Welcome to the Immunisation Coalition's

2021 Herpes Zoster Webinar Event

Here is your Panel

Professor Robert Booy
Speaker
Immunisation Coalition Board Member

Doctor Andrew Baird
Webinar Moderator
GP & Immunisation Coalition Member

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Questions & Answers

- Please type any questions for the speakers in the Q&A box.
- A certificate of attendance will be sent to your email (min. 50 minute attendance) in the coming weeks.
- A recording of this event will be available on the Immunisation Coalition and Praxhub websites soon.

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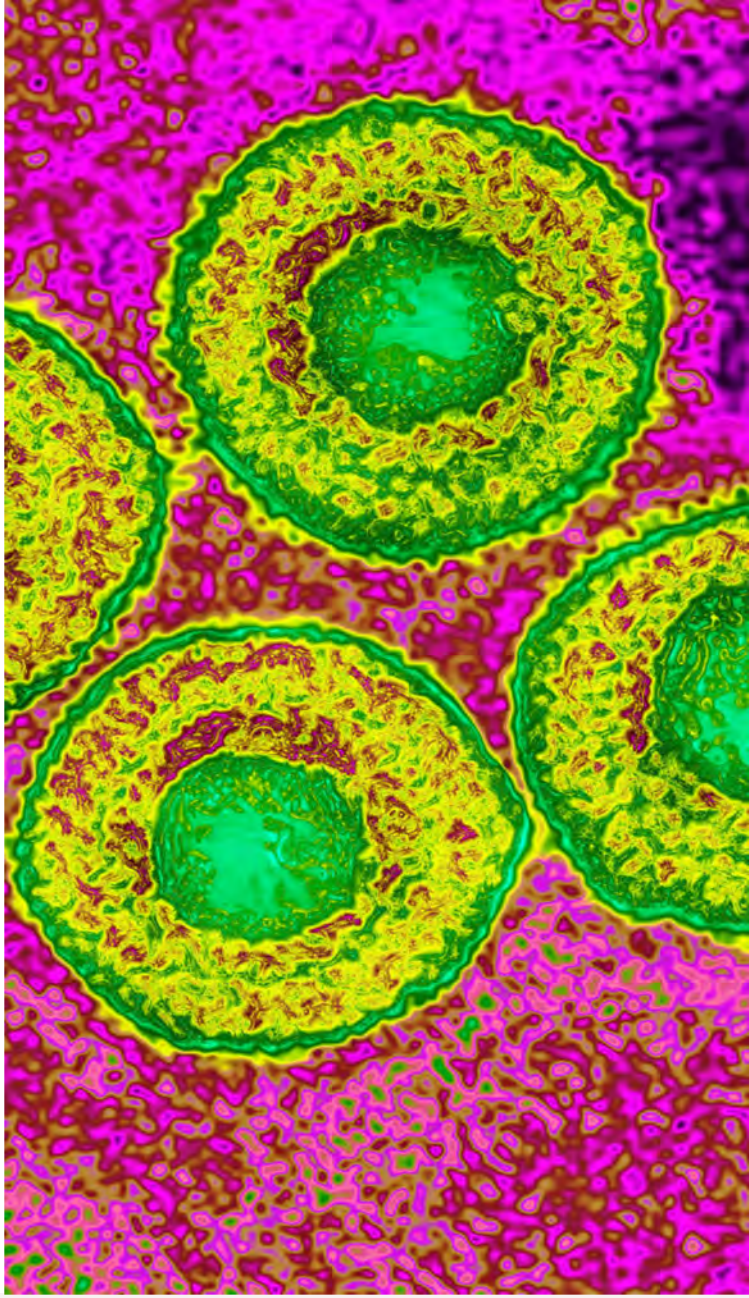
Herpes Zoster

Herpes Zoster

- **Re-activation of varicella zoster virus** (VZV) in someone who has had chickenpox
- Occurs mainly in people **over 50 years** of age
- Usually it appears as a **painful rash** of small blisters **on one side** of the face or body
- Globally, herpes zoster is becoming more common as the population ages



Ref: Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017.

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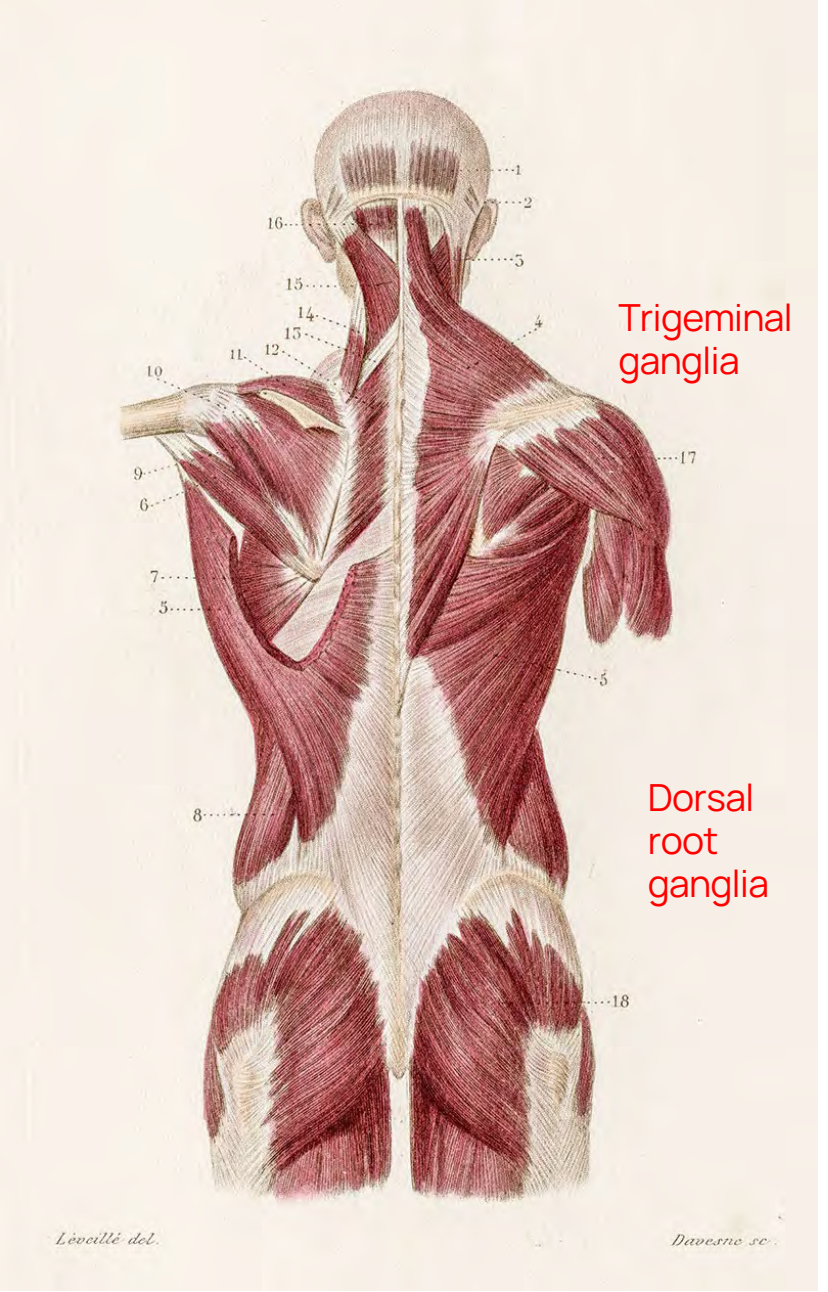
Cause of Disease

- After you develop chicken pox, the varicella zoster virus **(VZV)** remains **dormant** in the **dorsal root** or **trigeminal ganglia**

- Virus can become **reactivated later** in life, more frequently in older adults and those who are immunocompromised



Ref: Levin MJ. Zoster vaccine. In: Plotkin SA, Orenstein WA, Offit PA, eds. *Vaccines.* 5th ed. Philadelphia, PA: Saunders Elsevier, 2008.

