IVIG and SCIG Utilization in the Atlantic Provinces in FY 2018-2019

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Outline

- International and National Perspective
- Atlantic Perspective
- Data Collection
- Disease Indication
- Appropriateness of Use
- DBW
- Transfusion Reactions
- Pre and Post Policy

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International and National Perspective

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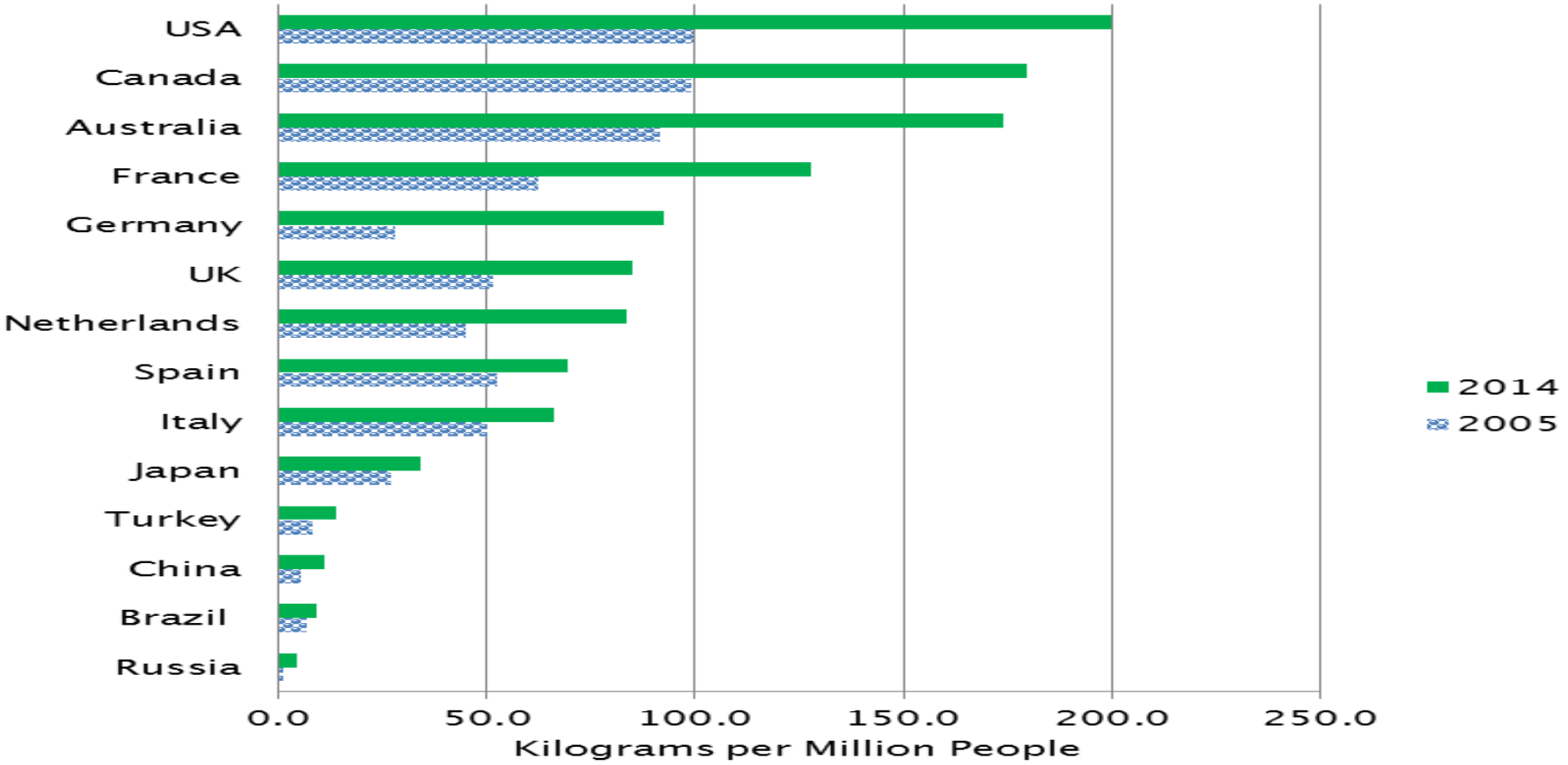
Global Per Capita Utilization of IG



Final Report of the Expert Panel on Immune Globulin Product Supply and Related Impacts in Canada (May 2018)
Protecting Access to Immune Globulins for Canadians Ottawa, ON

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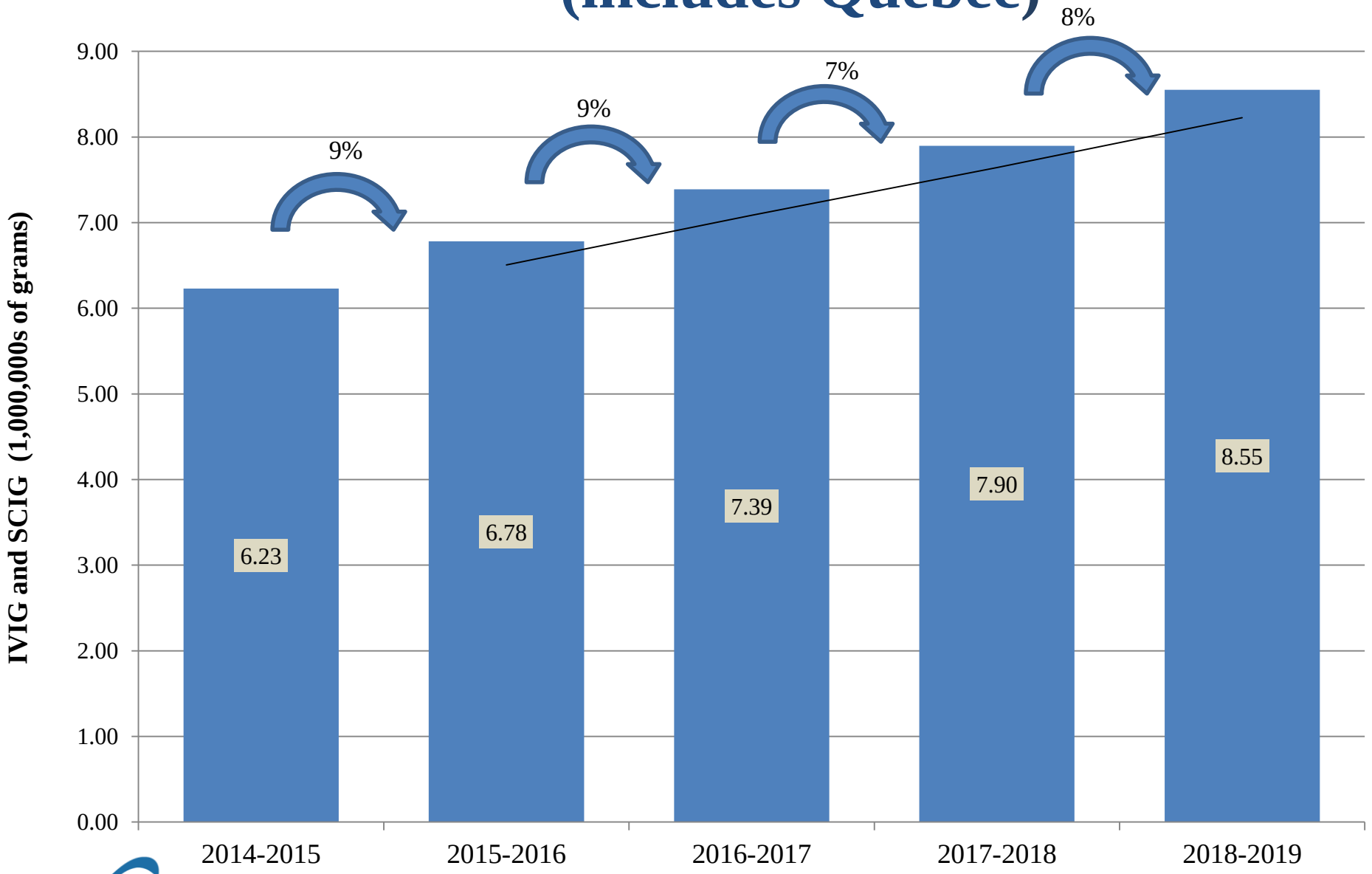
National Ig Distribution and Growth Rate (includes Quebec)



