

# Improving safety and conserving resources by reducing unnecessary transfusions



## What was achieved?

A research study was conducted to improve transfusion care by ensuring red blood cells are used appropriately. The Screening by Technologists and Auditing to Reduce Transfusions (START) study aimed to reduce the number of unnecessary red blood cell transfusions to prevent harm to patients, conserve a valuable resource, and save costs associated with blood transfusions. The results of the START study helped inform the Using Blood Wisely campaign — a national initiative by Choosing Wisely Canada to reduce the number of unnecessary red blood cell transfusions through quality improvement methods and measurement.

The practices used in the START study significantly reduced the number of unnecessary red blood cell transfusions, increased the appropriate use of red blood cells, and achieved cost savings for Canada's health systems.



## How was this achieved?

The START study was conducted through the University of Toronto's Quality in Utilization, Education and Safety in Transfusion (QUEST) program, a research collaborative supported by Canadian Blood Services. The START research team took a range of actions to reduce the number of unnecessary red blood cell transfusions. These interventions included educating clinicians, emphasizing established transfusion guidelines, empowering laboratory technologists to screen orders for appropriateness, and providing regular audit feedback to hospitals. The activities were straightforward, cost-effective and easy to replicate. The START research team successfully implemented its interventions in 13 community hospitals across Canada. These interventions significantly reduced inappropriate red blood cell transfusions, increased appropriate usage and achieved estimated cost savings of \$3.4 million over 10 months.

Drawing on these effective interventions, Choosing Wisely Canada launched the Using Blood Wisely campaign in September 2020 in collaboration with Canadian Blood Services and Héma-Québec. The campaign challenges hospitals across Canada to compare their recent red blood cell transfusions against national appropriateness benchmarks.

The campaign focuses on two key evidence-based measures:

- At least 65 per cent of red blood cell transfusions must be single-unit transfusions.
- At least 80 per cent of inpatient red blood cell transfusions must have a pre-transfusion hemoglobin level of 80 g/L or less.

Hospitals that meet these benchmarks are designated as a Using Blood Wisely Hospital and can put their designation toward broader recognition through Choosing Wisely Canada and Accreditation Canada programs. Hospitals that do not meet benchmarks can enroll in a quality improvement initiative to reduce the number of unnecessary transfusions in various ways, including interventions similar to those used in the START study.



## What was the impact and outcome?

As of August 2023, 245 hospitals across Canada had registered for the Using Blood Wisely campaign, demonstrating their commitment to improving their red blood cell stewardship. Of these, 60 per cent of hospitals had received national recognition for their efforts through Choosing Wisely Canada for meeting and maintaining the above benchmarks. Designation as a Using Blood Wisely Hospital highlights a hospital's commitment to promoting appropriate transfusion practices and ensuring patient safety. Hospitals earning this designation are examples for others to follow, inspiring a culture of excellence in the use of red blood cells across Canada. Hospitals that did not meet benchmarks are benefiting from a collaborative approach to improve their transfusion practices and work toward achieving the campaign's targets. The success of the Using Blood Wisely campaign has shown that implementing quality improvement and auditing measures can have meaningful impacts on Canada's health-care systems.

### Bibliographies

[Choosing Wisely Canada](#). (n.d.) Intervention toolbox.

Kron, A. T., Collins, A., Cserti-Gazdewich, C., Pendergrast, J., Webert, K., Lieberman, L., Zeller, M. P., Harding, S. R., Nahirniak, S., Prokopchuk-Gauk, O., Lin, Y., Mendez, B., Armali, C., Lee, C., Watson, D., Arnott, D., Xun, F., Blain, H., Panchuk, H., ... Callum, J. (2021). [A prospective multi-faceted interventional study of blood bank technologist screening of red blood cell transfusion orders: The START study](#). *Transfusion*, 61(2), 410–422.

Spradbrow, J., Cohen, R., Lin, Y., Armali, C., Collins, A., Cserti-Gazdewich, C., Lieberman, L., Pavenski, K., Pendergrast, J., Webert, K., & Callum, J. (2016). [Evaluating appropriate red blood cell transfusions: A quality audit at 10 Ontario hospitals to determine the optimal measure for assessing appropriateness](#). *Transfusion*, 56(10), 2466–2476.