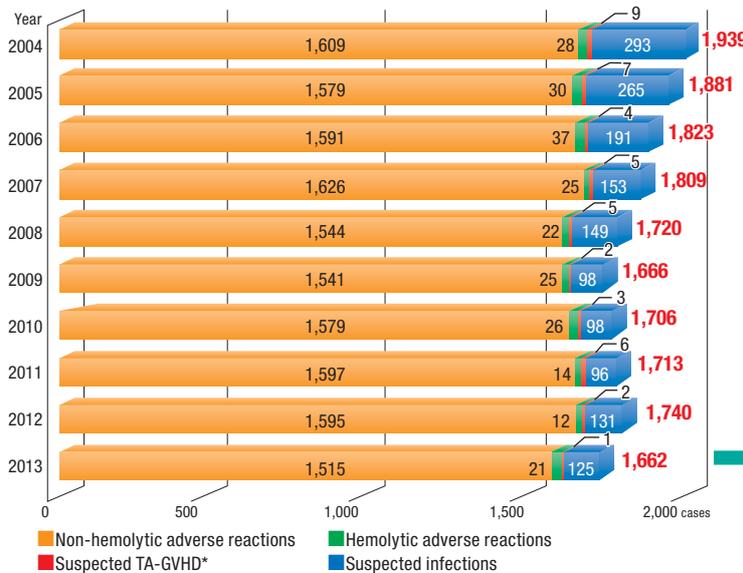


## Non-hemolytic Adverse Transfusion Reactions Reported to JRC Blood Centers (2013)

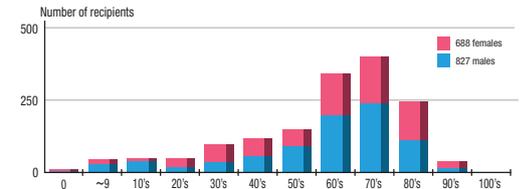
Transfusion-associated adverse reaction and/or suspected transfusion transmitted infectious cases were reported by medical institutions to JRC blood centers. This issue of Transfusion Information shows the result of analysis for non-hemolytic adverse reaction cases in 2013, the most frequently reported cases.

### The Number of Reports of Suspected Adverse Reactions and/or Infections Associated with Transfusion (reports from medical institutions; cases later evaluated to be unrelated to transfusion included)

#### Number of reports by year<sup>§</sup>



#### Age distribution of recipients (2013)



#### Details of reports (2013)<sup>§</sup>

- In 2013, reported non-hemolytic adverse transfusion reactions totaled 1,515 cases; this accounted for 91.2% of the total of 1,662 case reports of adverse transfusion reactions and suspected transfusion transmitted infection.
- In 703 (46.4%) of the 1,515 cases, the symptoms of the non-hemolytic adverse reactions were evaluated to be severe.
- The number of patients with any non-hemolytic adverse transfusion reactions was 827 for males and 688 for females. The median of age distribution was 67 years (range: 0 to 101 years).

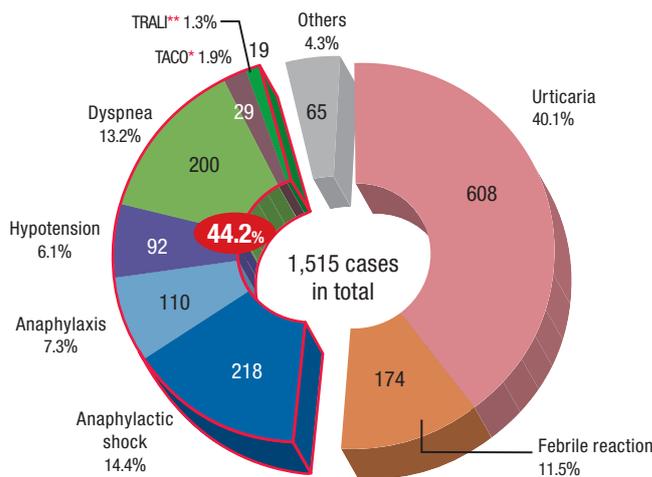
<sup>§</sup> Some cases were counted in multiple appropriate categories.

\* There was no confirmed Transfusion Associated (TA)-GVHD cases.

