

Delayed transfusion (DT): Analysis of the transfusion serious adverse events delayed transfusion reported to the French national haemovigilance database from 2013 to 2022

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BACKGROUND

Timely provision and transfusion of blood components (BCs) are often vital, notably for acute bleeding and severe anemia.

Despite procedures to prevent such occurrences, transfusion delays (DTs) put patients at risk and may contribute to death.

AIMS

Characterize and understand the causes/contributive factors of DTs reported in France as serious adverse events (SAEs) in the mandatory haemovigilance database (focus on DTs occurring in urgent settings).

METHODS

Mandatory database reporting of SAEs to health authorities (via dedicated national ANSM haemovigilance website) (e-FIT) was used.

Retrospective analysis from 01/01/2013 to 31/12/2022 of all SAEs pertaining to DTs.

To carry out this study, the database query was extended to all information concerning DTs in reported SAEs, whatever the category of SAE and whatever the activity step of the transfusion chain where a deviation occurred.

Assessments:

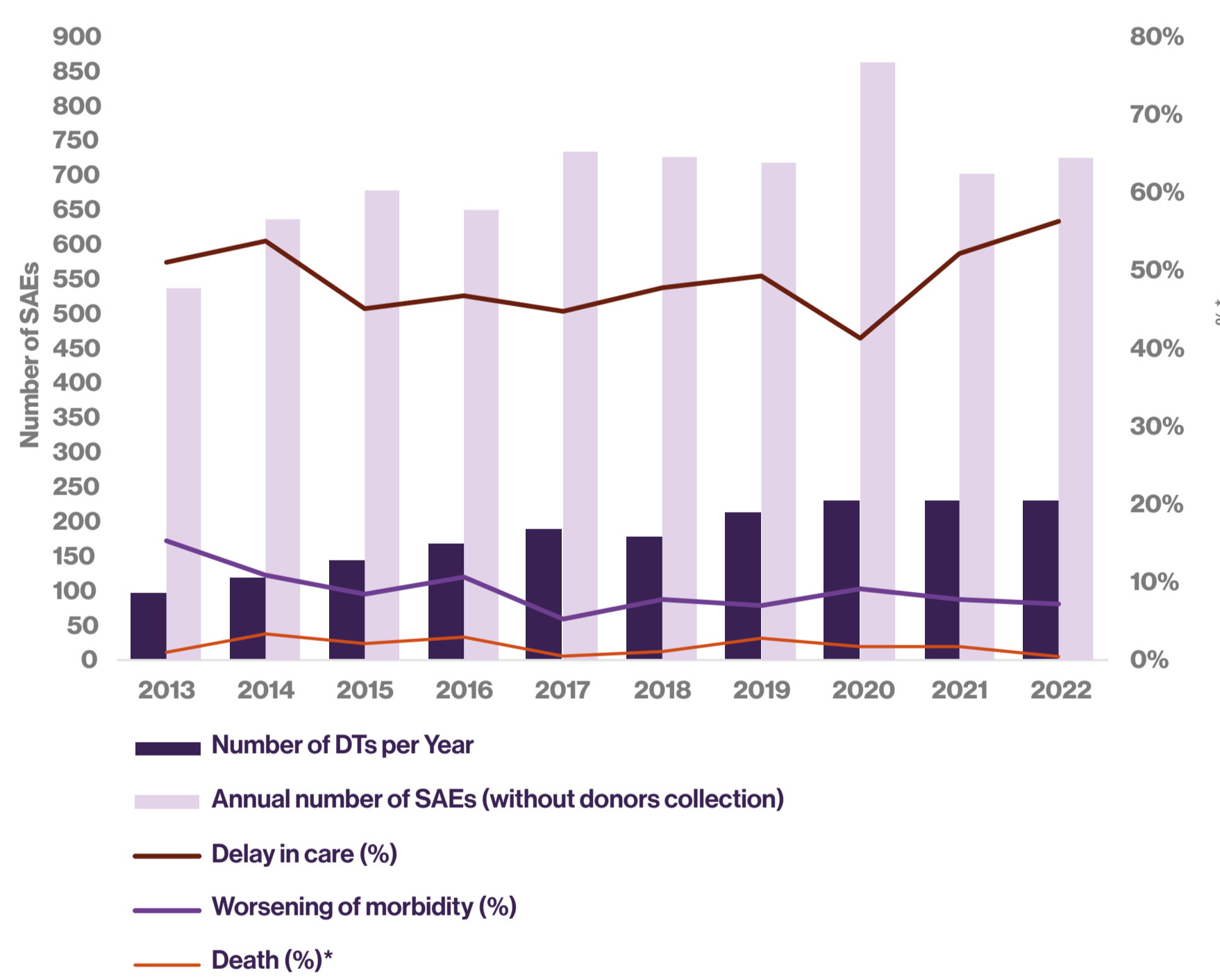
- Number of DTs & conditions settings (vital emergency settings vs non-urgent settings).
- Diagnostic categories & BCs needed (Data regarding DTs were compared to EFS data and Fillet et al, TRANSFUSION, Dec 2016)
- Causes/contributive factors related to DTs
- Clinical impact

