Promoting PBM as a regional quality standard: pilot experience in *Hauts de France* (HDF)

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Background: Patient blood management (PBM), already deployed in other countries, provides an effective solution to blood shortage and risks associated with blood transfusion. Following Medicine Academy symposium (PARIS, December 2019) on Patient Blood Management in scheduled surgery, the Regional Haemovigilance and Transfusion Safety Unit (CRH) sent the Guidelines to the directors of the region's public and private hospitals that perform transfusions, and their local haemovigilance specialists in order to raise their awareness of this public health project.

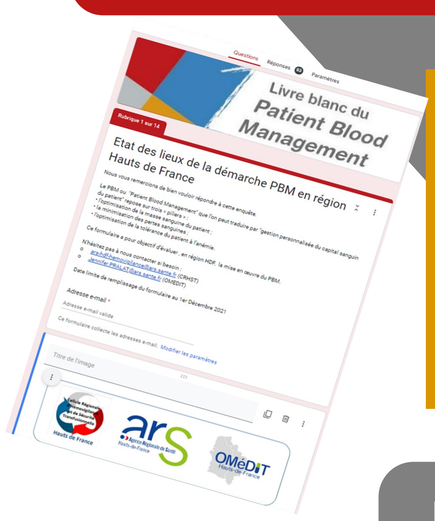

Figure 1

This approach has since been monitored by the CRH and the Observatory for Medicines, Medical Devices and Therapeutic Innovation (OMéDIT), together. From 2021 Oct. to 2021 Dec., with the support of Pr Benoit Vallet (head of the regional health agency, ARS), an online questionnaire form (figure 1) was sent to all transfusing public and private hospitals in our region "Hauts de France" (figure 2). The purpose of the survey was to identify hospitals involved in Patient Blood Management approach and to carry out an inventory prior to the publication of the expected guidelines from the French Health Authority (HAS).

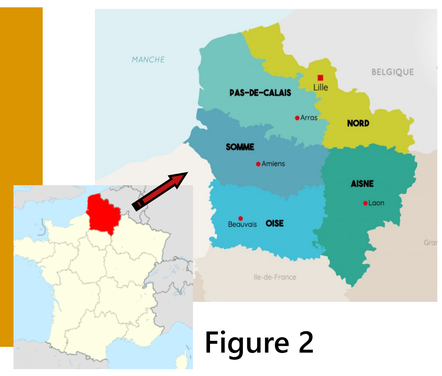

Figure 2

Method: Our survey investigated the PBM deployment in its 3 pillars and its 3 aspects of perioperative management and several criterial including : screening for anaemia and its etiology, definition of a target haemoglobin level for the procedure, methods of managing iron deficiency, use of haemostatic agents or erythropoiesis-stimulating agent , adoption of an optimised and personalised transfusion strategy, etc.

Results : This regional survey included 112 transfusing public and private hospitals. We obtained responses from 82 hospitals (73%) including 59 with a surgical activity (cf figure 3). The relative contribution to the three pillars of PBM, i.e. pre, intra- and post-operative step, are shown in figure 4 regarding the 59 hospitals with surgical activity.

We analyzed which surgical specialities were involved in PBM strategy, especially for pre-operative anemia and iron deficiency screening

We collected data about red blood cells units (RBCu) consumption in the 59 responding hospitals in 2021. We focused on their tranfusing consumption dedicated to all surgery departments and identified the part of consumption the obstetrical surgery, to comply with the latest French Health Authority Guidelines dating from September 2022. The part of RBC units transfused in surgical and gynecology anf obstetrical departments are showed in the table (figure 5)