## Non-hemolytic Adverse Transfusion Reactions (2013)

#### Breakdown of cases by symptoms

The numbers and percentages of non-hemolytic adverse reaction cases categorized by symptoms are shown below. Severe cases were predominant for the following symptoms: anaphylactic shock, anaphylaxis, hypotension, dyspnea, transfusion associated circulatory overload (TACO) and transfusion related acute lung injury (TRALI). The number of these cases accounted for 44.2% of the total number.



\* Evaluation based on JRCS's own criteria of TACO was conducted.

\*\* Cases of possible TRALI included.

#### Notes

[Anaphylaxis]

A condition characterized by generalized flushing, urticaria, angioedema (e.g., face edema and laryngeal edema), dyspnea, and other multiple systemic symptoms.

[Anaphylactic shock]

Anaphylaxis accompanied with hypotension.

[Hypotension]

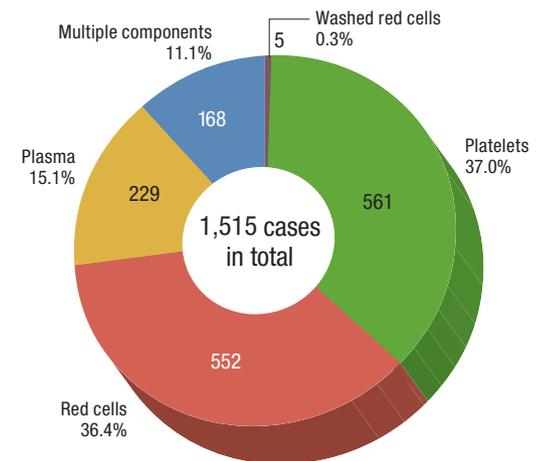
Hypotension with no other clinical signs such as skin symptoms or dyspnea.

[Transfusion associated circulatory overload (TACO)]

TACO is defined as cardiac failure due to transfusion associated circulatory overload accompanied with dyspnea, tachycardia, hypertension, etc.. There may be findings of cardiac pulmonary edema in chest radiography such as pulmonary infiltration. TACO is occurring within six hours of completion of transfusion.

#### Transfused blood components

Most of the non-hemolytic adverse reactions were caused by platelets or red cells.



Note that the blood components mentioned above all include components irradiated before supply, and components irradiated at medical institutions.

## Number of reported cases and frequency by component and symptom (2013)

Component	Platelets	Red cells*	Plasma
Number of bags supplied	834,655	3,428,047	980,386
Urticaria	275 cases (1/ 3,000)	156 cases (1/ 22,000)	120 cases (1/ 8,200)
Febrile reaction	44 cases (1/ 19,000)	112 cases (1/ 31,000)	4 cases (1/ 245,000)
Hypotension	23 cases (1/ 36,000)	50 cases (1/ 69,000)	13 cases (1/ 75,000)
Anaphylaxis	47 cases (1/ 18,000)	30 cases (1/ 114,000)	22 cases (1/ 45,000)
Anaphylactic shock	99 cases (1/ 8,400)	31 cases (1/ 111,000)	51 cases (1/ 19,000)
Dyspnea	53 cases (1/ 16,000)	104 cases (1/ 33,000)	15 cases (1/ 65,000)
TRALI	4 cases (1/ 209,000)	6 cases (1/ 571,000)	2 cases (1/ 490,000)
TACO	1 case (1/ 835,000)	16 cases (1/ 214,000)	0 case
Others	15 cases (1/ 56,000)	47 cases (1/ 73,000)	2 cases (1/ 490,000)
Total	561 cases (1/ 1,500)	552 cases (1/ 6,200)	229 cases (1/ 4,300)

(Parentheses represent the frequency based on the total number of bags supplied)

\* Excluded washed red cells, frozen-thawed red cells, and blood for exchange transfusion.

