

## Reducing the use of blood for better patient outcomes November 2019

A Counties Manukau Health blood management initiative aims to achieve better outcomes for patients.

In early 2018, Counties Manukau Health initiated a patient blood management programme that saved around 600 blood units during that year.

The appropriate use of blood is captured in *Choosing Wisely* recommendations from the [College of Intensive Care Medicine of Australia and New Zealand](#), the [Australian and New Zealand Intensive Care Society](#), and the [Royal Australasian College of Surgeons](#).

“To achieve better patient outcomes we are improving ways blood is used and intervening with other therapies when indicated,” says service manager, Counties Manukau Laboratories, Don Mikkelsen.

He says the project has two facets.

“The first is the use of a clinical nurse specialist based in the blood bank to review all requests for non-urgent red blood cell (RBC) transfusions. Often, after reviewing the request together with laboratory results, alternative therapies are recommended – such as iron therapy – or a reduction in the number of units to be transfused.

“The second facet is the use of a patient blood management nurse to review patients prior to elective surgery to ensure any iron deficiency anaemia present is treated before the major elective surgery starts.”

Mr Mikkelsen says it's common for someone who comes for elective surgery and has a history of bleeding or chronic disease to have anaemia.

“Previous practice in these situations was to give blood to increase the person's haemoglobin level, but the use of blood transfusion comes with greater risk of complications and potentially longer recovery. Rather than exposing the patient to unnecessary blood transfusion, their blood count can be improved by resolving any deficiencies such as iron deficiency. This is under the supervision of an experienced clinical nurse specialist who can interpret the blood results and treat accordingly with oral or intravenous iron.”

He says since the start of the project, the rate of RBC transfusions have been dropping.

“It is now in line with or lower than rates seen at other similar sized DHBs. We have seen better and quicker recovery from surgery for patients, cost savings from reduced RBC transfusions and we believe that we will also see a measurable decrease in length of stay in hospital.”

Don Mikkelsen says the team investigated expanding the programme to pre-operative orthopaedic surgery cases. “We piloted it for a bit over a month, looking at pre-operative orthopaedic surgery patients. If you can identify people who are anaemic due to iron deficiency prior to surgery, rather than transfusing them, they are in a much better position to recover should they lose blood during surgery because they have plenty of iron and iron is essential for making new red blood cells.

“But what we found, quite surprisingly, was although anaemia was present in 20 percent of cases, iron deficiency among pre-orthopaedic elective cases was low. We found about three cases in a month that would benefit from iron infusion.

“We’ve organised a referral process to ensure people who show up as iron deficient before major surgery get referred to our patient blood management nurse. This is primarily for general surgical and gynaecology patients with occasional orthopaedic patients.”

Mr Mikkelsen says the team is now focusing on consolidating the patient blood management programme so it becomes ‘business as usual’.

They are also working on another initiative with their IT provider – an electronic process of ordering blood and blood products.

“The clinical nurse specialist based in the blood bank reviews the orders that come in for blood. She works full time, but of course blood products are issued seven days a week. So we are working on an interface that the ordering doctor and the dispensing nurse can use, providing guidance on the placement and appropriateness of the order. It also covers other blood products, such as plasma and platelets, which will expand the range of products that are electronically vetted.

“The software we are using was developed for Auckland DHB a while ago, so we’ve picked it up at Counties. We will do some tweaking, and then install and use it.”

### ***Choosing Wisely* recommendations relating to the appropriate use of blood**

Transfuse red cells for anaemia only if the haemoglobin concentration is less than 70gm/L or if the patient is haemodynamically unstable or has significant cardiovascular or respiratory comorbidity.

- the College of Intensive Care Medicine of Australia and New Zealand, the Australia and New Zealand Intensive Care Society

Don’t transfuse more units of blood than absolutely necessary, noting that many hospitals have developed policies on indications for transfusion with a view to minimisation.

- Royal Australasian College of Surgeons