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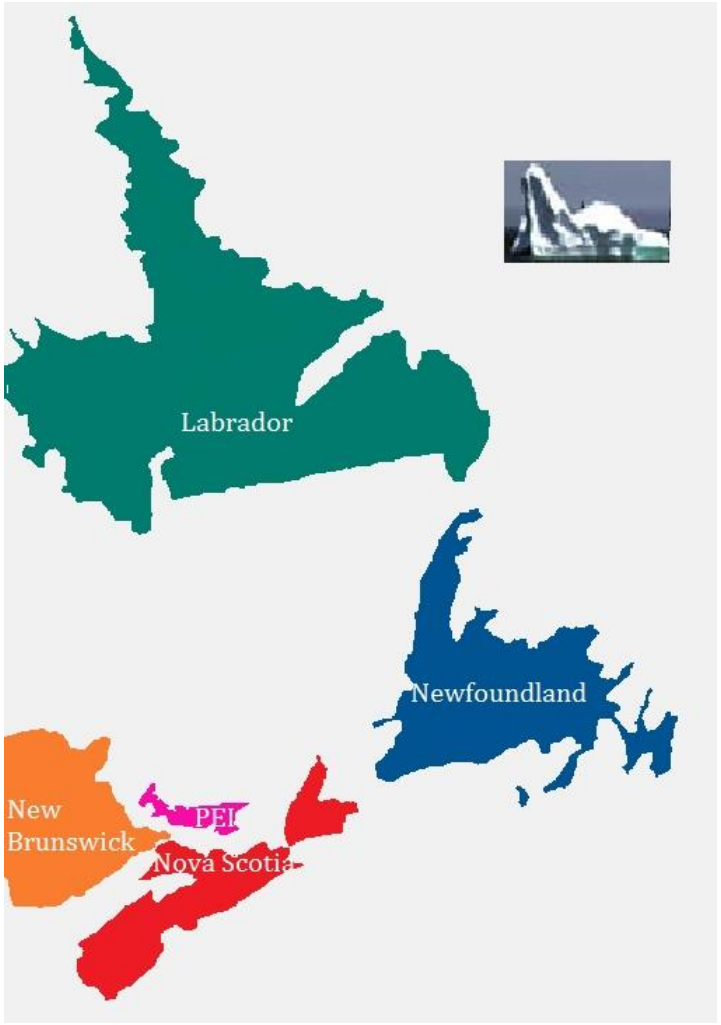
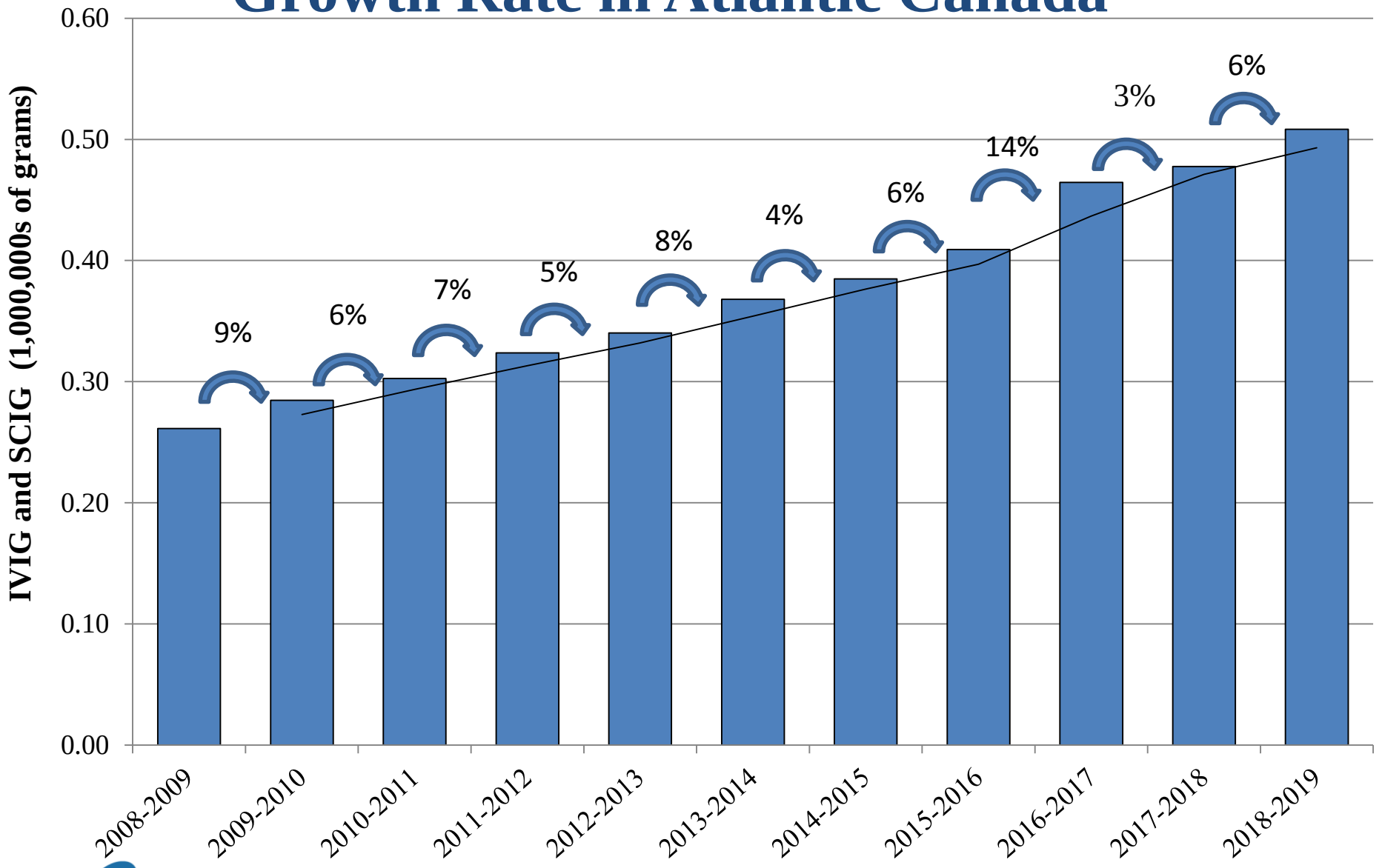


