NSW GOVERNMENT

2023 Annual Immunisation Update

Thursday 23rd March (6:30pm – 9:00pm)

PRIMARY HEALTH NETWORK

AGENDA

TIME	ITEM	PRESENTER
6:30 – 6:33	Welcome and Introductions, Acknowledgement of Country	**Phoebe James** (Professional Development Officer, HNECCPHN)
6:33 – 7:25	Welcome & Overview Covid update Aboriginal Immunisation Mpox, JE	**Patrick Cashman** (Immunisation Coordinator, HNELHD PHU)
	Children's Immunisation & Rates	**Jody Stephenson** (CNC, Immunisation HNELHD PHU)
	School Immunisation Program	**Sharon Saxby** (CNC, Immunisation HNELHD PHU)
	Influenza vaccines	**Rebecca Johnson** (CNC, Immunisation HNELHD PHU)
7:25 – 7:35	**10 MINUTE BREAK**	
7:35 – 8:20	Cold Chain Management, PRODA	**Jody Stephenson** (CNC, Immunisation HNELHD PHU)
	Health care worker immunisation requirements	**Rebecca Johnson** (CNC, Immunisation HNELHD PHU)
	Remaining Topics Shingrix	**Patrick Cashman** (Immunisation Coordinator, HNELHD PHU)
8:20 – 8:28	Questions & Answers from **Slido** Facilitator: Jody Stephenson	**All Presenters** (Immunisation Team, HNELHD Public Health)
8:28 – 8:30	Session close & Evaluation	**Phoebe James** (Professional Development Officer, HNECCPHN)

Our current HNEPHU immunisation team

Vaccinate for Fun

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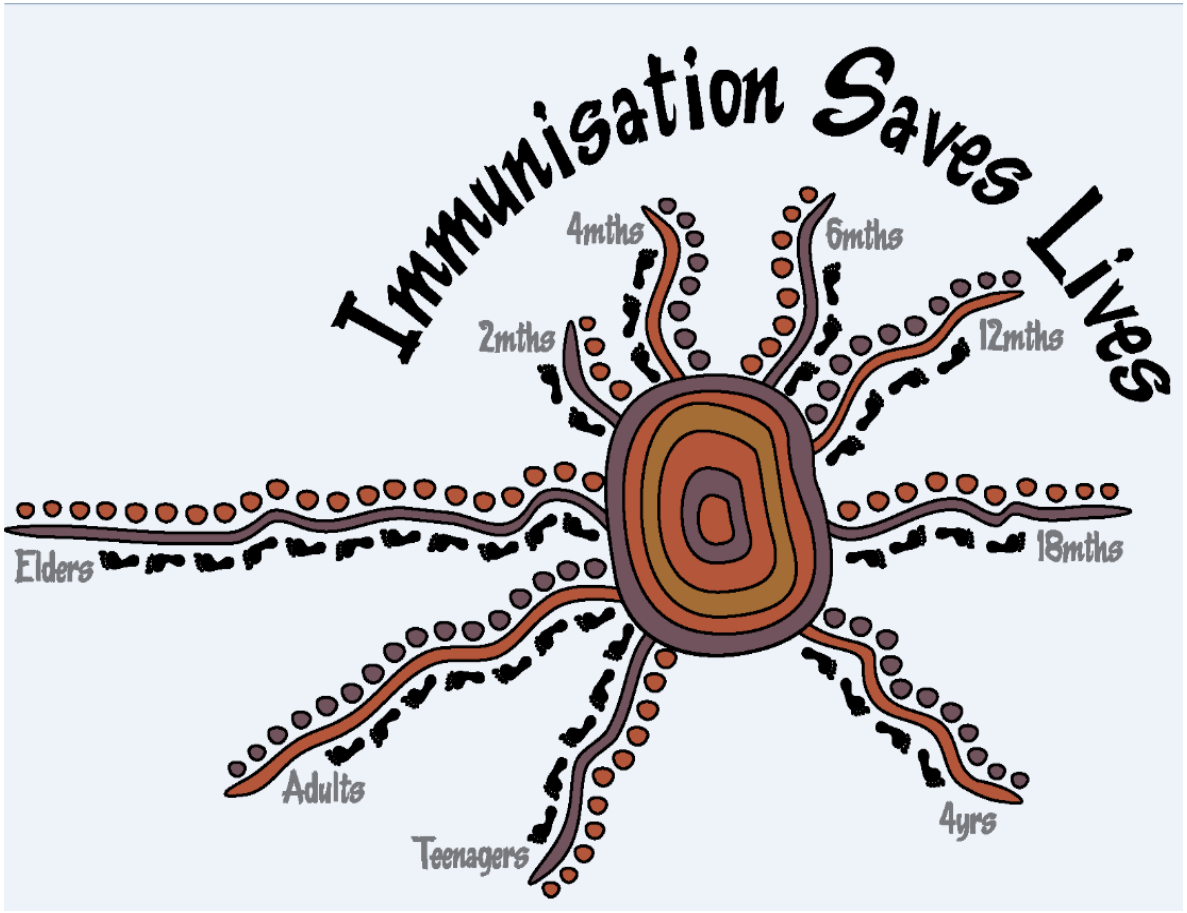
Aboriginal Immunisation Program



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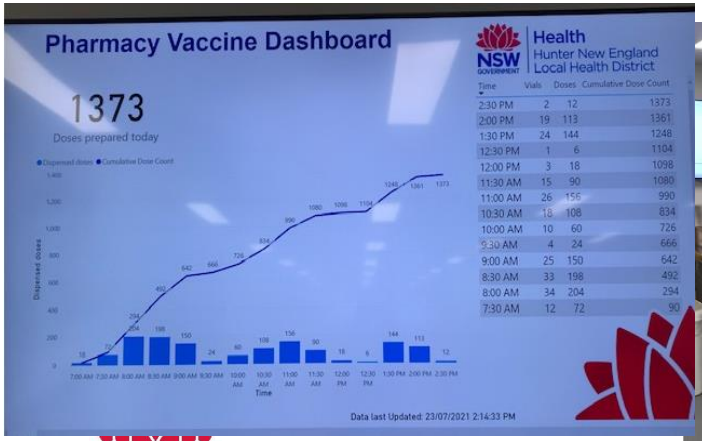
Thanks to HNE Hubs



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Dutch Elm Disease

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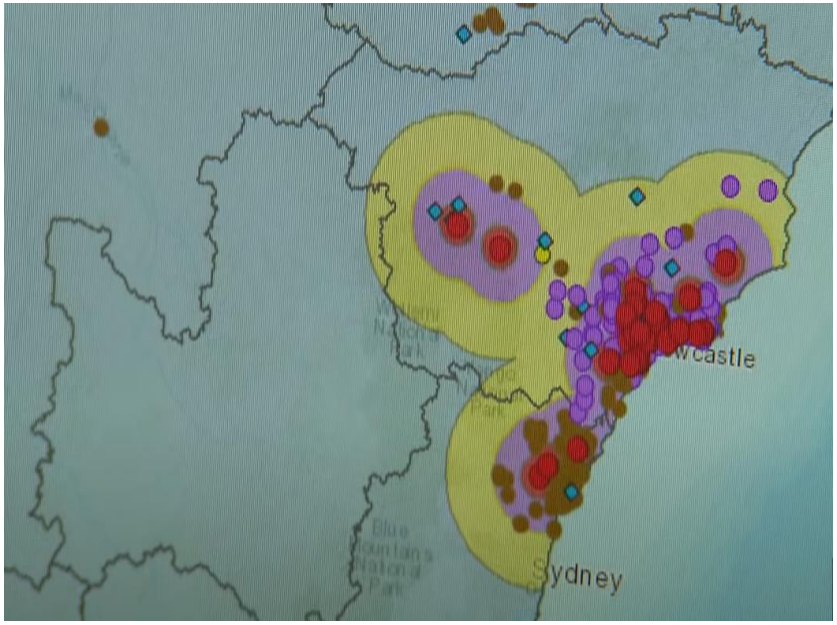
Bee Aware - ***Varroa destructor***



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Japanese Encephalitis

Who is eligible for a free Japanese encephalitis virus vaccination

In NSW, a **free** Japanese encephalitis virus vaccination is available for people aged 2 months or older who live or routinely work in any of the below Local Government Areas **and**:

- regularly spend time outdoors placing them at risk of mosquito bites, **or**
- are experiencing homelessness, **or**
- are living in conditions with limited mosquito protection (e.g. tents, caravans, dwellings with no insect screens), **or**
- are engaging in outdoor flood recovery (clean-up) efforts, including repeated professional or volunteer deployments.

NSW Health also continues to **recommend and offer free** vaccination for people who live in any part of NSW and:

- work, live, or are visiting a:
  - piggery, including farm workers and their families (including children aged 2 months and older) living at the piggery, pig transport workers, veterinarians (including veterinary students and nurses) and others involved in the care of pigs.
  - pork abattoir or pork rendering plant.
- work directly with mosquitoes through their surveillance (field or laboratory based) or control and management, and indirectly through management of vertebrate mosquito-borne disease surveillance systems (e.g. sentinel animals) such as:
  - environmental health officers and workers (urban and remote)
  - entomologists

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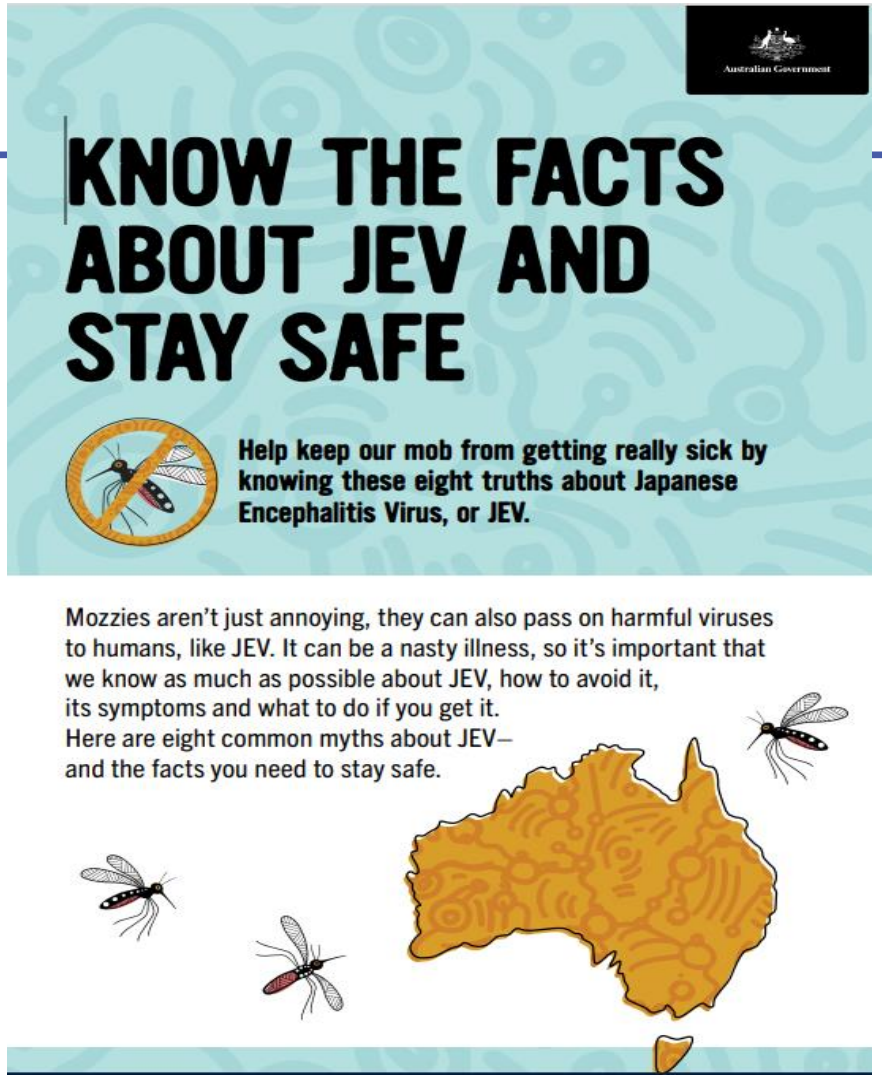

- [Know the facts about JEV and stay safe fact sheet (health.gov.au)]

Vaccine preventable disease

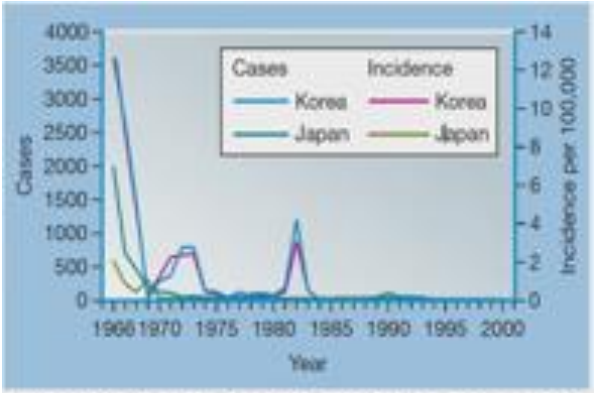

Figure 33.2. Reported Japanese encephalitis cases and incidence, Japan and Korea, 1966–2000. (Data from World Health Organization reports.)

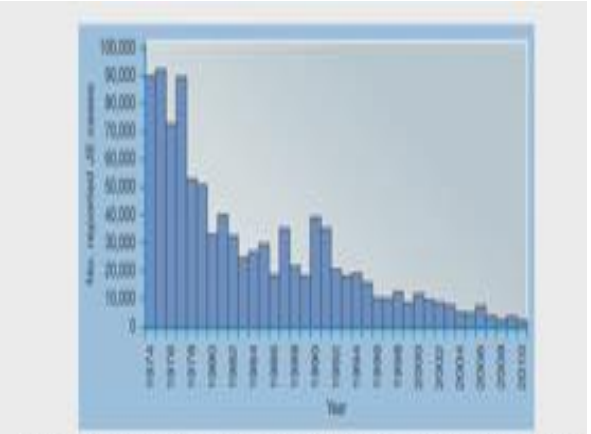

Figure 33.1. Reported cases of Japanese encephalitis (JE) for China, 1974-2010. (Data from Ministry of Health Beijing, China)

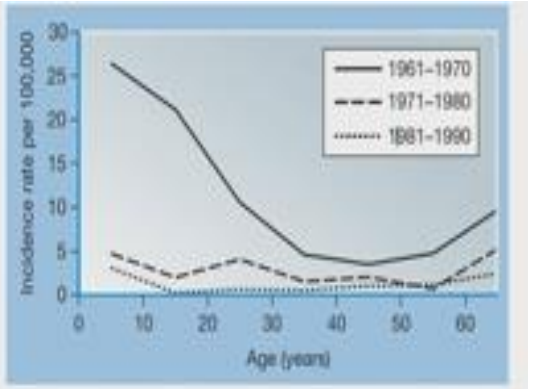

Figure 33.10. Age-specific incidence of Japanese encephalitis, Nanshi District, Shanghai, by decade. (Data from Z.Y. Xu, personal communication.)

4 Classes

- Inactivated (JE-Vax)
- Live attenuated made & used in China
- Inactivated JEspect
- Live Imojev

Recommended Immunization Schedule for children aged 0 to 15 years. Hanoi French Hospital

Age / Recommended Vaccine		At Birth	2 mo	3 mo	4 mo	6 mo	12 mo	15 mo	18 mo	19-23 mo	2-3 yrs	4-6 yrs	7-8 yrs	9-12 yrs	13-15 yrs
Tuberculosis		X													
Hepatitis B		X	X	X				X							
Diphteria, Tetanus & acellular Pertussis (DTaP)			X	X	X			X				X			
Inactivated Poliovirus			X	X	X			X							
Hemophilus Influenzae type b			X	X	X			X							
Rotavirus	Rotarix		2 dose series with minimum 1 month interval												
	Rotateq		3 dose series with minimum 1 month interval												
Pneumococcal conjugate			6wks - 6mo: first 3 doses at 1 month interval and fourth dose at least 6 months after third dose 7mo - 11mo: 2 doses at least 1 month interval; third dose is recommended after the 1st birthday, separated from the second dose by at least 2 months. 12mo – 5 yrs: 2 dose series at least 2 months apart												
Influenza						< 9 years: first 2 doses with 1 month interval and then 1dose every year. ≥ 9 years: Administer 1 dose every year										
Japan B Encephalitis							The first 2 doses at 1-4 weeks interval				x	Re-vaccination: 1 dose every three years up to 15 years of age			
Measles, Mumps, Rubella							X				X				
Varicella (Chiken pox)							X				X				
Hepatitis A (pediatric)							2 dose series with minimum 6 month interval								
Meningococcal	B+C					2 dose series with 6-8 weeks interval									
	A+C										First vaccination single dose Booster: 1 dose every three years				
Typhoid Fever											The first single dose. Re-vaccination: 1 dose every two years				
Human Papillomavirus	Cevarix													3 doses series: 0-1-6 months from 10 years of age	
	Gardacil													3 doses series: 0-2-6 months	

Jespect (also Ixiaro)

JEspect is an inactivated vaccine

- Women who are pregnant or breastfeeding
- immunocompromised people
- infants aged ≥ 2 months

Doses and schedule:

- JEspect is given as **two injections** 28 days apart **by intramuscular injection**. The dose required depends on the age of the person:
  - Infants and children aged ≥2 months to <3 years should receive 2 doses, each **0.25 mL**, 28 days apart
  - Children aged ≥3 years and adults should receive 2 doses, **each 0.5 mL**, 28 days apart

Short Supply - only order as required

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Imojev vaccine

- Imojev is a **live** attenuated vaccine. This means it contains a weakened version of the live JE virus.

Doses and schedule

- Imojev is given as a single dose via subcutaneous injection.
- Recommended for use in people aged ≥9 months.

Image courtesy of Sanofi

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Imojev vaccine: important considerations

- People who can become pregnant should avoid pregnancy for 28 days after Imojev vaccination.
- Do not give Imojev within 6 weeks of treatment with immunoglobulins or immunoglobulin-containing blood products. Imojev should be delayed until 3 months after these treatments.
- Imojev can be co-administered (given on the same day) as other live vaccines such as MMR and yellow fever. Give in separate limbs if possible, or if this is not possible, separate sites by at least 2.5 cm.
- If Imojev or other live vaccines are not co-administered, they should be given at least 4 weeks apart. You must check if a person has recently received any live vaccines before administering Imojev, and delay vaccination if required.

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Smallpox 1789

Without previous exposure to the smallpox virus,
Aboriginal people had no resistance,
and up to 70 per cent were killed by the disease.

Vaccine can protect culture

David Collins, Judge-Advocate of the colony, April 1789:

At that time a native was living with us; and on taking him down to the harbour to look for his former companions, those who witnessed his expression and agony can never forget either. He looked anxiously around him in the different coves we visited; not a vestige on the sand was to be found of human foot; ... not a living person was anywhere to be met with. It seemed as if, flying from the contagion, they had left the dead to bury the dead. He lifted up his hands and eyes in silent agony for some time; at last he exclaimed, `All dead! all dead!' and then hung his head in mournful silence

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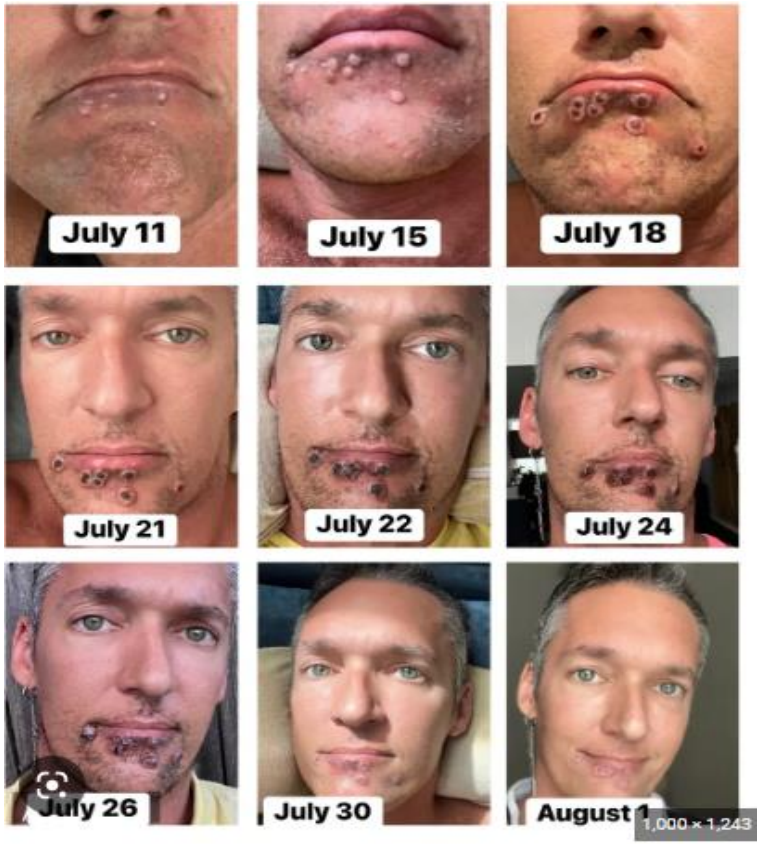
MPX



Monkeypox Pictures: Patient Shares Images, Describes Intense Pain

Visit

NSW - Far West

City/suburb	Vaccination centre/clinic	For booking support
Broken Hill	Make a booking at Broken Hill NSW Health Monkeypox Vaccination Centre	(08) 8080 1100
Far West (Mobile Clinic)	For bookings outside of Broken Hill, contact Broken Hill Community Health Centre on (08) 8080 1100.	(08) 8080 1100

NSW - Hunter New England

City/suburb	Vaccination centre/clinic	For booking support
Tamworth	Make a booking at Tamworth NSW Health Monkeypox Vaccination Clinic	(02) 6764 8080
Wallsend	Make a booking at Wallsend NSW Health Monkeypox Vaccination Centre	1800 570 575

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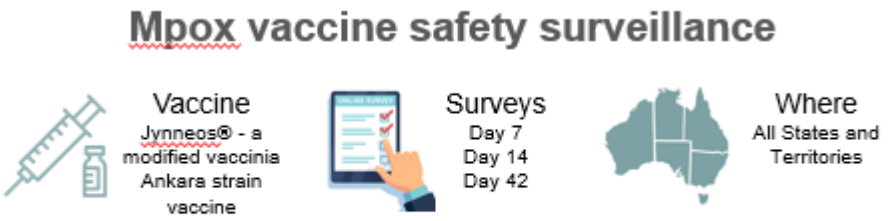
Vaxtracker Mpox vaccine safety surveillance



Scan to receive demo Mpox surveys

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Subcutaneous vs Intradermal Jynneos

Reports for first 7 days following dose 1:

- one or more adverse event: 45% subcutaneous, 59% intradermal
- visiting or calling a doctor 0.6% subcutaneous, 0.9% intradermal

Symptoms reported:

- Local injection site: Subcutaneous 28% pain, 24% redness, 26% swelling, 18% itchiness.

  Intradermal 13% pain, 50% redness, 39% swelling, 40% itchiness.

- Fatigue: 19% subcutaneous, 20% intradermal

Nationally there have been five visits to an emergency department across Australia within the first 7 days following vaccination (data not available by State and Territory).