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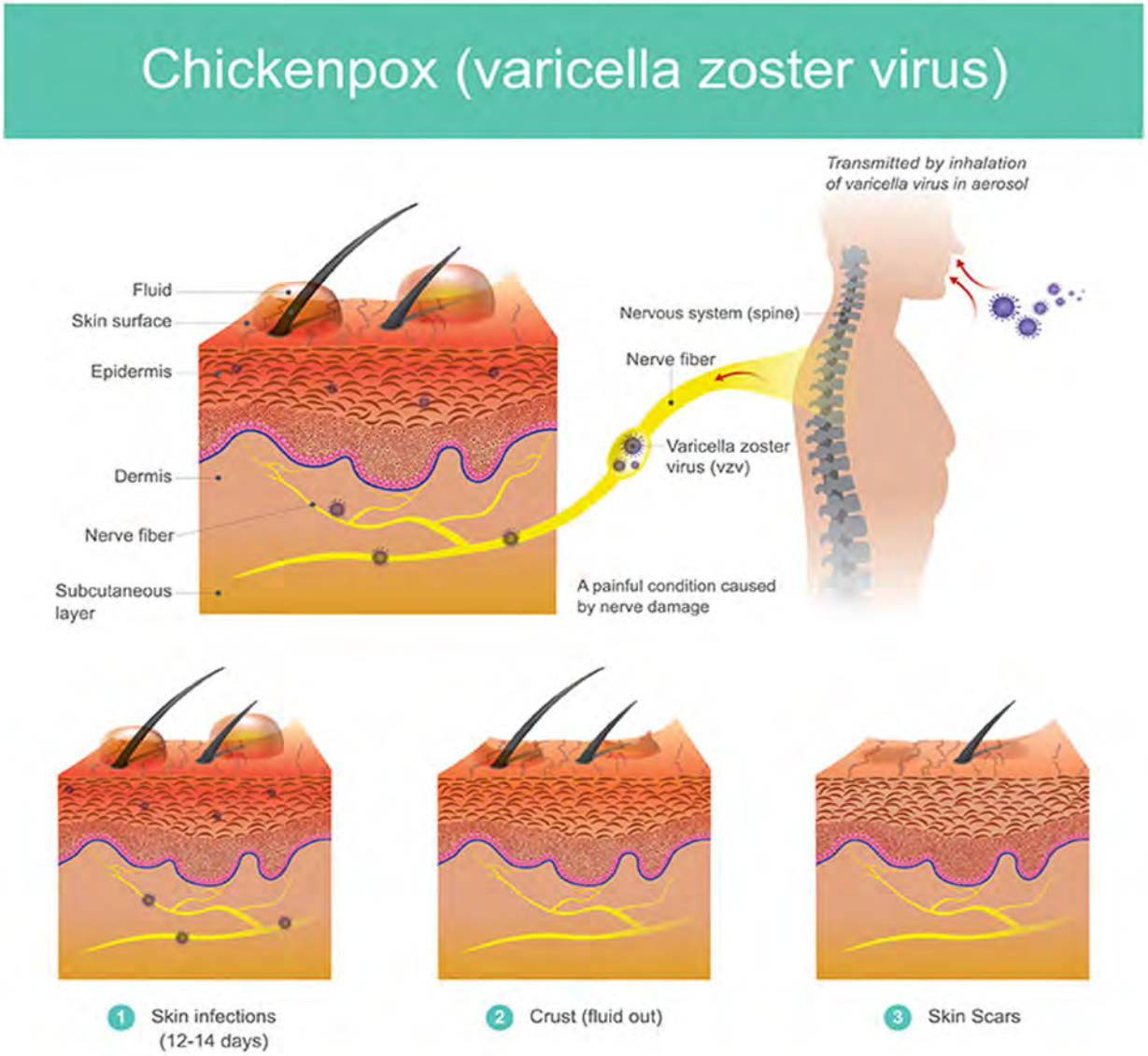
Reactivation of varicella zoster virus (VZV)



Ref: Image available from istock photos

Audience Question 1

Can shingles be transmitted from one person to another?

A. No, shingles is not contagious and the VZV is not contagious

B. Yes, it can be transmitted by contact with eating utensils of infected individuals

C. No, shingles is not contagious but the VZV can be passed on to cause chicken pox in a person that has never had chickenpox

D. Yes, shingles is a sexually transmitted disease

Ref: Zoster vaccine for Australian adults/NCIRS Fact sheet: August 2017

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Audience Question 1 Answer

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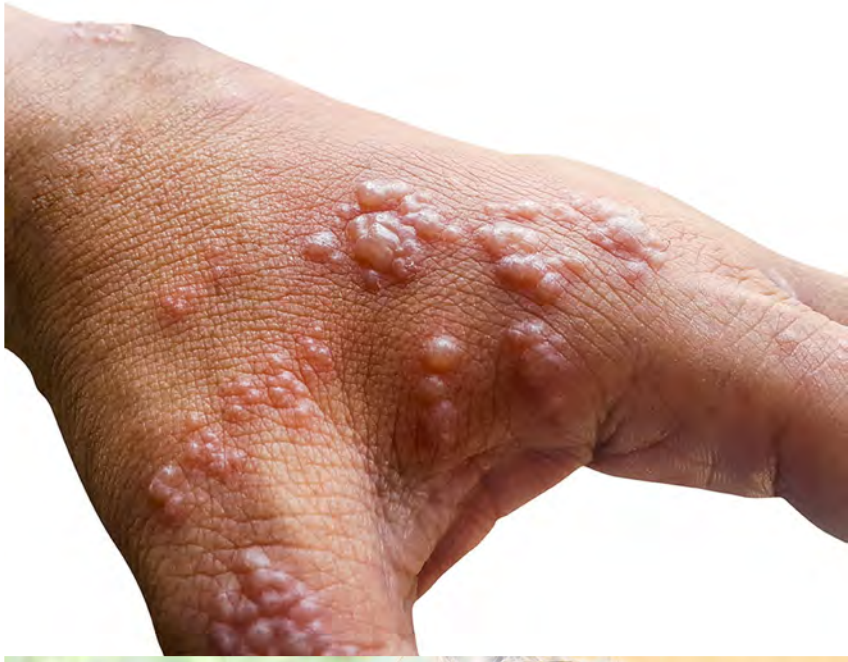
How is herpes zoster spread?

- **Shingles cannot be passed** on from one person to another
- A person with shingles **can pass VZV** to someone who has **never had chicken pox** or never received chicken pox vaccine
- Person exposed to the virus **can develop chicken pox** but **not shingles**
- Spread by **direct contact** with the **fluid** inside the blisters
- Infectious until blisters scab over



Ref: Centers for Disease Control and Prevention (CDC), https://www.cdc.gov/shingles/about/overview.html
Zoster vaccine for Australian adults/NCIRS Fact sheet: August 2017

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Preventing transmission

- **Cover non crusted shingles** lesions with non adherent padded dressing
- Bathe regularly with **saline** to **remove exudate and crusts**
- **Avoid susceptible contacts** especially those who are pregnant or immunocompromised

Ref: Wehrhahn MC, Dwyer DE. 2012. Herpes zoster: epidemiology, clinical features, treatment and prevention. Australian Prescriber 35(5): 143–7.