Atlantic Perspective

IVIG and SCIG Distribution and Growth Rate in Atlantic Canada



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Total Grams and Cost of Ig Distributed to the Atlantic Provinces by Fiscal Year

Fiscal Year	Avg. Price per gram	New Brunswick		Nova Scotia		Prince Edward Island		Newfoundland & Labrador	
		Grams	Cost	Grams	Cost	Grams	Cost	Grams	Cost
2013-2014	$48.74	102,835	$5,012,178	151,536	$7,385,865	19,013	$926,694	95,802	$4,669,389
2014-2015	$47.85	95,340	$4,562,019	162,080	$7,755,528	24,821	$1,187,685	102,510	$4,905,104
2015-2016	$51.28	101,149	$5,186,921	168,474	$8,639,347	33,097	$1,697,214	106,022	$5,436,808
2016-2017	$62.38	109,538	$6,832,980	206,924	$12,907,919	31,120	$1,941,266	116,828	$7,287,731
2017-2018	$64.83	126,416	$8,195,549	203,410	$13,187,070	36,532	$2,368,370	111,333	$7,217,718
2018-2019	**$44.32**	**136,718**	**$6,059,342**	**223,451**	**$9,903,348**	**31,928**	**$1,415,049**	**116,200**	**$5,149,984**

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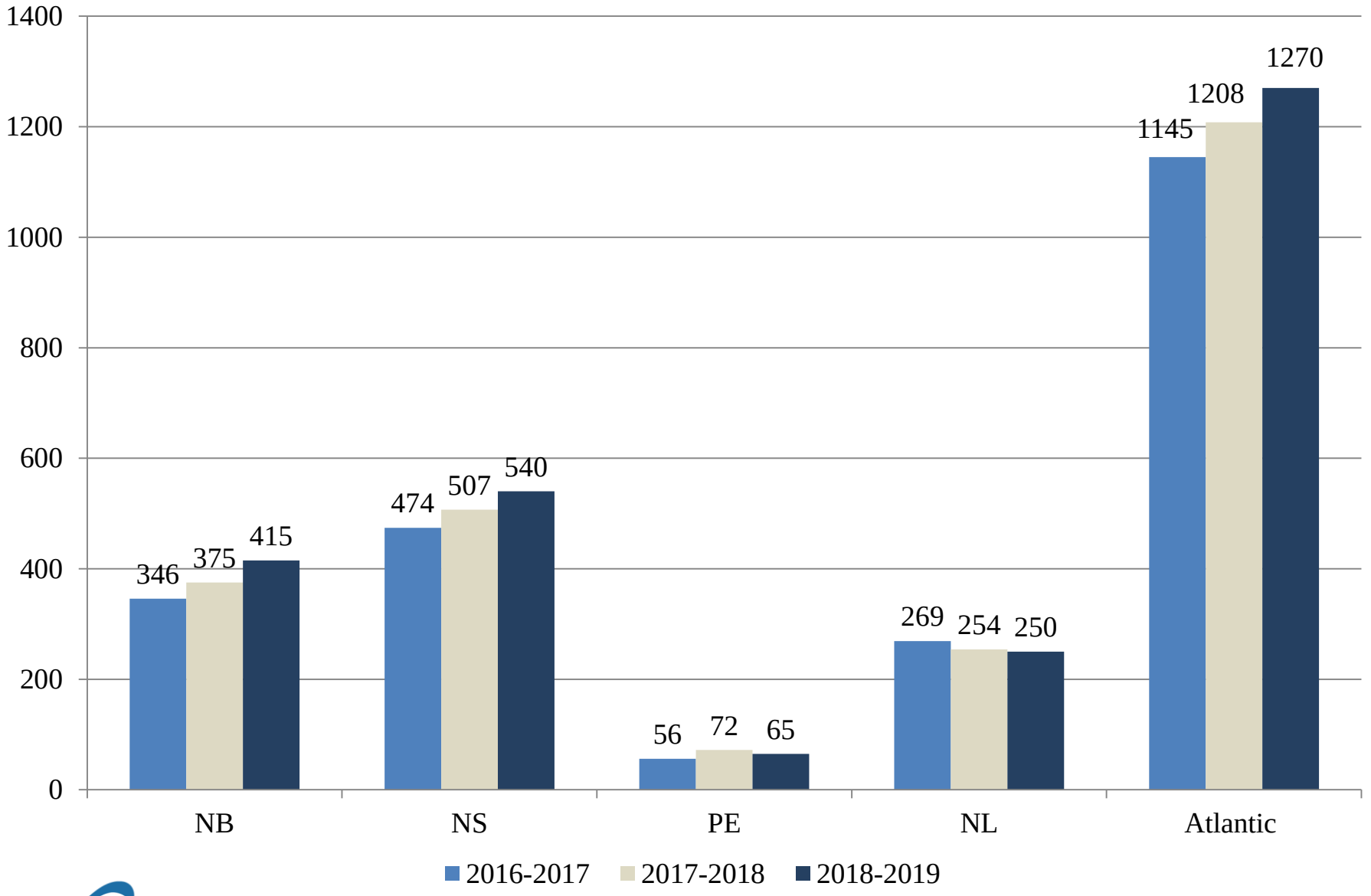
Data Collection

