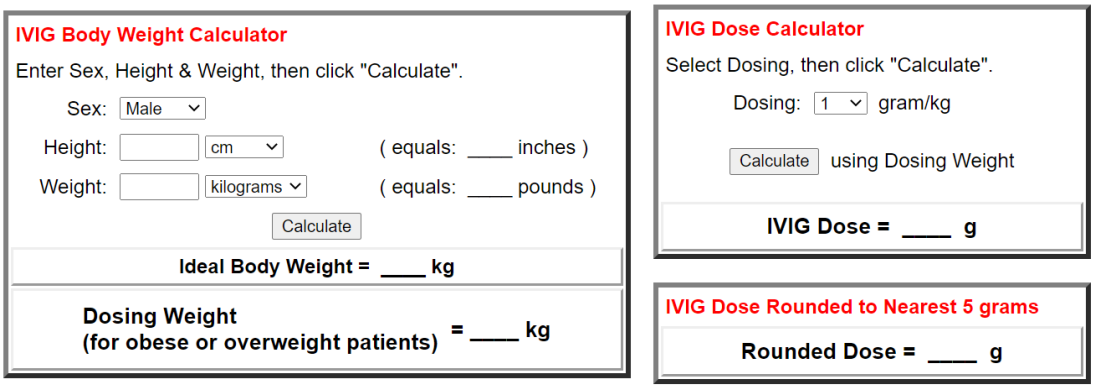
Saskatchewan Health Authority	**Title: Transfusion Medicine Laboratory (TML) Screening of ADULT 10% Intravenous Immune Globulin (IVIG) Order Set by Medical Laboratory Technologists (MLTs)** **Role performing Activity: MLTs working in the TML**	
WORK STANDARD	**Location:** SHA Facility	**Department/Unit:** Transfusion Medicine Laboratory
	Document Owner: Paula Van Vliet	**Date Prepared:** June 24, 2022, 2022
	Last Revision: December 1, 2021	**Date Approved:**
	Related Policies/Documentation/forms ADULT 10% Intravenous Immune Globulin (IVIG) Order Set	

Work Standard Summary:

Essential Tasks:	
1.	Receive **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set.** Physicians to complete the **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set**. All **inpatient and urgent outpatient** order sets will be faxed to the facility's Transfusion Medicine Laboratory for screening. All non-urgent **outpatient** order sets will be faxed to the Immune Globulin (IG) Stewardship Program for screening. *Note: The **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set** must be completed correctly for IVIG administration. If an older version of this order set is completed, please guide the prescribing physician to use the approved order set. The approved order set is available on SaskBlood.ca (Programs > Saskatchewan Immune Globulin Stewardship Program).* *Note: Informed consent is required prior to initiating IVIG therapy.*
2.	Identify vital information. *Note: Prior to screening, ensure order set is complete and not missing any vital information (MRP name, MRP contact information, inpatient/ outpatient request, initial/ renewal request, indication for IVIG therapy, patient weight, patient height, adjusted body weight, dose, etc.). If vital information is missing, contact the prescribing physician or the hospital unit. An adjusted body weight is sometimes not needed. Estimated height or weight is **NOT** acceptable.* **Practitioner Information** Requesting Most Responsible Practitioner (MRP) FULL Name: _____ License number: _____ MRP Specialty: _____ Clinic Name/Address: _____ Phone number: _____ Fax: _____ Email: _____

