Japanese Encephalitis Virus serology and vaccination

Information for general practitioners – Version 3.2

OFFICIAL

Summary of actions required

1. Determine Japanese Encephalitis (JE) virus exposure risk
2. Undertake serology test
3. Determine vaccine requirements
4. Offer vaccination
5. Arrange follow-up vaccination appointment (as required)

Serology

Who requires serology?

1. Serology for diagnostic purposes

Anyone who describes a clinical syndrome consistent with JE infection with onset from 1 December 2021 should be investigated as a potential case and notified on clinical suspicion to DH (Diagnostic Testing).

- This should involve acute and convalescent serum (2-4 weeks apart) collected for diagnostic testing, through usual pathology referral pathways.
- Samples for molecular (PCR) testing may also be appropriate, please contact VIDRL for further information if required.
- Usual payment arrangements are in place for processing these samples.
- Results will be reported to clinicians via usual reporting pathways.

Should serology come back positive, Japanese encephalitis is an urgent notifiable condition that must be notified immediately to the department if suspected or confirmed by medical practitioners and pathology services by phoning 1300 651 160 (24 hours).

2. Serosurvey

Anyone who does not describe a clinical syndrome consistent with JE infection and presents for JE vaccination (Serosurvey testing).

- Blood (serum tube – 2 mL from children, 5-8 mL from adults)
- Please use the Victorian Infectious Diseases Reference Laboratory (VIDRL) JE Serosurvey test request form
- This form includes basic demographic and risk exposure information for your patient and provides instructions for your usual pathology service to forward the specimen on to VIDRL for testing.

Please ensure that there are no out of pocket costs for serology testing for serosurvey participants. If bulk billing is not available, participating laboratories are asked to submit invoices to the Department of Health via email to JEhealthresponse@health.vic.gov.au for the attention of Logistics Officer.

Administration of the vaccine should not be deferred while awaiting serology.

Please note that VIDRL is currently prioritising serological testing for diagnostic purposes. Individual results for serosurvey testing will be returned in batches.

The Serosurvey aids in providing a snapshot as to what proportion of individuals with potential exposure to JE virus have been infected. This will assist in planning appropriate public health actions for the community. We appreciate your assistance with completing this serosurvey.

If you have any queries about the serosurvey please email: JEhealthresponse@health.vic.gov.au
for the attention of Intelligence Officer.

Vaccination

Who JE vaccine is recommended for?

- People who work at, reside, or have a planned, non-deferable visit to:
  - a piggery including but not limited to: farm workers and their families (including children aged 2 months and above) living at the piggery, transport workers, veterinarians and others involved in care of pigs
  - a pork abattoir or pork rendering plant.
- Personnel who work directly with mosquitoes through their surveillance (field or laboratory based) or control management, and indirectly through management of vertebrate mosquito-borne disease surveillance systems (e.g. sentinel animals) such as:
  - Environmental health officers and workers
  - Entomologists
  - Pest controllers
- Laboratory workers who may be exposed to JE virus, such as persons working with JE virus cultures or mosquitoes with the potential to transmit JE virus, as per the Australian Immunisation Handbook.[1]

In Victoria, initial distribution of JE vaccine is currently being prioritised for the following:

- People who work at, reside or have a planned, non-deferrable visit to a property that has been **confirmed** to be infected with JE virus
- People who work at, reside or have a planned, non-deferrable visit to a property **suspected** to be infected with JE virus

The JE vaccine will be available for free for people who are recommended for vaccination.

Vaccine information

The Australian Immunisation Handbook Japanese Encephalitis section provides specific guidance on the use of JE vaccines, including booster doses, precautions and contraindications. Please refer to the handbook when determining JE vaccine requirements for clients.

There are two types of JE vaccines are available for use in Australia:

- Imojev®- live attenuated Japanese encephalitis vaccine
- JEspect® inactivated Japanese encephalitis vaccine

Both are recommended for the current JE outbreak in Victoria. **However, Imojev®, which requires only a single dose, will be prioritised during this outbreak and is suitable for people from 9 months of age.**

Infants aged from 2-9 months, pregnant and breastfeeding women, people who have recently received immunoglobulin or blood products or people who are immunosuppressed must be vaccinated with JEspect® which requires 2 doses of vaccine (see Table 2).

An accelerated primary course is recommended for adults receiving JEspect® (see **Table 1**).

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[1] https://immunisationhandbook.health.gov.au/vaccination-for-special-risk-groups/vaccination-for-people-at-occupational-risk

Vaccine dose and route

Table 1. JE vaccine dose and route

Age at vaccination	Vaccine	Number of doses	Notes
≥2 months to <18 years	JEspect® -IM injection	2 doses (0,28 days)	Each dose of JEspect® in infants and children aged ≥2 months to <3 years is 0.25 mL.
≥9 months to <18 years	Imojev® -SC injection	1 dose	Live vaccine. Check contraindications prior to administration.
≥18 years	Imojev® -SC injection	1 dose	Live vaccine. Check contraindications prior to administration.
	JEspect® -IM injection	2 doses (0,7 days)	**It is recommended that adults receive an accelerated primary course of JEspect® (2 × 0.5 mL doses, 0,7 days apart).**

For specific vaccine product information, please refer to The Therapeutic Goods Administration website which provides product information for each vaccine - https://www.tga.gov.au/

Precautions and contraindications

Always use the pre-immunisation checklist prior to administering vaccines. Assess each client against the following precautions and contraindications before giving a JE vaccine.