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Subcutaneous JYNNEOS mpox

Data as at 9 January 2023

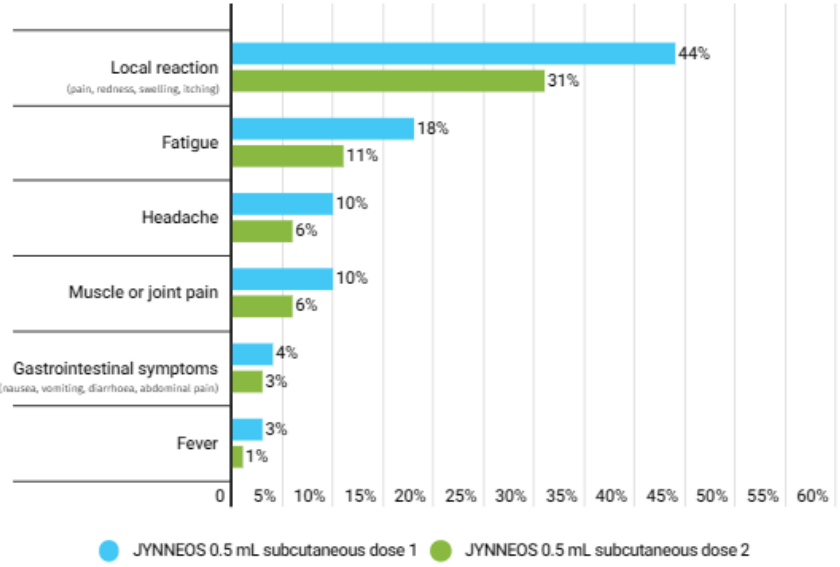
Vaccine safety surveys completed

2,993
JYNNEOS 0.5 mL subcutaneous dose 1

785
JYNNEOS 0.5 mL subcutaneous dose 2

Reported at least one adverse event

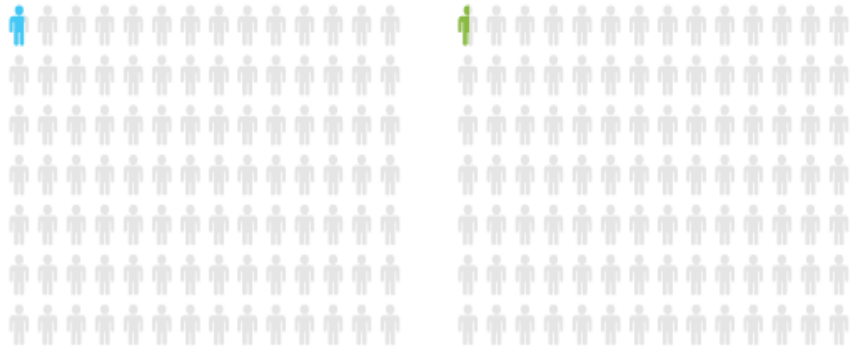
Commonly reported adverse events



Medical attendance

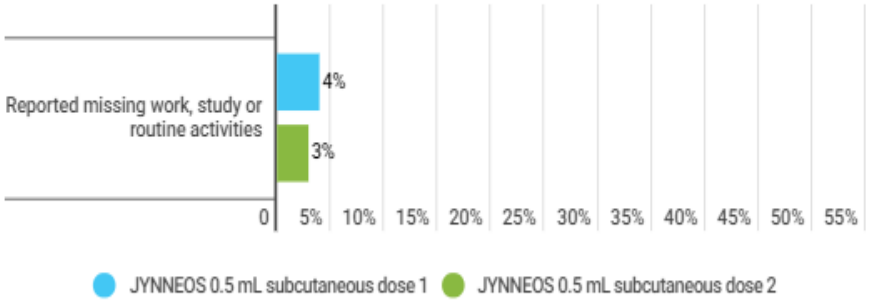
Less than 1 in 100 people reported seeing a doctor or going to the emergency department in the days after JYNNEOS 0.5 mL subcutaneous dose 1

Less than 1 in 100 people reported seeing a doctor or going to the emergency department in the days after JYNNEOS 0.5 mL subcutaneous dose 2



Those who presented to GPs and emergency departments had similar adverse events to those who did not. AusVaxSafety does not specifically ask participants the reason why they accessed medical care in the days following vaccination. Therefore medical attendance reported may or may not be related to any adverse events reported.

Impact on routine activities



The majority reported missing 1 day or less. Most participants who reported not being able to do routine activities had lethargy, headache and joint pain. These are common adverse events linked to the immune response following immunisation and understandably have meant some people have chosen to rest after vaccination.

THE TEXAS TRIBUNE

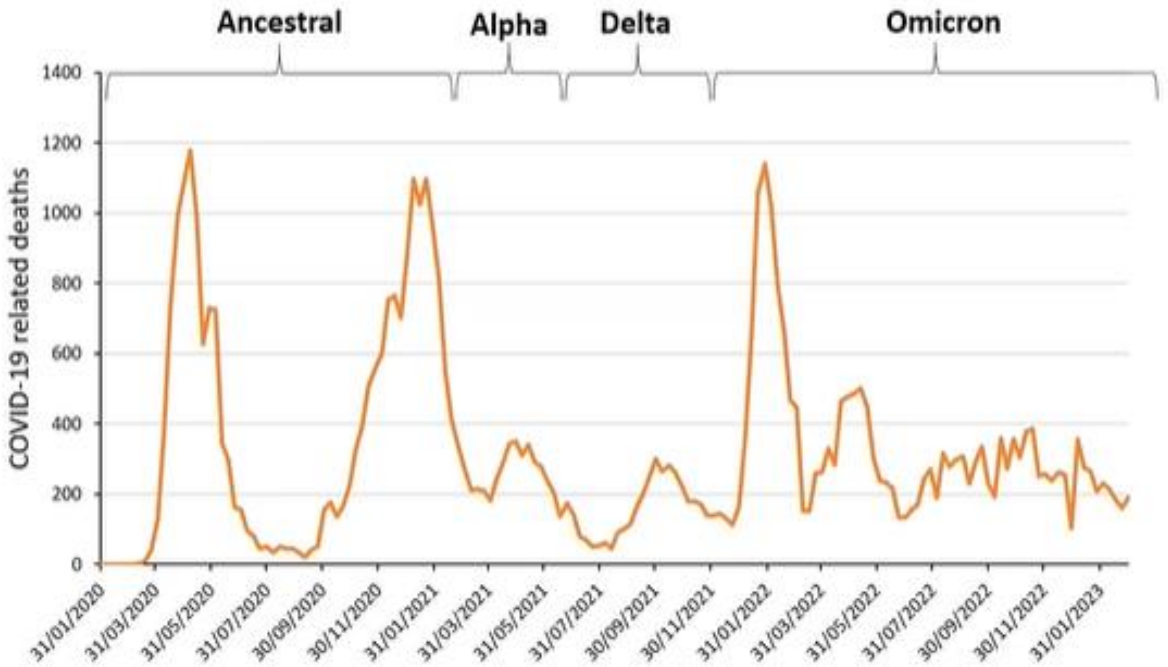
CORONAVIRUS IN TEXAS

Texas has seen nearly 9,000 COVID-19 deaths since February. All but 43 were unvaccinated people.

> Preliminary data shows 99.5% of COVID-related deaths in Texas were among unvaccinated people, according to the Department of State Health Services.

BY **COLLEEN DEGUZMAN** JULY 21, 2021 UPDATED: JULY 23, 2021

COVID-19 related deaths remain high



Data source: https://resources-covid19canada.hub.arcgis.com/

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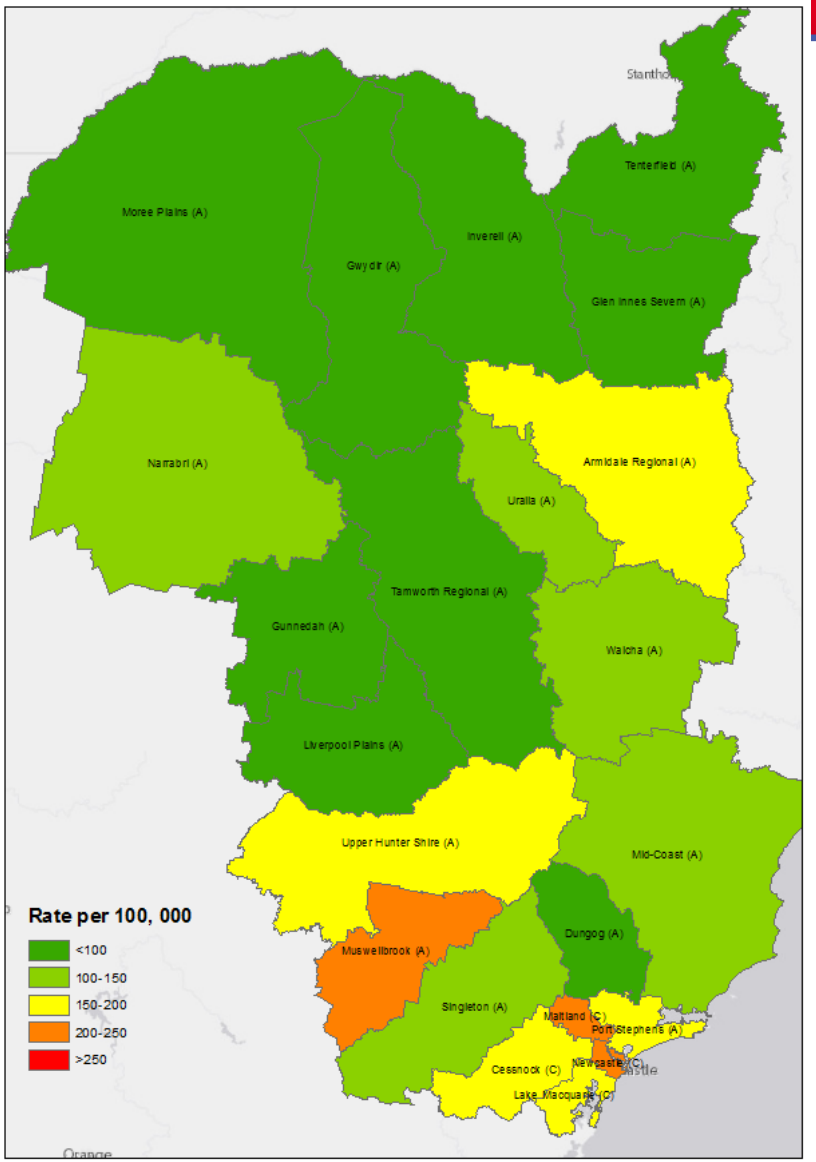
How do HNE LGAs compare?

1 – 14 March 2023

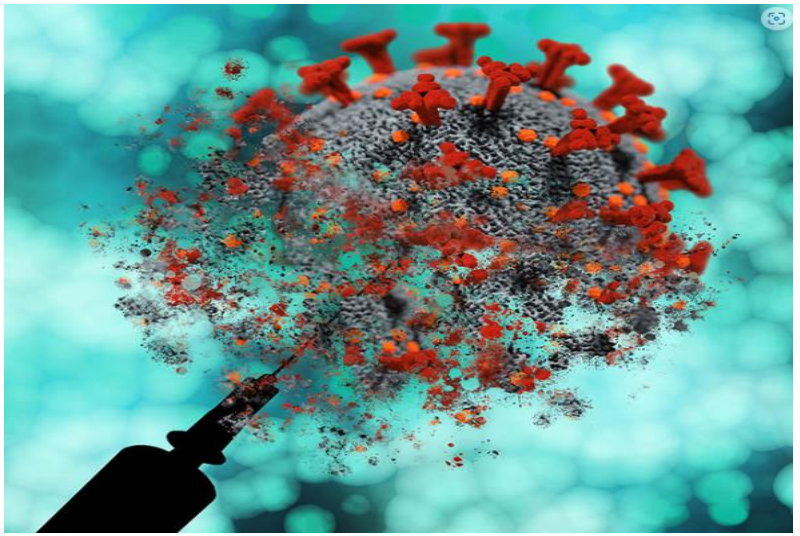
- Likely significantly under-reporting the true prevalence of COVID-19



COVID-19 vaccination protects against Long COVID

- Iinvestigation of Long COVID incidence by vaccination status in a random sample of UK adults aged 18 to 69 years from April 2020 to November 2021 from data collected by the UK COVID-19 Infection Survey, run by the Office for National Statistics (ONS).
- There were 3,333 eligible participants who were double-vaccinated before they were diagnosed with SARS-CoV-2 infection, and 3,090 non-vaccinated people who had also been infected were matched to these participants as controls.

The researchers found that receiving two COVID-19 vaccine doses, with the last at least two weeks before SARS-CoV-2 infection almost halved (a 41% decrease) the odds of developing Long COVID symptoms.



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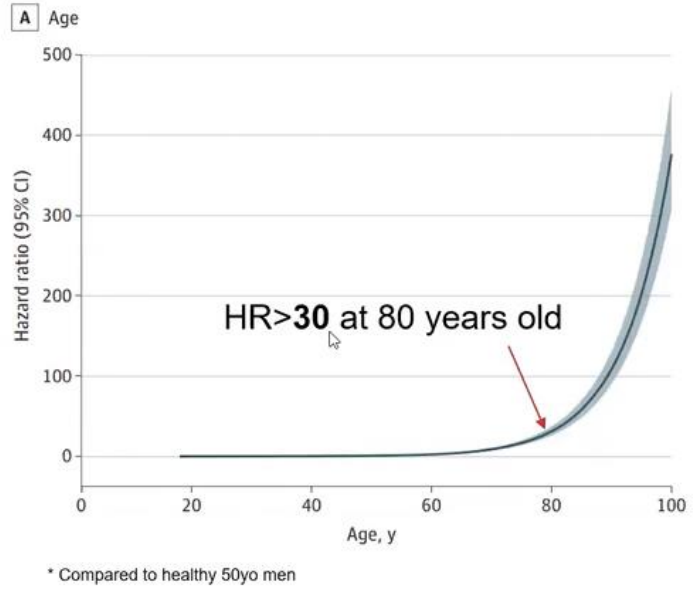
Age risk factor

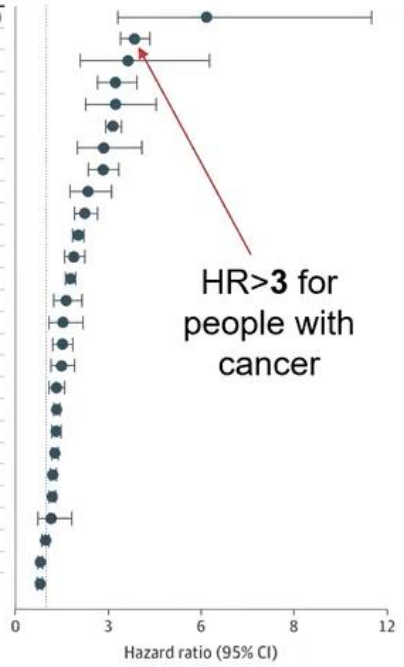
Age is the biggest risk factor for death from COVID-19

Figure. Risk Factors for Death From COVID-19 After Receiving a Booster



C Sociodemographic factors

	HR (95% CI)
SCID	6.17 (3.31-11.51)
Cancer of blood or bone marrow	3.85 (3.40-4.36)
MND/MS/myasthenia/Huntington disease/chorea	3.63 (2.11-6.26)
Pulmonary hypertension or fibrosis	3.23 (2.67-3.92)
Learning disability or Down syndrome	3.23 (2.28-4.57)
Dementia	3.16 (2.92-3.42)
Liver cirrhosis	2.86 (1.99-4.09)
Parkinson disease	2.82 (2.38-3.34)
Lung or oral cancer	2.35 (1.77-3.11)
Rheumatoid arthritis or SLE	2.25 (1.91-2.65)
COPD	2.03 (1.87-2.21)
Underweight	1.89 (1.58-2.25)
Heart failure	1.78 (1.62-1.95)
Epilepsy	1.64 (1.25-2.15)
Schizophrenia	1.54 (1.09-2.18)
Type 1 diabetes	1.52 (1.22-1.88)
Morbidly obese	1.49 (1.16-1.90)
Peripheral vascular disease	1.32 (1.10-1.59)
Chronic kidney disease	1.32 (1.23-1.43)
Stroke or TIA	1.32 (1.19-1.46)
Type 2 diabetes	1.27 (1.17-1.37)
Atrial fibrillation	1.20 (1.11-1.31)
Coronary heart disease	1.19 (1.08-1.30)
Prior fracture	1.15 (0.72-1.83)
Asthma	0.97 (0.86-1.10)
Overweight	8.00 (0.73-0.88)
Obese	8.00 (0.72-0.89)



Nafilyan V, et al - Evaluation of Risk Factors for Postbooster Omicron COVID-19 Deaths in England. JAMA Netw Open. 2022 Sep 1;5(9):e2233446.

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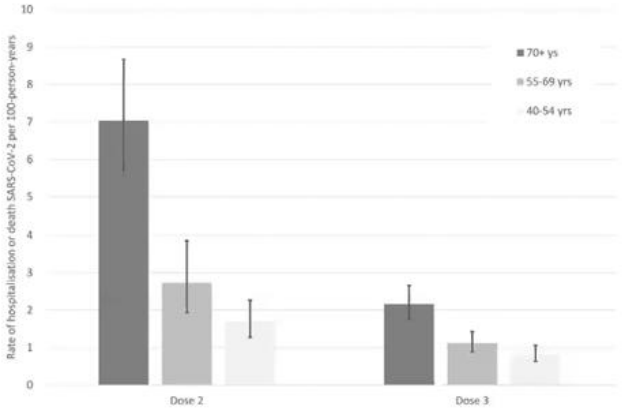
Vaccines reduce your risk of severe disease, but it may be very low already

Table 4. Vaccine effectiveness against mortality in those aged 50 years and older (all vaccine brands combined). VE = vaccine effectiveness, CI = confidence intervals.

Dose	Interval after dose	Odds ratio	VE (95% CI)
2	40+ weeks	0.48 (0.41 to 0.56)	52.3 (44.5 to 59)
3	2 to 4 weeks	0.15 (0.12 to 0.18)	85.3 (81.5 to 88.3)
3	5 to 9 weeks	0.17 (0.15 to 0.2)	82.9 (80.2 to 85.3)
3	10 to 14 weeks	0.21 (0.18 to 0.24)	79.2 (76.4 to 81.7)
3	15 to 19 weeks	0.25 (0.22 to 0.28)	75.3 (71.9 to 78.2)
3	20 to 24 weeks	0.32 (0.28 to 0.37)	67.7 (63.1 to 71.7)
3	25 to 39 weeks	0.37 (0.32 to 0.43)	63.0 (57.4 to 67.8)



Absolute rates adjusted for age, sex, socioeconomic status, co-morbidity (see methods for definitions).

Fig. 3. Adjusted absolute rates of SARS-CoV-2 Omicron severe disease (hospitalisation/death) by age group and within the first 3 months of receipt of vaccine dose 2 or 3. Absolute rates adjusted for age, sex, socioeconomic status, co-morbidity (see methods for definitions).

- VE (a relative risk measure) highlights the excellent protection these vaccines offer against severe disease

- Absolute rates are also very useful
- They highlight the importance of baseline risk, and how similar VEs across groups can have different effects on risk

UKHSA monthly COVID surveillance, Jan 2023 - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1134075/Vaccine-surveillance-report-week-2-2023.pdf

Liu B, Gidding H, Stepien S, Cretikos M, Macartney K. Relative effectiveness of COVID-19 vaccination with 3 compared to 2 doses against SARS-CoV-2 B.1.1.529 (Omicron) among an Australian population with low prior rates of SARS-CoV-2 infection. Vaccine. 2022 Oct 12;40(43):6288-6294 - https://pubmed.ncbi.nlm.nih.gov/36180375/

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Safety of COVID-19 bivalent BA.4/5 vaccines

- Authorized in US Aug 31, recommended to those 12y+ ≥2 mo after last dose, 22.6 M doses administered Aug 31 to Oct 23, 2022
- US VAERS: 5 cases myocarditis, 4 pericarditis, no new safety concerns
  - Administration errors most common (34% of reports)
- V-safe included 212,000 respondents, 40% received influenza vaccine concurrently
  - 11-20% reported inability to complete daily activities, decreasing with age
  - 0.8% had an AEFI requiring medical care

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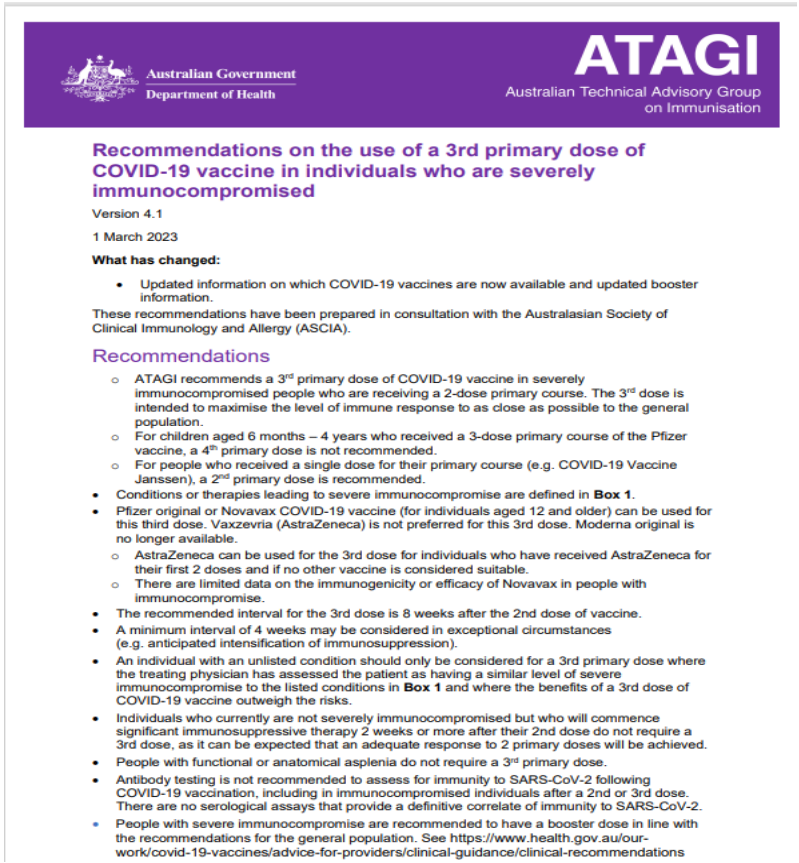
Covid vaccine for children – Double Check



Australian Government
Department of Health

ATAGI
Australian Technical Advisory Group on Immunisation

Recommendations on the use of a 3rd primary dose of COVID-19 vaccine in individuals who are severely immunocompromised

Version 4.1

1 March 2023

What has changed:

- Updated information on which COVID-19 vaccines are now available and updated booster information.

These recommendations have been prepared in consultation with the Australasian Society of Clinical Immunology and Allergy (ASCIA).

Recommendations

- ATAGI recommends a 3rd primary dose of COVID-19 vaccine in severely immunocompromised people who are receiving a 2-dose primary course. The 3rd dose is intended to maximise the level of immune response to as close as possible to the general population.
- For children aged 6 months – 4 years who received a 3-dose primary course of the Pfizer vaccine, a 4th primary dose is not recommended.
- For people who received a single dose for their primary course (e.g. COVID-19 Vaccine Janssen), a 2nd primary dose is recommended.

- Conditions or therapies leading to severe immunocompromise are defined in **Box 1**.
- Pfizer original or Novavax COVID-19 vaccine (for individuals aged 12 and older) can be used for this third dose. Vaxzevria (AstraZeneca) is not preferred for this 3rd dose. Moderna original is no longer available.
  - AstraZeneca can be used for the 3rd dose for individuals who have received AstraZeneca for their first 2 doses and if no other vaccine is considered suitable.
  - There are limited data on the immunogenicity or efficacy of Novavax in people with immunocompromise.
- The recommended interval for the 3rd dose is 8 weeks after the 2nd dose of vaccine.
- A minimum interval of 4 weeks may be considered in exceptional circumstances (e.g. anticipated intensification of immunosuppression).
- An individual with an unlisted condition should only be considered for a 3rd primary dose where the treating physician has assessed the patient as having a similar level of severe immunocompromise to the listed conditions in **Box 1** and where the benefits of a 3rd dose of COVID-19 vaccine outweigh the risks.
- Individuals who currently are not severely immunocompromised but who will commence significant immunosuppressive therapy 2 weeks or more after their 2nd dose do not require a 3rd dose, as it can be expected that an adequate response to 2 primary doses will be achieved.
- People with functional or anatomical asplenia do not require a 3rd primary dose.
- Antibody testing is not recommended to assess for immunity to SARS-CoV-2 following COVID-19 vaccination, including in immunocompromised individuals after a 2nd or 3rd dose. There are no serological assays that provide a definitive correlate of immunity to SARS-CoV-2.
- People with severe immunocompromise are recommended to have a booster dose in line with the recommendations for the general population. See https://www.health.gov.au/our-work/covid-19-vaccines/advice-for-providers/clinical-guidance/clinical-recommendations

Moderna 5 -11 yr formulation
Pfizer 6 – 11 year formulation

Table 1: Doses recommended for people with mild to severe immunocompromise

	Standard 2 dose primary course	3rd primary dose	Booster dose*
6 months-4 years without high-risk conditions	✗	✗	✗
6 months-4 years severe immunocompromise	✓	✓^	✗
5-11 years mild to moderate immunocompromise	✓	✗	✓
5-11 years severe immunocompromise	✓	✓	✓
12-15 years mild to moderate immunocompromise	✓	✗	✓
12-15 years severe immunocompromise	✓	✓	✓
16+ years mild to moderate immunocompromise	✓	✗	✓
16+ years severe immunocompromise	✓	✓	✓

*No COVID-19 vaccines are currently registered for use as a booster in people under the age of 5 years.
^If receiving Moderna 6 month – 5 year formulation, a 3rd primary dose is recommended. If receiving Pfizer 6 month – 4 year formulation, a 4th primary dose is not recommended.

[ATAGI recommendations on the use of a third primary dose of COVID-19 vaccine in individuals who are severely immunocompromised (health.gov.au)]

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Covid vaccine

Children aged 6 months to <5 years

Two vaccines are available for children aged 6 months to < 5 years:

- Moderna 6 months to 5 years formulation (blue cap/purple stripe) is given as a 2-dose primary schedule, with 25 µg of mRNA in each 0.25 mL dose
- Pfizer 6 months to 4 years formulation (maroon cap) is given in a 3-dose primary schedule, with 3 µg of mRNA in each 0.2 mL dose.

