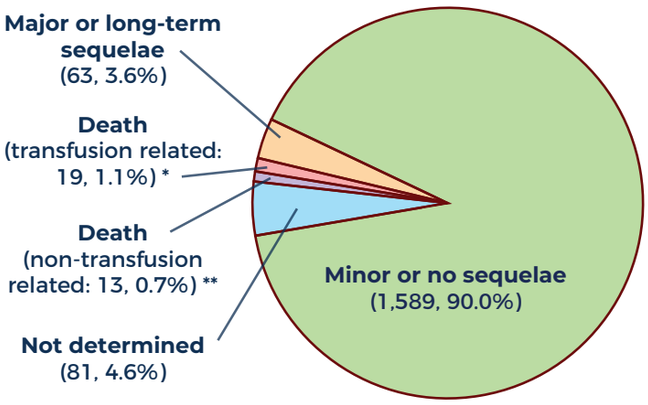
Transfusion Transmitted Injuries Surveillance System (TTISS), 2020-2021

Highlights:

The TTISS network monitors over 95% of transfusion activities in Canadian hospitals. The 2020-2021 data are summarized below:

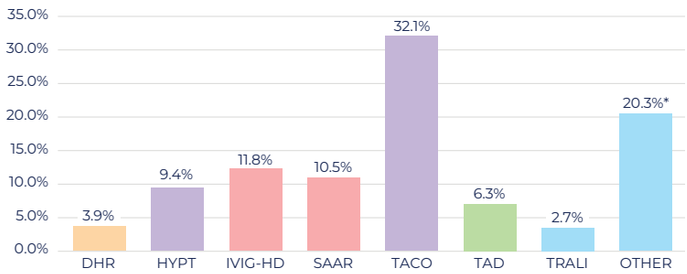
- A total of **1,765 adverse transfusion events (ATEs)**[1] were reported, with 897 cases in 2020 and 868 cases in 2021;
- **65% (n=1,147/1,765) of ATEs** were caused by transfusion of blood components and **35% (n=618/1,765) of ATEs** were caused by transfusion of plasma derivatives;
- **4.9% (n=87/1,765) of ATEs** resulted in life-threatening injuries;
- **1.1% (n=19/1,765) of ATEs** resulted in transfusion-related deaths;
- **8 deaths** occurred per million units of blood components transfused.

ATEs by Outcome



** Definite, probable, or possible* *** Doubtful, ruled out, or not determined*

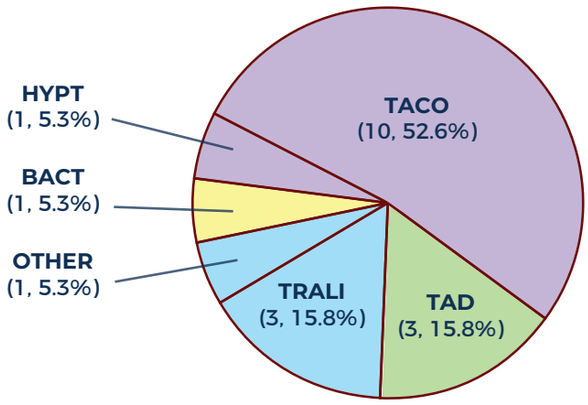
ATEs By Type



ATEs with few cases (<2.0%) are not shown here, i.e., AHR (0.8%), ASPT (1.1%), and BACT (1.0%).

**"Other" includes ATEs with too few occurrences, are not classified, or are not listed in the User's Manual. These events may include severe electrolyte imbalance, atypical pain syndrome, malaria (P. Falciparum, P. Vivax, babesiosis), Lyme disease, syphilis, toxoplasmosis, Creutzfeldt-Jacob Disease, etc.*

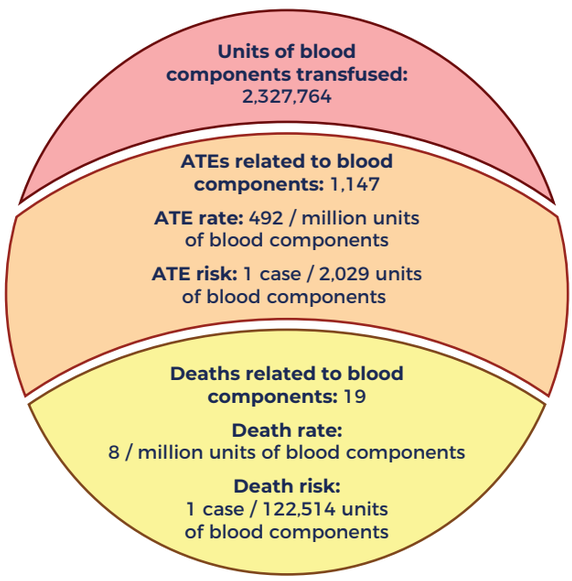
Deaths Related to ATEs



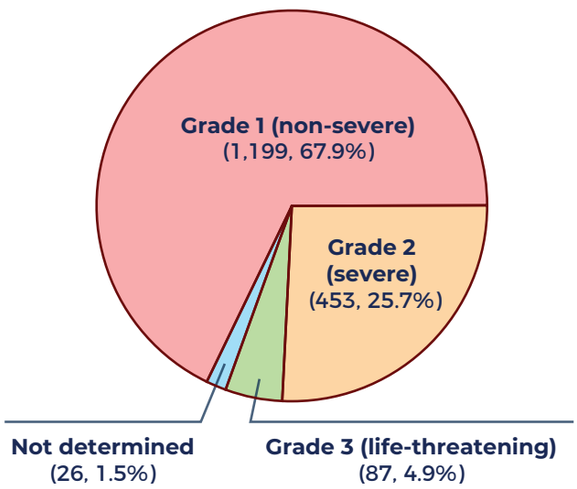
ABBREVIATIONS

AHR	Acute Haemolytic Reaction
ASPT	Aseptic Meningitis
BACT	Bacterial Infection
DHR	Delayed Haemolytic Reaction
HYPT	Hypotensive Reaction
IVIG-HD	Intravenous Immune Globulin Headache
SAAR	Severe Anaphylactic or Anaphylactoid Reaction
TACO	Transfusion-Associated Circulatory Overload
TAD	Transfusion-Associated Dyspnea
TRALI	Transfusion-Related Acute Lung Injury

ATE and Death Rate per Million Units of Blood Components Transfused



ATEs by Severity[2]



CONCLUSION

The proportions of ATE types are consistent with results from previous years. Additionally, while TACO is the leading cause of death, the overall fatality risk in comparison to the total number of transfusions is still very low in Canada.

References

1) Transfusion Transmitted Injuries Surveillance System , User's manual Version 3.0 https://ttiss.mcmaster.ca/wp-content/uploads/2016/10/Current-V3-CTAERF-Manual-E-2008-04-15.pdf

2) Please refer to the Transfusion Transmitted Injuries Surveillance System 2016 - 2020 Summary Report for the definitions of "severity", "outcome", and "related death", as well as descriptions of the types of ATEs and results from previous years. https://www.canada.ca/en/public-health/services/publications/drugs-health-products/transfusion-transmitted-injuries-surveillance-system-summary-report-2016-2020.html

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