	IVIG Request ☐ Inpatient Date Requested: _____ Fax to local Transfusion Laboratory ☐ Outpatient Date Requested: _____ Fax to IG Stewardship Program: (306) 766-3509 Anticipated Treatment Start Date: _____ or email: igstewardshipprogram@saskhealthauthority.ca Infusion Site/Facility: _____ Location/City/Town: _____ ☐ Inpatient unit: _____ ☐ Outpatient department: _____ ☐ **Initial Request: Maximum 6 months duration** ☐ **Renewal Request:** A reassessment must be done to confirm IG treatment continues to be effective and that minimum effective dose is being applied. **Maximum 6 months duration.** ☐ IG Stewardship Program to contact me (the patient's MRP), by email about the possibility of subcutaneous administration for future doses. **Patient Clinical Information** Diagnosis: _____ Indication for IVIG therapy (if different from diagnosis): _____ Previous reaction to IVIG: ☐ No ☐ Yes (specify reaction): _____ **IVIG Dosing Weight Calculations** Weight (kg): _____ Height (cm): _____ Adjusted Body Weight (kg): _____ **IVIG Dose** ☐ **Induction/One-time Dose:** _____ g/kg = _____ g; divided over _____ days ☐ **Maintenance Dose:** _____ g/kg = _____ g; divided over _____ days Repeat every _____ weeks for _____ cycles. **Maximum 6 months duration**
3.	Screen **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set**. Once all vital information is identified and available on the order set, start screening. • Medical Laboratory Technologists (MLTs) will be required to screen all **inpatient and urgent outpatient** order sets. *To contact the TMP,* call Regina switchboard at 306-766-4444 or Saskatoon switchboard at 306-655-1000. *Note: If an MLT is not available at the site to complete the screening, please contact RGH Transfusion Medicine Laboratory at 306-766-4474 or RUH Transfusion Medicine Laboratory at 306-655-2179 depending on the site location for screening.* • The IG Stewardship Program will be required to screen all **non-urgent outpatient** order sets.

4.	Screening **inpatient and urgent outpatient** order sets: **NOTE**: For induction orders, if the patient has received IVIG within the past month, consult the TMP to determine the need for the current induction order. **Step 1: Check that the *Indication for IVIG therapy* is an approved indication.** • Open ***Criteria for the Clinical Use of Immune Globulin*** **second edition** • Print document **OR** use the *find* function (ctrl + f), search for keywords to find the indication as it is listed in the document • The *Criteria for the Clinical Use of Immune Globulin* uses a color system to easily identify if IVIG is recommended or not • If the indication is in green (IVIG recommended), proceed to next **Step 2** • If the indication is in yellow (IVIG possibly recommended) **OR** if the indication is in red (IVIG not recommended), contact the TMP on call for further direction **Step 2: Check that the correct dose is ordered.** • Open the Alberta Health Services ***IVIG Dosing Calculator***



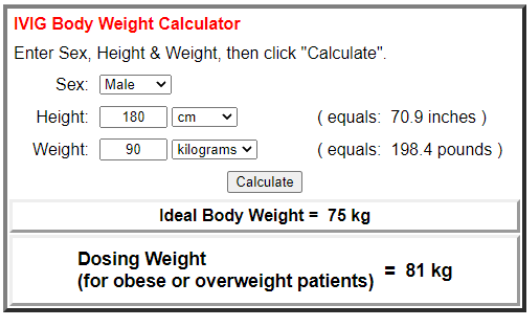
Note: To use this calculator, all 3 of the following indications must be met:

- *Height is between 152.4 – 241 cm (5 – 7.9 ft **OR** 60 – 95 in)*
- *Weight is between 20 – 400 kg (44 – 880 lbs)*
- *Patient is NOT pregnant*

*If the patient does **NOT** meet **1 or more** of these indications, contact the TMP on call.*

Example #1 (obese or overweight patient):

- Enter patient's sex, height, and weight. Click *calculate.*
  NOTE: If any of these information is missing please call the nursing unit.
- If a pop-up alert does not occur, then the patient's actual body weight is **higher** than their ideal weight. Use Adjusted Body Weight (Dosing Weight) in this situation.



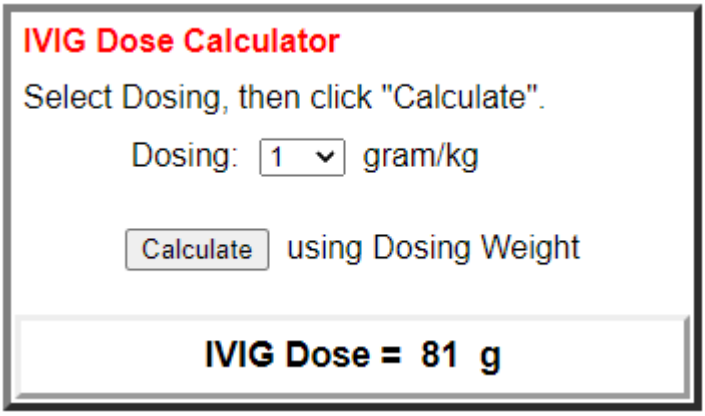
4.	• *Enter the g/kg value found on **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set**. Click *calculate.*