ATAGI recommends COVID-19 vaccination for children in this age group who are at greatest risk of severe outcomes from COVID-19. This includes those with the following or similar conditions:

- severe primary or secondary immunodeficiency, including those undergoing treatment for cancer, or on immunosuppressive treatments as listed in the ATAGI advice on third primary doses of COVID-19 vaccine in individuals who are severely immunocompromised
- bone marrow or stem cell transplant, or chimeric antigen T-cell (CAR-T) therapy
- complex congenital cardiac disease
- structural airway anomalies or chronic lung disease
- type 1 diabetes mellitus
- chronic neurological or neuromuscular conditions
- a disability with significant or complex health needs, such as severe cerebral palsy or Down syndrome (trisomy 21).

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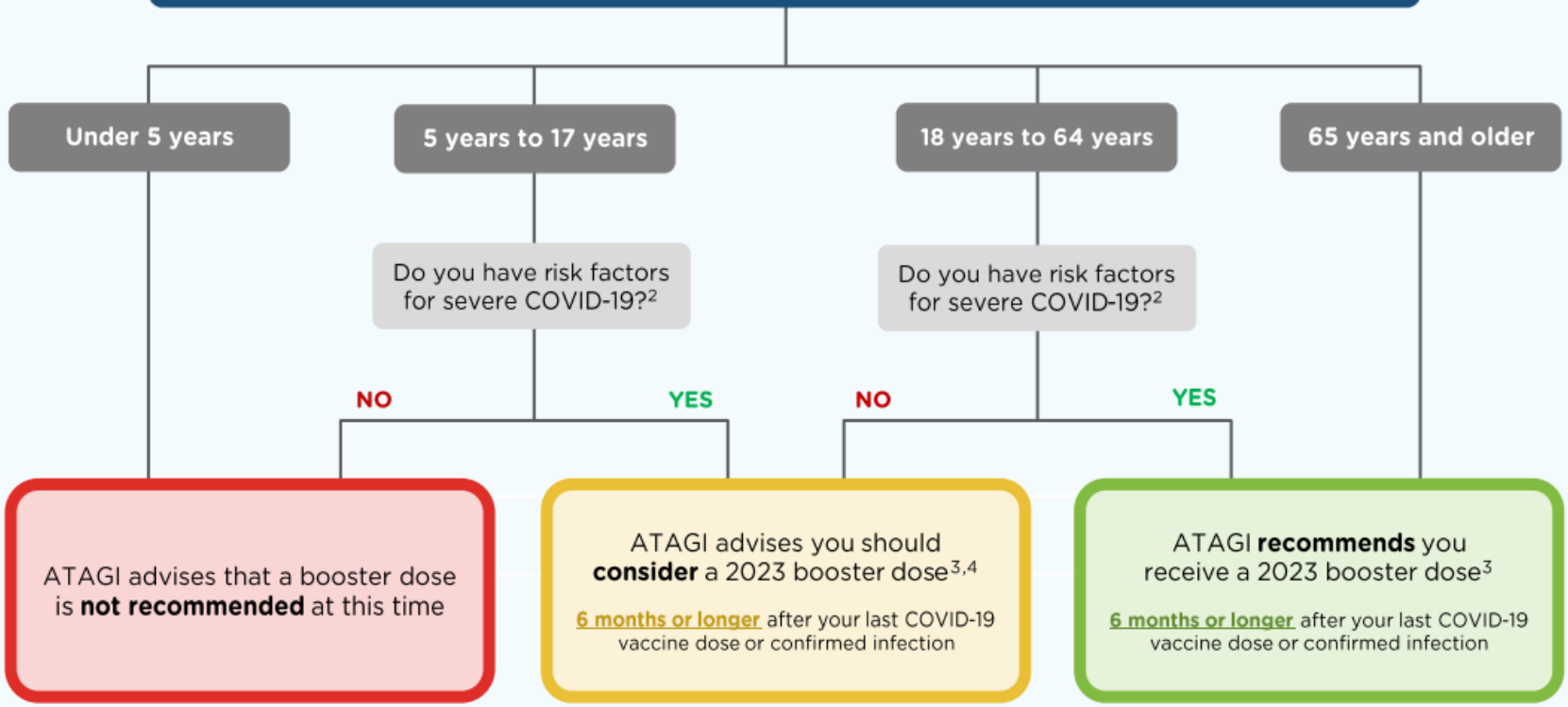
ATAGI 2023 booster advice

For people who have completed a primary course[1]



Notes

1. For most people, a primary vaccination course consists of 2 doses. A third primary dose is recommended for people aged 6 months or older with severe immunocompromise. See considerations for special populations: people who are immunocompromised.
2. Includes those with a medical condition that increases the risk of severe COVID-19 illness (refer to ATAGI clinical guidance) or those with disability with significant or complex health needs or multiple comorbidities which increase the risk of poor outcomes from COVID-19.
3. mRNA bivalent booster preferred; for ages in which a bivalent vaccine is not approved, use a vaccine approved for that age group.
4. Consider a 2023 booster dose based on an individual risk benefit assessment with their immunisation provider.

Information current as of 16 March 2023

COVID-19 VACCINATION

NSW GOVERNMENT

COVID-19 VACCINES: Ancestral virus (original formulations)

COVID-19 VACCINATION

	 **Pfizer (COMIRNATY)** 3 mcg/0.2mL concentrated suspension for injection multi-dose vial	 **Moderna (SPIKEVAX)** 0.10 mg/mL suspension for injection multi-dose vial	 **Pfizer (COMIRNATY)** 10 mcg/0.2 mL concentrated suspension for injection multi-dose vial	 **Pfizer (COMIRNATY)** 30 mcg/0.3 mL concentrated suspension for injection multi-dose vial	 **Novavax (NUVAXOVID)** 5 mcg/0.5 mL adjuvanted suspension for injection multi-dose vial
CVAS naming convention	Pfizer 6 months-4 years (Maroon)	Moderna 6 months-5 years (Blue/Purple)	Pfizer 5-11 years (Orange)	Pfizer 12 years+ (Purple)	Novavax
Vaccine type	mRNA (nucleic acid)	mRNA (nucleic acid)	mRNA (nucleic acid)	mRNA (nucleic acid)	Protein-based
Approved age	6 months to 4 years[1]	6 months to 5 years[1]	5 to 11 years	12 years and older	12 years and older
Dose volume	0.20 mL primary dose	0.25 mL primary dose	0.20 mL primary & booster dose	0.30 mL primary & booster dose[2]	0.50 mL primary & booster dose[2]
Doses per vial	10	10	10	6	10
Dilution required	Yes (2.2 mL)	No	Yes (1.3 mL)	Yes (1.8 mL)	No
Recommended primary course interval[3]	8 weeks (second dose) and 8 weeks (third dose)	8 weeks	8 weeks	8 weeks	8 weeks
Minimum interval for the primary course[4]	3 weeks (second dose) and 8 weeks (third dose)	4 weeks	3 weeks	3 weeks	3 weeks
Third primary dose[5]	Yes[6]	Yes	Yes	Yes	Yes[7]
Booster dose[2]	No	No	Yes	Yes	Yes
Ultra-Low Temperature (ULT) freezer storage time[8]	18 months (shelf life) at -90°C to -60°C	DO NOT STORE below -50°C	18 months (shelf life) at -90°C to -60°C	18 months (shelf life) at -90°C to -60°C	DO NOT STORE
Freezer storage time (unopened vials)[8]	DO NOT STORE at -25°C to -15°C	9 months (shelf life) at -50°C to -15°C	DO NOT STORE at -25°C to -15°C	2 weeks at -25°C to -15°C within the 18-month shelf life	DO NOT STORE
Refrigeration storage time (unopened vials)[8]	70 days (2°C to 8°C) within the 18-month shelf life	30 days (2°C to 8°C) within the 9-month shelf life	70 days (2°C to 8°C) within the 18-month shelf life	31 days (2°C to 8°C) within the 18-month shelf life	9 months (2°C to 8°C)
Room temperature storage time (unopened vials)[8]	24 hours, pre- and post-dilution (up to 30°C)	24 hours (up to 25°C)	24 hours, pre- and post-dilution (up to 30°C)	2 hours pre-dilution, 6 hours post-dilution (up to 30°C)	12 hours (up to 25°C)
ATAGI recommendations for storing opened vials	6 hours (up to 30°C)	6 hours (up to 25°C)	6 hours (up to 30°C)	6 hours (up to 30°C)	6 hours (up to 25°C)
ATAGI recommendations for pre-drawn doses	1 hour (up to 30°C) 6 hours (2°C to 8°C)	1 hour (up to 25°C) 6 hours (2°C to 8°C)	1 hour (up to 30°C) 6 hours (2°C to 8°C)	1 hour (up to 30°C) 6 hours (2°C to 8°C)	Storing pre-drawn doses in syringes is not preferred[9]
Transport limitations	80 hours thawed	12 hours thawed	80 hours thawed	48 hours thawed	Nil

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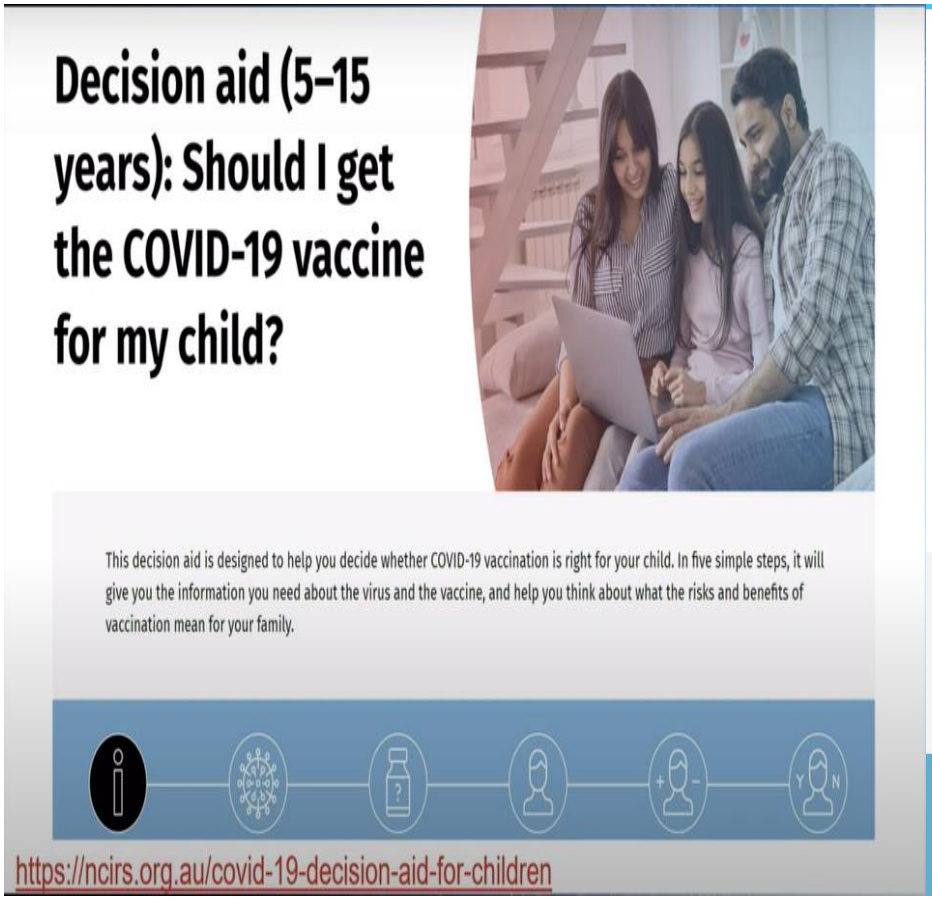
COVID-19 VACCINES: Bivalent mRNA booster vaccines

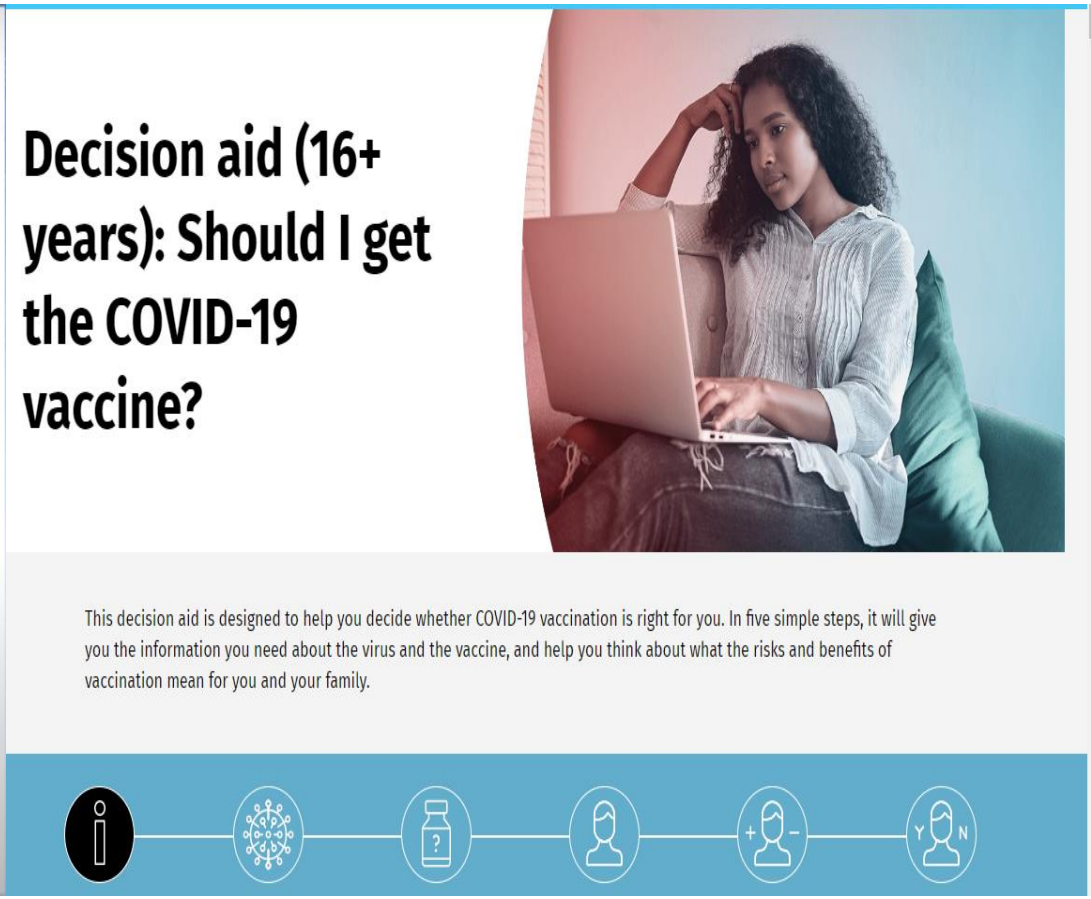
COVID-19 VACCINATION

	 **Moderna (SPIKEVAX) Bivalent BA.4-5** 0.10 mg/mL suspension for injection pre-filled syringe	 **Pfizer (COMIRNATY) Bivalent BA.4-5** 15/15 mcg/0.3 mL suspension for injection multi-dose vial	 **Moderna (SPIKEVAX) Bivalent BA.1** 0.10 mg/mL suspension for injection multi-dose vial	 **Pfizer (COMIRNATY) Bivalent BA.1** 15/15 mcg/0.3 mL suspension for injection multi-dose vial
CVAS naming convention	Moderna Bivalent (BA.4-5) 12 years+ (PFS)[1]	Pfizer Bivalent (BA.4-5) 12 years+ (Grey)[1]	Moderna Bivalent (BA.1) 18 years+ (Blue/Green)[1]	Pfizer Bivalent (BA.1) 18 years+ (Grey)[1]
Vaccine type	mRNA (nucleic acid)	mRNA (nucleic acid)	mRNA (nucleic acid)	mRNA (nucleic acid)
Approved age[2,3]	12 years and older	12 years and older	18 years and older	18 years and older
Dose	0.50 mL booster dose	0.30 mL booster dose	0.50 mL booster dose	0.30 mL booster dose
Doses per vial/syringe	1	6	5	6
Dilution required	No	No	No	No
Primary course dose[4]	No	No	No	No
Booster dose interval[2,3]	6 months or more following last COVID-19 vaccine dose or confirmed infection, whichever is the most recent	6 months or more following last COVID-19 vaccine dose or confirmed infection, whichever is the most recent	6 months or more following last COVID-19 vaccine dose or confirmed infection, whichever is the most recent	6 months or more following last COVID-19 vaccine dose or confirmed infection, whichever is the most recent
Ultra-Low Temperature (ULT) freezer storage time[5]	DO NOT STORE below -50°C	18 months (shelf life) at -90°C to -60°C	DO NOT STORE below -50°C	18 months (shelf life) at -90°C to -60°C
Freezer storage time (unopened)[5]	9 months (shelf life) at -50°C to -15°C	DO NOT STORE at -25°C to -15°C	9 months (shelf life) at -50°C to -15°C	DO NOT STORE at -25°C to -15°C
Refrigeration storage time (unopened)[5]	30 days (2°C to 8°C) within the 9-month shelf life	70 days (2°C to 8°C) within the 18-month shelf life	30 days (2°C to 8°C) within the 9-month shelf life	70 days (2°C to 8°C) within the 18-month shelf life
Room temperature storage time (unopened)[5]	24 hours (up to 25°C)	24 hours pre- and post-initial puncture (up to 30°C)	24 hours (up to 25°C)	24 hours pre- and post-initial puncture (up to 30°C)
ATAGI recommendations for storing opened vials	NA	6 hours (up to 30°C)	6 hours (up to 25°C)	6 hours (up to 30°C)
ATAGI recommendations for pre-drawn doses	NA	1 hour (up to 30°C) 6 hours (2°C to 8°C)	1 hour (up to 25°C) 6 hours (2°C to 8°C)	1 hour (up to 30°C) 6 hours (2°C to 8°C)
Transport limitations	Nil	80 hours thawed	12 hours thawed	80 hours thawed

NSW GOVERNMENT

Direct people to information - NCIRS





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Compare the risks and benefits

START: About this decision aid
STEP 1: Learn about the virus and the vaccines
STEP 2: Compare the risks and benefits
STEP 3: Check your personal risk profile
STEP 4: Consider what matters most to you
STEP 5: Make your decision

To make the decision that's best for you, it's useful to think about how the risks associated with COVID-19 compare with the risks of vaccination.

The charts on this page put those risks side by side so you can easily compare them. Here's how to use the charts:

1. **Select the vaccine you'd like to know more about.** Your doctor may recommend a particular vaccine depending on your age, your personal health history, and the availability of vaccines in your area.

2. **Select whether you want to see risks as a percentage (%), or as numbers of people** (for example, 'per 1,000' or 'per million').

3. **Compare the risks of the virus with the risks of the vaccine.** Click where indicated to expand the chart and see risks of specific symptoms in more detail.

Which vaccine would you like to know more about?

● Pfizer/BioNTech (Comirnaty)
○ AstraZeneca (Vaxzevria)
○ Moderna (Spikevax)

About the vaccine

Comirnaty is a vaccine made by Pfizer and BioNTech. It is also known as BNT162b2 or 'the Pfizer vaccine'.

It is an mRNA vaccine which means it uses genetic code from a part of the virus to train your immune system. The genetic code is quickly broken down by your body and cleared away. You can not catch COVID-19 from Comirnaty (Pfizer).

After the second dose, Comirnaty (Pfizer) is 87-88% effective against the Delta variant.[1,2] There is a small chance that you could catch COVID-19 even after you've been vaccinated. If you do, your illness will usually be mild.[2-4]

How it is delivered

The Pfizer vaccine will be given to you in two doses, three to six weeks apart.[4] If you're over 18, it is recommended that you get a booster dose six months after your second dose.

The chart below compares the risks of COVID-19 with the risks of the Pfizer vaccine.[5-16]

PERCENTAGE OF PEOPLE | NUMBER OF PEOPLE

HEALTH RISKS

With COVID-19 | % Percentage of people | With Vaccine

SYMPTOMS

90% | % | 56%

2-3 weeks | *DURATION OF SYMPTOMS* | 1-3 days

+ CLICK TO SEE INDIVIDUAL SYMPTOMS

SEVERE ALLERGIC REACTIONS

0% | % | 0.0005%

HOSPITALISATION

11.5% | % | 0.0027%

+ CLICK TO SEE INDIVIDUAL AGE GROUPS

INTENSIVE CARE

4.7% | % | 0%

+ CLICK TO SEE INDIVIDUAL AGE GROUPS

LONG-TERM HEALTH IMPACTS

5-20% | % | 0%

+ CLICK TO SEE DATA IN DETAIL

DEATHS

2% | % | 0%

+ CLICK TO SEE INDIVIDUAL AGE GROUPS

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Summary

- The strongest evidence says:
  - Vaccines provide excellent protection against severe disease
  - A booster dose will provide significant additional protection in people ≥65

  - Risk of death or hospitalisation is now very low in people under 65 (probably slightly higher for those approaching 65)
  - So, ATAGI has made a judgement call that most people under 65 will not gain significant benefit from another booster dose at this time

  - Although the risk of a severe adverse event is very low, the highest incidence of myocarditis/pericarditis occurs between the ages of 18 and 39 years.

- There's no right or wrong answer in the 18-64 year age group
- Small benefits and small risks

A good place to be!
Vaccines have made life possible

NSW GOVERNMENT

The Sydney Morning Herald

OPINION

Schools must be last to close and first to open. Science confirms they're the safest place for children

Dr Archana Koirala and Dr Phoebe Williams
January 27, 2022 — 5.30am

- 61 million children have been pushed into poverty due to COVID-19.
- One billion children have fallen behind in their schooling since the pandemic began, as fewer than one in four children have had access to online learning platforms.
- Ten million young girls have been forced into child marriage, largely triggered by school closures.

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ROYAL SOCIETY OPEN SCIENCE

royalsocietypublishing.org/journal/rsos

Registered report

Check for updates

Cite this article: Mansfield R, Santos J, Deighton J, Hayes D, Velikonja T, Boehnke JR, Patalay P. 2022 The impact of the COVID-19 pandemic on adolescent mental health: a natural experiment. *R. Soc. Open Sci.* **9**: 211114. https://doi.org/10.1098/rsos.211114

The impact of the COVID-19 pandemic on adolescent mental health: a natural experiment

Rosie Mansfield[1,†], Joao Santos[3,†], Jessica Deighton[4], Daniel Hayes[4,5], Tjasa Velikonja[4], Jan R. Boehnke[6,‡] and Praveetha Patalay[1,2,‡]

[1]Centre for Longitudinal Studies, Social Research Institute and [2]MRC Unit for Lifelong Health

- Results revealed that the COVID-19 pandemic has led to an increase in adolescent depressive symptoms and a decrease in life satisfaction.
- We estimate that if the COVID-19 pandemic had not occurred, we would observe 6% fewer adolescents with high depressive symptoms.
- Impact of the pandemic may have been greater in females, with females exposed to the pandemic showing greater depressive symptoms, externalizing difficulties and lower wellbeing.

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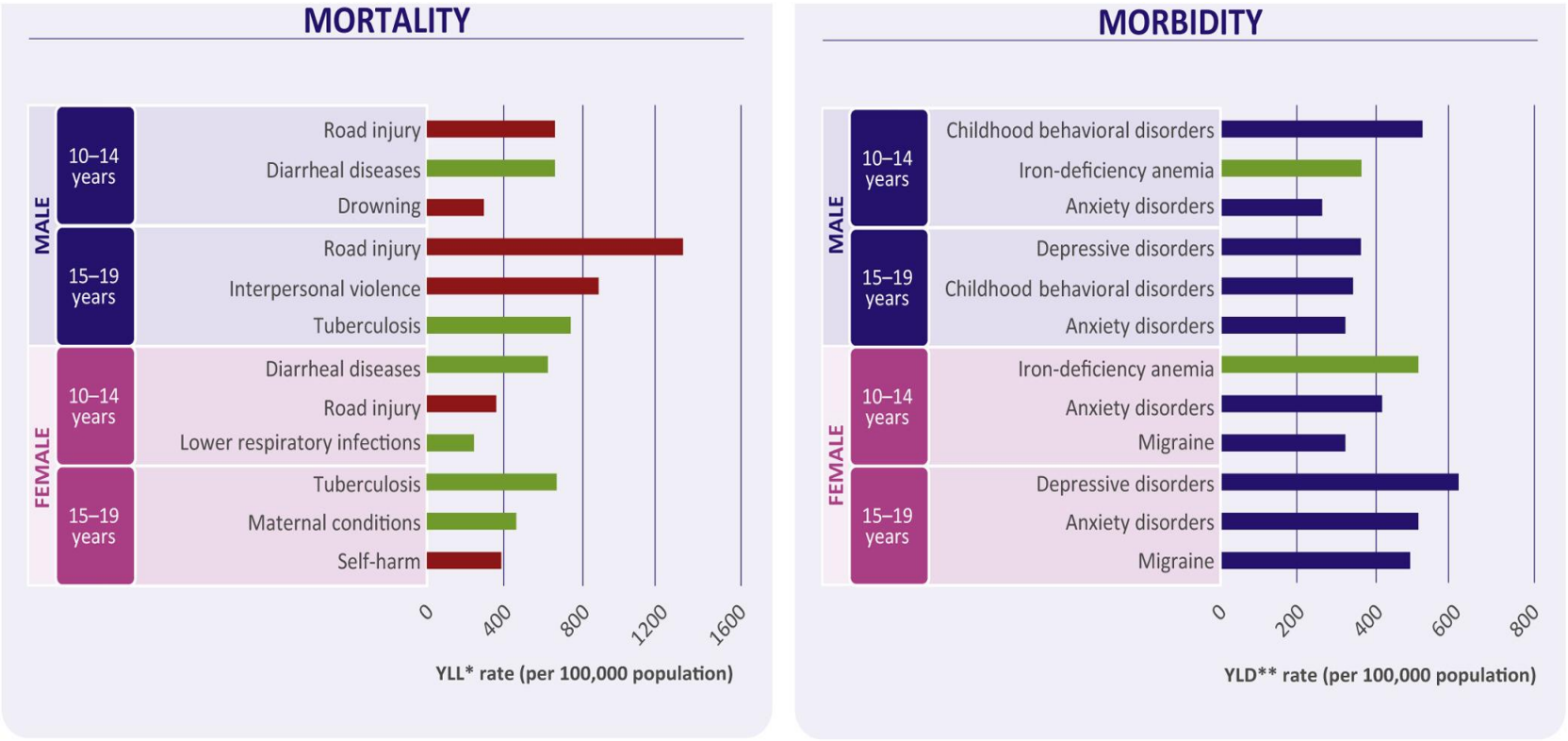
The Top Global Causes of Adolescent Mortality and Morbidity by Age and Sex, 2019



*Years of life lost (YLL) are a measure of mortality.