Total Number of Patients on Ig



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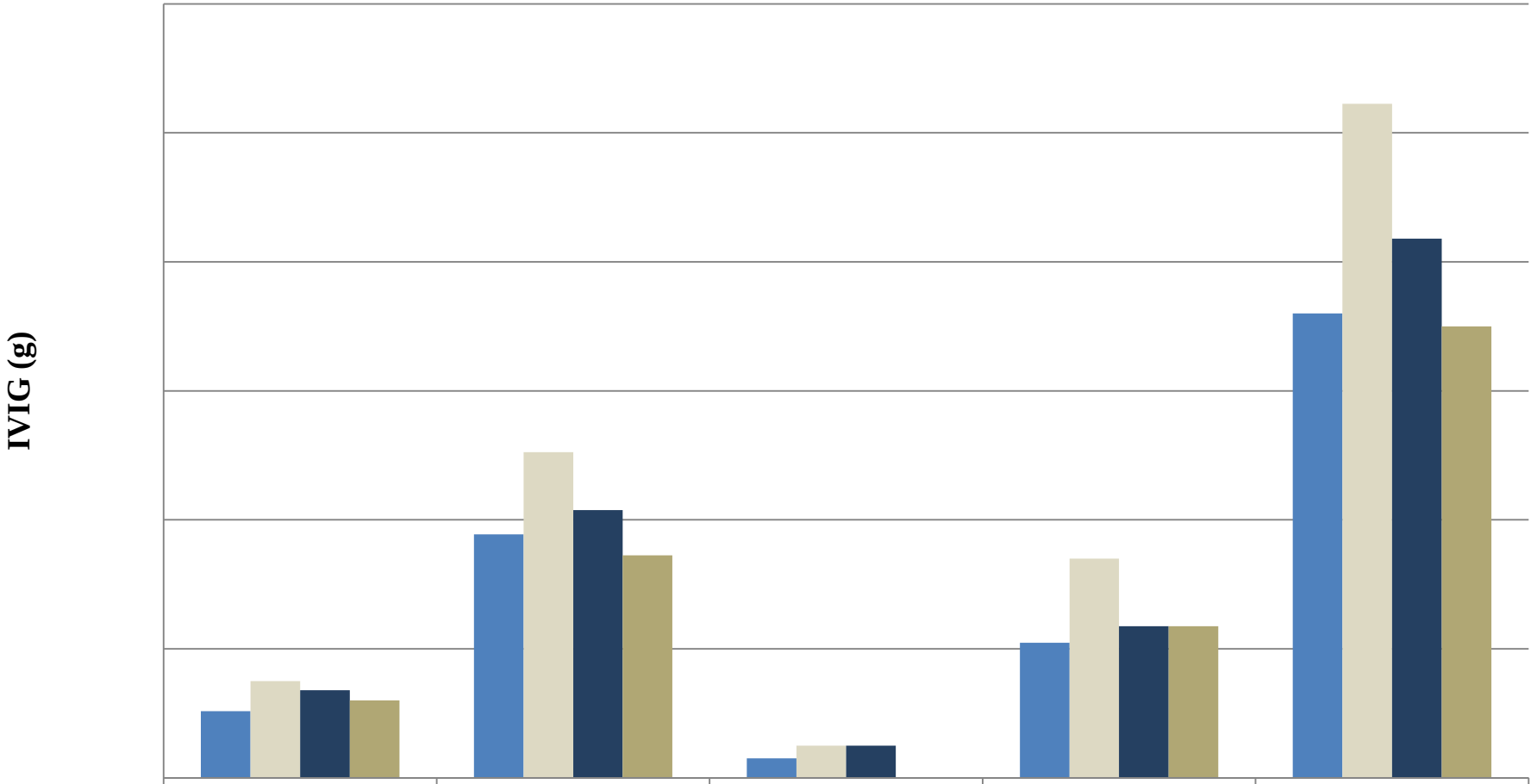
Atlantic IVIG(g) discards



	NB	NS	PEI	NL	Atlantic
2015-2016	103	378	30	210	720
2016-2017	150	505	50	340	1,045
2017-2018	136	415	50	235	836
2018-2019	120	345	0	235	700

Disease Indications

List of Top Five Indications in Descending Order of IG (g) Use FY 2018-2019

(color coded to compare the ranking)

NB		NS		PE		NL	
Indication	**g**	**Indication**	**g**	**Indication**	**g**	**Indication**	**g**
CIDP	28,180	PID	62,628	MMN	9,080	MG	20,788
SID (Hematology)	19,742	CIDP	41,470	CIDP	6,275	CIDP	18,435
PID	16,727	MG	16,990	MG	4,760	PID	12,659
MG	13,594	MMN	14,265	PID	2,796	MMN	12,545
ITP	12,327	ITP	12,412	SPS	2,780	SID (Hematology)	10,525

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Immune Deficiencies – 2018-2019

- 278 Primary immune deficiency cases in the Atlantic provinces
- 28 Secondary immune deficiency – Immunological
- 180 Secondary immune deficiency – Hematological
- 135 patients are using SCIG
  - PID (118)
  - SID (H) (14)
  - SID (I) (2)

Summary Table of SCIG Patients

Province	2017-2018	2018-2019
	# Patients Receiving SCIG	# Patients Receiving SCIG
NB	27	29
NS	70	81
PE	1	3
NL	16	22
Atlantic	**114**	**135**

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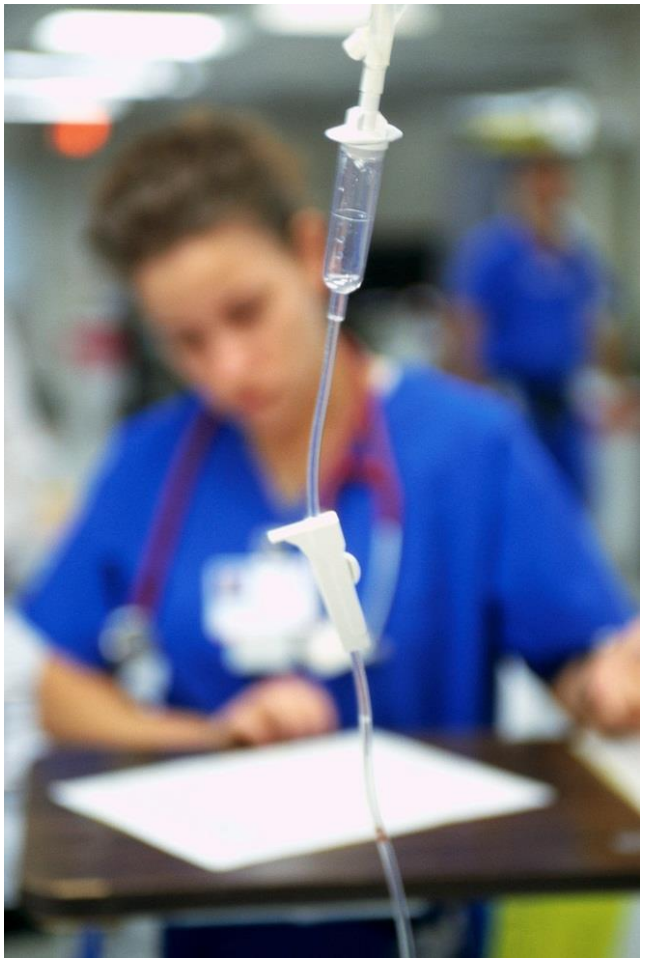


