OREGON HEALTH AUTHORITY
IMMUNIZATION PROGRAM

VARICELLA IMMUNE GLOBULIN (VARIZIG®)	
Last Reviewed	14 September 2021
Last Revised	26 March 2019
This order expires	31 July 2023

Update to procurement access and adverse events table.

I. Oregon Model Immunization Protocol:

1. Screen clients for contraindications and precautions. See warning box on page 2.
2. Provide product information and answer any questions.
3. Record all required data elements in the client's permanent health record.
4. Verify needle length for IM injection into the vastus lateralis or deltoid muscles.
5. Avoid injecting in the upper third of the deltoid muscle.
6. Both client and vaccinator must be seated for administration.
7. Give appropriate dose for age and exposure Intramuscularly (IM). See section II for schedules.
8. Ask client to remain seated on the premises for 15 minutes after vaccination to decrease the risk of injury should they faint.

Health Officer Date

Health Officer Date

II. A. SCHEDULE

Dose and Volume of Administration[1, 2*]				
Weight of Patient		VARIZIG® Dose		Volume to Administer◊ (mL)
Kilograms	Pounds	IU	Number of Vials	
≤2.0	≤4.4	62.5§	0.5	0.6
2.1–10	4.5–22.0	125	1	1.2
10.1–20	22.1–44.0	250	2	2.4
20.1–30	44.1–66.0	375	3	3.6
30.1–40	66.1–88.0	500	4	4.8
≥40	≥88.1	625‡	5	6.0

*Do not exceed 3 mL volume per injection site in adults.
◊Volume of VARIZIG ® to be administered.
§Minimum dose for small infants under two kilograms body weight.
‡Maximum dose for all patients greater than 40 kilograms body weight.

II.B. WARNING: THROMBOSIS[1]

Thrombotic events may occur during or following treatment with immune globulin products. Patients at risk include those with a history of atherosclerosis, multiple cardiovascular risk factors, advanced age, impaired cardiac output, coagulation disorders, prolonged periods of immobilization, and known or suspected hyperviscosity. Consider baseline assessment of blood viscosity in patients at risk for hyperviscosity including those with cryoglobulins, fasting chylomicronemia, markedly high triacylglycerols (triglycerides), and monoclonal gammopathies.

Because VARIZIG® is made from human plasma, it may carry a risk of transmitting infectious agents, e.g., viruses, the variant Creutzfeldt–Jakob disease (vCJD) agent and, theoretically, the Creutzfeldt–Jakob disease (CJD) agent. Plasma donors are screened for the presence of certain infectious agents, and the manufacturing process for VARIZIG® includes measures to inactivate and remove certain viruses. No cases of transmission of the viral diseases, vCJD or CJD have been associated with the use of VARIZIG®.
Report all infections thought by a physician to have been transmitted by VARIZIG® to Saol Therapeutics at 1-833-644-4216.

Recommended intervals between administration of Varicella immune globulin preparations and measles- or varicella-containing vaccine:[2,5]

Immune globulin: Varicella (VARIZIG®)	Dose	Months
Contact Prophylaxis	125 units/10 kg (60–200 mg IgG/kg) IM	5

Full measles/varicella table is available on pages 9 and 10.

III. LICENSED VARICELLA IMMUNE GLOBULIN[1]

Product Name	Immune Globulin Components	Indications and Usage	Latex	Thimerosal
VARIZIG®	Lyophilized powder 125 IU of anti-varicella-zoster virus (VZV) 10% maltose 0.03% polysorbate 80 VARIZIG® contains less than 40 µg per mL of IgA	Post-exposure prophylaxis in high risk individuals* VARIZIG administration is intended to reduce the severity of varicella.	None	None

*Immunocompromised children and adults, newborns of mothers with varicella shortly before or after delivery, premature infants, infants less than one year of age, adults without evidence of immunity, pregnant women.

IV.A. RECOMMENDATIONS FOR USE[2]

1. **Immunocompromised** patients without evidence of immunity.
2. **Newborn infants** whose mothers have signs and symptoms of varicella around time of delivery (i.e., 5 days before to 2 days after).
3. **Hospitalized premature infants** born at ≥28 weeks of gestation who are exposed during the neonatal period and whose mothers do not have evidence of immunity.