**Years of healthy life lost due to disability (YLD) are a measure of morbidity.

https://doi.org/10.1016/j.jadohealth.2021.06.023

Journal of Adolescent Health 69 (2021) 540

JOURNAL OF ADOLESCENT HEALTH
www.jahonline.org

- “The COVID-19 pandemic has shown that reliance on a few companies to supply global public goods is limiting and dangerous,” said WHO director-general Tedros Ghebreyesus

UNSEATING BIG PHARMA: THE RADICAL PLAN FOR VACCINE EQUITY

[Unseating big pharma: the radical plan for vaccine equity (nature.com)]

NSW GOVERNMENT

HealthPathways login

Community HealthPathways

Hunter New England

patient info
HUNTER NEW ENGLAND

https://hne.communityhealthpathways.org/
Username: hnehealth
Password: p1thw1ys

http://patientinfo.org.au/

Not password protected

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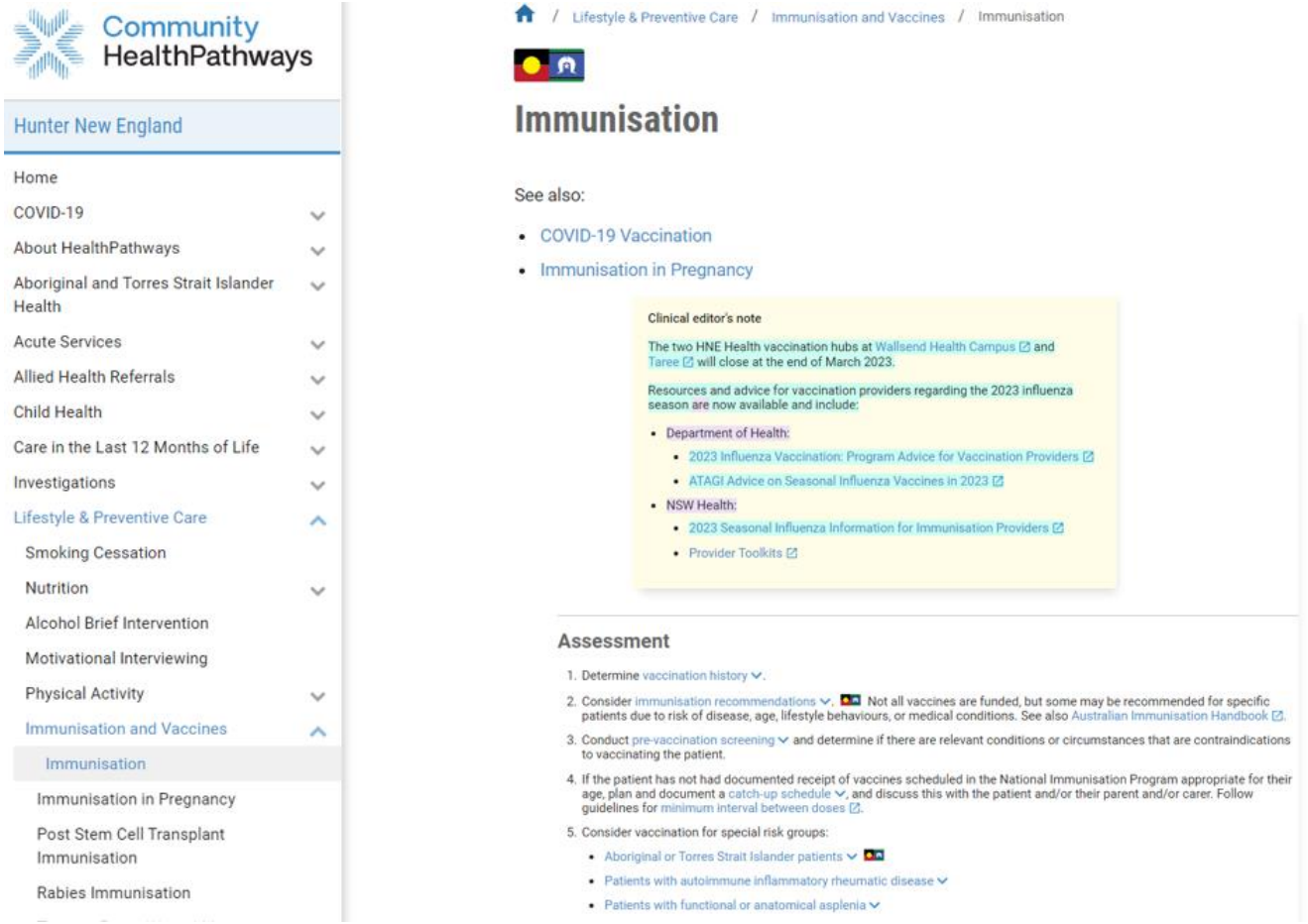
Immunisation HealthPathway



NSW GOVERNMENT

The Australian Immunisation Register and the transition to Web Services

What are web services?

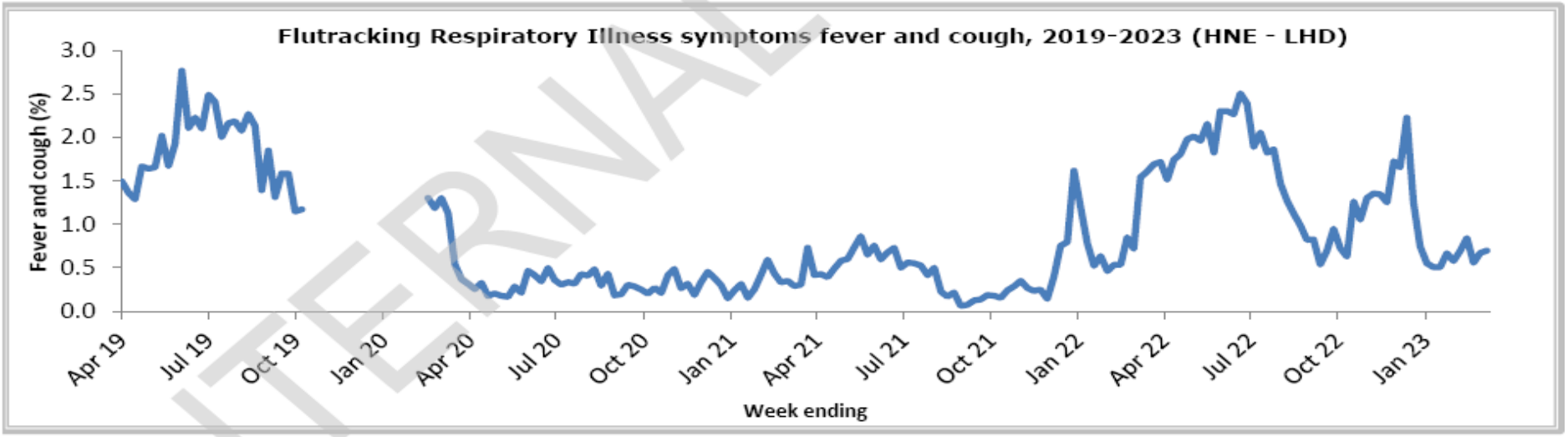
Web services is a technology that is available over the internet. It enables two- way communication between two devices on a network which means they can talk to each other securely and share data and services.

Why is the Australian Immunisation Register (AIR) transitioning to web services?

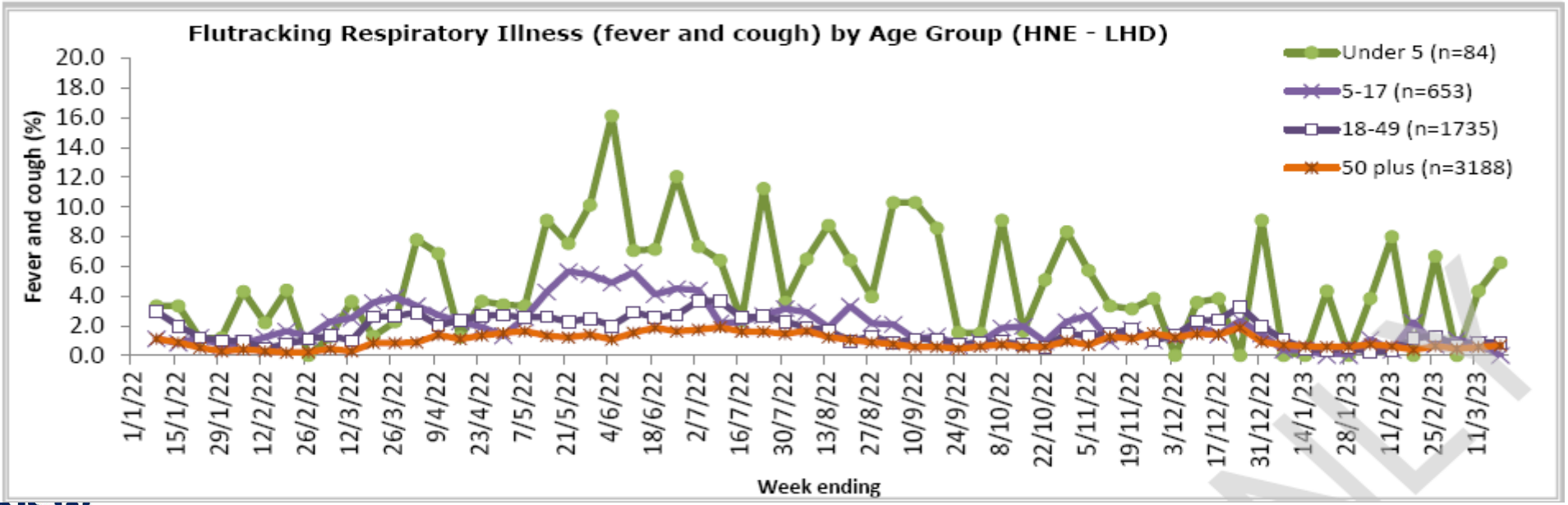
Services Australia, which manages AIR has moved to use web services; previously adaptor technology was used. Web services ensures that the digital channels:

- are secure and stable, now and into the future
- meet current technology standards
- are easier to update and improve

Flutracking



*5 year average is calculated using 2015, 2016, 2017, 2018 and 2019 data



NSW GOVERNMENT

Meningococcal Disease – Bexsero Vaccine

Meningococcal Septicaemia (MenB) - Charlotte's story

Five year old Charlotte Nott developed septicaemia through type B meningococcal disease infection

How common is it?

Between 2011 and 2015, there were 966 notifications of meningococcal disease, with 101 (10%) of these reported in Aboriginal and Torres Strait Islander people.

Notification rates in Aboriginal and Torres Strait Islander people, compared with other people, were 2.4 times higher overall, 4.3 times higher for children aged less than 5 years, and 5.5 times higher for children aged 5–14 years.

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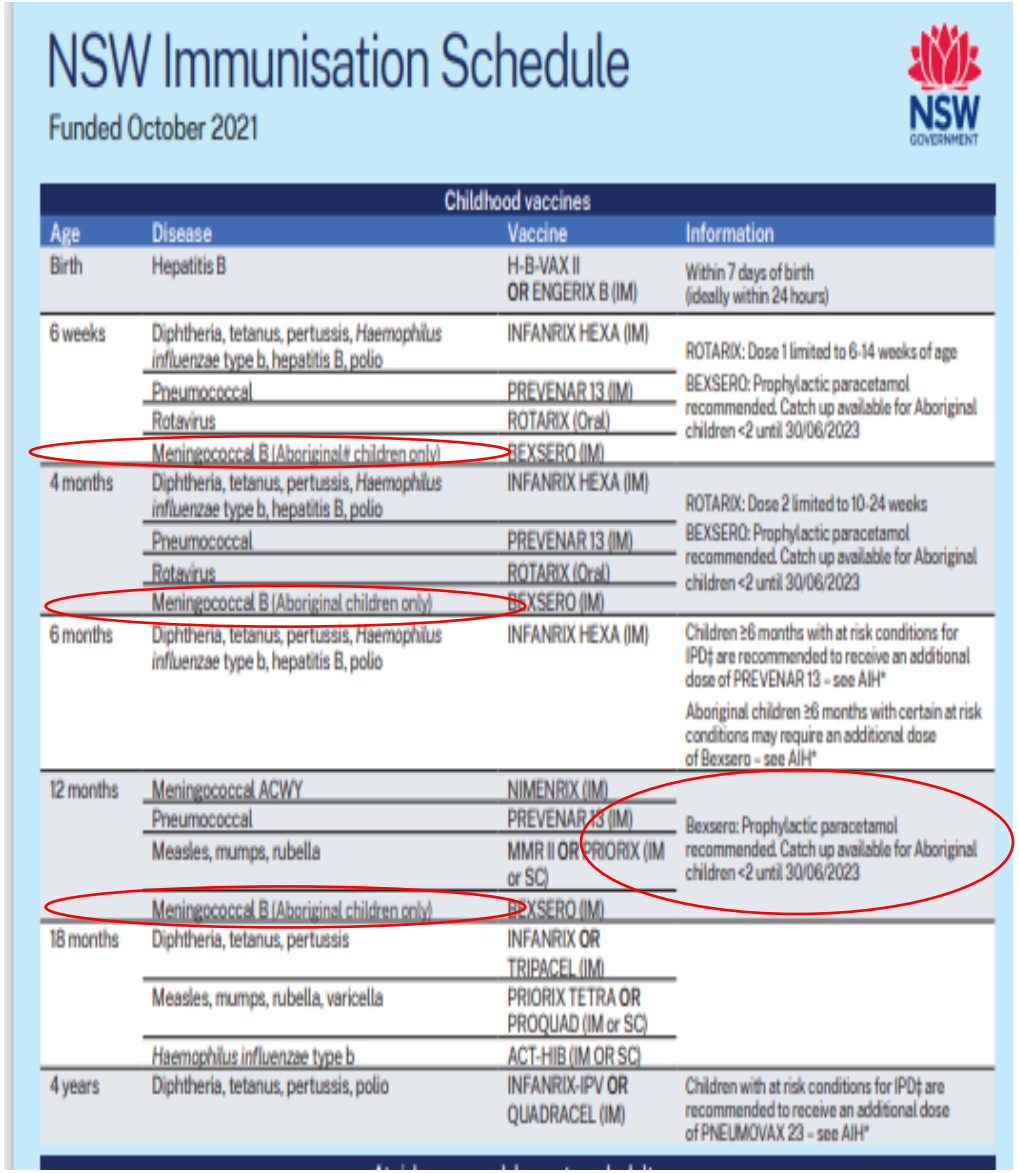
Bexsero (and childhood vaccines & tetanus)



NSW Immunisation Schedule

Funded October 2021

NSW GOVERNMENT

Childhood vaccines

Age	Disease	Vaccine	Information
Birth	Hepatitis B	H-B-VAX II **OR** ENGERIX B (IM)	Within 7 days of birth (ideally within 24 hours)
6 weeks	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA (IM)	ROTARIX: Dose 1 limited to 6-14 weeks of age BEXSERO: Prophylactic paracetamol recommended. Catch up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 13 (IM)	
	Rotavirus	ROTARIX (Oral)	
	Meningococcal B (Aboriginal# children only)	BEXSERO (IM)	
4 months	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA (IM)	ROTARIX: Dose 2 limited to 10-24 weeks BEXSERO: Prophylactic paracetamol recommended. Catch up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 13 (IM)	
	Rotavirus	ROTARIX (Oral)	
	Meningococcal B (Aboriginal children only)	BEXSERO (IM)	
6 months	Diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, hepatitis B, polio	INFANRIX HEXA (IM)	Children ≥6 months with at risk conditions for IPD‡ are recommended to receive an additional dose of PREVENAR 13 – see AIH* Aboriginal children ≥6 months with certain at risk conditions may require an additional dose of Bexsero – see AIH*
12 months	Meningococcal ACWY	NIMENRIX (IM)	Bexsero: Prophylactic paracetamol recommended. Catch up available for Aboriginal children <2 until 30/06/2023
	Pneumococcal	PREVENAR 13 (IM)	
	Measles, mumps, rubella	MMR II **OR** PRIORIX (IM or SC)	
	Meningococcal B (Aboriginal children only)	BEXSERO (IM)	
18 months	Diphtheria, tetanus, pertussis	INFANRIX **OR** TRIPACEL (IM)	
	Measles, mumps, rubella, varicella	PRIORIX TETRA **OR** PROQUAD (IM or SC)	
	Haemophilus influenzae type b	ACT-HIB (IM OR SC)	
4 years	Diphtheria, tetanus, pertussis, polio	INFANRIX-IPV **OR** QUADRACEL (IM)	Children with at risk conditions for IPD‡ are recommended to receive an additional dose of PNEUMOVAX 23 – see AIH*

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Table 1 | Estimated global annual measles deaths, 2016–2019

Year	Estimated total global measles deaths
2016	89,780
2017	109,638
2018	142,000
2019	207,500

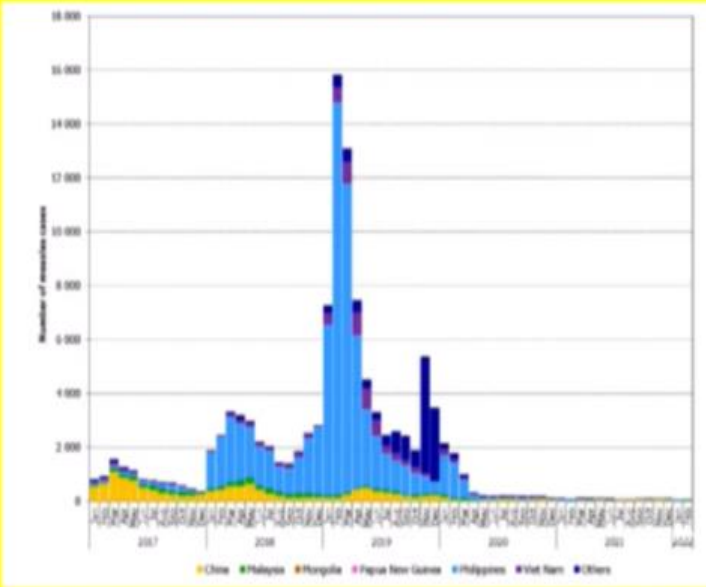
Source: World Health Organization, as published in their annual 'Progress towards regional measles elimination' reports in the *Weekly Epidemiological Record*[7–9].

A dangerous measles future looms beyond the COVID-19 pandemic

NATURE MEDICINE | VOL 27 | MARCH 2021 | 360–362 | www.nature.com/naturemedicine

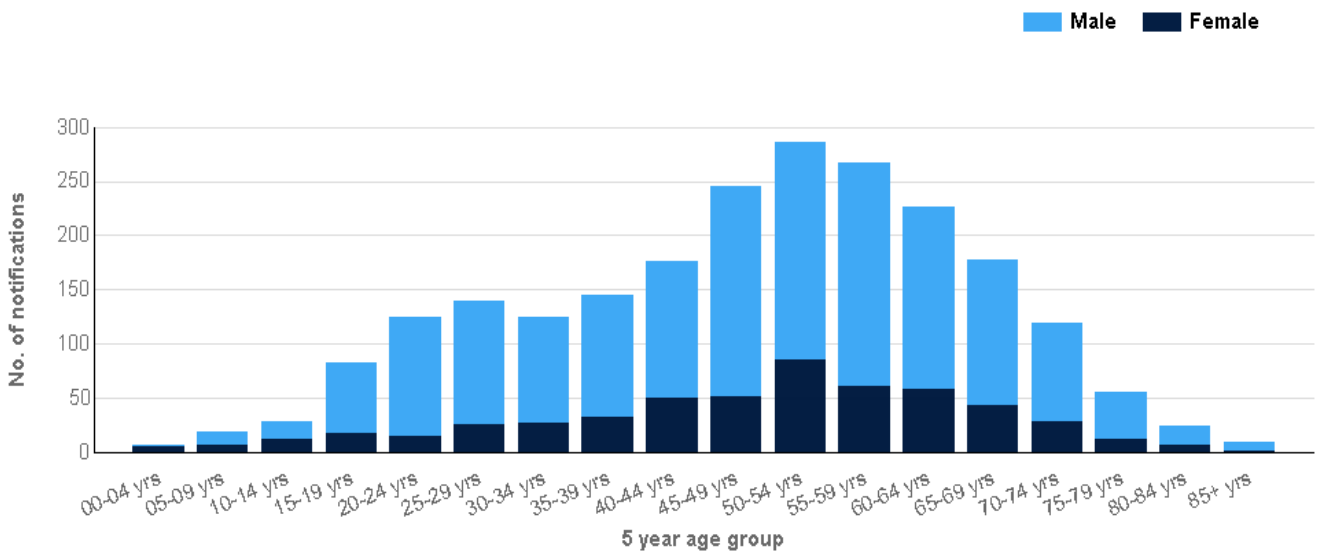
Accelerating measles elimination in the Western Pacific Region during the calm between the storms

The Lancet Regional Health - Western Pacific 2022;23: 100495
Published online xxx
https://doi.org/10.1016/j.lanwpc.2022.100495



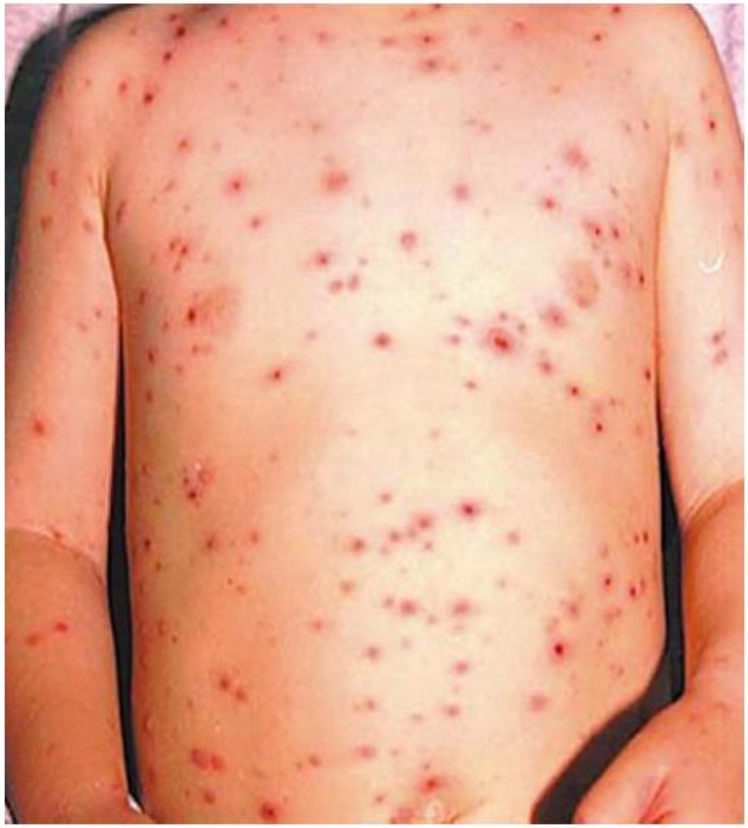
Q fever notifications in NSW residents

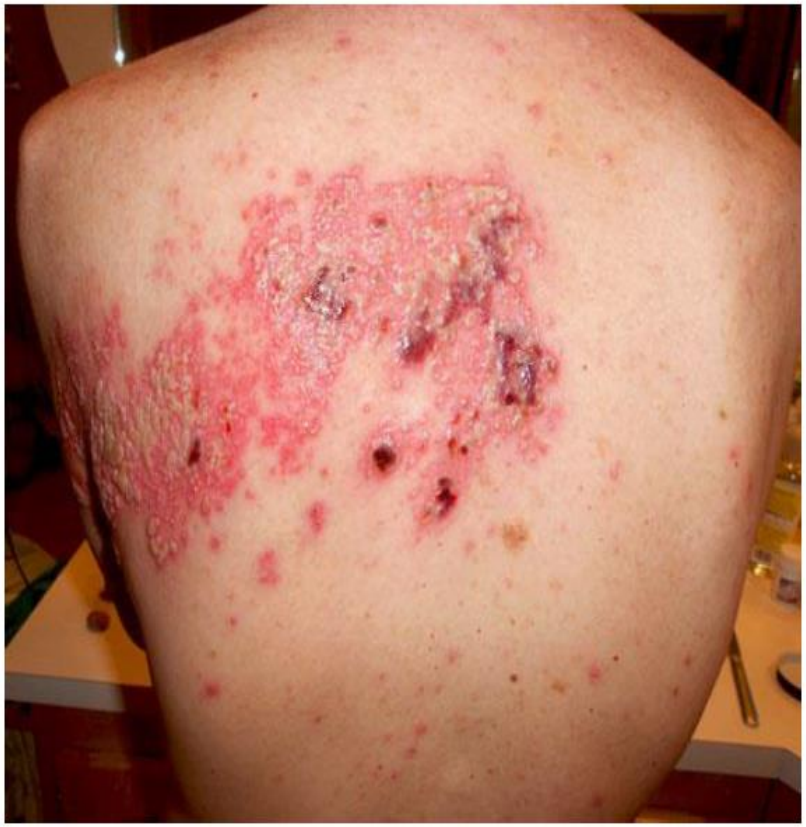
Q fever notifications in NSW residents, by five year age group and gender.
October 2011 to September 2022