Symptoms

Early Phase

In 80% cases, prodromal phase 2-3 days before rash

- Early symptoms may be itching, **severe pain** and numbness around the affected areas
- Accompanied by **headache, sensitivity to bright light** and **malaise**

Ref :Dworkin RH,Johnson RW, Breuer J, et al. Recommendations for the management of herpes zoster. Clinical Infectious Diseases 2007; 44 Suppl 1: S1-26

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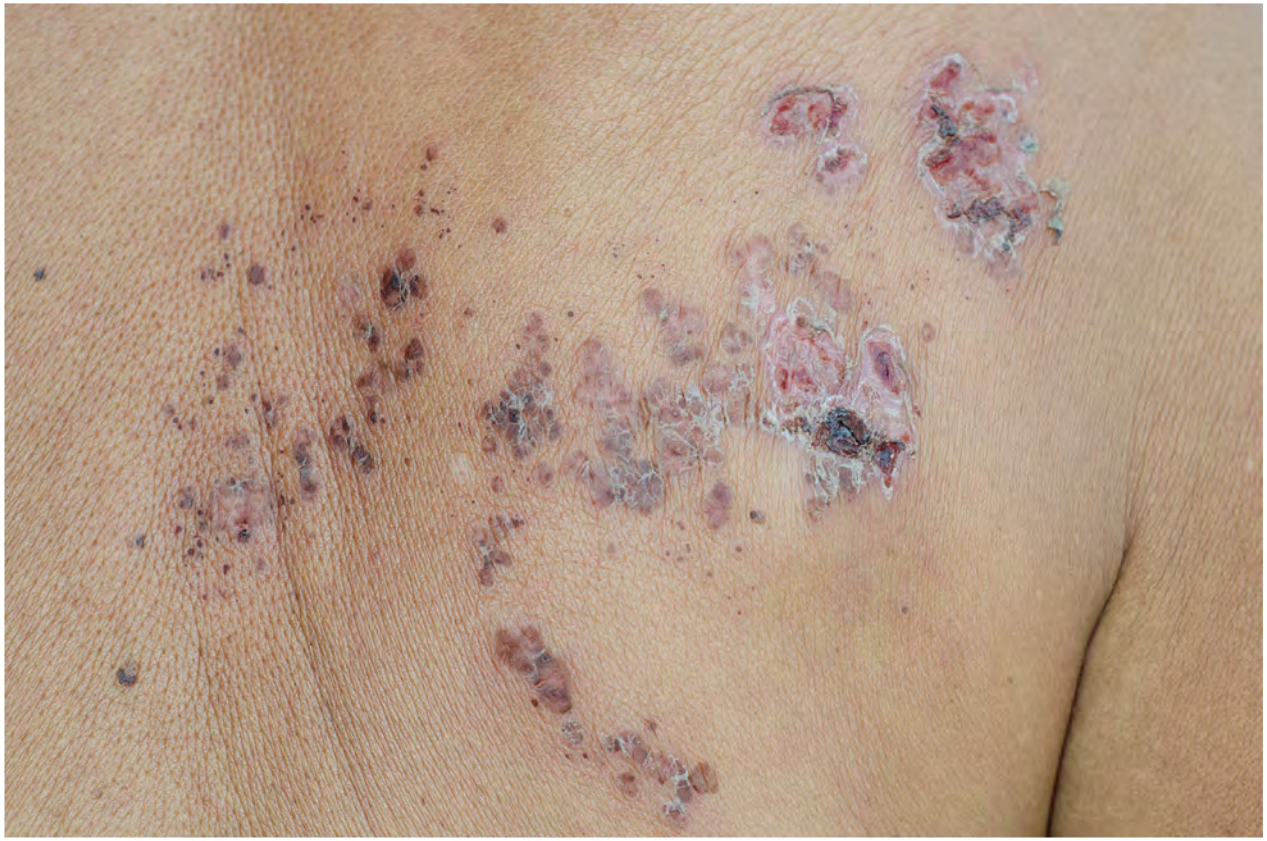
Symptoms



- Blistery rash often follows, often accompanied by pain
- Appears as a **band of blisters** which often wraps around the thoracic or lumbar region
- Generally self limiting with rash lasting **10-15 days** however may become more serious

Ref :Dworkin RH,Johnson RW, Breuer J, et al. Recommendations for the management of herpes zoster. Clinical Infectious Diseases 2007; 44 Suppl 1: S1-26

Complications

Post herpetic neuralgia (PHN)

- Persistent chronic **neuropathic pain** which **persists** for **longer than 90 days** from the onset of the rash
- Pain and nerve damage can begin before the shingles rash is visible
- **Debilitating** (burning, aching, throbbing, stabbing or shooting) **pain** where the rash was
- Incidence and duration related to **increasing age**
- Affects around **30%** of people **with shingles over 80 years of age**
- PHN patients report experiencing pain in the area of their shingles rash for an **average** of **3.5 years**

30% shingles sufferers **over 80** years of age go on to develop **PHN**

Ref: Yawn BP, Saddier P, Wollan PC, et al. A population based study of the incidence and complication rates of herpes zoster before zoster vaccine introduction. Mayo Clinic Proceedings 2007;82:1341-9. 7
Serpell M *et al. Health Qual Life Outcomes* 2014; 12: 92.
Harpaz R et al. MMRW 2008 Jun 6; 57(RR-5):1-30

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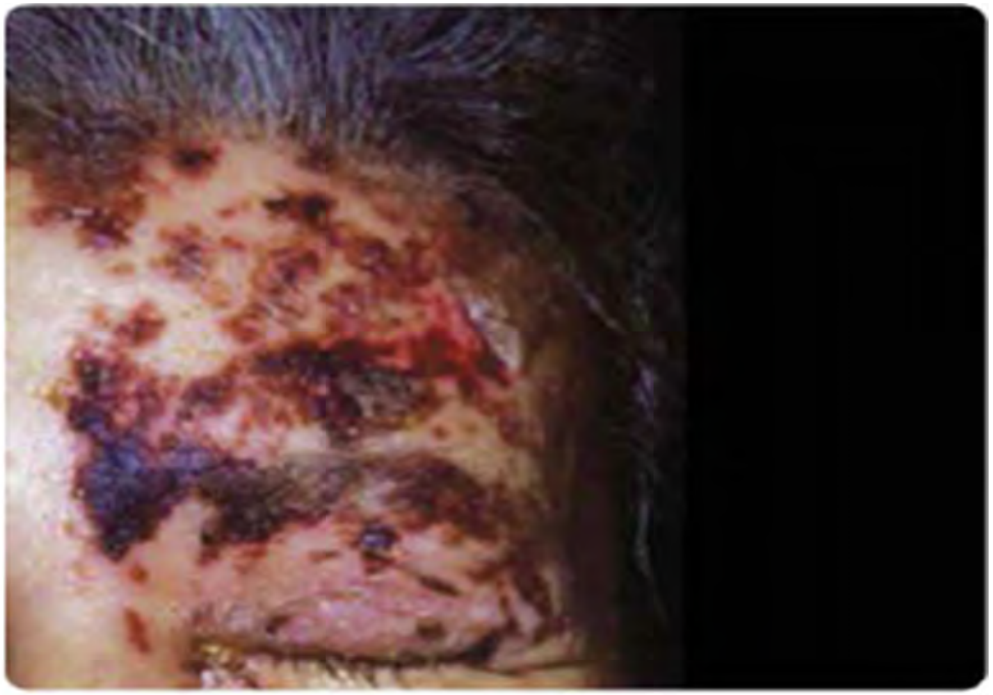
Complications



