Introduction:
The lack of evidence-based medicine supporting the transfusion decision is illustrated by the wide range of blood product use during first-time coronary artery bypass grafting (CABG). Use of red blood cells (RBC) ranges from 3 to 83 percent, while the use of platelets range from 0 to 40. [1] Approximately 20 percent of CABG patients suffer abnormal bleeding, with platelet dysfunction thought to be the most common culprit. [2]

Methods:
The objective of this study was to evaluate the use of allogeneic blood and blood products among patients undergoing first-time CABG over the past 15 years. The first 50 patients who underwent CABG (on-pump and off-pump) from 1st of March each year were included for analysis. The percentage of patients receiving RBC, fresh frozen plasma (FFP), platelet and cryoprecipitate during the first 48 hours intra- and postoperatively were analysed. Linear regression analysis was performed in each group.

Results:
Our analysis shows that the use of RBC decreased over the last 15 years, in contrast to the use of the other 3 investigated products. (see image 1) The increase of platelets was the most pronounced with a direction coefficient of 0.022 and had the least variability ($r^2=0.59$). (see image 2) The decrease in RBC was less obvious than the rise in platelet use (direction coefficient of 0.015) and had a higher variability ($r^2=0.32$). The consumption of FFP and cryoprecipitate stayed constant (direction coefficient of 0.004 and 0.001 respectively).

Conclusion:
The higher incidence of semi-urgent CABG in recent years, which involves continuation of anti-platelet therapy until the day before surgery, can be an explanation for our observed increased use of platelets. The observed decrease in RBC transfusion over the past 15 years might be due to rising awareness of complications associated with red cell transfusion.

References:

Image 1:
Blood and blood component usage in first time CABG

**Image 2:**

**Blood and blood component usage in first time CABG**

**Red blood cells**

Regression analysis for each blood product over time

**Platelets**

Regression analysis for each blood product over time

**Fresh frozen plasma**

Regression analysis for each blood product over time

**Cryoprecipitate**

Regression analysis for each blood product over time