NSW GOVERNMENT

Varicella/herpes zoster virus (VZV)





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Chickenpox Epidemiology

- Annually in Australia prior to vaccine introduction in 2005
  - 240,000 cases of varicella
  - 1500 hospitalisations as result of varicella
  - an average of 7–8 deaths due to varicella

  After 2005
  - Children aged 1.5–4 years had a 69% decline in varicella hospitalisations.
  - Hospitalisation rates in other age groups and general practice consultations also declined (AIH)

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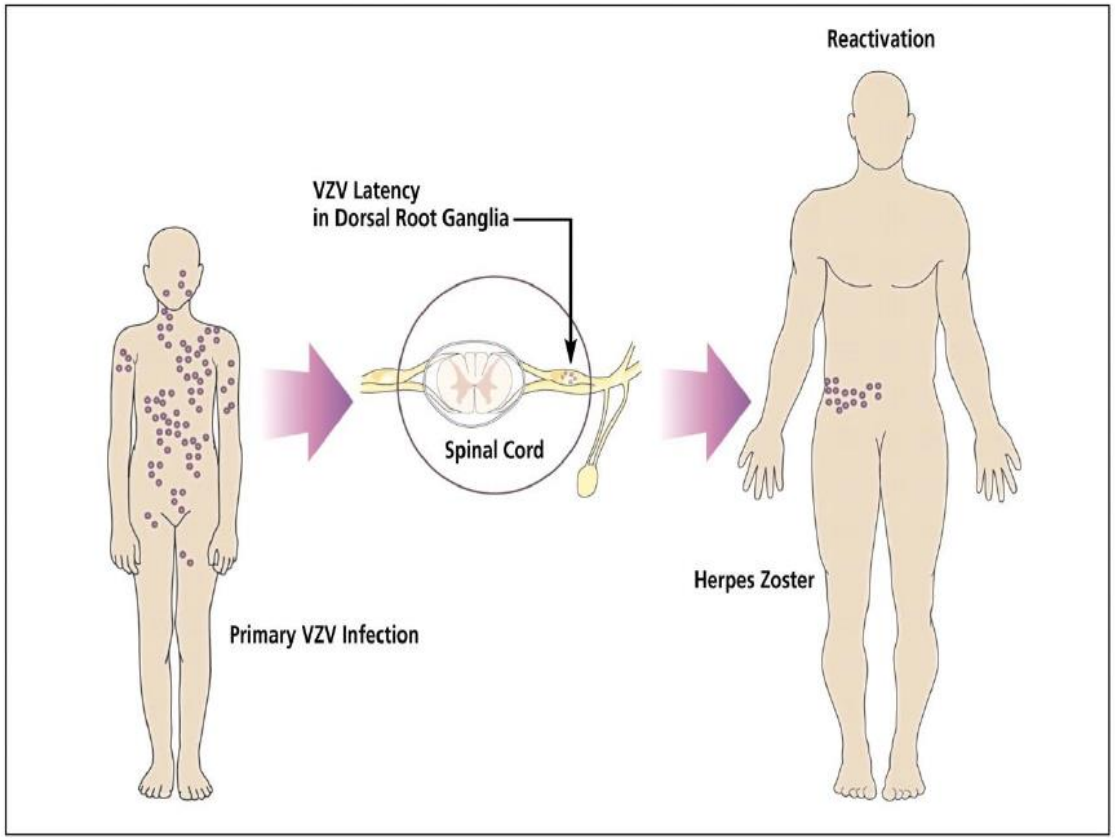
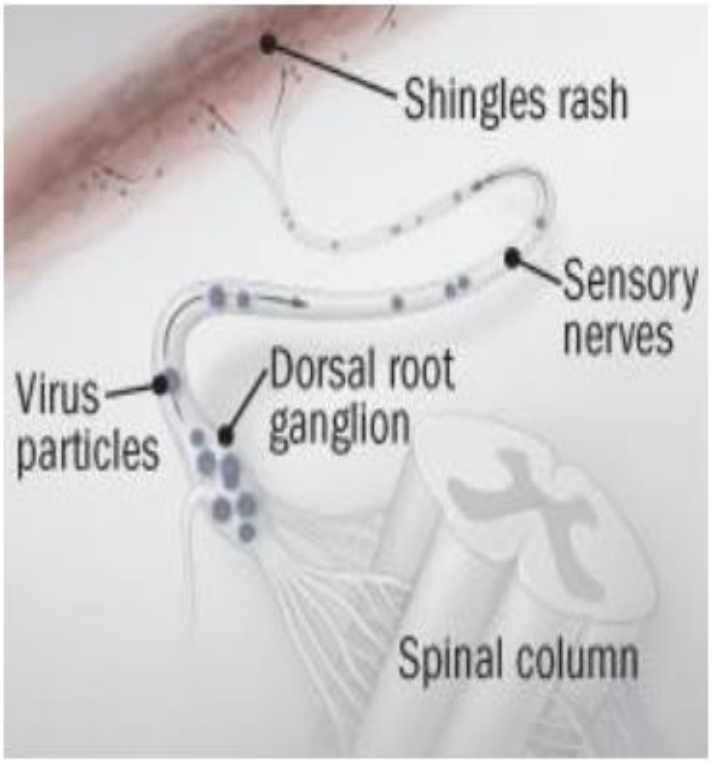
Varicella Zoster Virus latent





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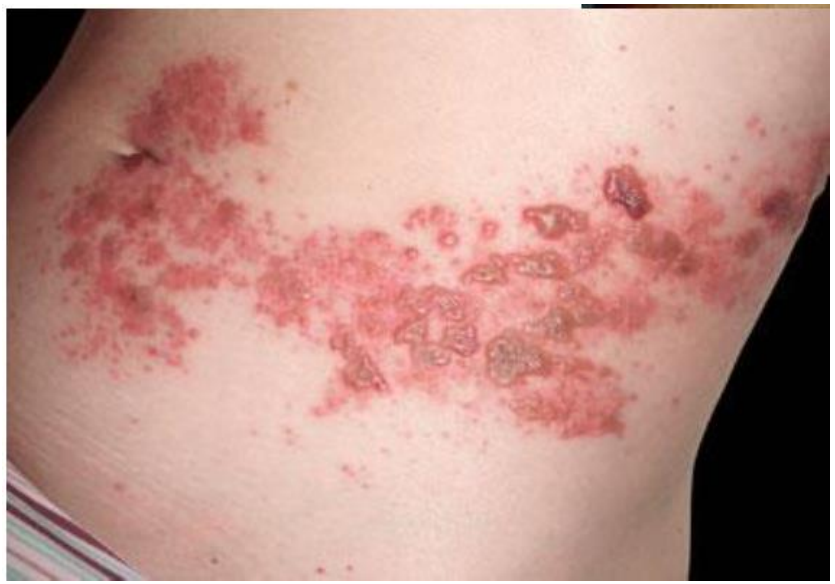
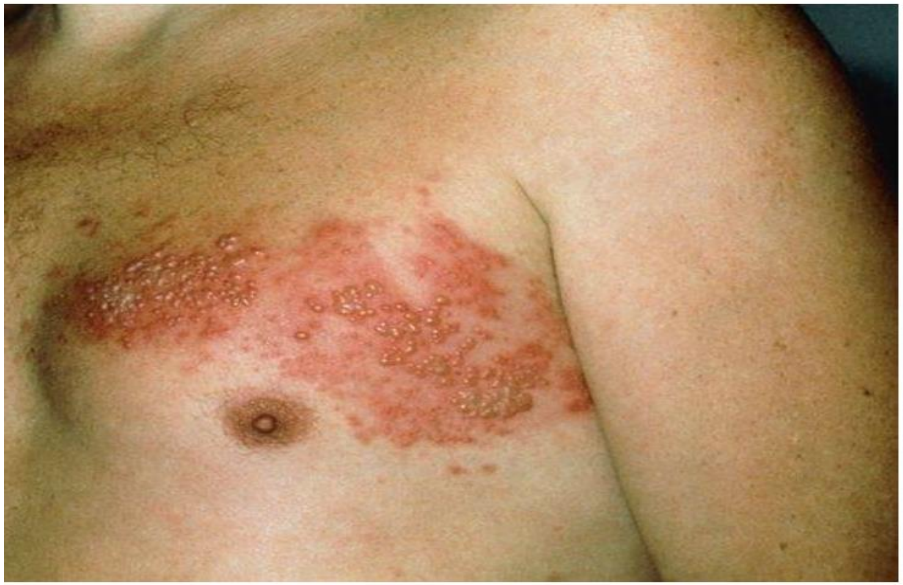
Zoster or Shingles

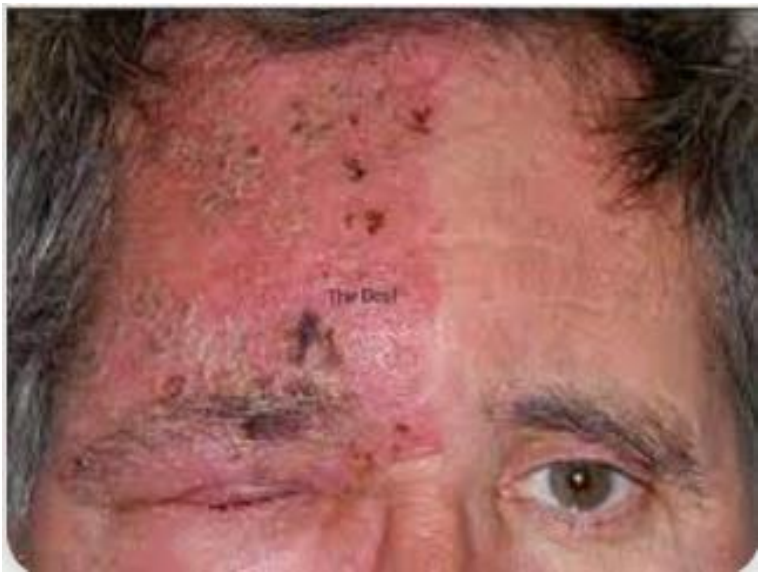
- Herpes zoster, commonly known as shingles, typically presents as a unilateral, painful vesicular rash with a distinctive dermatomal distribution
- decline in varicella zoster virus-specific cell-mediated immunity - immunosenescence

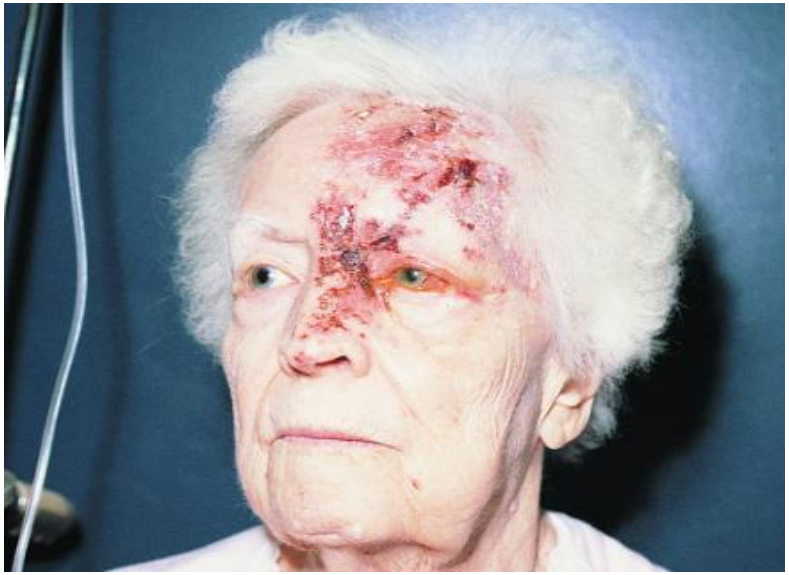




NSW GOVERNMENT

Herpes Zoster Ophthalmicus





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I wanna live like common people
I wanna do whatever common people do
Wanna get shingles with common people

- Overall, 20– 30% of people will develop shingles in their lifetime, most after the age of 50 years
- In Australia around 120,000 new cases of herpes zoster occur each year and account for approximately one in 1000 of all GP visits

(Sanjay Jayasinghe, Aust Prescr 2020;43:2–6)

NSW GOVERNMENT

Post-herpetic neuralgia (PHN)

- PHN is a neuropathic pain syndrome that persists or develops after the dermatomal rash has healed.
- Persistence of pain for longer than 3 months after the onset of the rash
- Described as a burning pain
- Zoster siné herpéte
- PHN 1 in 5 HZ cases >80 years, compared with approximately 1 in 10 cases 50–59 years

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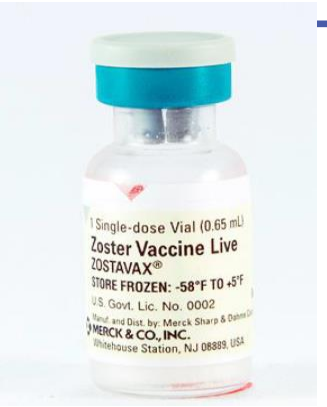
Vaccines



- Zostavax is funded for all people aged 70 years through the NIP. A single catch-up dose is also
- Available through the NIP for people aged 71–79 years until October 2023.

Registered age groups	Zostavax vaccine efficacy		Likelihood of developing PHN	Comments
	Shingles	PHN		
50–59 years	~70%	*	Low	Individual benefit likely
60–69 years	64%	66%	Moderate	Individual benefit likely
70–79 years	41%	67%	High	NIP funded
≥80 years	18%	†	Very high	Individual benefit still possible

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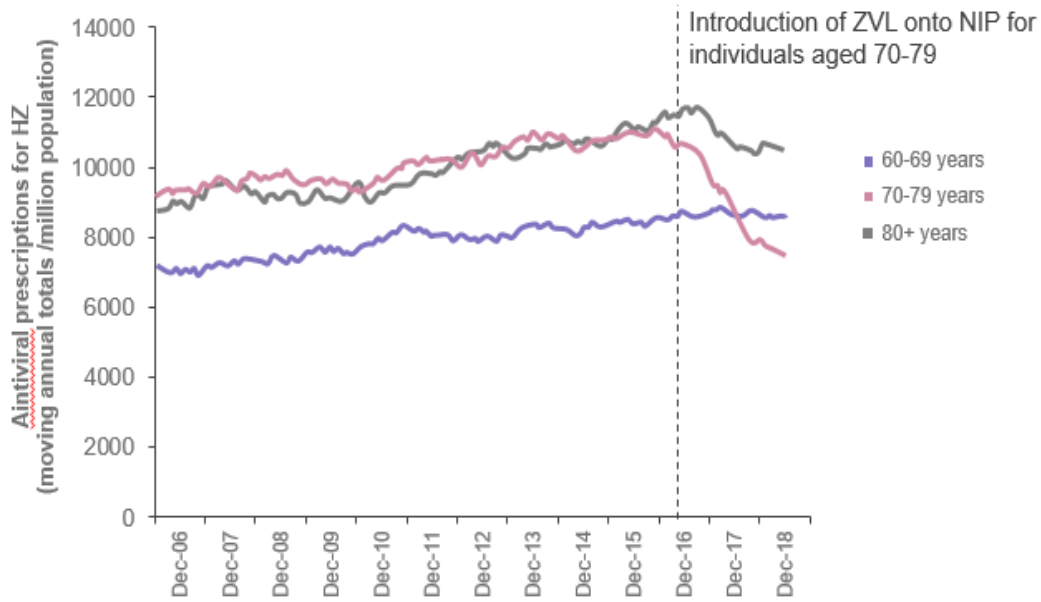
Antiviral prescriptions for HZ following introduction of ZVL onto the NIP in the Australian setting[1]

13.2% yearly reduction in antiviral prescriptions for HZ in individuals aged 70-79



*The Australian National Herpes Zoster Immunisation Program commenced in November 2016 for people aged 70–79 years old in Australia.
The graph has been independently recreated by GSK from the original data. It was first published in Kawai K, et al. BMP Open 2014;4:e004833.

ZVL Zoster Vaccine Live; HZ herpes zoster; NIP National Immunisation Program

1. Litt J, *Hum Vaccin Immunother.* 2020 Dec 1;16(12):3081-3089.

NSW GOVERNMENT

CASE REPORT

Fatal disseminated varicella zoster infection following zoster vaccination in an immunocompromised patient

E Costa,[1] J Buxton,[2] J Brown,[3] K E Templeton,[4] J Breuer,[3] I Johannessen[1]

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Accepted 11 April 2016

SUMMARY

A 79-year-old man with chronic lymphocytic leukaemia presented with fever and a widespread vesicular rash on 19 November 2014. The patient had not been under immunosuppressive regime for 6 months. He had received a shingles vaccine on 14th October and developed flu-like symptoms after 2 weeks. Intravenous antimicrobial therapy including aciclovir was started. He remained stable with no evidence of systemic involvement. On day 5, he developed respiratory and renal failure that required transfer to intensive care unit. Vesicle fluid, bronchoalveolar lavage and plasma were positive for varicella zoster virus by PCR. Slight clinical improvement allowed extubation on day 16. He subsequently deteriorated and died on day 25. Multiorgan failure was considered the immediate cause of death whereas disseminated varicella zoster infection was stated in the medical certificate as the other condition leading to this outcome. Varicella zoster Oka vaccine strain was detected in vesicle fluid, using PCR.

BACKGROUND

Protection against herpes zoster (HZ) infection affects a broad range of specialties. National guidance should help all medical practitioners in identifying both, indications and contraindications of HZ vaccine. This unfortunate case reinforces existing advice to not immunise individuals with haematological malignancies, who are nonetheless always considered previously exposed to VZV. Besides, it underpins the importance of not delaying antiviral treatment when a vesicular rash appears after inadvertent vaccination.

CASE PRESENTATION

On 19 November 2014, a 79-year-old man was admitted to a district general hospital, with a widespread vesicular rash clinically consistent with varicella zoster virus (VZV) infection. The patient had been diagnosed with chronic lymphocytic leukaemia in January 2012 and was no longer under immunosuppressive treatment after finishing first-line chemotherapy with six cycles of fludarabine, cyclophosphamide and rituximab, in April 2014. On 14th October, he received the live attenuated zoster vaccine as part of the regular UK immunisation catch up programme against shingles. Two weeks after vaccination, he gradually developed malaise, flu-like symptoms and lethargy. Besides, his right deltoid region showed inflammatory signs and subsequently some painful vesicular lesions appeared around the site of injection, which then spread to his trunk and extremities. On admission on 19 November, the patient had a temperature of 41°C, rigors, and a general vesicular rash on trunk and limbs that did not seem to follow a dermatomal distribution. From the clinical examination, it was not possible to ascertain if the extensive rash represented early reactivation and dissemination of VZV or direct dissemination of the shingles vaccine strain. The patient showed no clinical signs of respiratory distress and a chest X-ray revealed no significant changes from previous records (figure 1A). His bloods demonstrated pancytopaenia, with haemoglobin of 10^9 g/L, white cell count of 1.3×10^9/L (lymphocytes of 0.6×10^9/L) and platelets of 55×10^9/L. Of note, there was no information that he had been recently exposed to chicken pox. Also, there was no documented medical history of VZV infection.

INVESTIGATIONS

Vesicle fluid, bronchoalveolar lavage (BAL) and plasma were positive by PCR for VZV. BAL was negative by PCR for cytomegalovirus (CMV), herpes simplex virus type 1, herpes simplex virus type 2, influenza virus type A, influenza virus type B, respiratory syncytial virus, parainfluenza virus type 1, parainfluenza virus type 2, parainfluenza virus type 3, adenovirus, rhinovirus, *Mycoplasma pneumoniae* and *Pneumocystis jirovecii*, and culture for bacteria and fungi was also negative. VZV Oka (vOka) vaccine strain was detected in vesicle fluid, using a real-time PCR assay that targets single nucleotide polymorphism (SNP) 108111 in a 174 bp region of open reading frame 62. SNP 108111 has been shown to differentiate VZV vaccine and wild-type sequences.[1 2] Briefly, reactions consisted of 0.7 µM each primer (VZV-F, 5′ CGAAACAAACTCACGACTCTT; VZV-R, 5′GATA CCCGCCCAAGGAAA) and 1.4 µM each probe (WT-Pr, 5′JOE–TTTcTCcACtGGgCTGTCA; Oka-Pr, 5′FAM–TTTcTCcACcGGgCTGTCA, where DNA nucleotides are denoted in upper case, LNA nucleotides in lower case and the ocked nucleic acid (LNA) nucleotide complementary to SNP 108111 is underlined), Quantifast Multiplex PCR mastermix (Qiagen), 5 µL purified DNA and water to make a 25 µL reaction volume. Cycling on an ABI 7500 Fast consisted of 95°C for 5 min followed by 45 cycles of 95°C for 30 s and 60°C for 30 s.

TREATMENT

On admission, the patient started intravenous empirical antibiotic therapy with piperacillin/

To cite: Costa E, Buxton J, Brown J, *et al*. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2015-212688

Zostavax vaccine

Safety advisory - not to be used in people with compromised immune function

6 July 2020

The Therapeutic Goods Administration (TGA) has previously advised that Zostavax should not be used in people with compromised immune function, as it is associated with a risk of mild to serious complications (including death) from infection with the vaccine virus.

Consumers and health professionals are advised that the TGA has received a report of a new case involving this adverse event in a patient on low doses of immunosuppressive medicine.

The patient, who at the time of vaccination was taking hydroxychloroquine and a low dose of prednisolone to treat arthritis, died 3 weeks after receiving Zostavax.

The TGA investigation found that Zostavax was used in line with existing recommendations. However, it is important for health professionals to be mindful of the potential for this very rare adverse event.

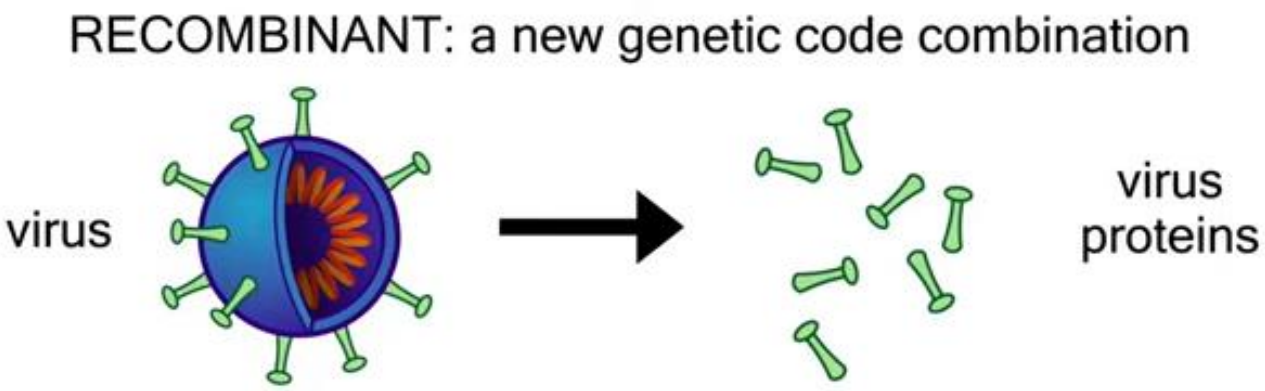
Zostavax is a live, attenuated varicella-zoster virus vaccine that is used to prevent shingles in patients aged 50 years and older and prevention/treatment of nerve pain associated with the virus in patients aged 60 years and older.