IVIG Dose

☐ **Induction/One-time Dose:** _____ g/kg = _____ g; divided over _____ days

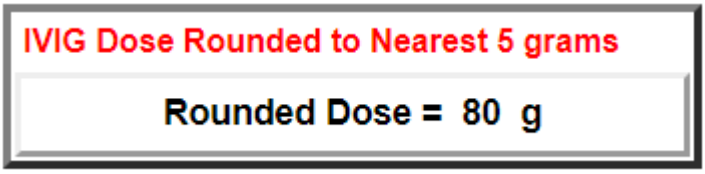
☐ **Maintenance Dose:** _____ g/kg = _____ g; divided over _____ days

Repeat every _____ weeks for _____ cycles. **Maximum 6 months duration**



Note: Some indications in the Criteria for the Clinical Use of Immune Globulin have suggested dose concentrations (g/kg). Compare suggested g/kg in Criteria for the Clinical Use of Immune Globulin to g/kg value on the order set. Contact the TMP on call if there are any discrepancies.

- The rounded dose (to the nearest 5 grams) is the **final dose** to be delivered to the patient

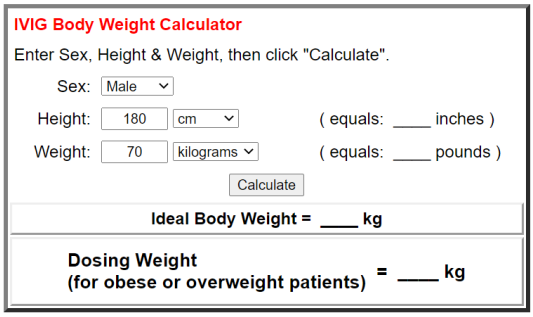


- Ensure the rounded dose and the dose on the **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set** match

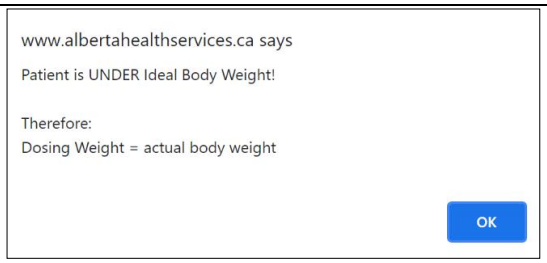
Note: Contact the TMP on call if the doses do not match for further direction. The TMP on call may adjust the dose. See Step 4 on where to document this.

Example #2 (patient is **NOT** obese or overweight):

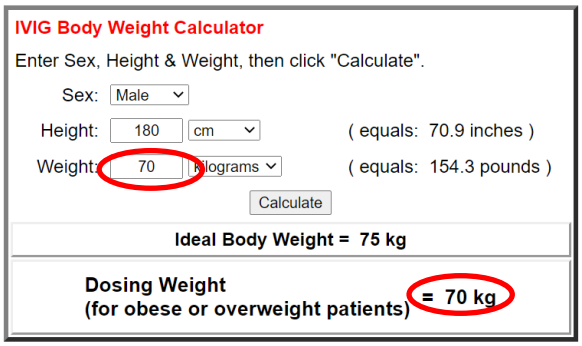
- Enter patient's sex, height, and weight. Click *calculate.*
  NOTE: If any of these information is missing please call the nursing unit.



- A pop-up alert will appear. Click *ok*.



- The patient's actual body weight is **lower** than their ideal weight. Use Actual Body Weight (Dosing Weight) in this situation.



- Check g/kg dosing to calculate final dose (same as above from *)

<u>Step 3</u>: Complete screening.

- Complete the section below on the **ADULT 10% Intravenous Immune Globulin (IVIG) Order Set**

Note: If the TMP adjusted the dose, document the new dose in the space provided below.