RESULTS

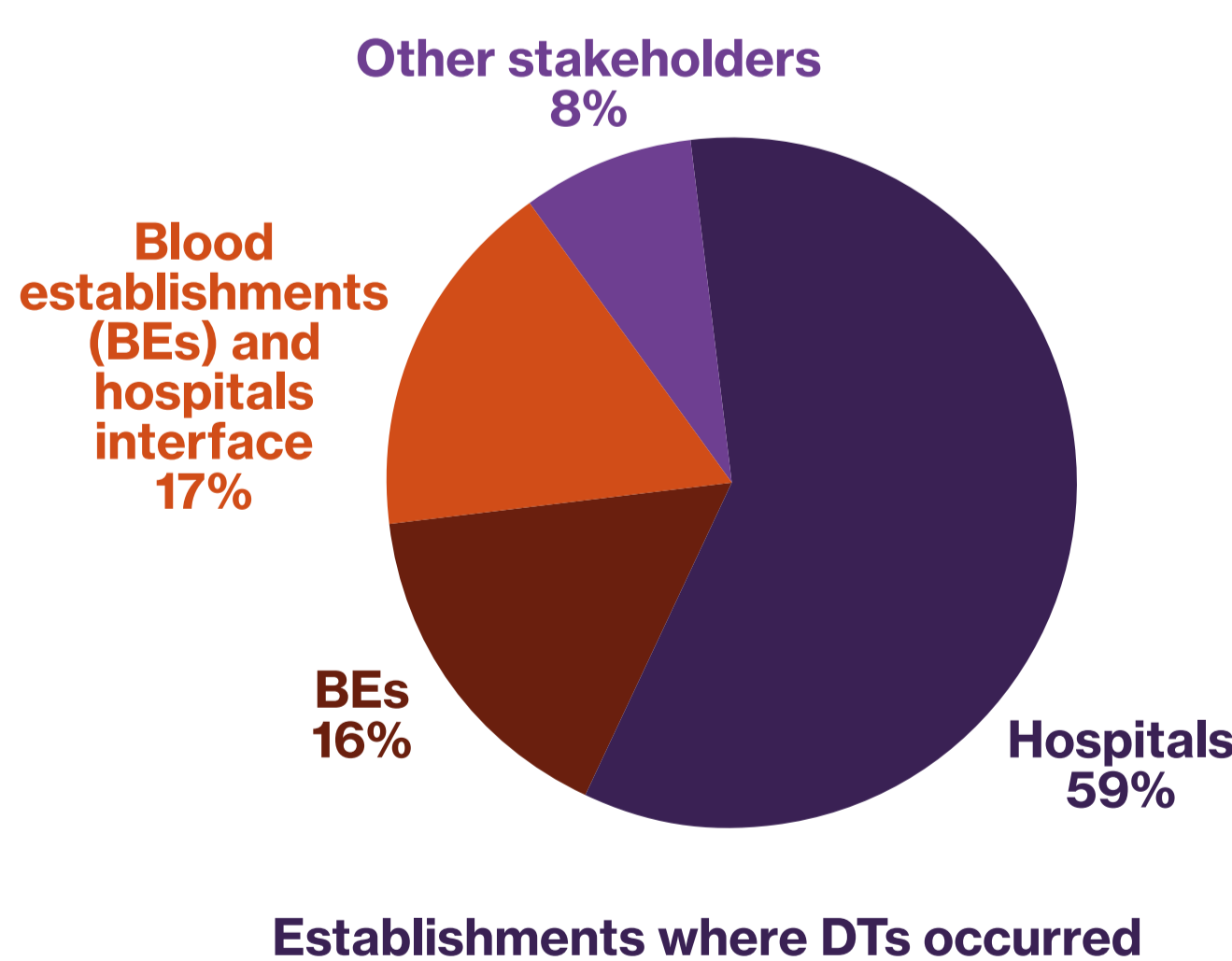
Over a 10-year period (29,398,498 BCs issued), 2023 DTs were collated and analyzed (18% of all reported SAEs (n=9167) (mean= 7 DTs/10⁵ BCs issued).

21% of DTs (n=348/1656 evaluable cases) occurred in urgent settings, mainly in operating rooms (30.4% vs 4.8% for DTs in non-urgent settings), medical and intensive care units (18% vs 10%), emergency department (12.7% vs 4.7%) and obstetrics (8% vs 1.2%) and among DTs in urgent settings 35% occurred during night shifts (7 PM to 7 AM). Among all DTs, obstetrics and neonatology were 2 categories where DTs were overrepresented (8.3% vs 1% of total transfusion, and 4.3% vs 0.6%, respectively).