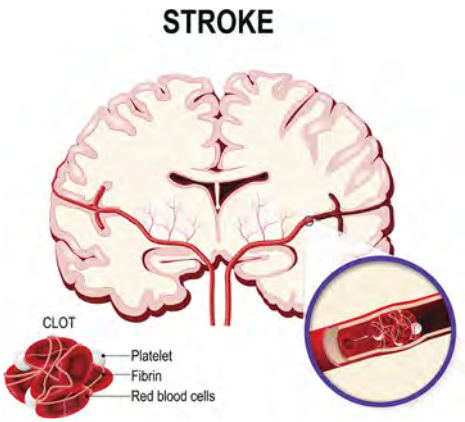
Ophthalmic zoster

- Can occur in up to **10 to 15%**
- Complications may include **facial scarring** and **loss of vision**

Stroke and MI risk

- Shingles may also **increase** the **risk of stroke** in the following 6 months
- **Increased by 63%** 4 weeks after shingles vs baseline risk
- **1.7 fold increased** acute **MI** rate observed in the first week after diagnosis of shingles

Very rarely, shingles can lead to pneumonia, hearing problems, encephalitis or death



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Langan SM *et al. Clin Infect Dis* 2014; 58: 1497-1503.
Harpaz R *et al. MMWR* 2008 (June 6); 57 (RR-5): 1-30
Australian Pharmacist Professor Gregory Petersen When the varicella zoster virus can turn nasty: in pregnancy and in the elderly November 2017

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Who is at risk?

- **20-30%** will develop shingles in their lifetime
- Most (over 70%) **after** the **age** of **50 years**
- Almost all adults are at risk

➔ **95% of Australians** aged over 30 years have been **infected with varicella-zoster-virus** (vzv)

- About **half of those** who live to **85** will **develop shingles**
- **Immunocompromised individuals** at increased risk

Ref: : Zoster vaccine for Australian adults/NCIRS Fact sheet: August 2017
Ward K, Dey A, Hull B, et al. Evaluation of Australia's varicella vaccination program for children and adolescents. Vaccine 2013;31:1413-9.

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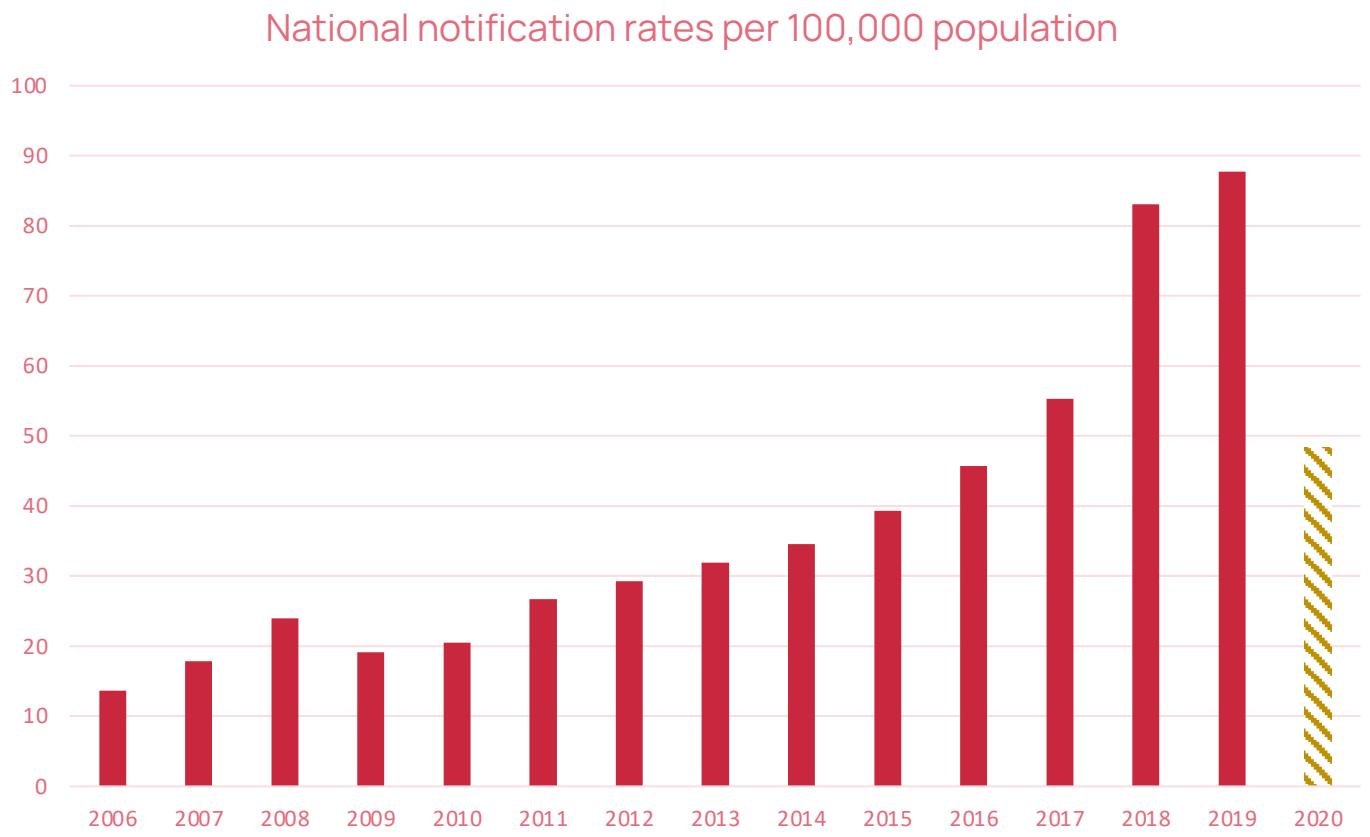
Burden of disease

*An estimated **120,000 to 150,000 new cases** of shingles occur per year in Australia*

Ref: NCIRS. Zoster vaccine for Australian adults. NCIRS Fact sheet: August 2017. Available at: http://www.ncirs.edu.au/assets/provider_resources/fact-sheets/zoster-vaccine-fact-sheet.pdf Accessed Jan 2018.
MacIntyre R et al PLoS ONE 2015; 10(4):e0125025..

Burden of disease

Shingles National notification rates 2006-2021



Ref: Australian Government Department of Health National Notifiable Diseases Surveillance System, as of 9/11/2020

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Audience Question 2

Can you develop shingles more than once?

A. No

B. Yes but it is uncommon with one study estimating a recurrence rate of 6.2% at 8 years

C. Yes but recurrence is more likely in men and anyone aged < 50 at index episode

D. Yes and recurrence is more common in immunocompetent people

Ref: . Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation handbook* 10th ed (August 2017 update). Canberra: Australian Government Department of Health, 2017.
Yawn et al Mayo Clin Proc 2011; 86:88-93.