4. **Hospitalized premature infants** born at <28 weeks of gestation or who weigh ≤1,000 g at birth and were exposed during the neonatal period, regardless of their mothers' evidence of immunity status.
5. **Pregnant women** without evidence of immunity.

IV.B. Evidence of immunity to varicella includes any of the following[3]:

1. **Documentation** of age-appropriate varicella vaccination;
    a. Preschool-age children (i.e., age 12 months through 3 years): 1 dose
    b. School-age children, adolescents, adults: 2 doses
2. **Laboratory evidence** of immunity or laboratory confirmation of disease
3. **Birth** in the United States before 1980 (Should not be considered evidence of immunity for health care personnel, pregnant women, and immunocompromised persons)
4. **Diagnosis** or verification of a history of varicella or herpes zoster by a health care provider
5. **To verify a history** of varicella, health care providers should inquire about:
    a. An epidemiologic link to another typical varicella case or to a laboratory confirmed case, or
    b. Evidence of laboratory confirmation if testing was performed at the time of acute disease.

Persons who have neither an epidemiologic link nor laboratory confirmation of varicella should not be considered as having a valid history of disease. For these persons, a second dose of vaccine is recommended if they previously received only one dose. If a health care provider verifies the diagnosis based on the above criteria, then vaccination is not needed.

V CONTRAINDICATIONS[1]

- **History of anaphylactic or severe systemic reactions** to human globulins.
- **IgA-deficient patients** with antibodies against IgA and a history of hypersensitivity.

VI. PRECAUTIONS AND WARNINGS[2]

- **Thrombotic events**: See warning box on page 2.
- **Coagulation disorders:** Administer VARIZIG® intramuscularly only. In patients who have severe thrombocytopenia or any coagulation disorder that would contraindicate intramuscular injections, only administer VARIZIG® if the expected benefits outweigh the potential risks.
- **Hypersensitivity:** Severe hypersensitivity reactions may occur following VARIZIG® administration. Administer VARIZIG® in a setting with appropriate equipment, medication and personnel trained in the management of hypersensitivity, anaphylaxis and shock. In the case of hypersensitivity, discontinue administration of VARIZIG® immediately and provide appropriate treatment.

VII. OTHER CONSIDERATIONS

1. **IGIV:** Patients receiving monthly high-dose (≥400 mg/kg) immune globulin intravenous (IGIV) are likely to be protected and probably do not require VARIZIG ® if the most recent dose of IGIV was administered ≤3 weeks before exposure.[2]
2. **Repeat Dose** VARIZIG®**:** for high-risk patients who have additional exposures to VZV ≥3 weeks after initial VARIZIG ® administration, another dose of VARIZIG ® should be considered.[1,2]
3. **Altered Incubation in VARIZIG®:** Because VARIZIG® might prolong the incubation period by ≥1 week, any patient who receives VARIZIG® should be observed closely for signs and symptoms of varicella for 28 days after exposure.
4. **Antiviral Use:** Antivirals should be instituted immediately should signs or symptoms of varicella occur.[2]
5. **Nursing Mothers:** All classes of immunoglobulins can be detected in breast milk. Immunoglobulins from the mother help to support the infant's health.[5]

VIII. VARIZIG® SIDE EFFECTS AND ADVERSE EVENTS; n=621[1]

Reaction	% with Reaction	
	Pregnant Women N=166	Infants, immunocompromised pediatric and adult patients N=435
Local Reaction, Injection site		
Pain	7	≤1
Systemic Complaints		
Chills	2	≤1
Tiredness	2	≤1
Headache	3	≤1
Rash	4	≤1
Nausea	≤1	≤1

The study was not designed to differentiate between adverse events attributed to the underlying medical condition and adverse reactions to VARIZIG®.

- Deep vein thrombosis (n=1)
- Disseminated intravascular coagulation (n=1)
- Intracranial hemorrhage (n=2)
- Coagulopathy (n=2)
- Intraventricular hemorrhage (n=1)
- Pulmonary hemorrhage (n=1

In 621 subjects in the open-label, Expanded Access Protocol (EAP).