<u>IG Stewardship Program Use Only</u>
☐ Dose verified ☐ If required, Dose adjusted to: _____ g
Recommendation for IG use:
☐ Approved ☐ Possibly indicated with follow-up in 3 months ☐ Not approved
Notifications:
☐ Requesting MRP ☐ Infusion Clinic
☐ Transfusion Medicine Laboratory ☐ TM Physician Name: _____
Technologist Name: _____ Date: _____
IG Navigator/Manager Name: _____ Date: _____

- Once screen is complete, the Transfusion Medicine Laboratory MLT will ***immediately*** email or fax **screened** order sets to the IG Stewardship Program
  - Email to igstewardshipprogram@saskhealthauthority.ca
  - Fax to 306-766-3509
- The IG Stewardship Program Nurse Navigators will enter order set details into the IVIG patient registry

Note: An IG Nurse Navigator is available office hours (Monday-Friday 0800-1630, excluding statutory holidays). If fax sent after office hours, the Nurse Navigators will receive the fax the next business day.

	<u>Step 4</u>: Notify hospital unit for inpatient orders or notify Infusion clinic for urgent outpatient orders • *MLT notifies hospital unit or infusion clinic of the screening outcome (approval or non-approval) via phone call and fax the completed order set.*
5.	Issue IVIG product. *Note: Only proceed if the indication is approved and the dosing is appropriate.* • Issue IVIG product per current local protocol. *Note: Maintenance dose order sets expire after **6 months**. A new order set will need to be completed by the prescribing physician after expiry. For **inpatients and urgent outpatient orders**, the Transfusion Medicine Laboratory MLT will screen the order. For **non-urgent outpatient orders**, the IG Stewardship Program will screen the order.*

Appendices

Appendix A: ADULT 10% Intravenous Immune Globulin (IVIG) Order Set
Appendix B: Inpatient Adult 10% IVIG POS Process Map

Appendix A: ADULT 10% Intravenous Immune Globulin (IVIG) Order Set

Saskatchewan Health Authority

PRACTITIONER ORDER SET

ADULT 10% Intravenous Immune Globulin (IVIG) Order Set

Allergies: ☐ **See Regional Allergy / Intolerance Record OR:**	Patient Weight ***Refer to page 2 for Actual and Adjusted Body Weight and Height***

To complete the order form, fill in required blanks and check the appropriate boxes (☐).
Pre-checked boxes (☒) are initiated automatically. To delete orders, draw one line through the item and initial.

This form must be completed on initial or renewal requests for IVIG on all patients, regardless of indication. Informed Consent is required prior to initiating IVIG Therapy. Please attach to outpatient orders.

Practitioner Information

Requesting Most Responsible Practitioner (MRP) FULL Name: _____
License number: _____ MRP Specialty: _____
Clinic Name/Address: _____
Phone number: _____ Fax: _____
Email: _____

IVIG Request

☐ Inpatient Date Requested: _____ Fax to local Transfusion Laboratory
☐ Outpatient Date Requested: _____ Fax to IG Stewardship Program: (306) 766-3509
Anticipated Treatment Start Date: _____ or email: igstewardshipprogram@saskhealthauthority.ca
Infusion Site/Facility: _____ Location/City/Town: _____
☐ Inpatient unit: _____ ☐ Outpatient department: _____
☐ **Initial Request: Maximum 6 months duration**
☐ **Renewal Request:** A reassessment must be done to confirm IG treatment continues to be effective and that minimum effective dose is being applied. **Maximum 6 months duration.**
☐ IG Stewardship Program to contact me (the patient's MRP), by email about the possibility of subcutaneous administration for future doses.