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Prevention - Vaccines

Two Zoster vaccines

Shingles vaccine	Brand	Live/Inactivated	Availability
Zoster virus vaccine	**Zostavax**	**Live attenuated**	**Available on NIP/ Private**
HZ/su (contains VZV glycoprotein and AS01$_B$ Adjuvant System	**Shingrix**	**Inactivated**	**Not avail on NIP – Private prescription - $300 approximately per dose.**

Ref: Australian Public Assessment Report, TGA, Recombinant Varicella Zoster Virus (VZV) glycoprotein E (gE) antigen, December 2018

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Who should be vaccinated?

- **All adults 60 years and older** who have not received a dose
- **Household contacts ≥ 50 years of age** of a person who is or expected to become **immunocompromised**
  - A single dose of Zostavax is funded on the **National Immunisation Program (**NIP) for all **adults at 70 years of age**
  - A single **catch-up** dose of Zostavax is funded for adults aged **71-79 years** until **October 2023**

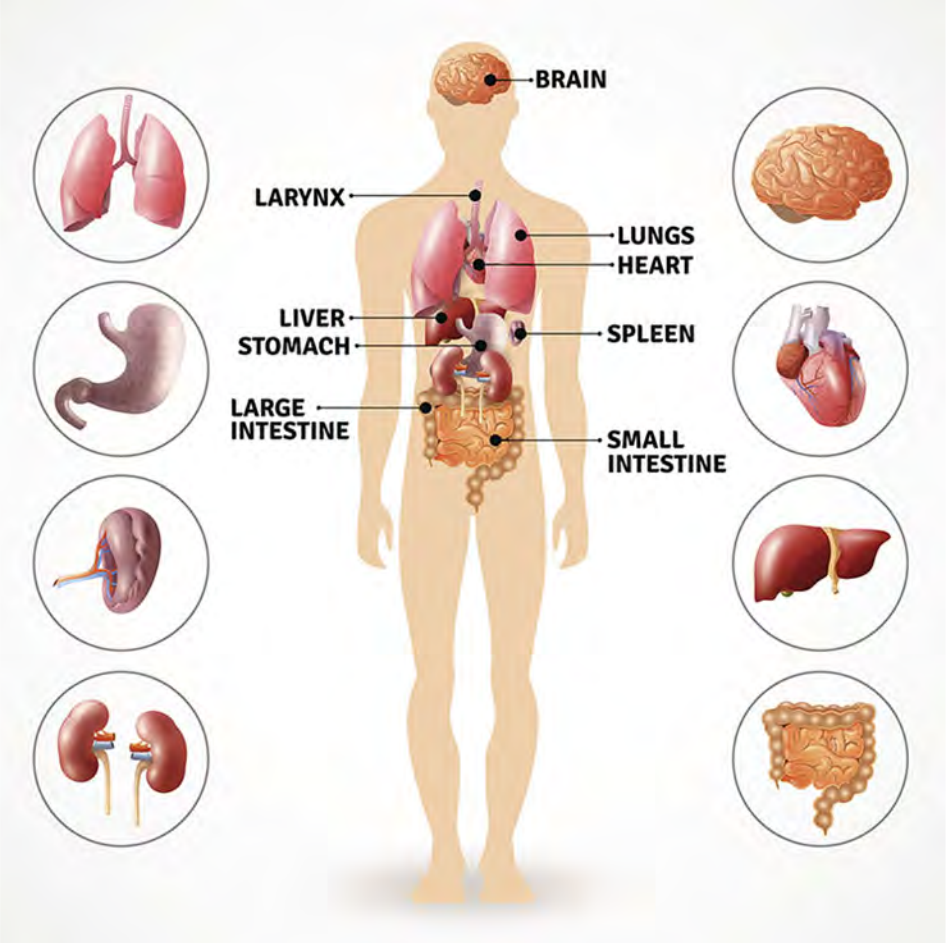
Ref: Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017.

Who **especially** should be vaccinated?

People with **chronic conditions**:

- Splenectomy
- Diabetes
- Rheumatoid arthritis
- Inflammatory bowel disease
- Dermatologic diseases (psoriasis)
- Cardiorespiratory disease
- Renal disease
- But **not if** any of the above are **immunocompromised**

People at **high risk of cardiovascular disease**



Ref: Zoster vaccine: Frequently asked questions/ NCIRS Fact sheet: April 2018

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Who should **not** be vaccinated?

- **Pregnant women**
- **Previous anaphylaxis to the vaccine** (either Zostavax or varicella vaccine or its components)
- People who are **IMMUNOCOMPROMISED** through:

❖ **Primary or acquired immunodeficiency** e.g. leukaemias, lymphoma, other conditions affecting the bone marrow or lymphatic system, immunodeficiency due to HIV/AIDS, cellular immune deficiencies

❖ **Immunosuppressive therapy**(current or recent)
including high-dose corticosteroids (≥20 mg of prednisone per day, or equivalent) however Zostavax is not contraindicated for use in individuals who are receiving topical/inhaled corticosteroids or low-dose systemic corticosteroids or in patients who are receiving corticosteroids as replacement therapy e.g for adrenal insufficiency

Ref: Zoster vaccine: Frequently asked questions/ NCIRS Fact sheet: August 2017

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Audience Question 3

How is Zostavax administered?

A. It is given as a single dose (0.65ml) SC. Reconstitute immediately after removal from fridge. Administer immediately after reconstitution

B. It is given as two injections IM two months apart

C. It is given as two injections SC two months apart

D. It is given as a single dose (0.65ml) IM. Reconstitute immediately after removal from fridge. Administer immediately after reconstitution

Ref:. ZOSTAVAX Approved Product Information. Amended August 2017.

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Ref:. ZOSTAVAX Approved Product Information. Amended August 2017.

Audience Question 4

How is Shingrix administered?

A. It is given as a single dose (0.5ml) SC.

B. It is given as two injections IM (0.5ml) two to six months apart

C. It is given as two injections SC (0.5ml) two to six months apart

D. It is given as a single dose (0.5ml) IM.

Ref: Lal et al NEJM 2015; 372: 2087-96.

Audience Question 4 - Answer

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Ref: Lal et al NEJM 2015; 372: 2087-96.

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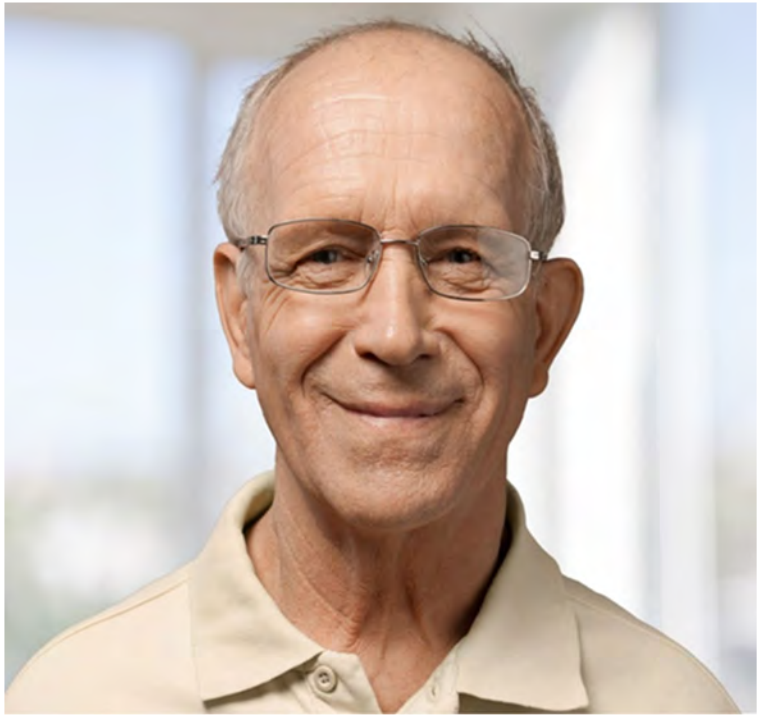
Before vaccinating with a zoster vaccine

- **Obtain medical history** and **check contra-indications** for **immunocompromised** people
- **Fatal outcomes** may be seen in administering **live Zoster** vaccine to **immunocompromised individuals**
- In persons who are **immunocompromised**, administering **Zostavax** should be considered on a **case by case basis**
- **If uncertainty** around level of immunocompromise and vaccination, **withhold vaccination and seek expert advice**



Ref: Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017.