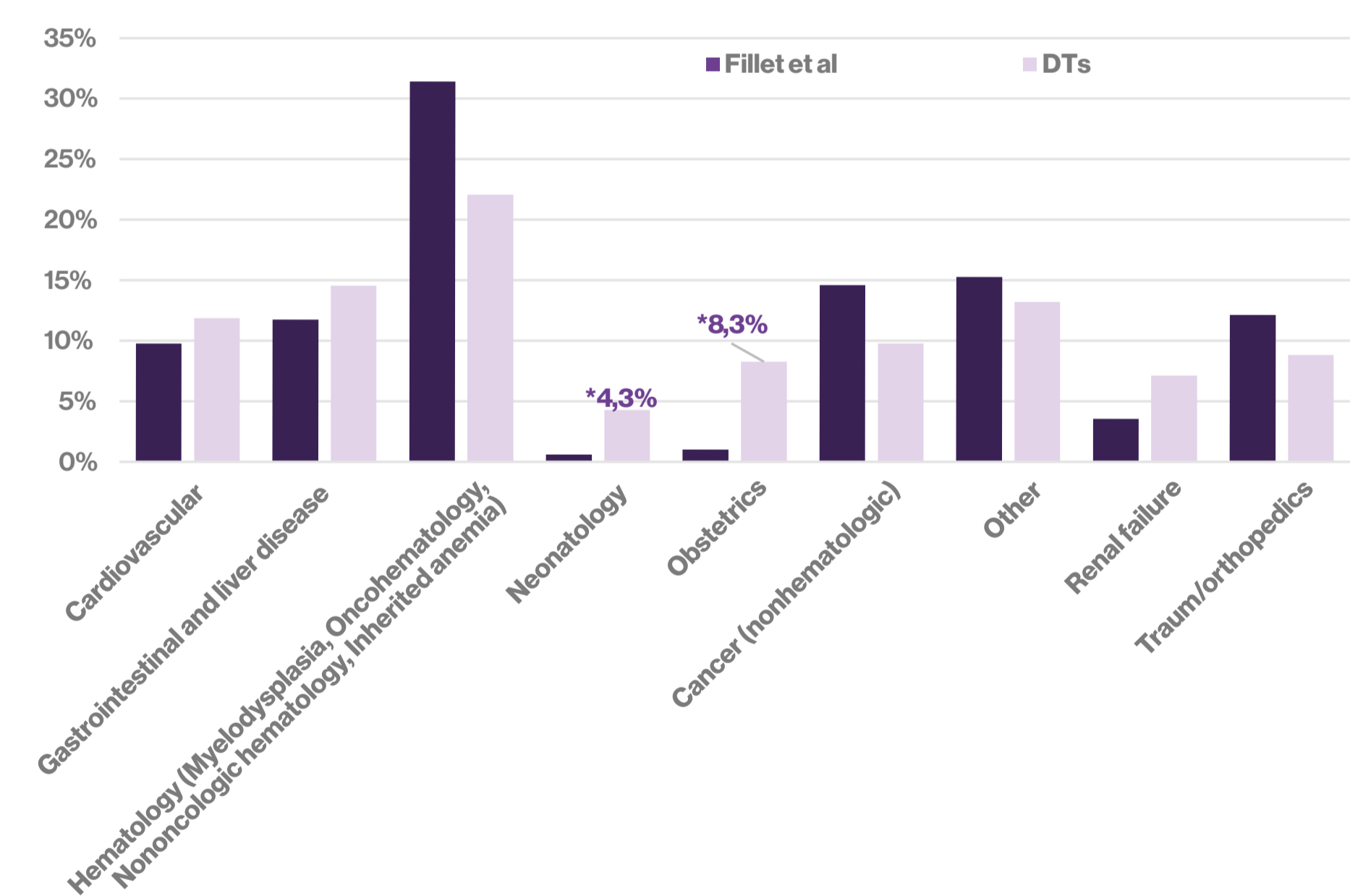
Number of DTs & clinical impacts



*percentage among evaluable cases



Diagnostic categories



In all DTs, among *evaluable cases (n=1285/2023), a combination of BCs is involved including red blood cells (85%), plasma (15%) and platelets (15%). In urgent settings, the transfusion indication was mostly slow bleeding (11%*), anemia (21%*), Hemorrhage (53%*). An increase of plasma's prescription (40%*) was observed in urgent settings.

DTs were mainly due to failures in the identification of patients, whether in the medical prescription of BCs, their issuing, their transport and communication between the healthcare and BC issuing teams.

In all DTs, delay in care was associated in 49% and worsening of morbidity in (8%). In 1.6 %, 33 deaths were observed (0.11 death/10⁵ BCs issued) with a possible contributing factor in 12 patients deceased (other n=21 excluded).

DISCUSSION / CONCLUSION

Our study highlights the critical risk posed by the multistep failures as communication failures between healthcare and BC issuing teams as well as patient care by healthcare teams, delays in BC issue and their transport especially in urgent settings and at nighttime. Specific clinical sectors such as obstetrics and neonatology are at higher risk. Continuous training, including simulations, as well as regular process updating to prevent such occurrence are a priority in transfusion medicine.

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Authors have no conflict of interest.