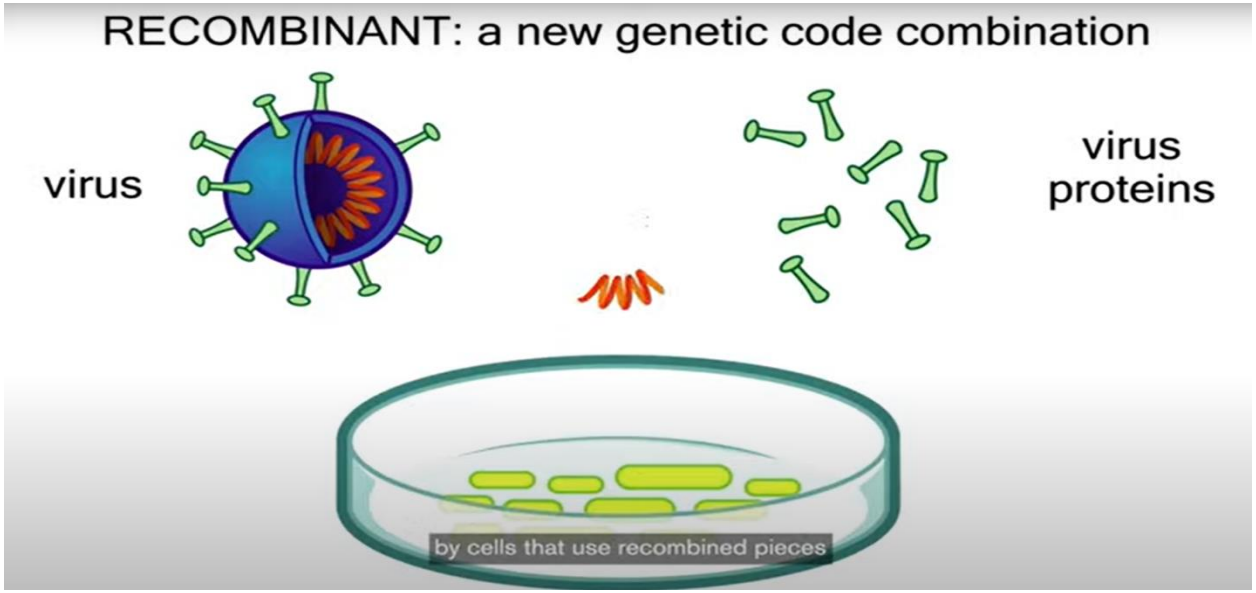
Zostavax is included on the National Immunisation Program for people aged 70 to 79 years.

- Shingrix is the preferred zoster vaccine for the prevention of herpes zoster and associated complications in all older adults
- For immunocompromised adults aged 18-49 years, Shingrix is the only vaccine available to prevent herpes zoster

	Vaccine	
	Zostavax	**Shingrix**
Number of Doses	1 dose subcutaneously	2 doses intramuscularly
Interval between doses	-	2-6 months (immunocompetent) 1-6 months‡ (immunocompromised)
Registered age group	≥50 years	≥50 years (immunocompetent)
		≥18 years (immunocompromised)
Recommended population group(s)	Immunocompetent†	Immunocompetent and Immunocompromised
NIP* funding	70 years*	Not NIP funded

NSW GOVERNMENT





Hepatitis B vaccine
Gardasil HPV vaccine

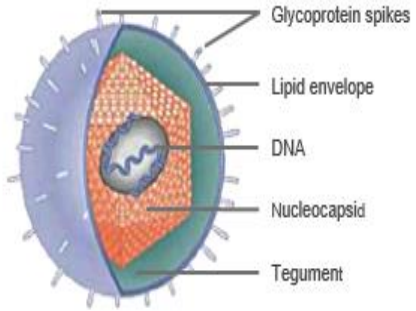
NSW GOVERNMENT

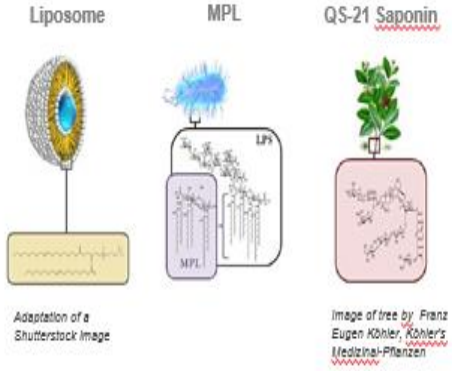
Recombinant Zoster Vaccine composition[1,2]

Recombinant Zoster Vaccine
Non-live

Antigen
Glycoprotein E (gE) - 50 µg

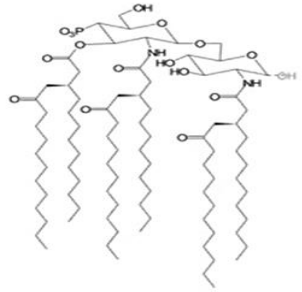
Adjuvant system AS01$_B$
Liposome with MPL and QS-21* - 50 µg each



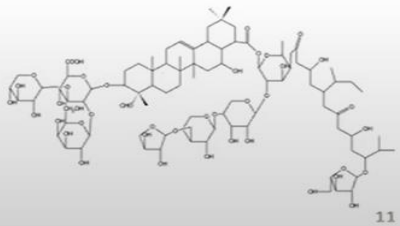


Adjuvants

MPL



QS-21



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*QS-21 adjuvant licensed from Antigenics Inc, a wholly owned subsidiary of Agenus Inc. a Delaware USA corporation; gE, glycoprotein; MPL, 3-O-desacyl-4'-monophosphoryl lipid A; QS-21, *Quillaja saponaria* Molina, fraction 21
HZ herpes zoster; PHN post-herpetic neuralgia

1. Lal H *et al. N Eng J Med* 2015, 372: 2087–96; 2. Cunningham A *et al. N Eng J Med* 2016,75:1019–32

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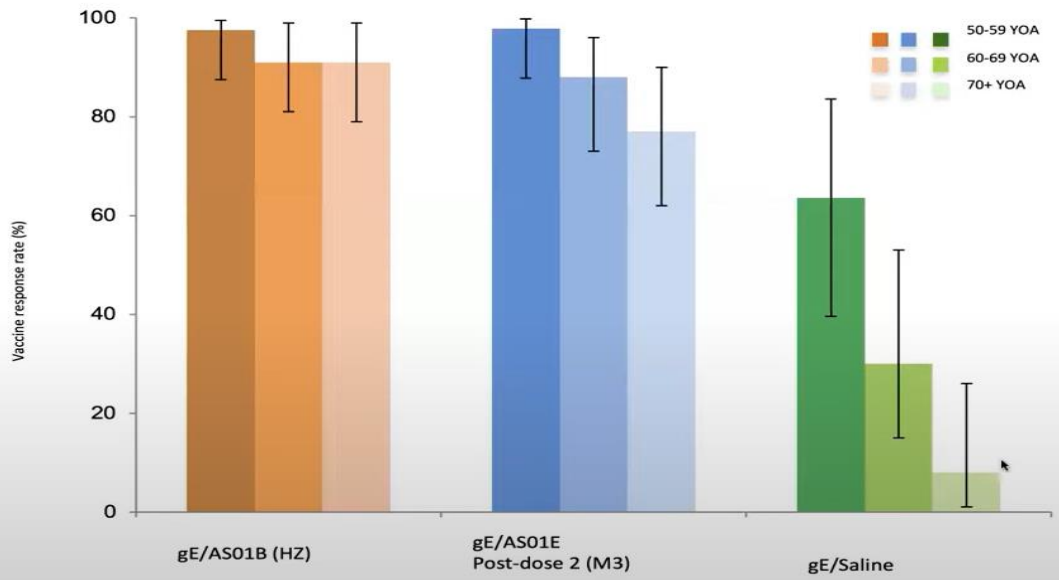
Phase I/II: T cell responses to RZV (gE/AS01$_B$) but not gE alone diminish little with advancing age



Chlibek R et al 2015

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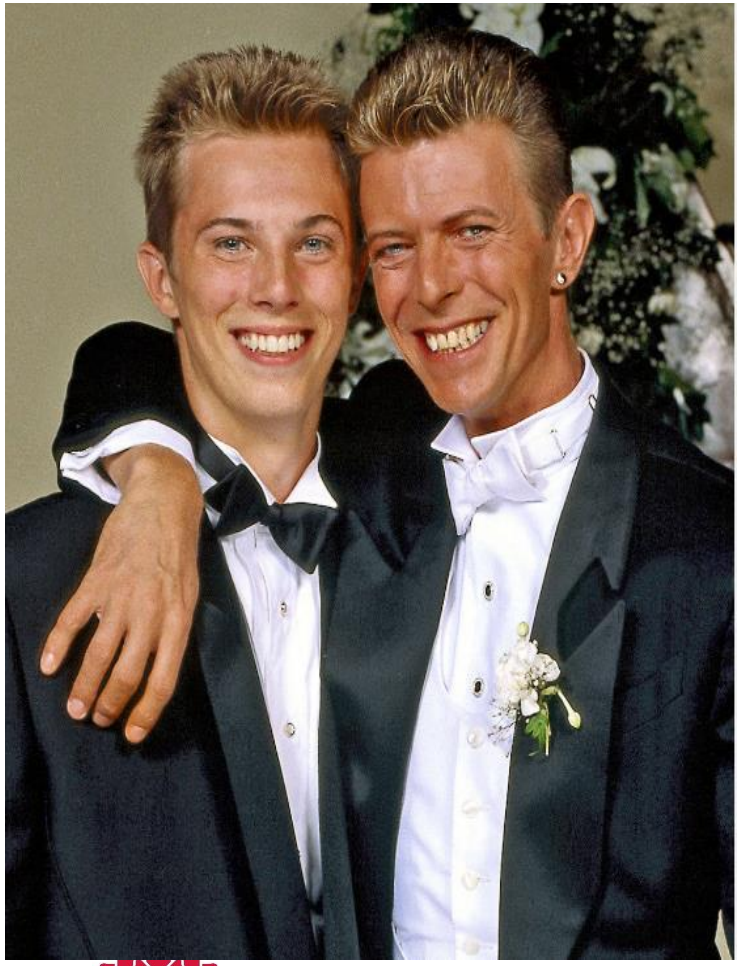
Zowie Bowie

ZOE 50 & ZOE 70



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 15, 2016 VOL. 375 NO. 11

Efficacy of the Herpes Zoster Subunit Vaccine in Adults 70 Years of Age or Older

A.L. Cunningham, H. Lal, M. Kovac, R. Chlibek, S.-J. Hwang, J. Díez-Domingo, O. Godeaux, M.J. Levin, J.E. McElhaney, J. Puig-Barberà, C. Vanden Abeele, T. Vesikari, D. Watanabe, T. Zahaf, A. Ahonen, E. Athan, J.F. Barba-Gomez, L. Campora, F. de Looze, H.J. Downey, W. Ghesquiere, I. Gorfinkel, T. Korhonen, E. Leung, S.A. McNeil, L. Oostvogels, L. Rombo, J. Smetana, L. Weckx, W. Yeo, and T.C. Heineman, for the ZOE-70 Study Group*

ABSTRACT

BACKGROUND

A trial involving adults 50 years of age or older (ZOE-50) showed that the herpes zoster subunit vaccine (HZ/su) containing recombinant varicella–zoster virus glycoprotein E and the $AS01_E$ adjuvant system was associated with a risk of herpes zoster that was 97.2% lower than that associated with placebo. A second trial was performed concurrently at the same sites and examined the safety and efficacy of HZ/su in adults 70 years of age or older (ZOE-70).

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Address reprint requests to Dr. Heineman at Genocea Biosciences, Cambridge Discovery Park, 100 Acorn Park Dr., 5th Floor, Cambridge, MA 02140, or at thomas.heineman@genocea.com.

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HZ complications among groups ≥50 and ≥70 years of age[1,2*]

Prespecified, pooled analysis of ZOE-50 and ZOE-70*

Age (years)	PHN cases[1†]		VE_{PHN}[‡] (95% CI)	Other complications[^2]		VE_{other} (95% CI)
	RZV (n = 13881)	Placebo (n = 14035)		RZV (n = 13881)	Placebo (n = 14035)	
50+	4	46	**91%** (76, 98)	1	16	**94%** (60, 100)
70+	4	36	**88%** (69, 97)	1	12	**92%** (43, 100)

In RZV recipients aged 50-69, there were no cases of PHN or other HZ-related complications (i.e. all complications in the RZV group were in those aged 70+)

Mean follow-up 3.8 years in subjects ≥50 years old; *Modified vaccinated cohort (excludes subjects not receiving dose 2 or who developed HZ within 1 month after dose 2); †PHN defined as HZ-associated pain ≥3 (on a 0–10 scale), occurring or persisting for ≥90 days following the onset of rash using Zoster Brief Pain Inventory (ZBPI); ‡p<0.001 for both comparisons versus placebo. ^other complications include HZ vasculitis, disseminated, ophthalmic and neurological disease.
CI confidence interval; HZ herpes zoster; n total number of subjects; PHN post-herpetic neuralgia; RZV recombinant zoster vaccine; VE_{PHN} vaccine efficacy against PHN VE_{other} vaccine efficacy against other HZ-related complications

1. Cunningham AL, *et al. N Engl J Med* 2016;75:1019–32; 2. Kovac M, *et al. Vaccine* 2018;36:1537–41

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Shingrix Reactogenic

- Injection site reactions 82% (placebo 12%)
- Systemic adverse events – fever, fatigue, GIT, headache, myalgia – 66% (placebo 30%)
- Rates of local & systemic Shingrix> Zostavax
- Complete dose 2 even if expected reactions to dose 1

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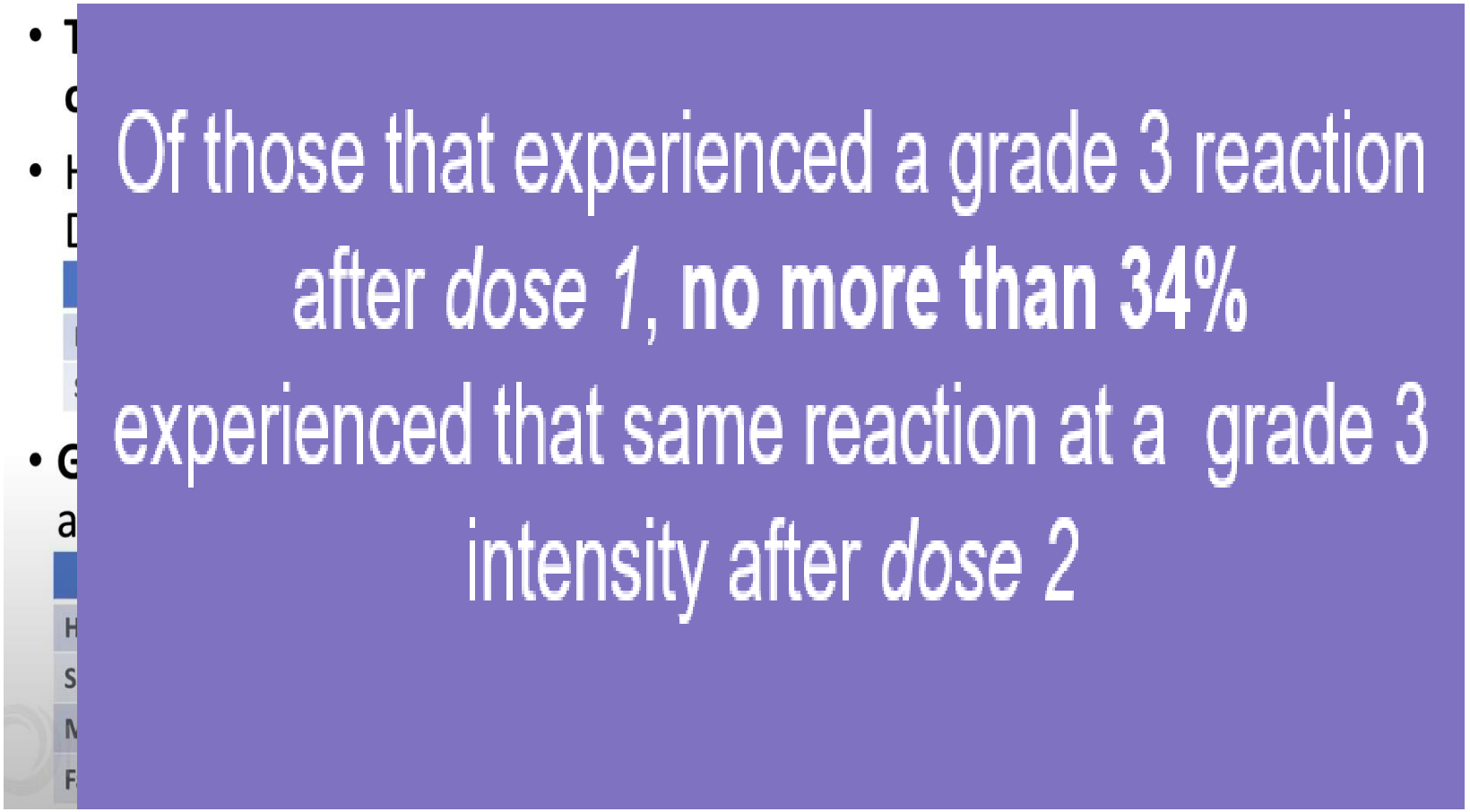
Local & systemic reactogenicity of RZV: Dose 1 & Dose 2



The recommendations for the use of Zoster vaccines in Australia have been updated in the Australian Immunisation Handbook

- Nil changes to NIP schedule. **Zostavax remains recommended and funded for immunocompetent adults at 70 years old with catch up available for 71–79-year olds until October 2023**

Clear recommendations on the following topics now available:

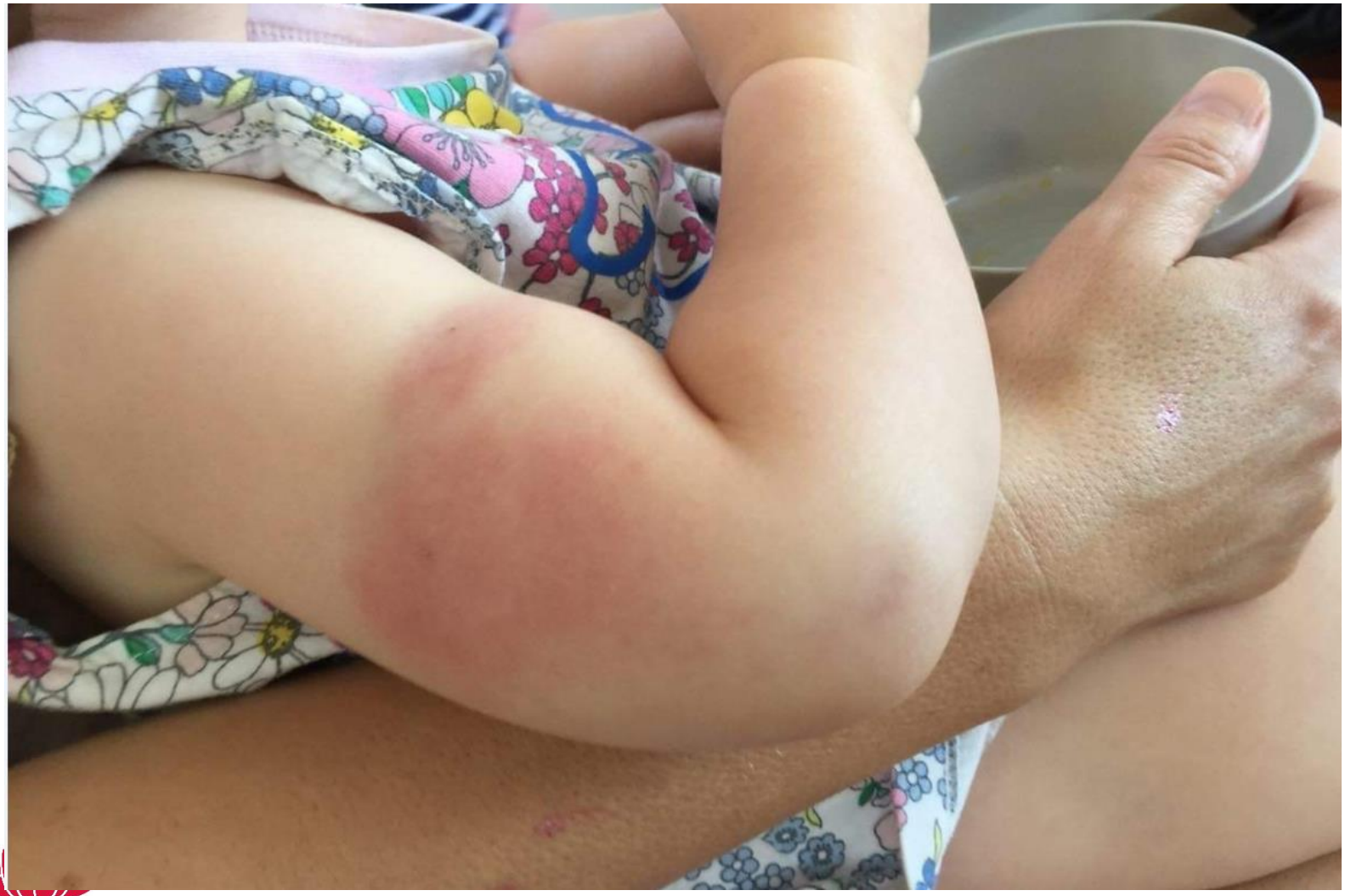
- **People aged ≥50 years who are immunocompetent**
- **People aged ≥18 years who are immunocompromised or shortly expected to be immunocompromised**
- **Receiving Shingrix if previously vaccinated with Zostavax**
- **Receiving Zostavax if previously vaccinated with Shingrix**
- **Household contacts of people who are immunocompromised**
- **People who have had a previous episode of herpes zoster**
- **People previously vaccinated with varicella vaccine**
- **Serological testing before and after zoster vaccination**

NSW GOVERNMENT

- GSK is has made a second submission to the PBAC/Federal Government to make our shingles vaccine (Shingrix) accessible through the Australian National Immunisation Program (NIP).

- The submission to the PBAC is focused on the population in which immunisation against shingles can have the greatest potential impact: all non-Indigenous adults 65 years and over and Indigenous adults 50 years and over, including those that have received Zostavax previously.