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Zoster vaccine in people on immunosuppressive therapy

Immunosuppressive therapy	Treatment regimen	Potential timing of vaccination
High-dose corticosteroid monotherapy (≥20 mg per day of prednisone or equivalent)	Therapy for less than 14 days	• At least 1 month before treatment starts, or • Any time after treatment stops
	Therapy for 14 days or longer	• At least 1 month before treatment starts, or • At least 1 month after treatment stops
csDMARD — azathioprine	>3.0 mg per kg per day	• At least 1 month before treatment starts, or • At least 3 months after treatment stops
csDMARD — 6-mercaptopurine	>1.5 mg per kg per day	• At least 1 month before treatment starts, or • At least 3 months after treatment stops
csDMARD — methotrexate	>0.4 mg per kg per week	• At least 1 month before treatment starts, or • At least 3 months after treatment stops
Other csDMARDs (except sulfasalazine, hydroxychloroquine and similar, which are safe at any dose)	All regimens	• At least 1 month before treatment starts, or • At least 3 months after treatment stops

Ref::Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017.

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Zoster vaccine in people on immunosuppressive therapy

Immunosuppressive therapy	Treatment regimen	Potential timing of vaccination
T-cell inhibitors (eg tacrolimus, cyclosporine except denosumab for which there is no evidence of significant immunosuppression)	All regimens	• At least 1 month before treatment starts, or • At least 3 months after treatment stops
Other unspecified immunosuppressants (eg chemotherapy, radiotherapy)	All regimens	• At least 1 month before treatment starts, or • At least 3 months after treatment stops, and possibly at least 6 months for people who have received chemotherapy or radiotherapy (based on individual patient risk assessment)
bDMARDs or tsDMARDs (eg monoclonal antibodies)	All regimens	• 1 month before treatment starts, or • At least 12 months after treatment stops — this must be discussed with the treating physician
Haematopoietic stem cell transplant	All regimens	• At least 1 month before transplant, or • At least 24 months after transplant

Ref::Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017.

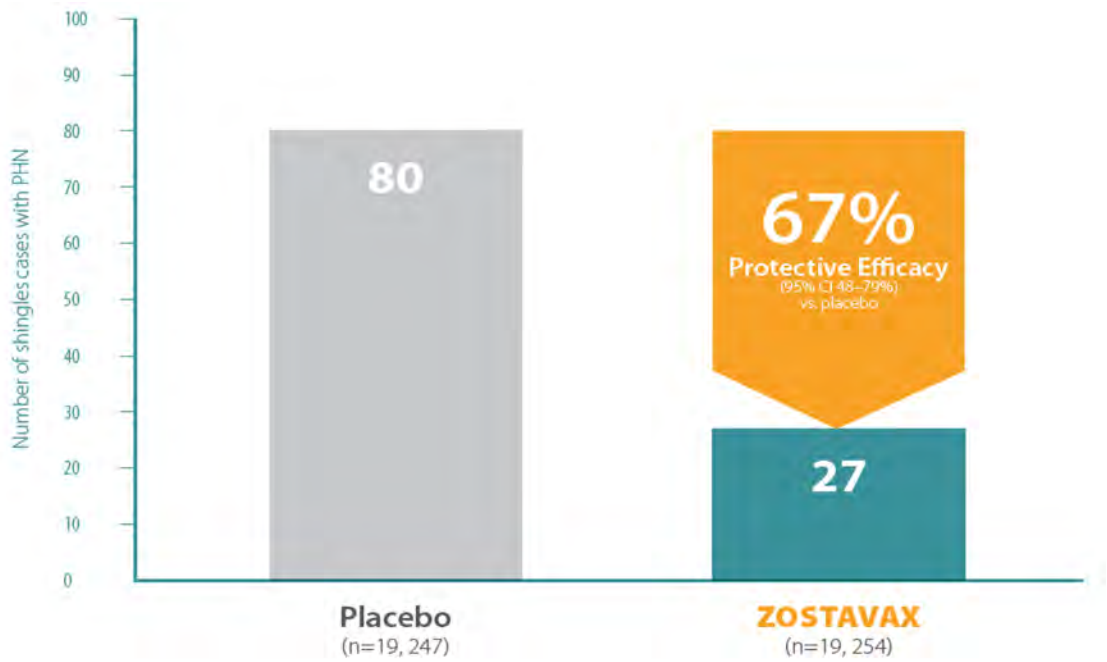
Shingrix and immunocompromised individuals

Being a non live vaccine, Shingrix will overcome the contra-indication of Zostavax to immunocompromised individuals

Vaccine effectiveness of Zostavax

Shingles Prevention Study

1. ZOSTAVAX® reduced the incidence of PHN by 67%



2. ZOSTAVAX® significantly reduced the incidence of shingles by 51% vs. placebo in adults aged 60+

Ref::Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2018 update). Canberra: Australian Government Department of Health, 2018.

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Vaccine Effectiveness of Zostavax

Shingles Prevention Study

Shingles Prevention Study (SPS) was conducted among **38 546 adults aged ≥ 60 years** and showed that compared to placebo vaccination with **Zostavax reduced**:

- **Herpes zoster (HZ) by 51%**
- Post herpetic neuralgia **(PHN) by 67%**
- **Burden of illness** associated **with HZ by 61%** over a median of more than three years follow-up