Patient Clinical Information

Diagnosis: _____
Indication for IVIG therapy (if different from diagnosis): _____
Previous reaction to IVIG: ☐ No ☐ Yes (specify reaction): _____

FOR INITIAL ORDERS, indicate alternate treatments prior to IVIG therapy ☐ None

1. Treatment:			
Outcome:	☐ No response	☐ Intolerance	☐ Contraindicated
2. Treatment:			
Outcome:	☐ No response	☐ Intolerance	☐ Contraindicated
3. Treatment:			
Outcome:	☐ No response	☐ Intolerance	☐ Contraindicated

Practitioner:			
	PRINTED NAME	**SIGNATURE**	**DATE/TIME**

Approved by: Department of Laboratory Medicine, Division of Transfusion Medicine June 2021
Approved for use by: SHA Multidisciplinary Clinical Practice Oversight Committee July 2021
Revision Date: July 2024
CS-OS-1910 September 27, 2021

Saskatchewan Health Authority

PRACTITIONER ORDER SET

ADULT 10% Intravenous Immune Globulin (IVIG) Order Set

To complete the order form, fill in required blanks and check the appropriate boxes (☐). Pre-checked boxes (☒) are initiated automatically. To delete orders, draw one line through the item and initial.	Date/Time Initials

Lab Investigations/Tests

Note: Provide lab requisition for outpatient lab testing to patient

- ☒ ABO group/Rh – prior to initial treatment
- ☐ Creatinine – prior to initial treatment and as clinically indicated
- ☐ Immunoglobulin trough level (IgA, IgE, IgG, IgM) for immunodeficiency patients only
- ☐ CBC and reticulocyte count (if group A, B, AB) – 7 - 10 days post infusion
- ☐ Platelet count (for ITP patients) – 24 - 48 hours post infusion

Additional labs: _____

IVIG Dosing Weight Calculations

Dosing Weight is an Adjusted Body Weight (ABW) for obese or overweight patients and should be used to calculate the dose of IVIG

ABW Calculation: **Dosing Weight** = Ideal Body Weight (IBW) + [0.4 x (Actual - IBW)]
NOTE: *If actual body weight is less than IBW, then the patient's actual body weight should be used for dosing*

An online ***IVIG Dosing based on Adjusted Body Weight Calculation*** is available from:
https://www.albertahealthservices.ca/webapps/labservices/IVIG_Dosing_Calculator.htm

Indications for using ABW calculator:

- Height is between 152.4 - 241 cm (60 - 95 inches)
- Weight is between 20 - 400 kg (44 - 880 pounds)
- Patient is **NOT** pregnant

Consult the on-call Transfusion Medicine physician (through switchboard) to determine safe dosing considerations in **pregnant** patients or if **height and/or weight** are outside the recommended ABW calculator parameters

Doses for specific conditions are outlined in the '***Criteria for the Clinical Use of Immune Globulin***' guideline and is available at https://saskblood.ca/programs/sk-ivig-program/

Weight (kg): _____ Height (cm): _____
Adjusted Body Weight (kg): _____
If **actual** body weight dose is required, provide reason below:

- ☐ Patient height less than 152.4 cm (60 inches) ☐ Patient weight less than 20 kg (44 pounds)
- ☐ Other: _____

IVIG Dose

- ☐ **Induction/One-time Dose:** _____ g/kg = _____ g; divided over _____ days
- ☐ **Maintenance Dose:** _____ g/kg = _____ g; divided over _____ days

Repeat every _____ weeks for _____ cycles. **Maximum 6 months duration**

Practitioner:	_____	_____	_____
	PRINTED NAME	**SIGNATURE**	**DATE/TIME**

Saskatchewan Health Authority

PRACTITIONER ORDER SET

ADULT 10% Intravenous Immune Globulin (IVIG) Order Set

To complete the order form, fill in required blanks and check the appropriate boxes (☐). Pre-checked boxes (☒) are initiated automatically. To delete orders, draw one line through the item and initial.	Date/Time Initials

Monitoring – Follow local Policy/Procedure

Infusion Rate

NOTE: *1) Maximum infusion rate not to exceed 4 mL/kg/h due to risk of acute renal dysfunction*
2) Refer to Appendix (Page 4 of 4) for ADULT 10% IVIG Infusion Rate Table

- ☐ As per appropriate Smart Pump selection for generic *ADULT 10% pilot line*
- ☐ Reduced infusion rate required: MAXIMUM rate _____ mL/kg/h

IV Fluids

Compatible IV Solutions: Dextrose 5% in Water (D5W) or specific compatible solution as indicated by manufacturer. Do not mix with other medicinal fluids. Use a separate infusion line.