Appropriateness of Use

PRE-PRINTED ORDER
Intravenous Immunoglobulin (IVIG)
IMMUNOLOGY – Adult and Pediatric (PPO0649MR)

Items preceded by a **bullet** (•) are active orders. Items preceded by a **checkbox** (□) are only to be carried out if checked

- **Any change to indication, dose, duration or frequency requires a new order**

Note: IVIG dose is calculated using the patient's DOSING BODY WEIGHT (DBW) for all indications. To obtain the DBW calculator refer to http://www.cdha.nshealth.ca/nova-scotia-provincial-blood-coordinating-team

Patient:	Allergies:	
• Patient's Actual Weight (kg):	• Patient Height (cm):	• Gender:
IgA Deficient Product Required: ☐ Yes ☐ No	Is this a Repeat Dose due to lack of Expected Response? ☐ Yes ☐ No	Intended Treatment Start Date (dd/mm/yyyy):
• Infuse ____ g/kg = ____ g daily for ____ days ***OR*** Infuse ____ g/kg = ____ divided over ____ days • If indicated, repeat this regiment q ____ days for a total of ____ treatments		

Indicated Conditions	Prerequisites – Checkboxes must be checked/completed as appropriate. Missing information will result in delays or denial of product PATIENT MUST MEET THE FOLLOWING:	Dose
☐ **Primary Immunodeficiency***	☐ Order must be in consultation with an Immunologist Name: _____ ***AND*** ☐ IgG levels done within last 5 months Level _____g/L date:_____ Target: 7 to 10 g/L for most patients May be considered urgent if acute/severe infection	**ADULT:** 0.4 to 0.6 g/kg every 4 weeks **PEDIATRIC:** 0.4 to 0.6 g/kg every 3 to 4 weeks
☐ **Secondary Immunodeficiency***	☐ Recent life threatening or recurrent clinically significant infection(s) related to low levels of polyclonal immunoglobulin May be considered urgent if acute/severe infection	**ADULT:** 0.4 to 0.6 g/kg every 4 weeks **PEDIATRIC:** 0.6 to 0.7 g/kg every 3 to 4 weeks
☐ **Other** _____ **(Indication and dosing to be approved by the Pediatric Immunology Clinical Expert)**	☐ Order must be in consultation with a Pediatric Immunologist Name: _____	

Possibly Indicated Conditions are approved for a 3 month period only at which time a clinical outcome questionnaire must be provided for the patient to continue treatment.

Possibly Indicated Conditions	Prerequisites – Checkboxes must be completed PATIENT MUST MEET THE FOLLOWING:	Dose
☐ **Chronic Idiopathic Urticaria ADULT ONLY**	☐ Has failed to respond or has contraindications to high dose antihistamines ***AND*** ☐ Failed to respond or has contraindications to Xolair® or equivalent (if covered)	**Induction:** 1 g/kg/d x 3 consecutive days **Maintenance:** 1 g/kg every 4 weeks

AUTHORIZED PRESCRIBER'S NAME (PRINT):	LICENSE NO.
SIGNATURE:	DATE:

*May be considered URGENT if notified by ordering physician

Appropriateness Codes

I – Indicated (includes previous category L-Labeled)

PI – Possibly Indicated (includes previous category UL-I-Unlabeled Indicated)

NI – Not Indicated (includes previous category UL-N-Unlabeled Not Indicated)
There is no evidence to support use or evidence supports no use/benefit

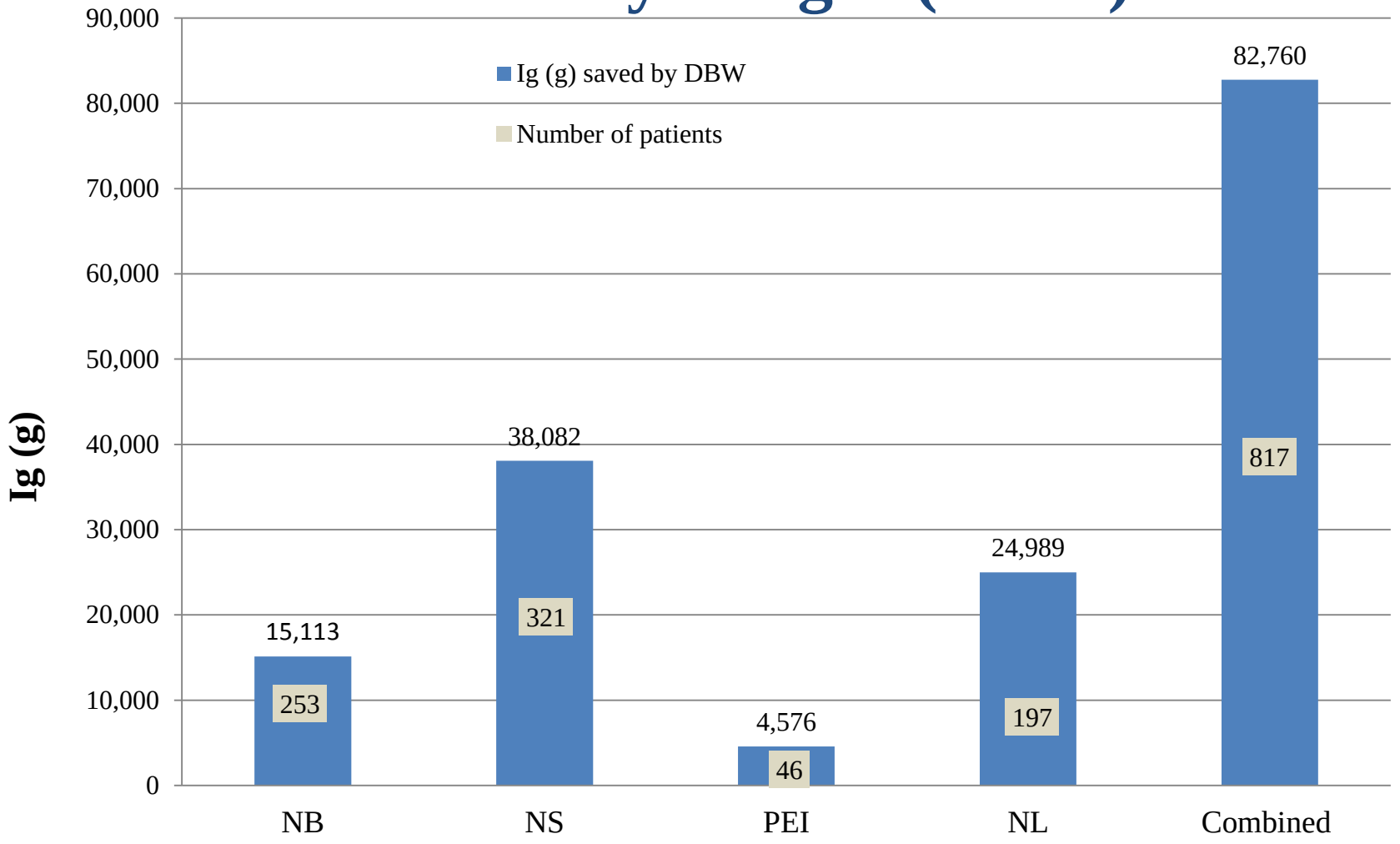
II – Insufficient Information – The information provided to the NSPBCT is insufficient to determine appropriateness