- **23 November 2022** Pharmaceutical Benefits Advisory Committee (PBAC) comments open.
- **25 January 2023** PBAC comments close.
- **March 2023** GSK's application for National Immunisation Program listing of Shingrix for shingles is considered.
- **21 April 2023** PBAC response to submission to be published.
-
- The March 2023 PBAC Agenda: https://www.pbs.gov.au/industry/listing/elements/pbac-meetings/agenda/pdf/2022/PBAC-meeting-agenda-March-2023.pdf



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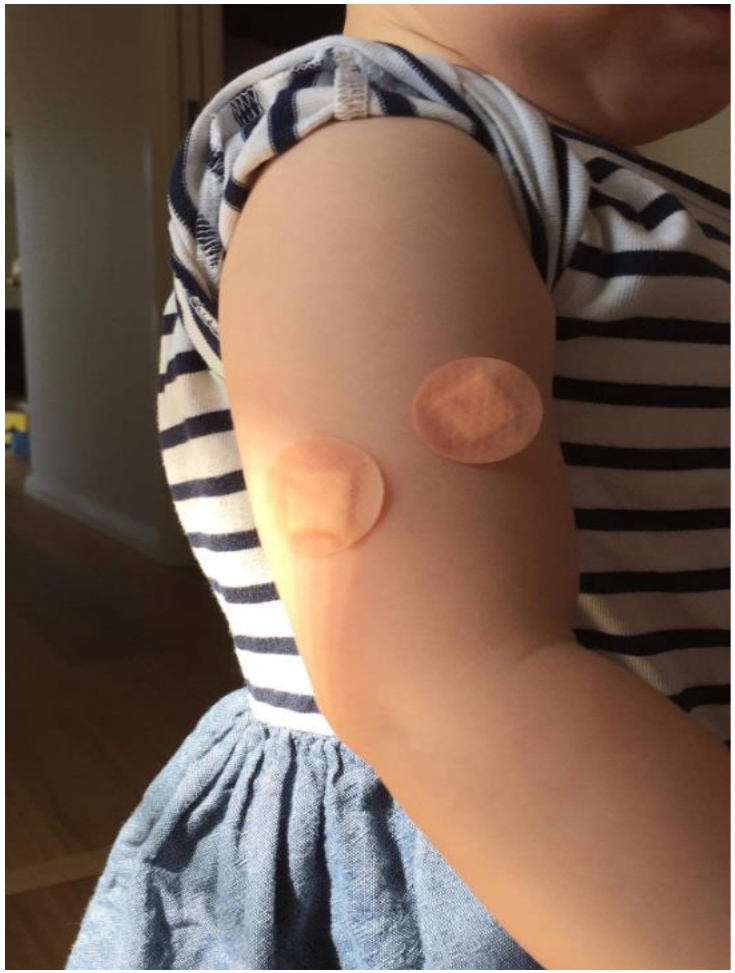

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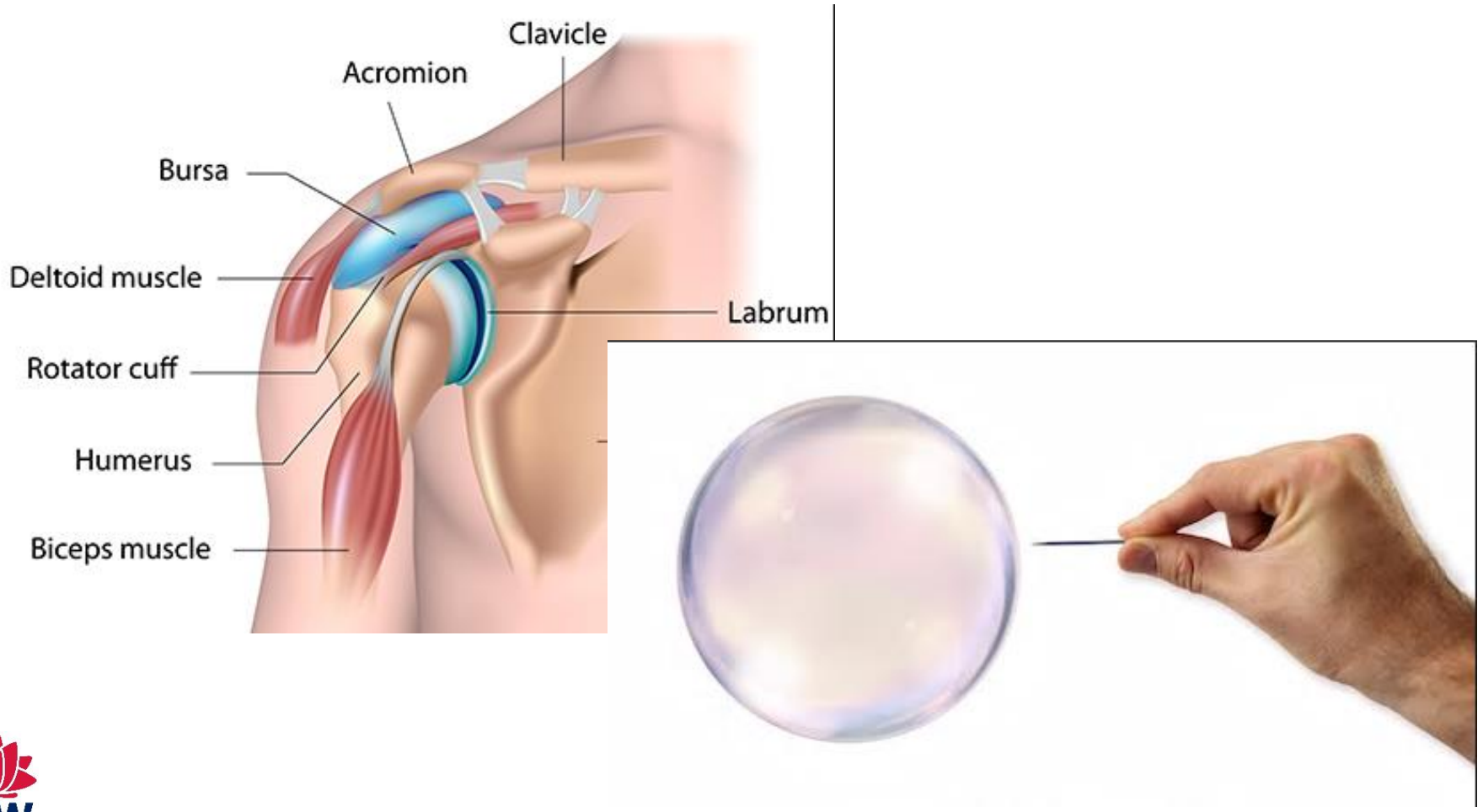
Shoulder injury related to vaccine administration (SIRVA)



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SIRVA

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Adverse Event Following Immunisation (AEFI)

Differentiating seizure from syncope: helpful and unhelpful features

Unhelpful features - often mistakenly thought to indicate seizure but can occur in syncope

- Twitching and jerking
- Incontinence (reflects a full bladder at the time of the event)
- Pallor
- Bitten tip of tongue
- Fatigue after the event

Helpful features - indicate a seizure

- Confusion after the event lasting >2 minutes
- Deeply bitten lateral border of the tongue
- Tonic then clonic movement lasting >1 minute
- Deep cyanosis

http://www.bmj.com/content/334/7585/153.full

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Anaphylaxis - management

http://www.racgp.org.au/afp/2013/januaryfebruary/anaphylaxis/

http://life-saver.org/patients/ce/360/anaphylaxis/

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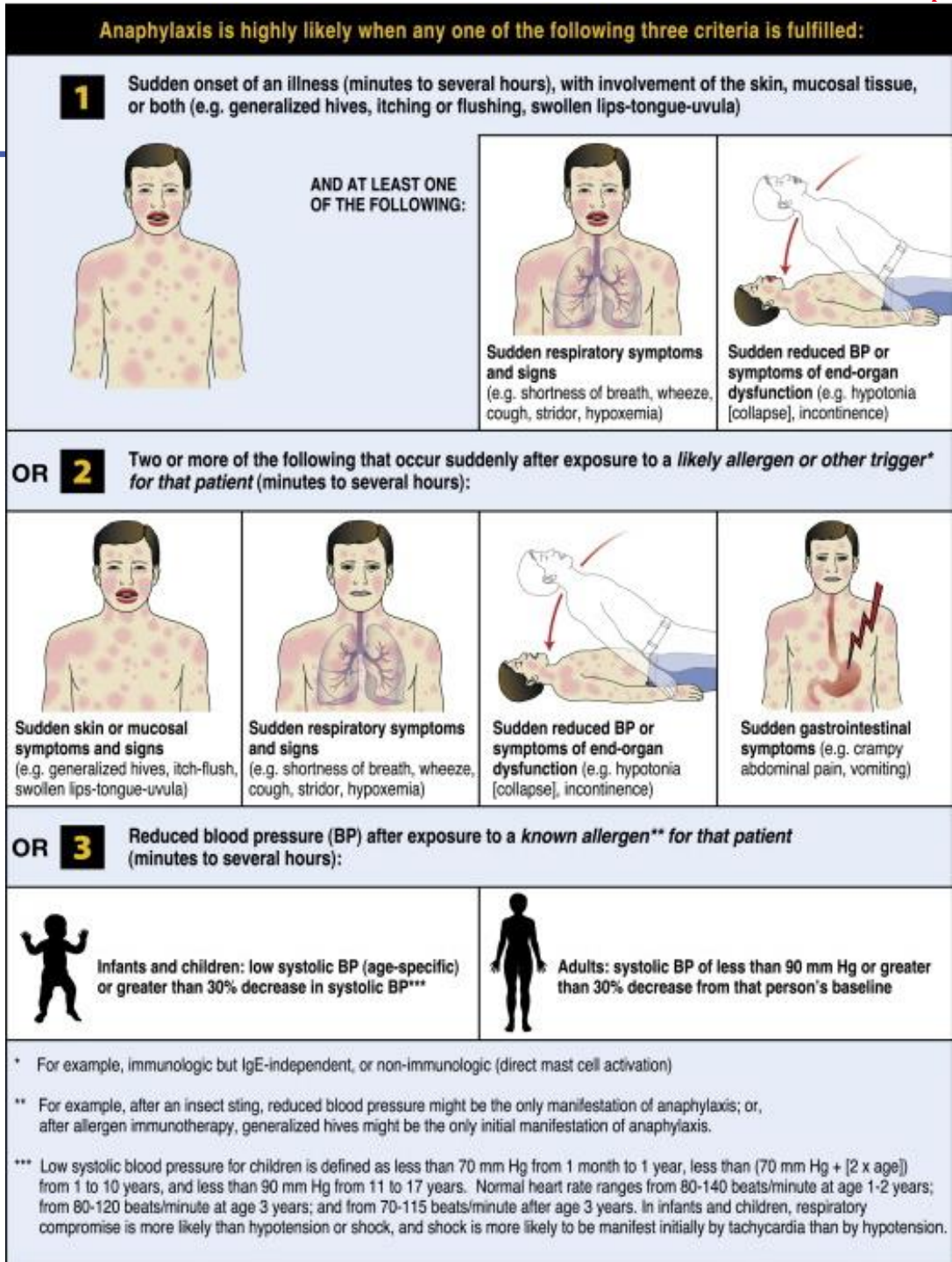
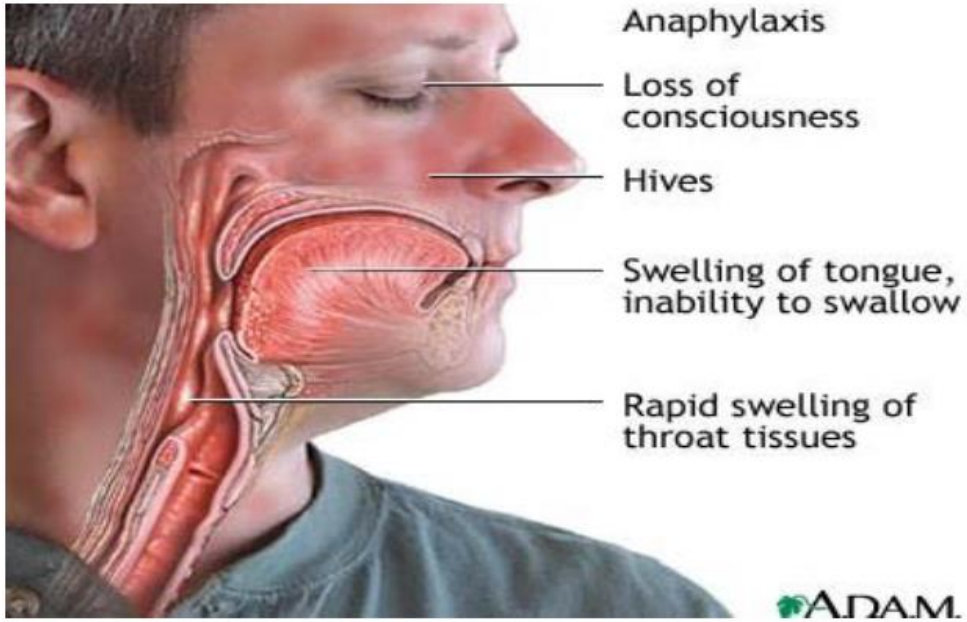
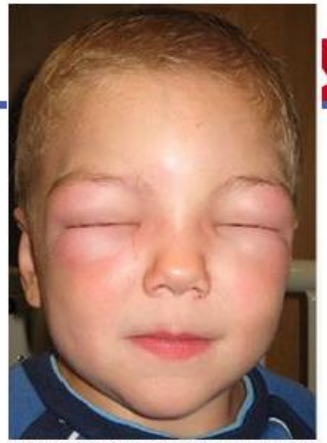
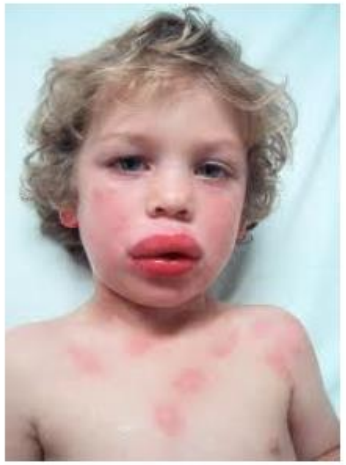


Anaphylaxis





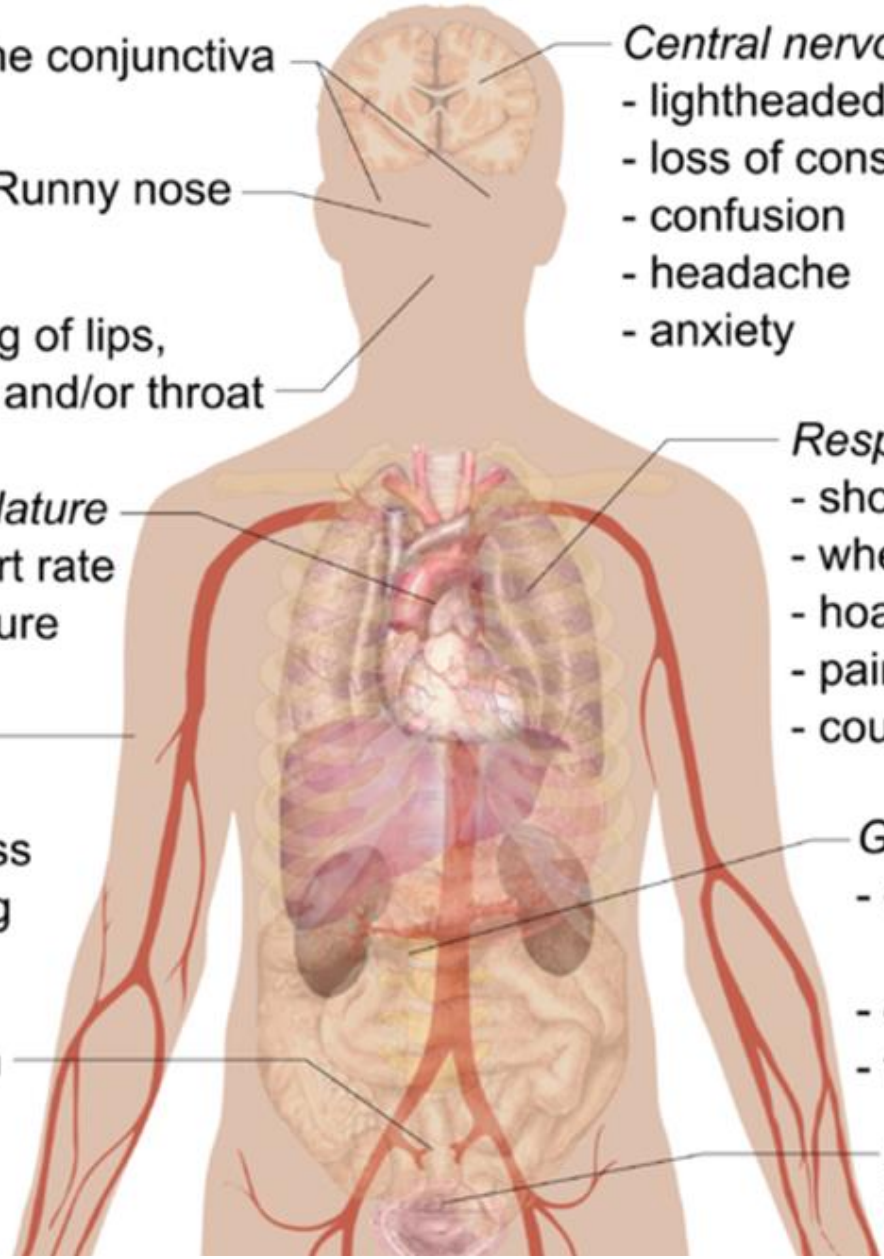
Angioedema of the face such that the boy is unable to open his eyes. This reaction was caused by an allergen exposure.



Health
Population Health

Signs and symptoms of

Anaphylaxis



Swelling of the conjunctiva

Runny nose

Swelling of lips, tongue and/or throat

Central nervous system
- lightheadedness
- loss of consciousness
- confusion
- headache
- anxiety

Respiratory
- shortness of breath
- wheezes or stridor
- hoarseness
- pain with swallowing
- cough

Heart and vasculature
- fast or slow heart rate
- low blood pressure

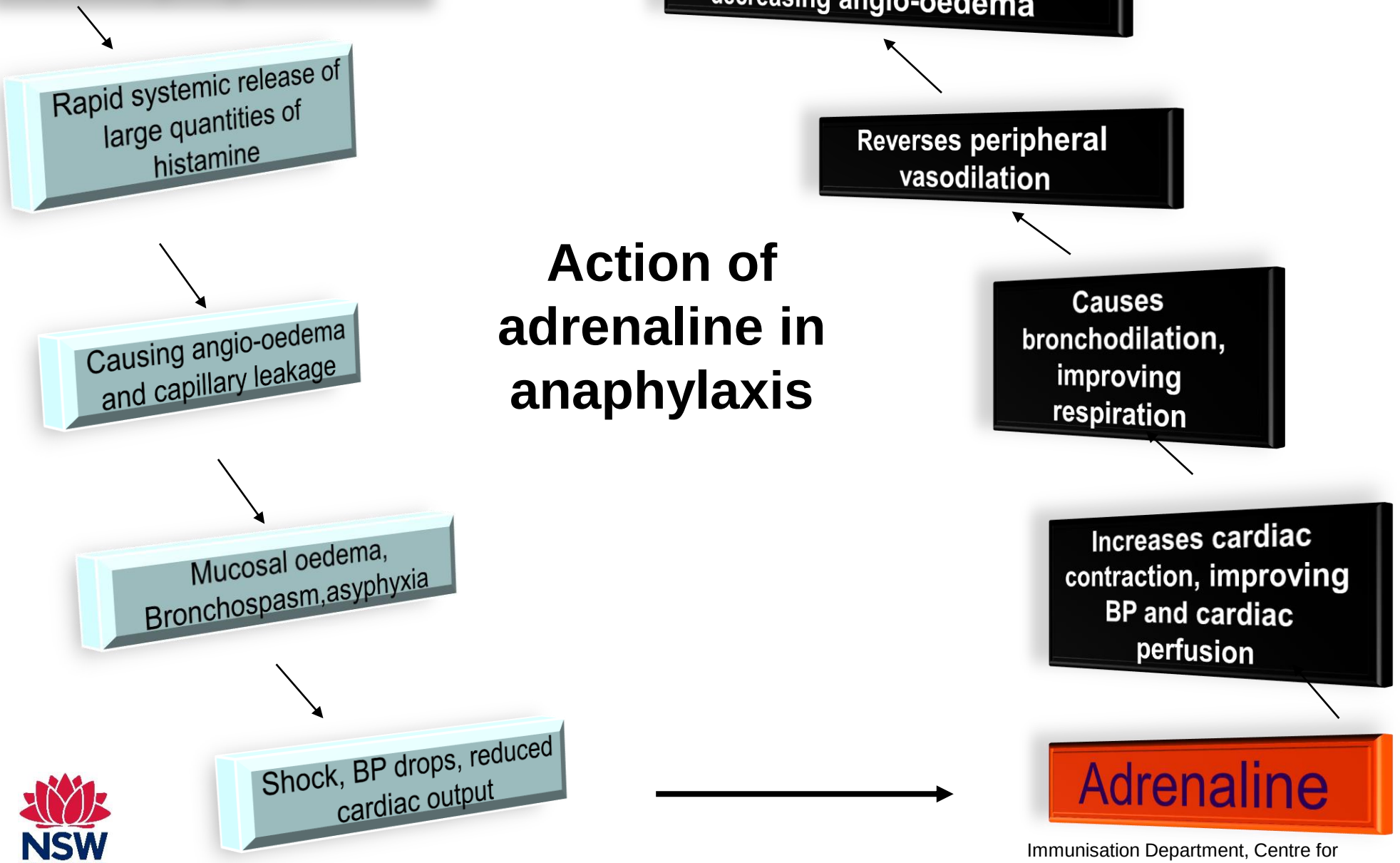
Skin
- hives
- itchiness
- flushing

Gastrointestinal
- crampy abdominal pain
- diarrhea
- vomiting

Pelvic pain

Loss of bladder control

Anaphylaxis



Action of adrenaline in anaphylaxis

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J ALLERGY CLIN IMMUNOL PRACT
VOLUME 10, NUMBER 5

Vocal cord dysfunction/inducible laryngeal obstruction(s) mimicking anaphylaxis during SARS-CoV-2 (COVID-19) vaccination

Paul Leong, PhD[a,b], Mohammed Al-Harrasi, MD[a], Beau Carr, MBBS[a], Elizabeth Leahy, BN[a], Phillip G. Bardin, PhD[a,b,*], and Sara Barnes, FRACP[a,b,*]

Clinical Implications

Dyspnea, tachypnea, and throat tightness following vaccination provoke concern for anaphylaxis, but these symptoms are also characteristic of vocal cord dysfunction/inducible laryngeal obstruction. We report the first case series of vocal cord dysfunction/inducible laryngeal obstruction occurring in the context of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (coronavirus disease 2019 [COVID-19]) vaccination.

AZD1222) vaccine. Symptoms included dyspnea in all cases, a sensation of throat closure (8 of 10), and tachypnea with increased respiratory effort (8 of 10). Hoarse voice was present in 3; stridor and wheeze were present in 2 patients. In 6 patients, symptoms began within 30 minutes of the dose. All patients presented to an emergency department, and a provisional diagnosis of anaphylaxis was made by the treating physicians in all cases.

One individual had Brighton diagnostic certainty level 1 anaphylaxis with rapid onset of facial and upper airway angioedema, hypotension, and elevated tryptase (22 μg/L, upper limit of normal 11.4 μg/L). This patient was admitted to the hospital; respiratory syncytial virus was detected and subsequent inpatient laryngoscopy performed in the intensive care unit for nonresolving stridor demonstrated obvious inspiratory vocal cord adduction indicating VCD/ILO. In the other patients, laryngoscopy was not performed and symptomatic treatment was administered leading to symptom resolution.

Following specialist allergist assessment, 9 of the 10 individuals, including the patient with anaphylaxis, received a second dose of the same vaccine that caused their reaction in a monitored hospital setting. Symptoms recurred in 8 of the 9 patients who received the

The Brighton Collaboration anaphylaxis definition includes symptoms of respiratory distress, tachypnea, hoarse voice, stridor, and a sensation of throat closure.[1] These features significantly overlap with manifestations of vocal cord dysfunction/inducible laryngeal obstruction(s) (VCD/ILO), a disorder characterized by intermittent laryngeal obstruction.[2] We have recently proposed cardinal VCD/ILO phenotypes, including incident-associated VCD/ILO, which may be linked to vaccination.[3]

In conclusion, clinicians should be aware that VCD/ILO can mimic anaphylaxis and that the 2 conditions may overlap. Differentiation of anaphylaxis from VCD/ILO is critical in the setting of vaccination, especially during the ongoing pandemic because diagnosing an individual with vaccine-related anaphylaxis has critical implications for future vaccination and their ability to benefit from this important treatment.


IMMUNIZATION STRESS-RELATED RESPONSES
A manual for program managers and health professionals to prevent, identify and respond to stress-related responses following immunization
World Health Organization

Vasogagal

- An initial acute stress response consistent with a fight or flight response (sympathetic involvement with increased heart rate and blood pressure) may be followed by an overcompensatory parasympathetic reaction, in which the heart rate and blood pressure fall precipitously. Thus, in some individuals, an acute stress response may lead to physiological overcompensation and a vasovagal reaction.

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Table 1.1 Immunization and the biopsychosocial model

BIOPSYCHOSOCIAL FACTOR	PRE-EXISTING CONDITIONS (HISTORICAL)	CONDITIONS OCCURRING DURING IMMUNIZATION (DYNAMIC)
Physiological	• **Age:** adolescence is a period of risk for vasovagal reactions. • **Sex:** females are more predisposed to vasovagal reactions. • **Weight:** lower body mass index increases the risk of vasovagal reactions[4]	• Physiological stress response to pain, such as change in heart rate or blood pressure: acute stress response
Psychological	• Temperament (personality) • Ability to understand and reason, which depends on developmental age and cognitive understanding • Preparedness: prior knowledge of immunization by injection • Underlying anxiety • Previous experience	• Underlying psychological factors (e.g. anxiety and fear) that may affect the perception of symptoms after an injected vaccine, such as pain at the injection site, dizziness due to a vasovagal reaction or fever and lethargy as part of the expected immune response to the vaccine
Social	• Community trust in health care • Community perceptions, norms and values about immunization • Community and family support for immunization • False or misleading news reports and social media messages about immunization • Experience of peers	• Behaviour of health care workers and observers (e.g. family, friends) • Behaviour of others being vaccinated (e.g. during mass or school campaigns)

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Clinical case 1

AG, a 13-year-old girl, received HPV vaccine in a school programme. She had fainted 2 months previously when a blood sample was taken, and, just before receiving the vaccine, she received a Facebook message from a friend complaining about how painful the injection had been. She was the last girl in her class to be vaccinated and had been standing, watching her classmates receive the vaccine. Before being vaccinated, she complained of chest pain, but the vaccinator was in a hurry and did not follow up on this complaint.

Less than 2 minutes after immunization, AG said that she felt light-headed, had blurred vision and was having difficulty in breathing. The vaccinator administered a dose of adrenaline into the left deltoid; however, the shortness of breath persisted, and severe palpitations began. An ambulance was called, and AG was admitted to the local hospital with a diagnosis of anaphylaxis due to the HPV vaccine.