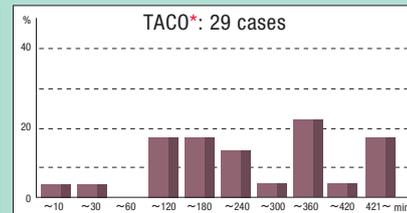
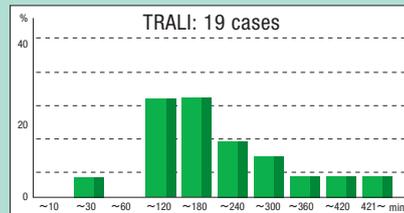
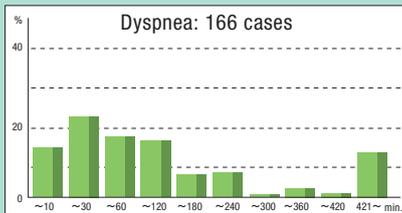
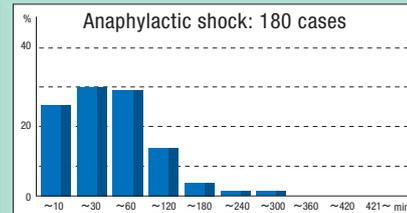
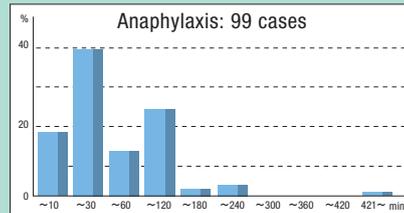
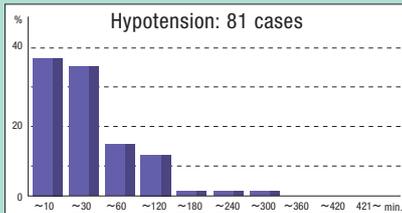
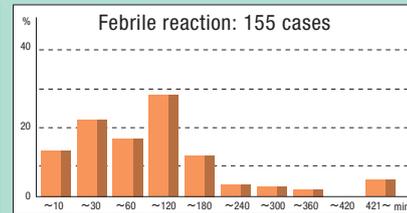
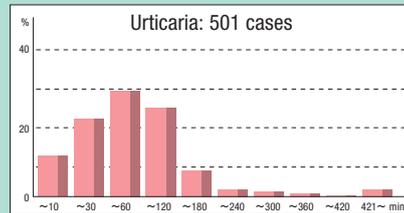
The blood components in the table all include components irradiated before supply and components irradiated at medical institutions. Cases given two or more types of blood components in combination were excluded.

Regarding the type of blood component, the frequency of adverse reactions based on the total number of bags supplied was the highest with platelets, one case per approximately 1,500 bags. Taking symptoms into account, the category with the highest frequency was urticaria, which was caused by platelets, and the frequency was one event per approximately 3,000 bags.

## Time of onset (cases with unknown time of onset excluded) (2013)

### Time of onset from the start of transfusion for non-hemolytic adverse reactions

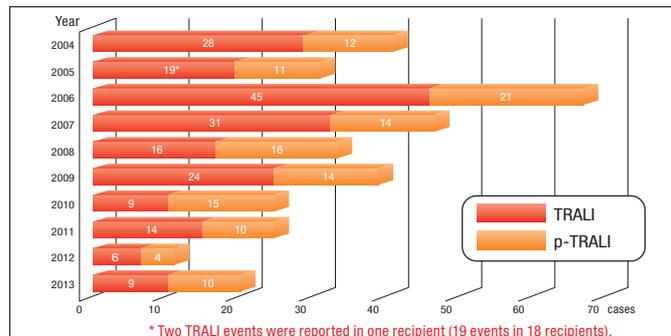
These graphs indicate the time of onset from the start of transfusion by type of non-hemolytic adverse reaction. Adverse reactions occur not only immediately following the start of transfusion, but also during and after the transfusion. Thus, recipients should be appropriately monitored throughout immediately following the start of transfusion, during transfusion and following the completion of transfusion.



\* TACO evaluation by JRC's own criteria.

## The number of TRALI and p-TRALI cases by year

This chart describes the number of TRALI and possible TRALI (p-TRALI) cases reported by medical institutions that were evaluated to meet the relevant diagnostic criteria. In 2013, 9 TRALI cases and 10 p-TRALI cases were confirmed. During the past ten years (2004 to 2013), 17 cases were considered to be fatal TRALI. No fatal cases have been reported since 2011.



In case any of adverse reactions and/or infections related to transfusion of blood components, please notify the medical representatives of your local JRC blood center immediately. Please provide the residual products, the recipient's pre- and post-transfusion samples, and any other related materials; it is helpful to investigate and/or identify the cause. For storage of residual products and the recipient's samples, refer to the "Guidelines for lookback studies of blood products."

### Haemovigilance Information for Healthcare Professionals

URL <http://www.jrc.or.jp/mr/english/>

Issued by:  
**Medical Information Division, Blood Service**  
**Headquarters, Japanese Red Cross Society**  
 1-1-3, Shiba Daimon, Minato-ku, Tokyo 105-8521, Japan

\* For more information, please contact the medical representatives of your local JRC blood center.