Atlantic Use of IVIG Per Category 2018-19

Category	Grams per Category	Percentage of Utilized
Indicated (I)	330,991	73.1%
Possibly Indicated (PI)	111,903	24.7%
Not Indicated (NI)	9,640	2.1%

Dosing Ig Based On Adjusted Body Weight

Savings Using Dosing Based on Adjusted Body Weight (DBW)



Grams Saved Using DBW (Patients)

Region	2016-2017	2017-2018	2018-2019
NB	13,199 (184)	13,648 (220)	15,113 (253)
NS	14,090 (173)	33,405 (279)	38,082 (321)
PEI	6,464 (43)	6,211 (48)	4,576 (46)
NL	18,986 (191)	17,635 (199)	24,989 (197)
ATLANTIC	**52,739 (591)**	**70,899 (746)**	**82,760 (817)**

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Cost Savings Using DBW

- New Brunswick - 15,113 g or $669,808 total was saved dosing by DBW
- Nova Scotia - 38,082 g or $1,687,794 total was saved dosing by DBW
- Prince Edward Island - 4,576 g or $202,808 total was saved dosing by DBW
- Newfoundland and Labrador - 24,989 g or $1,107,512 total was saved dosing by DBW

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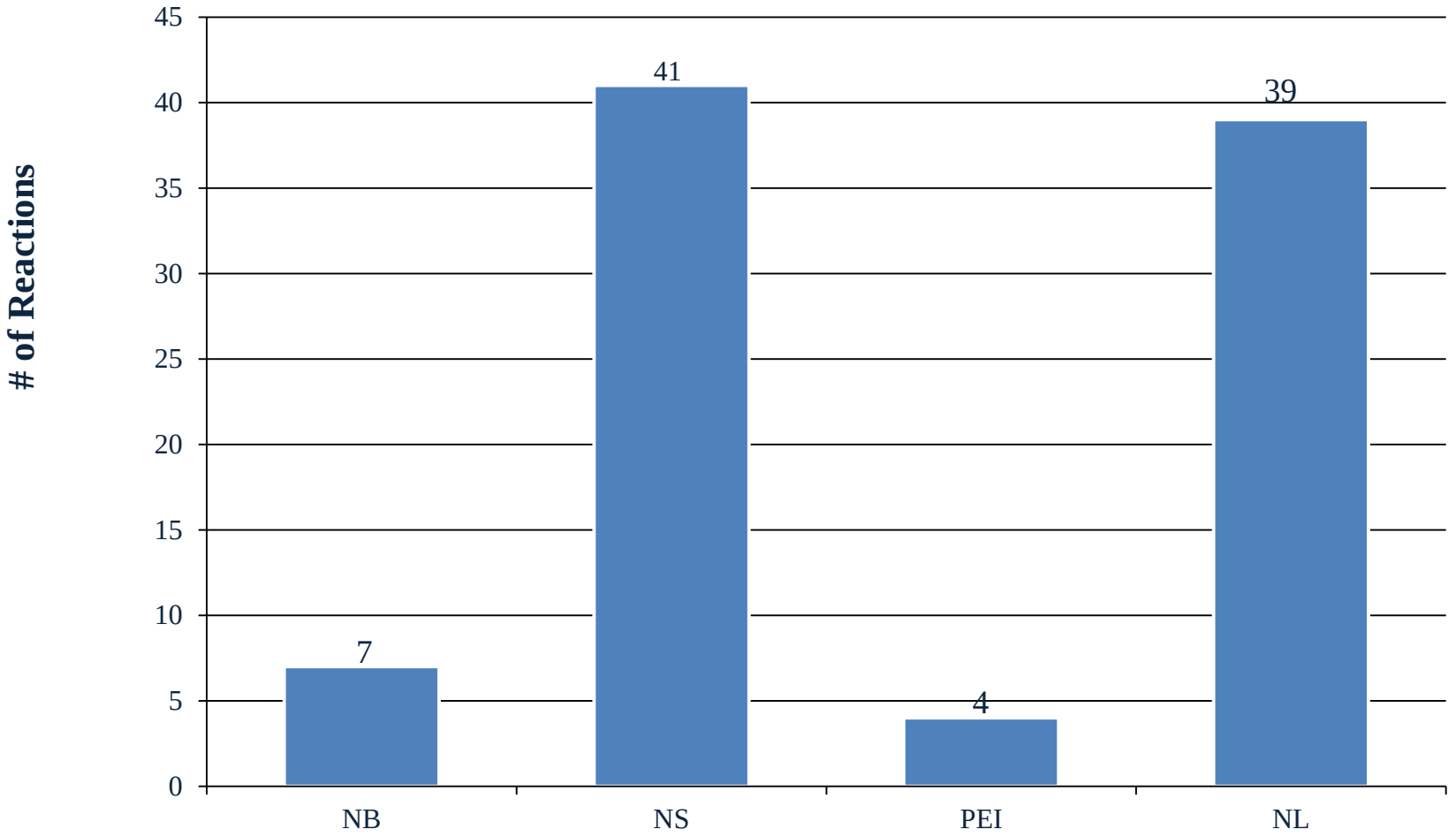
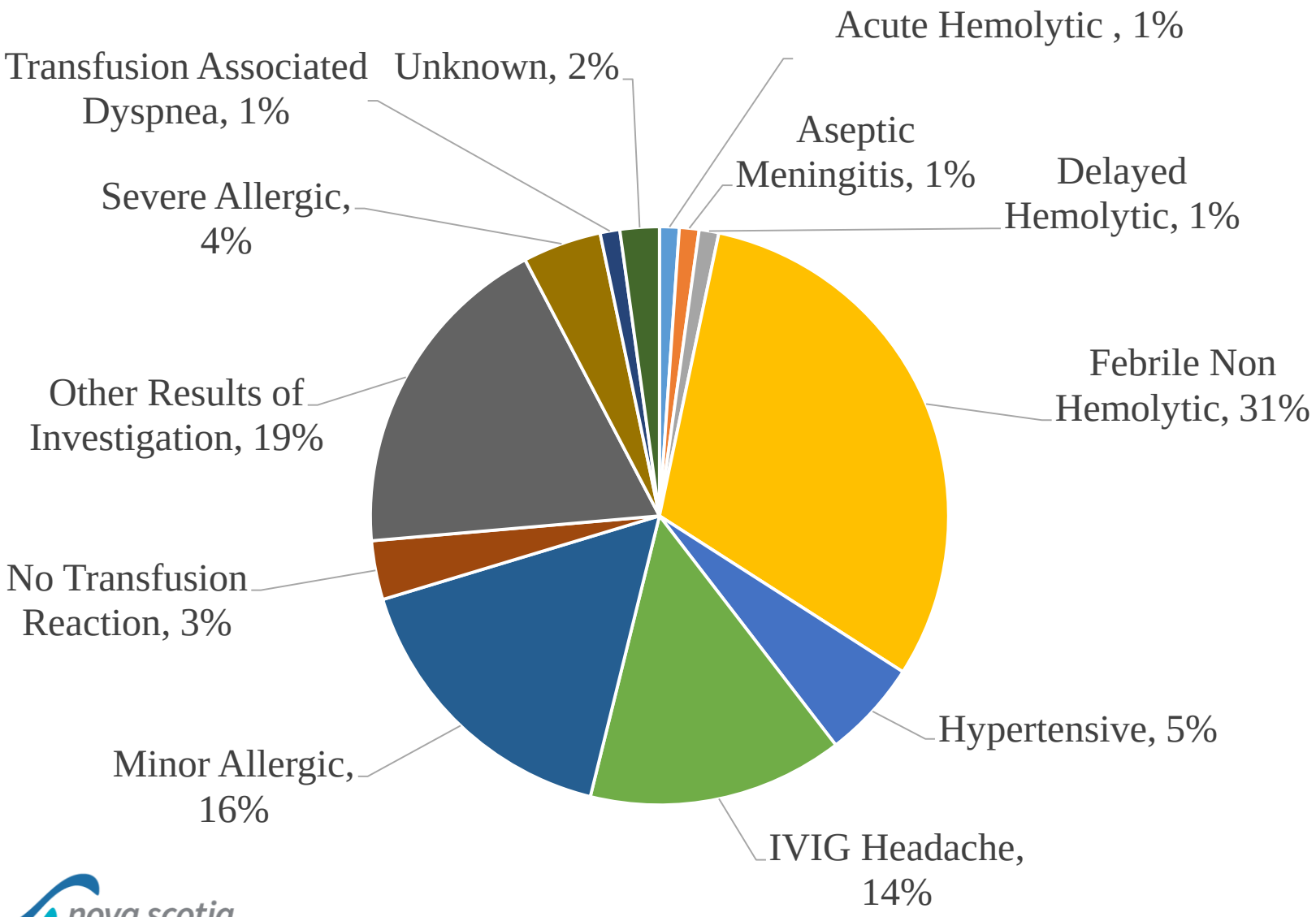
Transfusion Reactions to IVIG