- ☐ Initiate IV of D5W at 30 mL/hr

Pre-Medication *(if history of documented transfusion reaction)*

Administer 30 minutes prior to infusion:

- ☐ acetaminophen 650 mg PO x 1 for febrile reaction (maximum 1000 mg in a 4 hour period)
- ☐ hydrocortisone 100 mg IV direct x 1 for severe itch or rash

For mild to moderate allergic reaction (if an antihistamine is required, select the option available locally):

- ☐ cetirizine 10 mg PO x 1
- ☐ desloratadine 5 mg PO x 1
- ☐ loratadine 10 mg PO x 1
- ☐ Other: _____

Additional Medications

- ☐ acetaminophen 325 - 650 mg PO q4h x 1 PRN for febrile reaction (max 1000 mg in a 4 hour period)
- ☐ dimenhyDRINATE 25 - 50 mg PO or IV x 1 PRN for nausea
- ☐ ondansetron 4 mg PO or IV x 1 PRN for nausea
- ☐ diphenhydrAMINE 25 - 50 mg PO or IV x 1 PRN for mild itch or rash
- ☐ hydrocortisone 50 - 100 mg IV direct x 1 dose PRN for severe itch or rash
- ☐ salbutamol 100 mcg/puff metered dose inhaler 1 - 2 puffs q5 min PRN for respiratory distress
- ☐ EPINEPHrine 0.5 mg IM x 1 PRN for anaphylaxis (use 1 mg/mL product)

IG Stewardship Program Use Only

☐ Dose verified ☐ If required, Dose adjusted to: _____ g

Recommendation for IG use:

☐ Approved ☐ Possibly indicated with follow-up in 3 months ☐ Not approved

Notifications:

☐ Requesting MRP ☐ Infusion Clinic

☐ Transfusion Medicine Laboratory ☐ TM Physician Name: _____

Technologist Name: _____ Date: _____

IG Navigator/Manager Name: _____ Date: _____

Practitioner:			
	PRINTED NAME	**SIGNATURE**	**DATE/TIME**

ADULT 10% Intravenous Immune Globulin (IVIG) Order Set

ADULT 10% IVIG Infusion Rate Table

10% IVIG products could include (but not limited to): Gammagard Liquid®, Gamunex®, IVIGNex®, Privigen®, Panzyga®, Octagam®

The following table represents **recommended maximum infusion rates** at specific intervals and **should not be exceeded**. Transfusion rates can be ordered at a reduced rate at the discretion of the MRP. Slower infusions will diminish rate related symptoms such as headache, shivering, Heart Rate and Blood Pressure changes. **Maximum recommended rate of infusion is 4.0 mL/kg/hr**. It is appropriate for nursing staff administering the product to revert to a previously tolerated rate if the patient demonstrates symptoms that do not require a transfusion reaction investigation. For complete product information, please refer to the product insert.

	INFUSION RATE **RATE CALCULATION CHECK:** **INFUSION RATE (ML/KG/H) X PATIENT DOSING WEIGHT (KG) X 1 H = INFUSION RATE (ML/H)**			
PATIENT DOSING WEIGHT* (KG)	**Initial Rate:** **0.5 mL/kg/h**	**Then:** **1 mL/kg/h**	**Then:** **2 mL/kg/h**	**Then:** **4 mL/kg/h** *Note: maximum rate for first-time IVIG infusion*
	Start at (mL/h)	**30 min after start (mL/h)**	**60 min after start (mL/h)**	**90 min after start (mL/h)**
40.1 - 45	22.5	45	90	180
45.1 - 50	25	50	100	200
50.1 - 55	27.5	55	110	220
55.1 - 60	30	60	120	240
60.1 - 65	32.5	65	130	260
65.1 - 70	35	70	140	280
70.1 - 75	37.5	75	150	300
75.1 - 80	40	80	160	320
80.1 - 85	42.5	85	170	340
85.1 - 90	45	90	180	360
90.1 - 95	47.5	95	190	380
95.1 - 100	50	100	200	400
100.1 - 105	52.5	105	210	400
105.1 - 110	55	110	220	400
110.1 - 119.9	57.5	115	230	400
120 OR OVER	60	120	240	400

Appendix B: Inpatient Adult 10% IVIG POS Process Map