Table 2: Vaccine specific contraindications

Imojev®	JEspect®
Imojev® is contraindicated in people who are: – **Immunocompromised** – **Pregnant women** (*Women should avoid pregnancy for 28 days after vaccination*) – **Breastfeeding women** should not receive Imojev® because it is not known whether the virus is excreted in breast milk. – **People who have received immunoglobulin or blood product administration**. Do not give Imojev® within 6 weeks after giving immunoglobulins or immunoglobulin-containing blood products. It is preferable to wait 3 months.	JEspect® is an inactivated vaccine, so it is not expected to cause any safety concerns in people who are immunocompromised. **Women who are pregnant or breastfeeding** – JE vaccine is not routinely recommended for pregnant or breastfeeding women. However, **pregnant women at risk of acquiring JE are recommended to receive JEspect®**. – **Breastfeeding women who are at increased risk of acquiring JE are recommended to receive JEspect®.**

Table 3. Precautions and contraindications of JE vaccine

Precautions	Contraindications
People with an acute febrile illness should not receive JE vaccines.	JE vaccines are contraindicated in people who have had: • anaphylaxis after a previous dose of any JE vaccine • anaphylaxis after any component of a JE vaccine

Co-administration of JE vaccine with other vaccines

Table 2. Co-administration of JE vaccine and other vaccines

Imojev®	JEspect®
People can receive Imojev® at the same time as: – yellow fever vaccine[6] – MMR (measles-mumps-rubella) vaccine[7] Use separate syringes and inject in separate limbs. If a person does not receive Imojev® and yellow fever vaccine (or other live vaccines) at the same time, they should receive them at least 4 weeks apart.	People can receive JEspect® at the same time as: – hepatitis A vaccine[8] – quadrivalent (ACWY) meningococcal conjugate vaccine – rabies vaccine[9] Use separate syringes and inject in separate limbs.

Can JE vaccines be co-administered with COVID-19 and influenza vaccines?

The ATAGI Clinical recommendations for COVID-19 vaccines state that COVID-19 vaccines can be co-administered (that is, given on the same day) with an influenza vaccine. COVID-19 vaccines can also be co-administered with other vaccines if required. The benefits of ensuring timely vaccination and maintaining high vaccine uptake outweigh any potential risks associated with immunogenicity, local adverse reactions or fever.

What are the JE vaccine side effects?

Injection site reactions and minor systemic reactions are common after JE vaccination. Report serious adverse reactions to SAEFVIC, the vaccine safety surveillance service in Victoria.

Table 5. Common reactions to JE vaccines

Imojev®	JEspect®
Most commonly reported adverse reactions included headache and myalgia. They usually occur within the first three days after vaccination, are usually mild and disappear within a few days. In children, common or expected reactions to the vaccine include pain, redness and swelling at the	The most frequently reported systemic reactions include headache and myalgia.

injection site. Appetite loss, irritability, and abnormal crying.	

Where do I report JE vaccines given?

JE vaccines should be reported to the Australian Immunisation Register (AIR) using your medical practice software. Reporting these vaccinations to the AIR means that **the register contains a complete and reliable dataset and is able to monitor immunisation coverage and administration**. It also means that individuals have a complete record of their vaccinations.

When are booster doses of JE vaccine recommended?

Booster doses are recommened 1-2 years after vaccination for some cohorts, depending on the vaccine brand used for the primary dose/s and if there is an ongoing risk of JE infection.

Table 6. Booster dose recommendations

Imojev®	JEspect®
≥9 months to <18 years: 1-2 years after primary dose if ongoing risk of JE virus exposure ≥18 years: not required	≥2 months to <18 years: Not recommended. No data available to inform recommendation. Consider a booster if the child needs sustained protection. ≥18 years: 1–2 years after primary dose if ongoing risk of JE virus exposure

For further information about JE vaccine booster doses please refer to the Australian Immunisation Handbook – Japanese encephalitis chapter.

Vaccine transport, storage and handling

JE vaccine is to be stored and transported according to National vaccine storage guidelines: Strive for 5.

- Store JE vaccine at +2°C to +8°C.
- **Do not freeze.**
- **Protect from light.**

Imojev® **must be reconstituted**. Add the entire contents of the diluent container to the vial and shake until the powder completely dissolves. Use the reconstituted vaccine within 1 hour.

For Cold Chain Breach advice please visit - https://www.health.vic.gov.au/immunisation/cold-chain-breach-reporting or email the Immunisation Unit - immunisation@health.vic.gov.au.

Vaccine ordering and supply

- The Victorian Department of Health has ordered JE vaccines - Imojev® and JEspect® .
- Imojev® can be ordered online using the Japanese Encephalitis Vaccine Order and Wastage Form.
- Due to restricted stock, orders for JEspect® must be approved by the Immunisation Unit. Please email immunisation@health.vic.gov.au if you require JEspect® vaccine.

- Onelink will process the order and send a confirmation to the email address registered.
- Wastage for both Imojev® and JEspect® JE vaccines needs to be reported using the Japanese Encephalitis Vaccine Order and Wastage Form

- Please email immunisation@health.vic.gov.au for further information regarding ordering and wastage reporting.

Further information

- Australian Immunisation Handbook – Japanese Encephalitis Section <https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis >
- Australian Government Department of Health, Therapeutic Goods Administration. Australian Public Assessment Report for Japanese encephalitis vaccine (live, attenuated). Canberra: Therapeutic Goods Administration; 2014.
- Murray Valley Encephalitis Virus - National Guidelines for Public Health Units <https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-mvev.htm>
- SAEFVIC < https://www.safevac.org.au/Home/Info/VIC >

Contact information

To contact the JE response team at the Victorian Department of Health please email JEhealthresponse@health.vic.gov.au.

For JE vaccine specific queries please email immunisation@health.vic.gov.au.

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