IVIG Transfusion Reactions Reported in 2018-19



Ig Transfusion Reactions by Reaction Type



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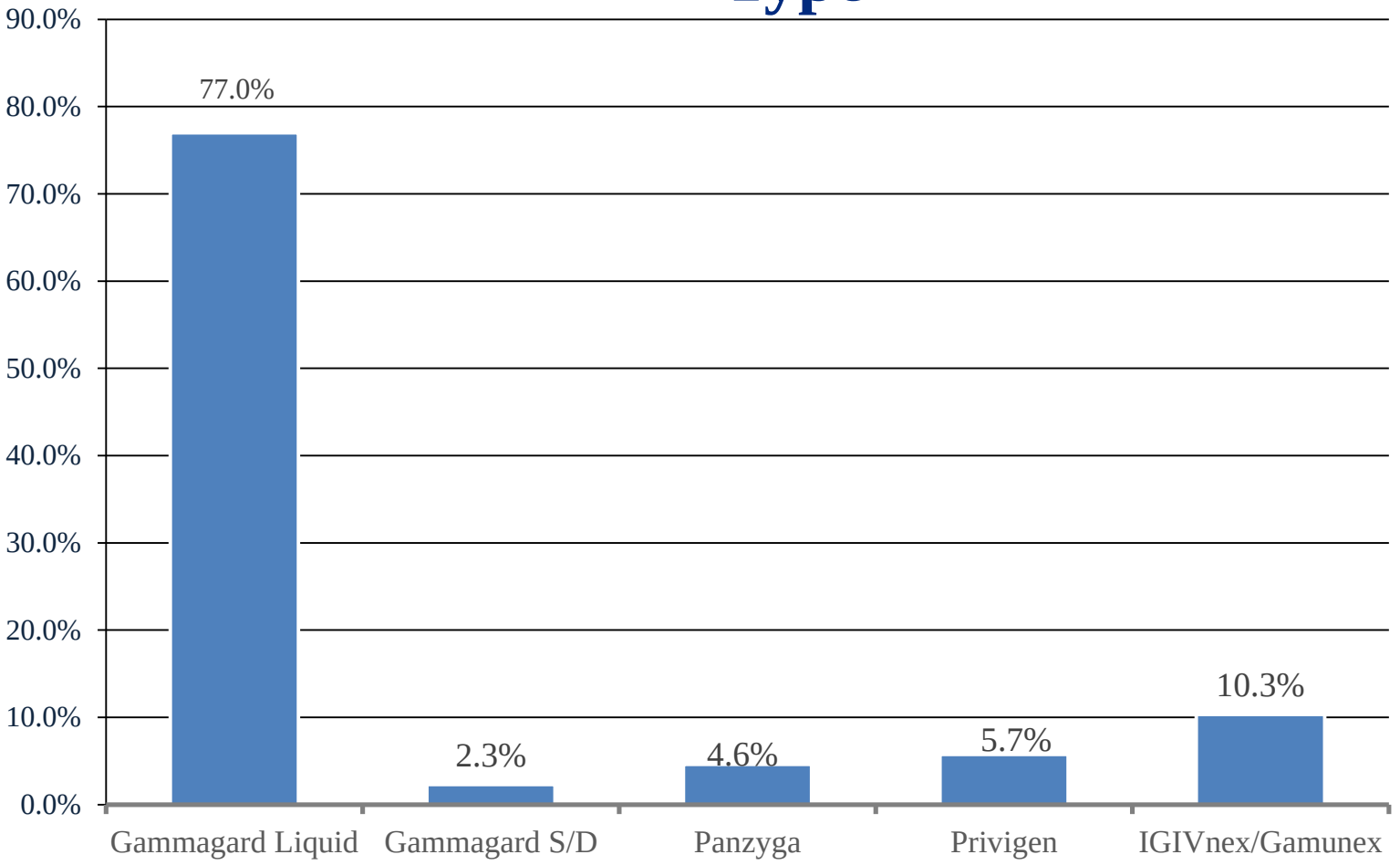
IVIG Transfusion Reactions by Product Type



