Intro BeQuinT symposium 2023

Prof. Dr. Sarah Lessire, chair BeQuinT

Health
Food Chain Safety
Environment

BeQuinT
Belgian Quality in Transfusion

Programme

Welcome coffee 08:30-9:00

9:00-10:30 **Presentation results 2nd national PBM survey**

The 3 chapters will be discussed:
1) Organisation of PBM
2) PBM in obstetrics
3) Use of O Rhesus negative red blood cells

Break 10:30-10:50

10:50-12:20 **PBM implementation by international experts: education, benchmarking and evaluation**

Is a PBM programme economically reasonable? by Prof. Dr. P. Meybohm

How local and national benchmarking such as the MAPBM can empower hospitals in PBM implementation? by Prof. Dr. E. Bisbe

How to increase PBM knowledge and to build a strong PBM leadership in a country? by Prof. Dr. V. Louw

Lunch 12:20-13:20

13:20-15:00 **Local/national projects in Belgium**

Preoperative anaemia detection and management in elective cardiac surgery patients by Dr. S. Buys

PBM implementation at the CHU UCL Namur : communication with patients and care units by Ms. C. Nobis

National database on RBC antibodies: why and how do we need it? by Dr. E. Lazarova

Technical Interoperability in Belgian eHealth Ecosystem by Mr. J.-M. Polfliet

Conclusions for BeQuinT by Prof. Dr. S. Lessire

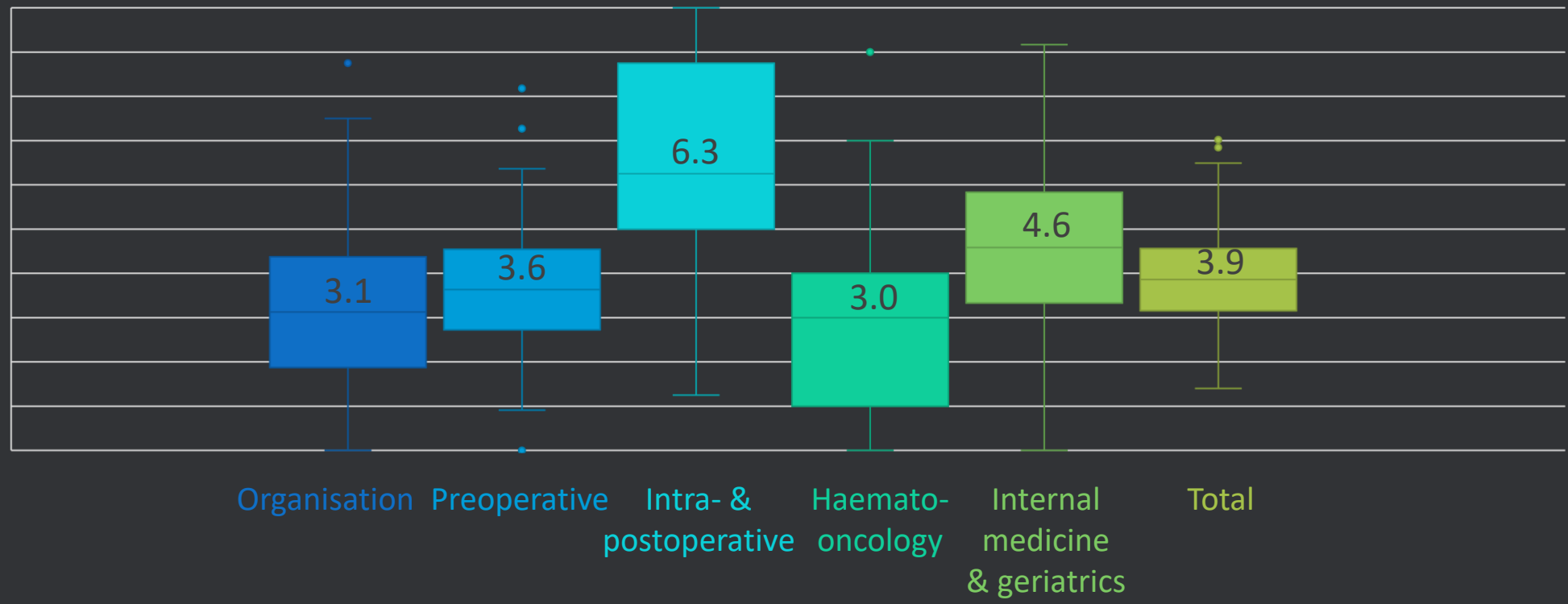
[+ Afternoon break] 15:00

Improving:

1. transfusion practice
2. PBM implementation

1st PBM survey (2020)

Distribution of the scores on 10 (n=96)



Steering Committee

S. Lessire

Clinicians:

- Anaesthesiologists
  C. Van Aelbrouck,
  M. Beran
- Haematologists
  T. Devos, M. Colard
- Gastro-enterologist
  J. Sabino
- Emergency physician
  T. Ecker

Clinical biologists

- E. Bailleul
- L. Bogaert
- V. Deneys
- S. De Bruyne
- A. Hendrickx
- E. Lazarova
- A. Nijs
- R. Seghaye
- K. Van Poucke

