# The Clinical and Economic Impact of ROTEM-Guided PBM in Cardiac Surgery

## Management of bleeding complications related to cardiac surgery

Nearly 1 million coronary artery bypass graft (CABG) surgeries are performed annually worldwide. These surgeries:[1]

- Consume approximately 20% of all blood products transfused
- Include acquisition costs of >$700 for all blood components transfused per patient*

Though cardiac surgeries are frequent and bleeding incidence is high, treatment and transfusion vary significantly.

At hospitals performing ≥100 on-pump CABG surgeries, there is a high variation in rates of blood transfusion:[3]

- 7.8–92.8% for red blood cells
- 0–97.5% for fresh frozen plasma
- 0.4–90.4% for platelets

### High incidence of bleeding complications

The rate of bleeding complications in cardiac surgery is **47.4%**, the **highest among all surgical subgroups.**[2]

*Corresponds roughly to USD $3,500 in activity-based costs.[8]

### Bleeding complications and resultant transfusions negatively impact clinical outcomes, leading to increased:[4-7]

Morbidity and mortality

Hospital length of stay (LOS)

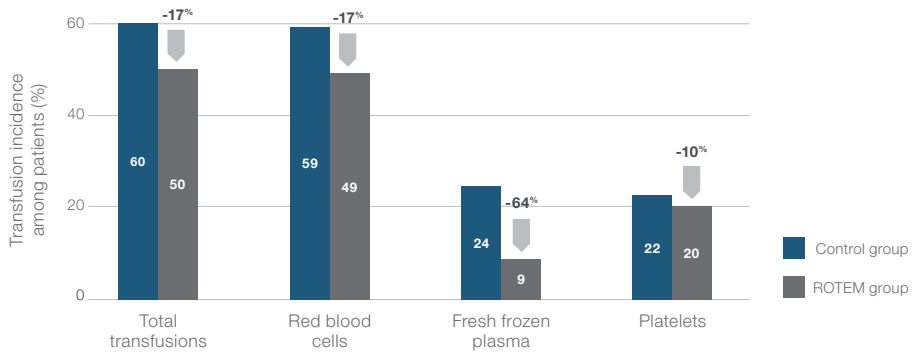
Avoidable complications

## Viscoelastic testing for cardiac surgery patients

Early diagnosis and goal-directed therapy to correct an underlying hemostatic abnormality is highly effective. Moreover, algorithm-based therapy has demonstrated superiority to empiric treatment.[4]

### Viscoelastic testing can reduce transfusions

**Reduction in transfusion[8]**




**Potential reduction in**

Total transfusions
17%

Red blood cells
17%

Fresh frozen plasma
64%

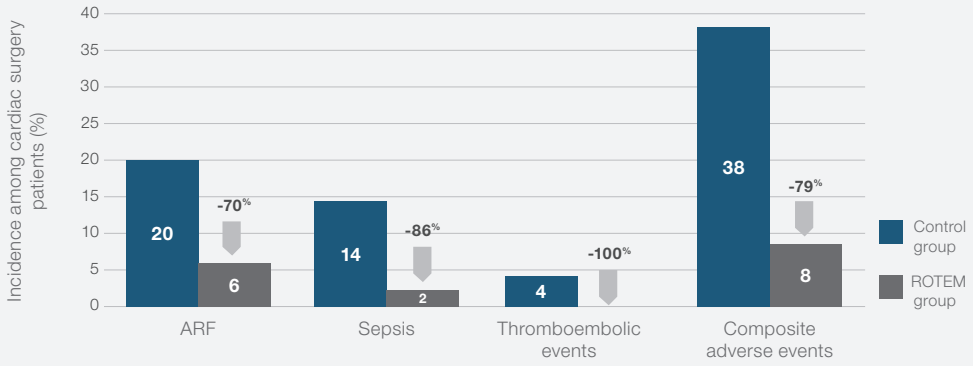
Platelets
10%

ROTEM *delta* is FDA 510(k)-cleared and Canada-licensed for laboratory use only and not at the point of care.

# ROTEM-guided management can improve clinical outcomes in cardiac surgery

Several studies in cardiac surgery have shown significant improvements in clinical outcomes by implementing ROTEM-guided, patient-centered treatment concepts.

### Clinical complications[4]




### Potential reduction in

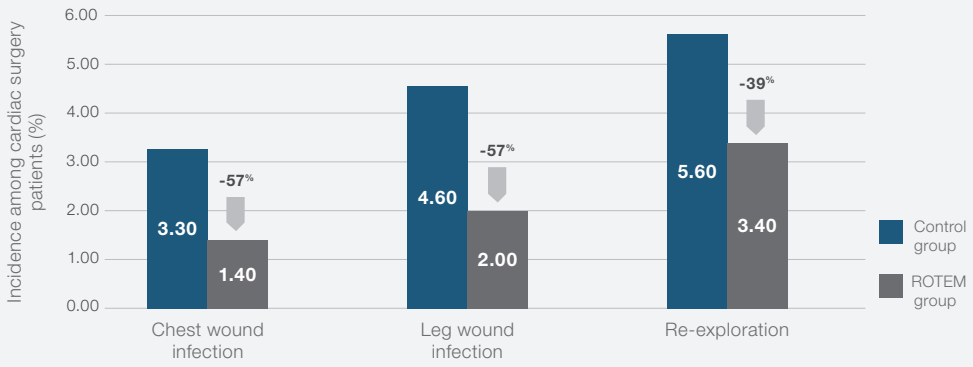
Acute Renal Failure (ARF)
70%

Sepsis
86%

Thromboembolic events
100%

Composite adverse events
79%

### Adverse events[5]



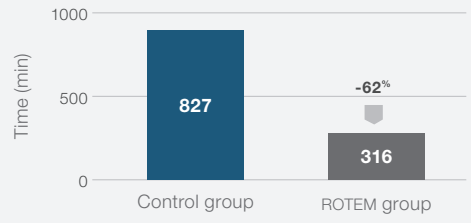

### Potential reduction in

Chest wound infection
57%

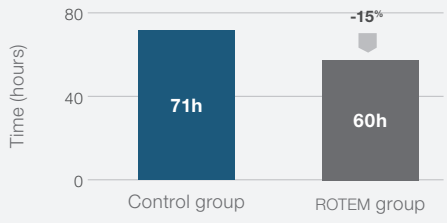
Leg wound infection
57%

Re-exploration
39%

### Mechanical ventilation[4]




### Reduction in ICU LOS[6]




### ROTEM-guided bleeding management reduces:

Mortality[7]
56%
compared to controls[8]

Implementing ROTEM-guided management in cardiac surgery addresses the high incidence of bleeding complications by providing **early diagnosis for goal-directed treatment decisions.** This results in **improved patient care and experience.**


**References**

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