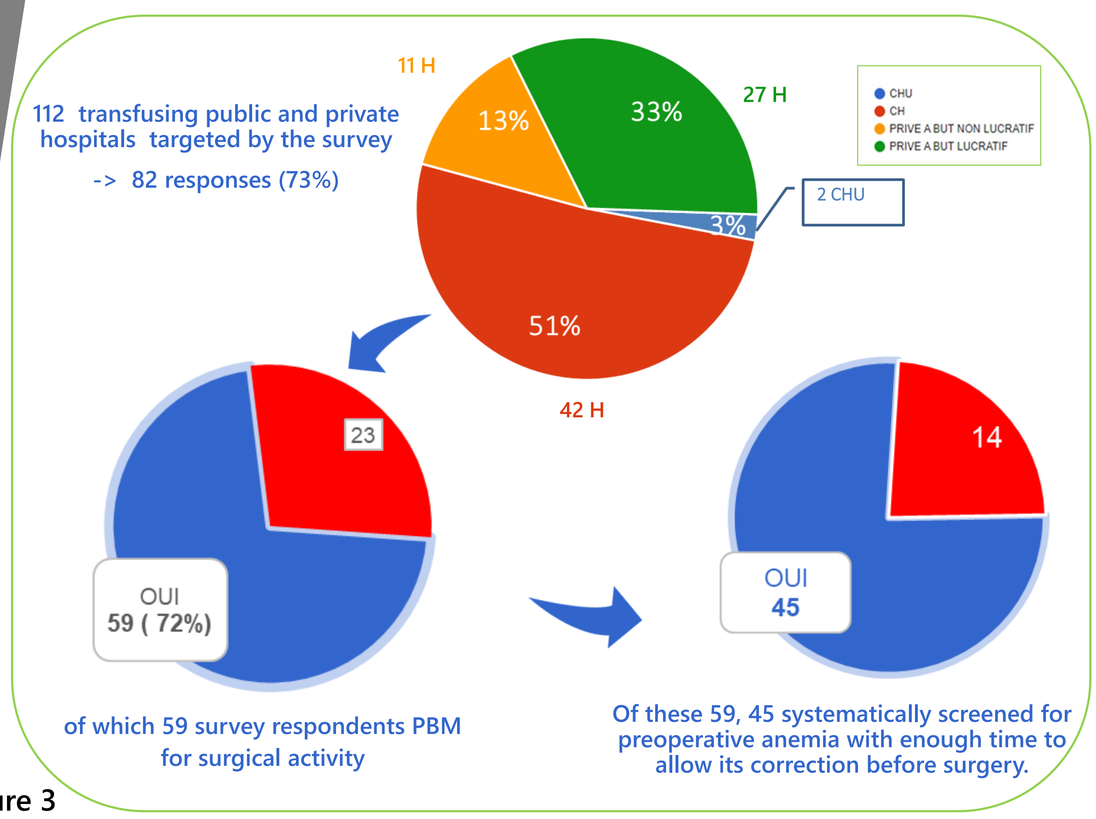

Figure 3

Optimisation of blood volume and red cell mass

Optimization of blood volume and red cell mass	Decision to postpone surgery if preop Hb rate not reached	Iron deficiency management protocol available?
Systematic anemia research for 45 hospitals (76,3%) ⇒ 28 out of 45 systematically investigate anemia etiology by measuring: ⇒ Blood Ferritin level : 25 ⇒ Transferrin saturation : 16	• Postponement for 16 H • No postponement for 25 H	Concerns 20 H (32,8%) of which 8 out of 19 routinely perform iron deficiency research

Minimize Blood Loss

PRE OPERATIVE	INTRA OPERATIVE	POST OPERATIVE
N= 26 •Definition of surgeries with haemorrhagic risk (24) •Coagulation disorder research (23) •Anticoagulants and antiplatelet drugs management (23) .Operating room program (19)	N= 26 •Less invasive surgery (22) •Haemostatic drugs use (22) •Haemostatic surgical procedures improvement (19) •Blood saving (17)	N=26 •Blood loss measure (26) • Normothermia maintening (25) •Coagulation monitoring (21) •Infection treatment (17)

Optimize the patient's tolerance of anaemia

PRE OPERATIVE	INTRA OPERATIVE	POST OPERATIVE
N= 33 •Patient-specific strategy (30) •Identification of patient risk factors (27) •Restrictive transfusion strategy (24) • Comparison predictable blood loss with tolerable blood loss (22)	N= 33 •Ventilation and oxygenation optimization (32) •Optimization of cardiac output (29) •Restrictive transfusion strategy (32)	N= 33 • Anemia treatment (33) • Infection treatment (33) • Restrictive transfusion strategy (30) • Careful use of treatments that increase bleeding (28)

Figure 4

59 hospitals involved PBM by surgical activity: 163 844 RBCu for 40 738 dedicated surgery

Hauts de France results	Total		Number of survey respondents	concerned by PBM for surgery	%
Number of hospitals	112	of which	82	59	
Total RBCu use	197 398		174 913	163 844	
RBCu in all surgery	43 073	21,8%	41 593	40 738	24,9%
RBCu in obstetric and gynecology surgery	1 842	4,3%	1 707	1 689	1,0%

Figure 5

Conclusion : Our study highlighted the heterogeneity of this multidisciplinary approach in private and public hospitals, and revealed the wish to go further in the deployment of PBM by optimizing organization and communication through the involvement of all actors in the process. More and more hospitals are realising that PBM gives them a great opportunity for practice improvement. However, despite current evidence and published guidelines, clinical practice regarding the timing of transfusion varies between physicians and institutions, although most agree that blood products should only be administered when the benefits outweigh the harms. To this end, seeking to involve patients in decisions about management and treatment options, as well as risks and benefits, could be a key communication focus, making PBM popular for all.

See webinar contents