IX. STORAGE AND HANDLING

All clinics and pharmacies enrolled with the Vaccines for Children (VFC) program must report any storage and handling deviations immediately to the Oregon Immunization Program at 971-673-0300.

Product Name	Temp	Storage Issues	Notes
VARIZIG® [1]	Store at 2°–8°C (36˚F–46˚F)	Solutions that have been frozen should not be used. Report to HE for further information.	Sterile liquid: 125 IU of anti-VZV in a 3 mL type 1 glass tubing vial

X. ADVERSE EVENTS REPORTING

Public providers are to complete the Vaccine Adverse Events Reporting System (VAERS) report online at https://vaers.hhs.gov/reportevent.html.

Private providers are to report events directly to VAERS and can read about options on how to do so at https://vaers.hhs.gov/reportevent.html.

To request this material in an alternative format (e.g., Braille) or to clarify any part of the above order, contact the Oregon Health Authority Immunization Program at 971-673-0300 and 711 for TTY. For other questions, consult with the vaccine recipient's primary health care provider or a consulting physician.

Electronic copy of this immunization protocol is available at: immunization protocols

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Currently, VARIZIG® is commercially available from a broad network of specialty distributors in the United States; list available at www.varizig.com.

VARIZIG® is available at the following distributors:	
ASD	ASD
BioCARE	BioCARE
Cardinal SPD	Cardinal SPD
CuraScript	CuraScript
FFF Enterprises	FFF Enterprises
https://varizig.com/liquid-ordering_info.html	

For Product Information please contact Customer Service at **1-855-898-2446**

REFERENCES

1. VARIZIG® Package insert 2018. Available at: https://varizig.com/VARIZIG_PI.pdf Accessed 26 March 2019.
2. CDC. Updated recommendations for the use of VARIZIG — United States, 2013. MMWR 2013;62;574–6. Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6228a4.htm. Accessed 26 March 2019.
3. CDC. Varicella. In: *Epidemiology and Prevention of Vaccine-Preventable Diseases* ("Pink Book"). Atkinson W, Hamborsky J, Wolfe S, eds. 13th ed. Washington, DC: Public Health Foundation, 2015; 353–76. Available at: https://www.cdc.gov/vaccines/pubs/pinkbook/varicella.html. Accessed 26 March 2019.
4. Kroger AT, Duchin J, Vázquez M. General Best Practice Guidelines for Immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP). 2017. Available at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf. Accessed 26 March 2019.
5. Chiara C, Aldrovandi GM. Breast milk: proactive immunomodulation and mucosal protection against viruses and other pathogens. Future Virology 2013;8:1127–8. Available at: www.medscape.com/viewarticle/814970. Accessed 26 March, 2019.
6. CDC. Appendix A-24 in: *Epidemiology and Prevention of Vaccine-Preventable Diseases* ("Pink Book"). Atkinson W, Hamborsky J, Wolfe S, eds.13th ed. Washington, DC: Public Health Foundation, 2018. Available at: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/mmr_ig.pdf. Accessed 26 March 2019.

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Electronic copy of this immunization protocol is available at:
http://1.usa.gov/OregonStandingOrders

SUGGESTED INTERVALS BETWEEN ADMINISTRATION OF IMMUNE GLOBULIN PREPARATIONS AND MEASLES- OR VARICELLA-CONTAINING VACCINE[4]

Product/Indication	Dose (mg IgG/kg) and route	Recommended interval before measles- or varicella-containing vaccines administration (months)
IG IV		
• Postexposure varicella prophylaxis	400 mg/kg IV	8
Varicella IG (VARIZIG®)	125 units/10kg (60-200mg IgG/kg **IM**, maximum=625 units	5

Footnotes:[6]

Table 3-5, page 37-39, June 2018:
Abbreviations: HIV = human immunodeficiency virus; IG = immune globulin; IgG = immune globulin G; IGIV = intravenous immune globulin; mg IgG/kg = milligrams of immune globulin G per kilogram of body weight; IM = intramuscular; IV = intravenous; RBCs = red blood cells.

Does not include zoster vaccine. Zoster vaccine may be given with antibody-containing blood products.