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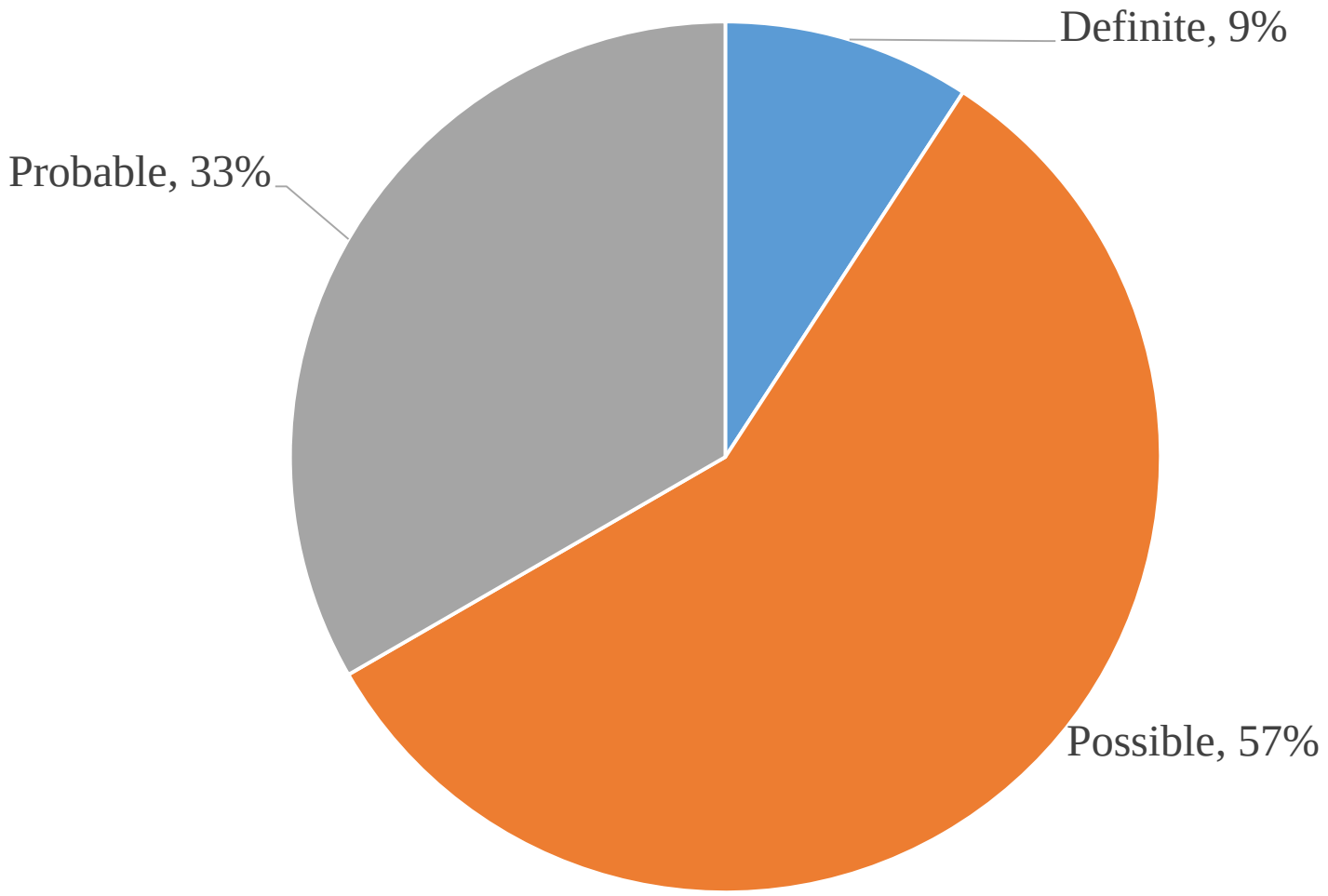
Ig Transfusion Reactions by Relationship to Transfusion



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Pre and Post Policy Implementation

- The implementation of the *Atlantic Clinical Indications and Criteria for Intravenous and Subcutaneous Immunoglobulin (IVIG/SCIG)* policy aims to reduce Ig use for not indicated conditions.
- Nova Scotia saw an overall increase in NI use for FY 2018-19 however after the Atlantic policy was implemented NI use decreased. Prior to the policy being implemented Nova Scotia NI use was 1.57% while post policy it was 0.74%.
- New Brunswick's NI use remained the same as the previous year.
- PEI did not have any change in NI use, as they reported no off labelled use for FY 2018-19.
- Newfoundland and Labrador also saw an overall increase in NI use for FY 2018-19. Although the policy has not yet fully implemented, NI use decreased from 5.7% to 4.7% when comparing the same time frames.

Pre and Post Policy Implementation cont.

DBW (patients)		
Province	Pre Implementation	Post Implementation
New Brunswick	90% (175 patients)	90% (178 patients)
PEI	91% (29 patients)	95% (39 patients)
Nova Scotia	97% (240 patients)	99% (268 patients)
Newfoundland and Labrador	93% (142 patients)	96% (146 patients)

DBW (grams missed)		
Province	Pre Implementation	Post Implementation
New Brunswick	385	214
PEI	30	60
Nova Scotia	380	265
Newfoundland and Labrador	235	120

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Pre and Post Policy Implementation cont.

- The cost effectiveness and the patient benefits that have resulted are still to be fully determined. However, the data for the 2018-19 FY provides a preliminary outlook on the impacts the policy has had. The overall decrease of unnecessary grams transfused to patients and higher rates for DBW dosing after the policy was implemented suggests that the utilization of IVIG following the second half of FY 2018 improved.