Comment. A history of syncope is a risk factor for a vasovagal reaction. The adverse social media message probably increased AG's anxiety before and fear during immunization manifested as an acute stress response accompanied by chest pain. Her symptoms immediately after immunization are consistent with an acute stress response (sympathetic system activation), exacerbated by the effect of adrenaline, which is a sympathetic stimulant, and by receiving a second injection, as she was afraid of needles, and by fear transmitted by the vaccinator, who thought this was anaphylaxis.

Interventions that would have been useful include:

1. Before immunization:

- Identification of individual risk factors,
- communication about and explanation of stress symptoms and
- vaccinating her first or in privacy.

2. During immunization:

- Use of pain management techniques **(see section 4.1.6)**,
- vaccinating her seated or lying down and allowing her to remain supine for 10–15 minutes after immunization and
- use of muscle tension to raise her blood pressure and avoid syncope **(see section 4.1.7)**.

3. After immunization:

- Clinical differentiation between syncope and anaphylaxis to avoid use of adrenaline (another injection) and unnecessary hospitalization and
- feedback to the vaccinator to avoid mismanagement of similar incidents in the future.

As AG was hospitalized for a serious AEFI, an investigation of the case and an assessment of causality would be indicated, followed by appropriate communication to both the patient and her family and to the vaccinator, with recommendations and interventions to decrease the risk for future misdiagnosis **(see section 4.2)**.

The effect of exercise on local and systemic adverse reactions after vaccinations – Outcomes of two randomized controlled trials

V.Y. Lee [a], R. Booy [b, c], S.R. Skinner [c], J. Fong [d], K.M. Edwards [a]

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https://doi.org/10.1016/j.vaccine.2018.09.067

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Results

Study one; Reported days of tenderness in female adolescents that exercised were significantly lower than control ($p=0.032$), with a similar trend in reported days of pain ($p=0.050$). Furthermore, days of feeling ill ($p=0.070$) and reduced appetite ($p=0.067$) were found to be lower with exercise, although not significant. Overall, female adolescents reported significantly more days of pain ($p=0.003$), tenderness ($p<0.001$), swelling ($p=0.011$), and feeling ill ($p=0.0040$). *Study two*; Exercise groups reported reduced days of swelling ($p=0.018$), fever ($p=0.013$), and lowered appetite ($p=0.011$) across both genders. Furthermore, females reported reduced days of medication use with exercise ($p=0.034$), and a trend toward reduced days of swelling ($p=0.052$).

The effect of exercise on local and systemic adverse reactions after vaccinations – Outcomes of two randomized controlled trials - ScienceDirect

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The risk of syncope can be decreased by use of a strategy called "muscle tension", designed to maintain the blood pressure to avoid syncope. Reviewing the steps listed below with potential vaccine recipients can also give them a sense of control and distract them from the procedure.

ADDITIONAL MEASURES FOR PEOPLE AT RISK OF A VASOVAGAL REACTION

- Immunize in a seated or supine position.
- Consider using muscle tension **(see right)**.
- After immunization, allow them to remain seated for 15–30 min or as long as is feasible.
- People who are immunized in the supine position should adopt an upright position only if they have no vasovagal symptoms.
- Ideally, the vaccinator should remain with the vaccine recipient during this period and be alert for early signs or symptoms of a vasovagal reaction.

MUSCLE TENSION

- Ask the vaccine recipient to tense his or her large muscle groups, such as by clutching a ball in the hand of the arm not used for immunization or tensing the leg and abdominal muscles.
- Ask him or her to maintain the tension for 15–30 seconds, until he or she feels warm or flushed in the face.
- Ask the vaccine recipient to release the tension to the starting point for 15–30 seconds.
- Repeat the tension and releasing cycles before, during and after the vaccination procedure.

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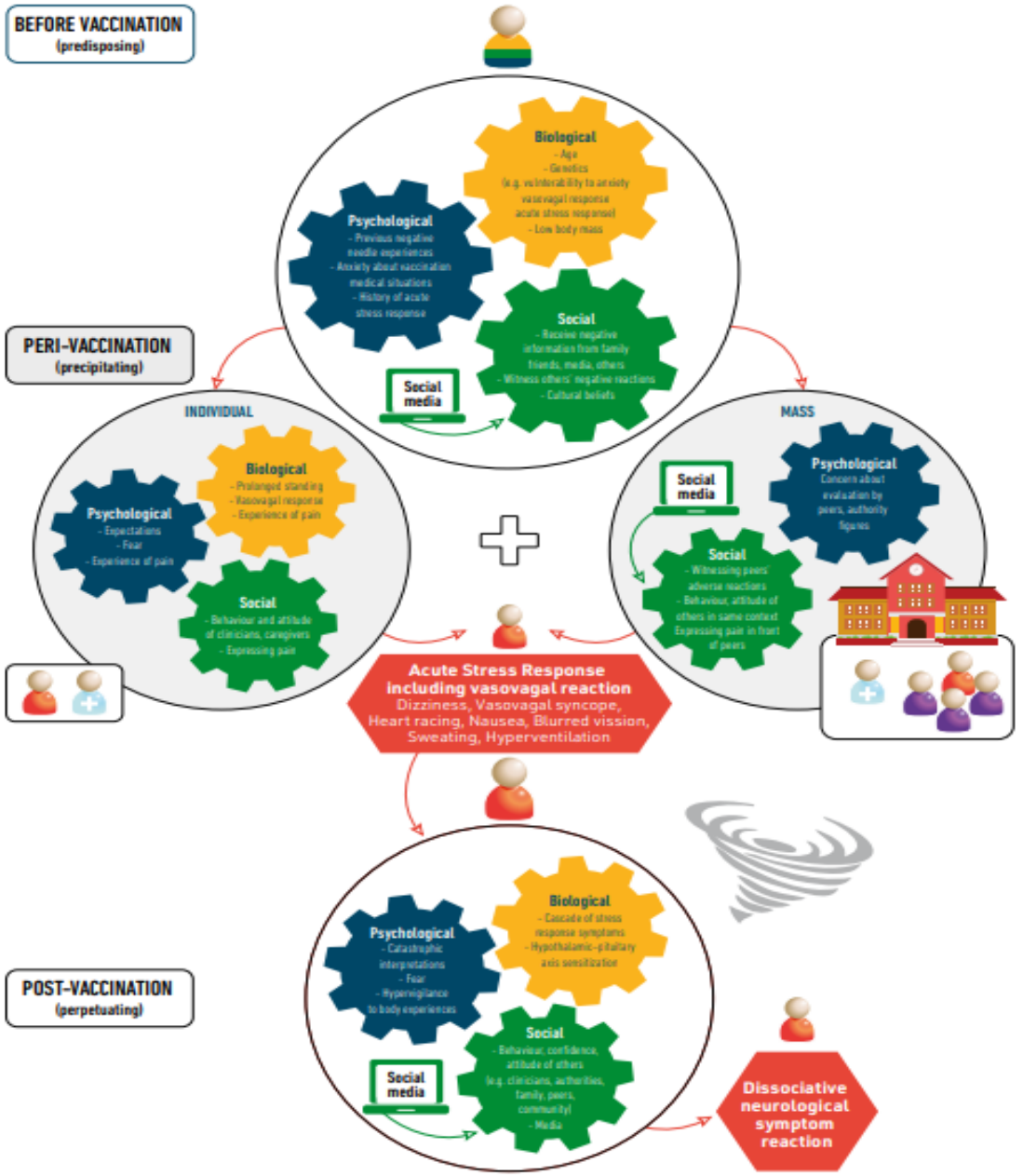
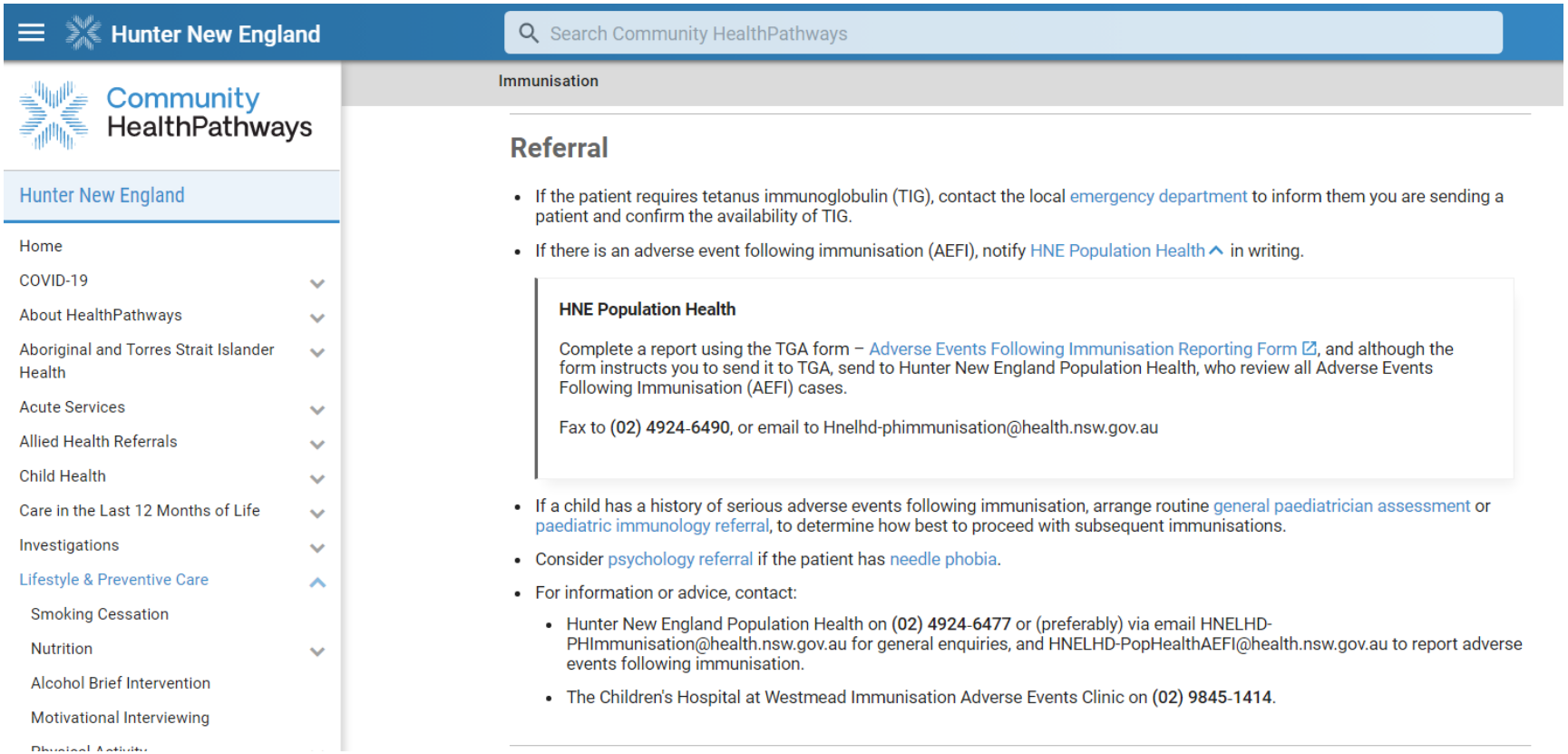

BEFORE VACCINATION
(predisposing)
Biological
- Age
- Genetics
(e.g. vulnerability to anxiety
vasovagal response
acute stress response)
- Low body mass
Psychological
- Previous negative
needle experiences
- Anxiety about vaccination
medical situations
- History of acute
stress response
Social
- Receive negative
information from family
friends, media, others
- Witness others' negative reactions
- Cultural beliefs
Social
media
PERI-VACCINATION
(precipitating)
INDIVIDUAL
Biological
- Prolonged standing
- Vasovagal response
- Experience of pain
Psychological
- Expectations
- Fear
- Experience of pain
Social
- Behaviour and attitude
of clinicians, caregivers
- Expressing pain
MASS
Social
media
Psychological
Concern about
evaluation by
peers, authority
figures
Social
- Witnessing peers'
adverse reactions
- Behaviour, attitude of
others in same context
Expressing pain in front
of peers
Acute Stress Response
including vasovagal reaction
Dizziness, Vasovagal syncope,
Heart racing, Nausea, Blurred vission,
Sweating, Hyperventilation
POST-VACCINATION
(perpetuating)
Biological
- Cascade of stress
response symptoms
- Hypothalamic-pituitary
axis sensitization
Psychological
- Catastrophic
interpretations
- Fear
- Hypervigilance
to body experiences
Social
- Behaviour, confidence,
attitude of others
(e.g. clinicians, authorities,
family, peers,
community)
- Media
Social
media
Dissociative
neurological
symptom
reaction

Immunisation HealthPathway – AEFI reporting and advice



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Online AEFI Reporting

- Direct reporting to PHU online
- Upload up to 5 files eg photos, specialist report, GP letter
- Secure reporting
- Quicker responses

https://redcap.link/HNEAEFIReportForm

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Vaccine hesitancy

Also

Fragile and vulnerable settings

Weak primary health care

Which also contribute to under-vaccination

How common are severe side effects from COVID vaccines? And how are they detected? | NCIRS

Former federal MP Dr Kerryn Phelps has talked this week about the medical problems she and her wife had after their COVID-19 vaccinations around 18 months ago.

In her submission to the parliamentary inquiry into long COVID, Phelps said her wife Jackie Stricker-Phelps had ongoing neurological problems after her first vaccine. Phelps herself experienced breathlessness and blood-pressure fluctuations after her second dose.

This has prompted public discussion about severe side effects, known as "adverse events", after COVID-19 vaccines.

So how does Australia track vaccine problems?

1) Asking clinicians and patients to report any adverse event after vaccination to the TGA

2) Using active surveillance systems including AusVaxSafety

3) Monitoring for conditions that could theoretically be a risk after vaccination

4) Getting information and safety reports from other countries, multinational groups and vaccine manufacturers

5) Looking at studies using large electronic health databases to check for for positive or negative links between vaccination and health conditions

6) Using a national network of specialist clinicians to support GPs and specialists to assess patients with complex immunisation questions

Transparency is essential

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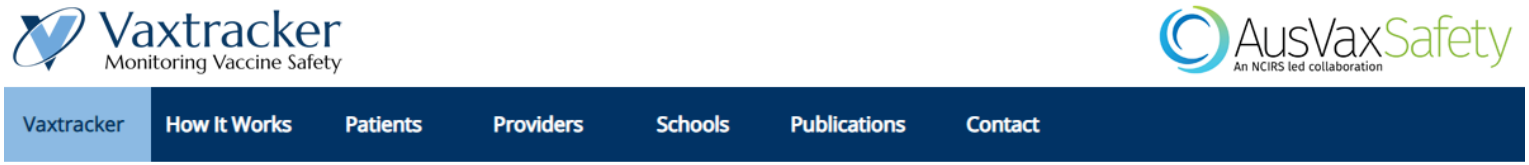
About Vaxtracker



About Vaxtracker

Established in 2011, Vaxtracker is a national online active vaccine safety surveillance system tool that enables people to report on how they or their child have responded to a recently administered vaccine.

Since 2014, Vaxtracker has partnered with AusVaxSafety, a national active vaccine safety surveillance system, to monitor the safety of vaccines in Australia.

With more than 4.5 million vaccine safety surveys collected Australia-wide across multiple vaccine programs, Vaxtracker is an integral part of the national vaccine safety surveillance system in Australia.

In The News

Vaxtracker would like to congratulate AusVaxSafety on their momentous win of Research Australia's Data Innovation Award!

We would also like to thank our partner agencies for their ongoing support and everyone who has completed a vaccine safety survey through Vaxtracker.

Read more »

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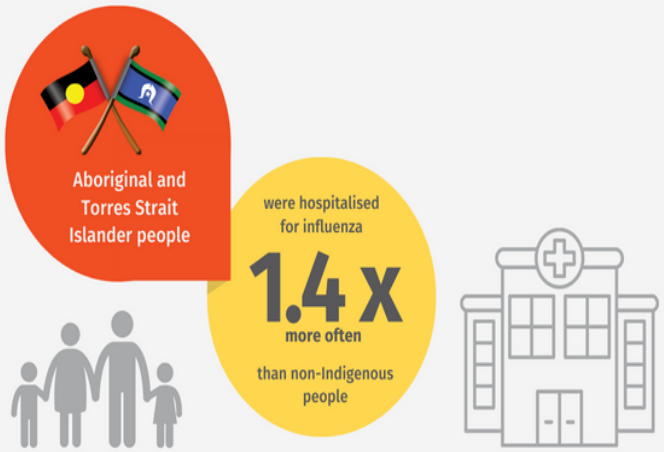
SKAI

Sharing Knowledge About Immunisation

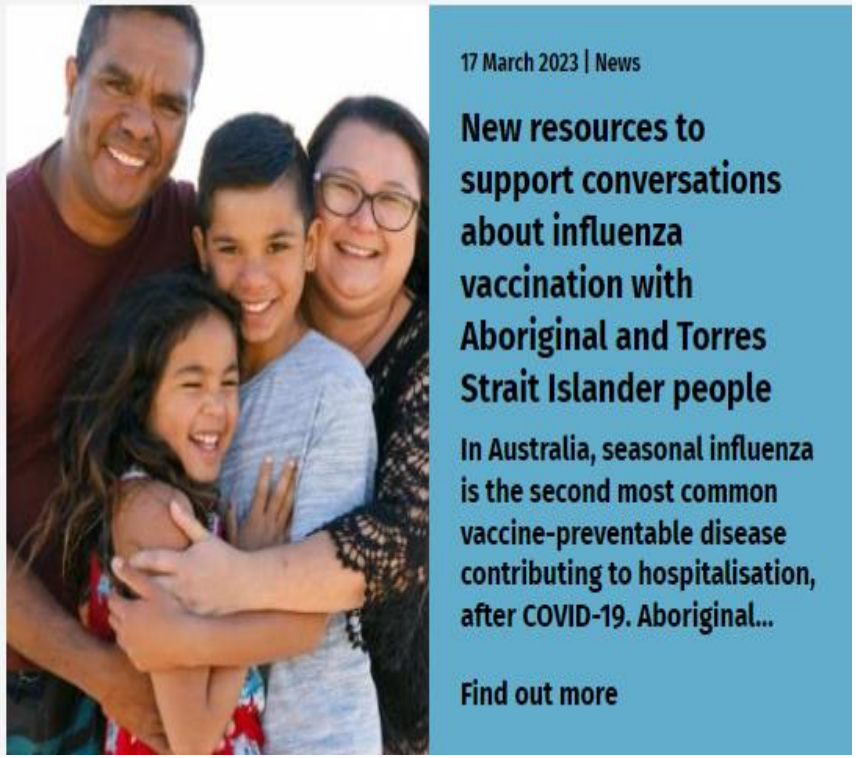
Why is it important to talk with Aboriginal and Torres Strait Islander families about vaccinating against influenza?

Aboriginal and Torres Strait Islander people are more likely to experience severe influenza disease[2] that could be prevented with vaccination. In Australia, seasonal influenza is the most common vaccine-preventable disease contributing to hospitalisation, aside from COVID-19.

In 2016 - 2018:



Influenza vaccine has been funded (since 2019) for all Aboriginal and Torres Strait Islander people over 6 months of age, but Aboriginal and Torres Strait Islander families are under-vaccinated.[3,4]



17 March 2023 | News

New resources to support conversations about influenza vaccination with Aboriginal and Torres Strait Islander people

In Australia, seasonal influenza is the second most common vaccine-preventable disease contributing to hospitalisation, after COVID-19. Aboriginal...

Find out more

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[Supporting conversations about vaccinations with Aboriginal and Torres Strait Islander people | NCIRS]

Talking about flu vaccination with Aboriginal and Torres Strait Islander families

This resource is a conversation guide for immunisation providers to use when discussing vaccination with Aboriginal and Torres Strait Islander people and families of all ages. It's designed to support providers to feel comfortable to have these conversations and strongly recommend vaccination.

Building rapport

Building rapport leads to building trust and creating a comfortable environment. Greet with a smile and take the time to chat about something more personal for the person, before discussing their health. **Building rapport will take time.**

A person walks in wearing a sporting jersey or hat.
"How'd your team go in their last game?"

Asking the question

It is really important to know whether a person identifies as Aboriginal or Torres Strait Islander. **Don't assume how a person does or does not identify and always ask the question.**

"Do you or your child identify as Aboriginal or Torres Strait Islander?"

Family considerations

Family is an important aspect of Aboriginal and Torres Strait Islander communities. Some people may wish to have their family as support at appointments and may refrain from accessing services if they are unable to do so. **Provide the flexibility** to have more people present at appointments.

This is particularly relevant for families who have multiple children – it can be very challenging for parents to find childcare for children when appointments are restricted to one parent and one child.

"Would you like to bring an Aboriginal health worker or family member with you?"

"You can bring your other children/family members along."

NCIRS

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Strong recommendation to vaccinate

Aboriginal and Torres Strait Islander people value a clear, strong recommendation to vaccinate.

Sometimes people need a strong reminder about the importance of vaccination in order to vaccinate.

As a provider, your strong recommendation to vaccinate is very important.

Explain to the person that vaccination will help them protect themselves their families and their communities, against serious illness and potential hospitalisation from communicable diseases.

"It's really important for your health and the health of your family for you to have this vaccination."

Opportunistic vaccination

Consider every visit an opportunity to have a conversation about vaccination and the opportunity to vaccinate.

Consider who else might require a vaccination. Does the person have a family member in the waiting room or car who hasn't been vaccinated? Offer everyone present the opportunity to be vaccinated.

"Did anyone else come with you today who might want their flu shot now, too?"

Some things to consider when having a conversation

- Try to be flexible and accessible when booking appointments.
- Avoid reprimanding a person if they miss an appointment.
- Don't rush a person during their appointment.
- Some Aboriginal and Torres Strait Islander people don't make eye contact for various cultural reasons.
  - Follow the other person's lead and lower your eyes during conversation.
- Avoid rushing a response from the patient and allow for silence.
  - Observe and respect the silence.
  - Give the person time to process and respond.
- Avoid interrupting the person while they are talking.
- Avoid using medical jargon.
- Ensure the conversation occurs in a private space.

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EXAMPLE OF A SUPPORTIVE CONVERSATION

"I can see that you're due for your flu shot. Do you have any questions or concerns about getting the flu shot?"

Immunisation provider

"I don't know whether to get it. My mum had the flu shot the other day and it gave her the flu. I don't want to get the shot and get sick like her."

Patient

The immunisation provider has started this conversation by asking if the patient has any questions and has let the patient talk without interrupting. They may nod while the patient is speaking to show they are listening.

"Do you have any other concerns about having the flu shot?"

The immunisation provider here is encouraging the patient to express any other concerns they might have.

"No, I don't think so."

"Thank you for sharing your thoughts and concerns with me."

"So, you mentioned you don't want to get the flu shot and get sick like your mum."

"Yep, that's right."

"It's normal to have concerns and I can see you're really thinking about your health. Can I share with you what I know about this vaccine? We can explore your concerns together."

"That would be great."

Here, the immunisation provider is acknowledging the patient's concerns and asking for their permission to share knowledge about immunisation.

"The flu vaccine does not have a live virus, so it cannot give you the flu. But it is normal to feel a bit achy, tired or feverish after getting your shot and to have redness and swelling at the spot where the needle went in. These side-effects are normal; they mean that your body is responding well to the vaccine."

"So, why did my mum end up with flu even after getting the flu shot?"

"It takes the body a couple of weeks after getting the flu shot to build its strength and immunity against the flu. So, if you come into contact with the flu virus soon after you receive your flu shot, you can still catch the flu."

"So, you can get the flu even if you've had the shot?"

"Yes, until the shot's had time to work. Also, it's never 100% guaranteed to stop you getting the flu, but if you have the flu shot, you're less likely to get really sick and need to go to the hospital if you do catch the flu. It also helps to protect Elders, bubs and people with other health problems you live with or have close contact with, as they're more likely to get really sick from the flu."

The next step is for the immunisation provider to recommend vaccination.

"I have the flu shot every year and I recommend that everyone has it. I recommend that you have it. We can chat to the practice nurse about getting the flu shot today if you would like."

"That sounds good."

Note: For suggestions on how to address other common questions about flu and the flu shot (e.g. 'Why get the shot if I don't feel like I'm at risk of getting the flu?'), see the Flu vaccine information for Aboriginal and Torres Strait Islander people

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This year's winners are:

Winners 2022

Data Innovation Award

Winner: The AusVaxSafety Team, National Centre for Immunisation Research & Surveillance

Highly commended: Associate Professor Matthew Ritchie, Walter & Eliza Hall Institute and Professor Shlomo Berkovsky, Australian Institute of Health Innovation

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ARIA Australian Regional Immunisation Alliance

About us | Our work | Our members | News & Events | ARIA Project Hub

Welcome to the Australian Regional Immunisation Alliance

Read about ARIA here

Our work

Our experts

Our impact

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slido

1. Will your surgery continue offer covid vaccines?

ⓘ Start presenting to display the poll results on this slide.