Ref:: . Oxman MN et al. NEJM 2005; 352:2274-84

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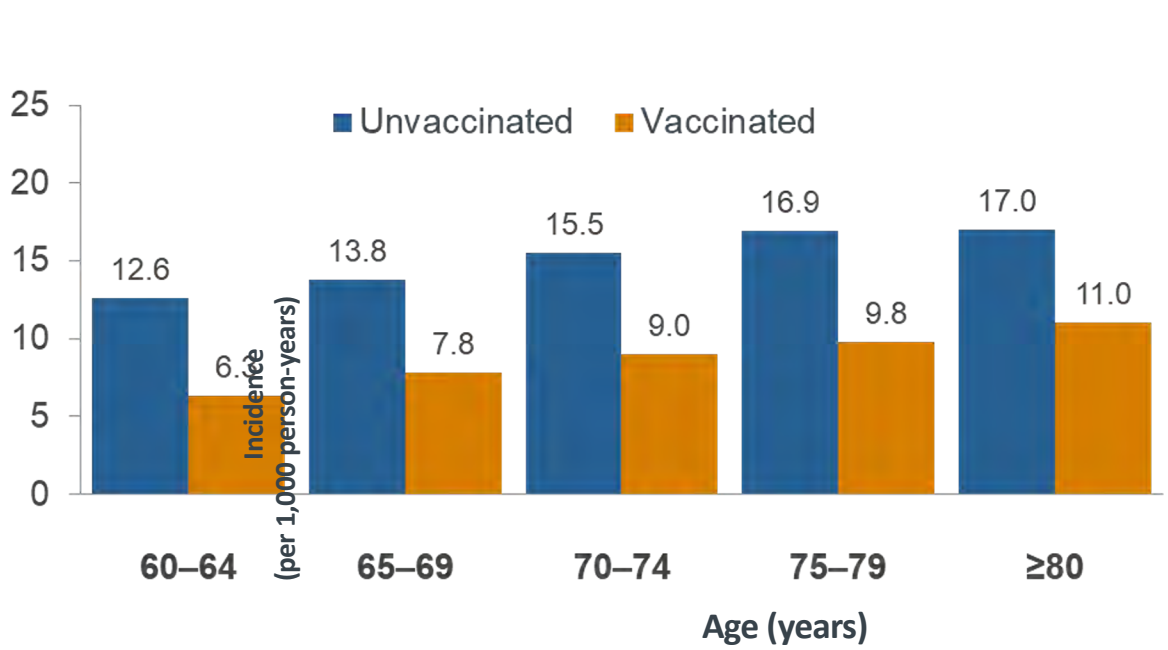
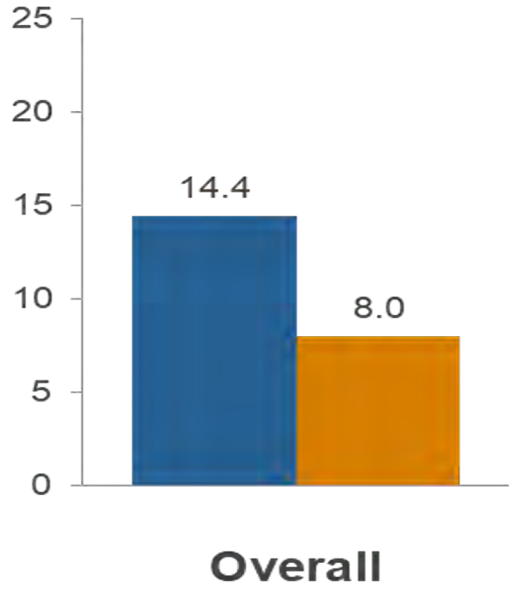
Vaccine effectiveness of Zostavax

US retrospective cohort study





Overall vaccine effectiveness 49% against Herpes Zoster

Ref:: Tseng HF et al. *J Infect Dis.* 2016;15:62(4):462-467.doi: 10.1093/cid/civ930.

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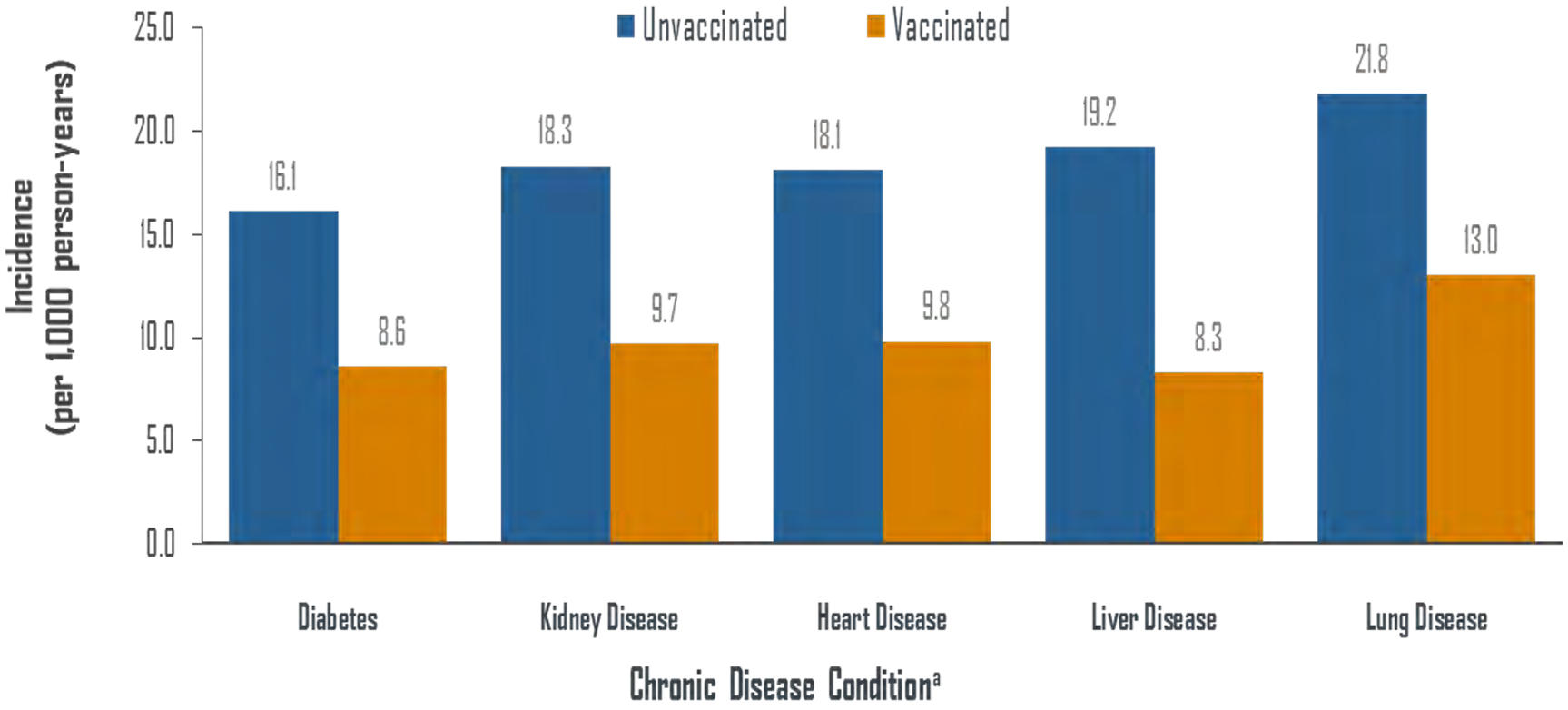
Vaccine effectiveness of Zostavax in adults ≥ 60 years of age with chronic disease



Reduction in incidence of herpes zoster also seen in people with chronic conditions

Ref:: Tseng HF et al. *J Infect Dis.* 2016;15:62(4):462-467.doi: 10.1093/cid/civ930.

Vaccine effectiveness of Shingrix

Two large Phase 3 trials ZOE 50 and ZOE 70

Shingrix efficacy is 90% or above compared to 50% with Zostavax

Shingrix
97.2% in age group **≥ 50 years**
89.8% in age group **≥ 70 years**
91.3% in age group **≥ 70 years**

(pooled results from ZOE 50 and ZOE 70)

Ref:: Lal et al NEJM 2015; 372: 2087-96.
Cunningham et al NEJM 2016; 375: 1019-12.
US Food and Drug Administration. Shingrix BLA Approval letter. Available at: https://www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM581750.pdf Accessed February 2018.

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Vaccine safety

Zostavax

Safe and well tolerated

Some may experience:

- Headache
- Fatigue
- Soreness around site of injection
- Reaction is mild and resolves within a few days

Ref:: Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017

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Vaccine safety- Zostavax

Is there a risk of transmission of chicken pox virus in people vaccinated with Zostavax?

