# Intraoperative Transfusion of Fresh Frozen Plasma is Associated with Increased Hospital Length of Stay

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## Introduction

Procedure specific pathways for cardiac surgery promote faster recovery with fewer complications.[1,2] However, blood product administration hinders recovery.[3] We examined the role of intraoperative fresh frozen plasma administration on hospital length of stay and on the disposition status at hospital discharge in adults following cardiovascular surgery.

## Methods

Following Institutional Review Board approval, patient characteristics, need for intraoperative transfusion of fresh frozen plasma, hospital length of stay, and the disposition status at hospital discharge were the measures of interest in 1480 adult patients undergoing cardiovascular surgery. Measures of effect size were used for clinical assessments. Key analyses included 95% confidence intervals (CI).[4]

## Results

Baseline patient characteristics are shown in Table 1. An increase in hospital length of stay was observed in patients receiving intraoperative transfusion of fresh frozen plasma (Table 2). Risk differences in the need for advanced care at hospital discharge were calculated in this patient population. An increased risk difference of 20.6% CI 14.3-26.9%

was detected in the need for advance care at hospital discharge following intraoperative administration of fresh frozen plasma (Fig. 1).

**Conclusions**

These results suggest that the intraoperative administration of fresh frozen plasma increases hospital length of stay and increases the need for advanced post-hospital care.

**Figure Legend**

**Figure 1** Mosaic Plot of the distributions of hospital discharge disposition in cardiovascular patients following intraoperative transfusion of fresh frozen plasma. Risk difference of 20.6% CI 14.3-26.9% in the need for advanced post-hospital care. Likelihood Radio Chi-Square=40, P<.0001. P values <.005 are statistically significant.[5]

**References**


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Table 1: Baseline Characteristics in Adult Cardiovascular Patients Requiring Intraoperative Blood Products Transfusion

| Variables | Patients n=1480 |
|---|---|
| Age, yrs median [IQR] | 63 [54-69] |
| Sex, female n (%) | 455 (31) |
| BMI, kg/m$^2$ median [IQR] | 29 [25-33] |

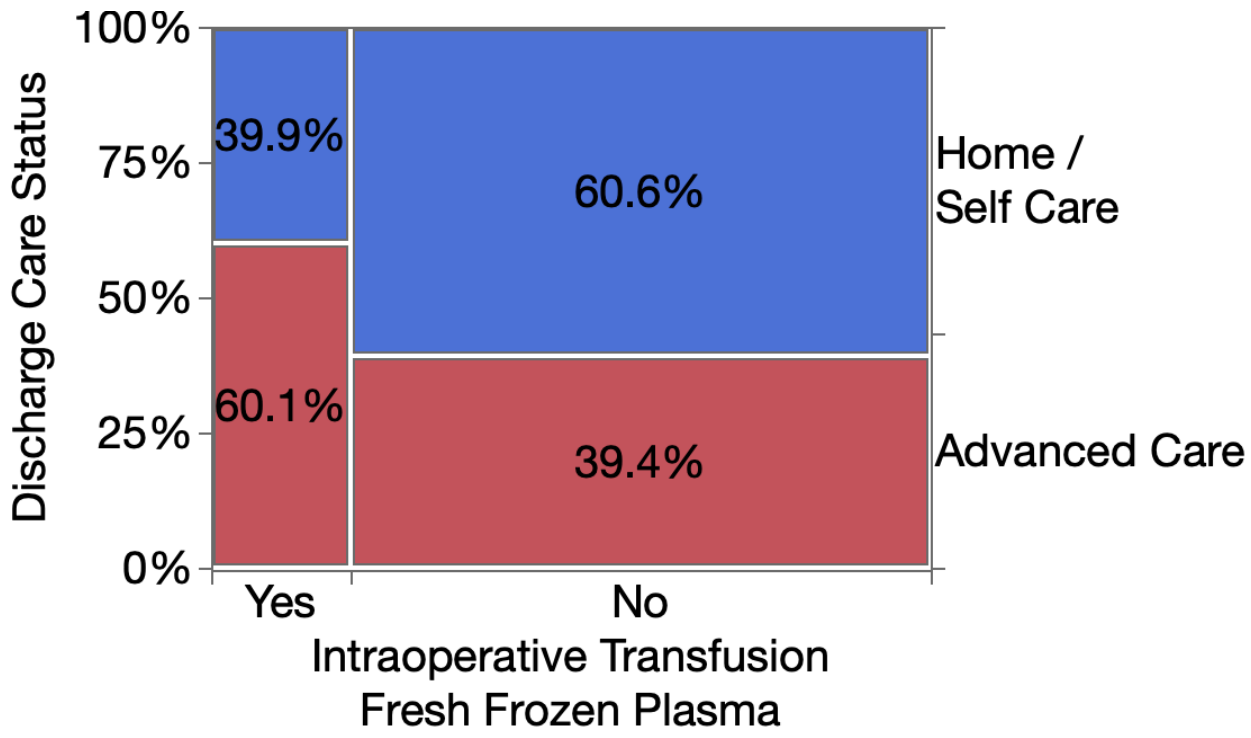
n=number of patients; IQR: 25-75% interquartile ranges; BMI: Body mass index.

Table 2: Quantiles of Hospital Length of Stay (days) by Intraoperative Transfusion of Fresh Frozen Plasma

| Transfusion | Patients | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|---|
| Yes | 287 | 2 | 6 | 8 | 14 | 24 | 37 | 184 |
| No | 1191 | 4 | 5 | 6 | 7 | 9 | 15 | 121 |

Kruskal-Wallis Chi-Square=223, P<.0001. Two missing values. P values less than 0.005 are statistically significant.[5]

Figure 1


100%
75%
50%
25%
0%
Discharge Care Status
39.9%
60.6%
60.1%
39.4%
Home /
Self Care
Advanced Care
Yes
No
Intraoperative Transfusion
Fresh Frozen Plasma