- In clinical trials, transmission of VZV has not been reported
- Post marketing experience shows that **transmission in people with a VZV rash** may **occur rarely** to contacts
- **Transmission** of virus in people **without VZV rash** has been **reported** but **not confirmed**

Ref:: ZOSTAVAX® Approved Product Information. Amended August 2017

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Co-administration of live Zoster vaccine with other vaccines

Can Zostavax be given on the same day as other vaccines?

Yes all live and **inactivated** vaccines can be given **on** the **same day** as live zoster vaccine (using separate syringes and injection sites)

If live zoster vaccine is not given on the **same day** as other **live viral vaccines** (MMR and yellow fever), **separate** administration **by four weeks**

Ref:: Zoster vaccine: Frequently asked questions/ NCIRS Fact sheet: August 2017
Australian Technical Advisory Group on Immunisation (ATAGI). *The Australian immunisation Handbook 10th* ed (2017 update). Canberra: Australian Government Department of Health, 2017

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Vaccine safety

Shingrix

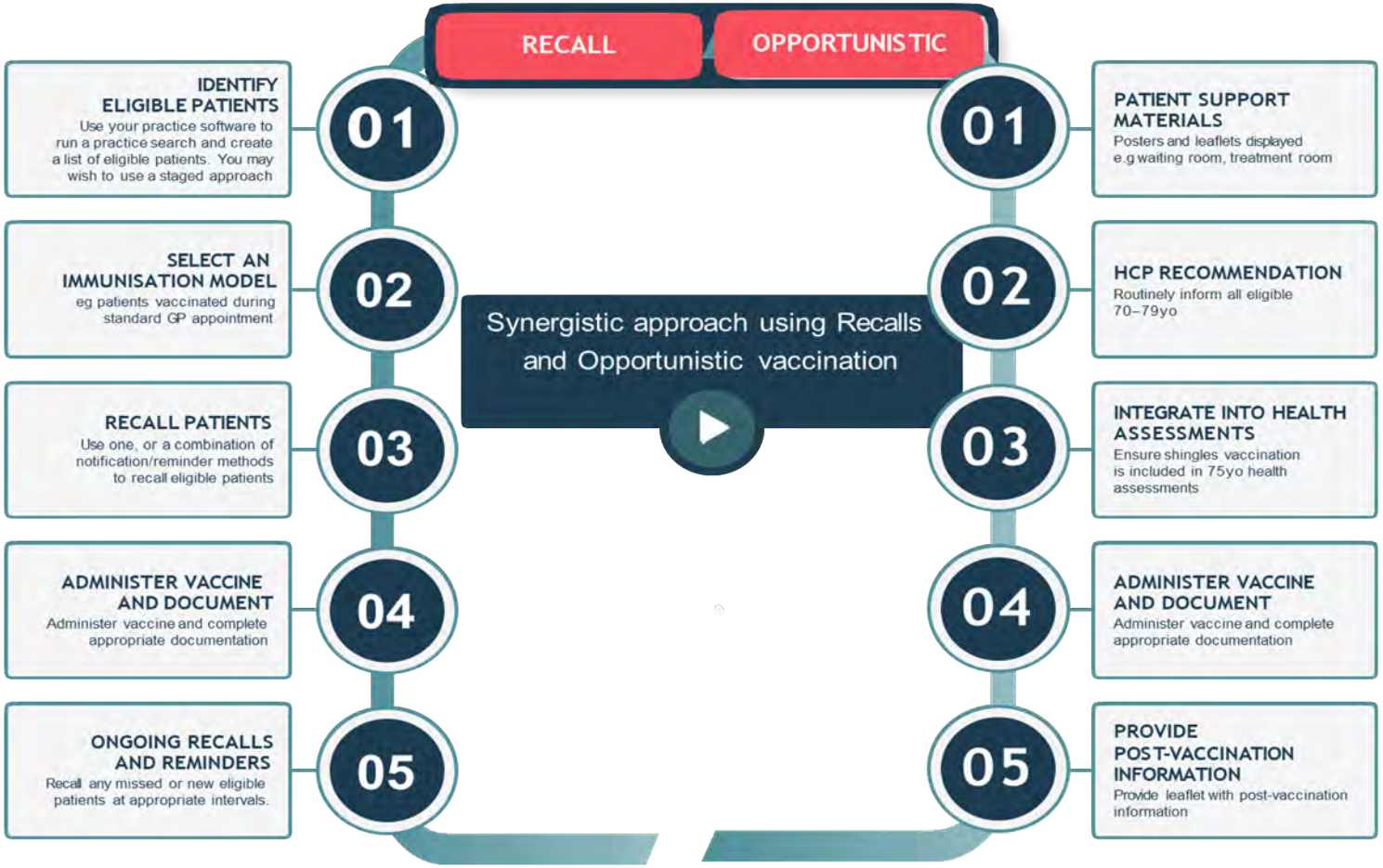
No safety concerns related to vaccination identified

Most common reactions:

- Injection site reactions (81.5% vs 11.9%) HZ/su group vs placebo
- Systemic reactions e.g. myalgia, fatigue and headache (66.1% vs 29.5%) HZ/su group vs placebo

Ref:: . Lal et al NEJM 2015; 372: 2087-96.
Cunningham et al NEJM 2016; 375: 1019-12.

Optimising zoster vaccine uptake



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Treatment of herpes zoster

Antiviral treatment (famciclovir, valaciclovir or aciclovir) for immunocompetent patients who present **within 72 hours of the onset** of the rash and for all immunocompromised patients

There is evidence that famciclovir and valaciclovir are more effective than aciclovir in reducing acute pain in patients with herpes zoster

More evidence to support aciclovir in pregnancy than famiciclovir and valaciclovir

Ref:: Antibiotic Expert Groups. Therapeutic guidelines: antibiotic. Version 15. Melbourne: Therapeutic Guidelines Limited; 2014.

Management of pain in herpes zoster

Table 1 - Treatments for acute pain associated with herpes zoster *

Recommendation	Treatment	Prescribing advice
First-line	Paracetamol: 1 g every 4–6 hours as required, if modified release 1.33 g as required	Maximum 4 g daily
	Prednis(ol)one: 50 mg daily for 7 days then taper over 2 weeks	Use if pain severe Reduces acute pain when given with an antiviral, but has not been shown to reduce postherpetic neuralgia
Other alternatives	Amitriptyline: 10–25 mg at night (maximum dose 75 mg at night)	Response rate of 40–65% Caution in elderly, ischaemic heart disease Nortriptyline less sedating
	Oxycodone: 5 mg every 4 hours as required (maximum 30 mg/day)	Convert to slow release oxycodone/morphine when stable dose achieved Where possible, opioids should be supervised by a pain clinic

* based on eTG[11]

Ref: Wehrhahn MC, Dwyer DE. 2012. Herpes zoster: epidemiology, clinical features, treatment and prevention. Australian Prescriber 35(5): 143–7.

Conclusions

- Herpes zoster is increasing as the population ages
- Preventing herpes zoster with vaccination is the best way to prevent post herpetic neuralgia and complications
- Optimise vaccination uptake by a synergistic approach of recall and opportunistic vaccination
- Before vaccination with live Zoster virus vaccine, obtain medical history and check contra-indications for immunosuppressed people
- Early management with antivirals and analgesia to reduce pain

Thank you for your attendance

We welcome questions for discussion (Q&A box)

The Immunisation Coalition has resources for healthcare professionals on our website including a printable GP Herpes Zoster Guide, webinar recordings, vaccine hesitancy advice and much more!

Visit immunisationcoalition.org.au

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