Federal:

- M. Efoudebe (FAGG/AFMPS)
- C. Van Meerbeeck (RIZIV/INAMI)
- A. Vlayen (FOD/SPF)
- J. Vanden Broeck (FOD/SPF)

Blood establishments
S. Van Landeghem/
A. Muylaert
T. Najdovski /G. Bulliard

Transfusion Practitioners
C. Van Fleteren,
G. Van Vaerenbergh

National database red cell antibodies

PBM in obstetrics

PBM for general practitioners

Patient blood management is

a patient-centered, systematic, evidence-based approach

to improve patient outcomes

by managing and preserving a patient's own blood,

while promoting patient safety and empowerment

Shander et al. Anesth Analg. 2022 Sep 1;135(3):476-488.

Optimal blood use

- Minimum effective dose of blood comp.
- Seeks to improve blood component use
- Promotes evidence-based transfusion practice
- Employs informed consent

goal

PBM

- Improved blood health
- Seeks to protect and build person's own blood
- Promotes also management of anaemia, bleeding & coagulation
- Employs informed choice

PBM from new kid on the block to standard of care: global definition.
Presentation from A. Shander @UK Transfusion Practitioner Day 2023, 17/05/2023 (online)

PBM anno 2020-2023 in Belgium?

1st chapter: PBM implementation

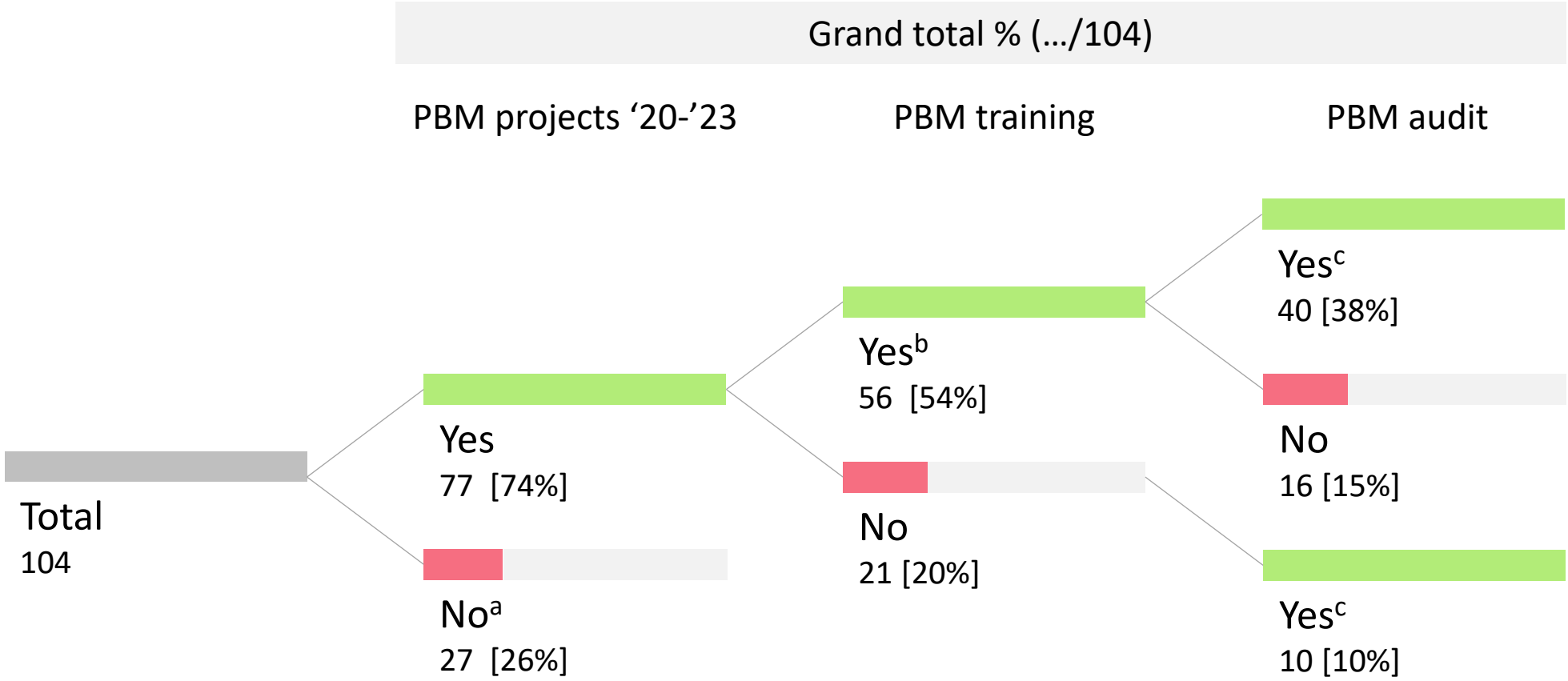
Dr. C. Van Aelbrouck

Health
Food Chain Safety
Environment

BeQuinT
Belgian Quality in Transfusion

Symposium 14/12/2023

Overview PBM implementation



hospitals in 1st PBM survey […/96 = …%]:

[a]28 [29%]

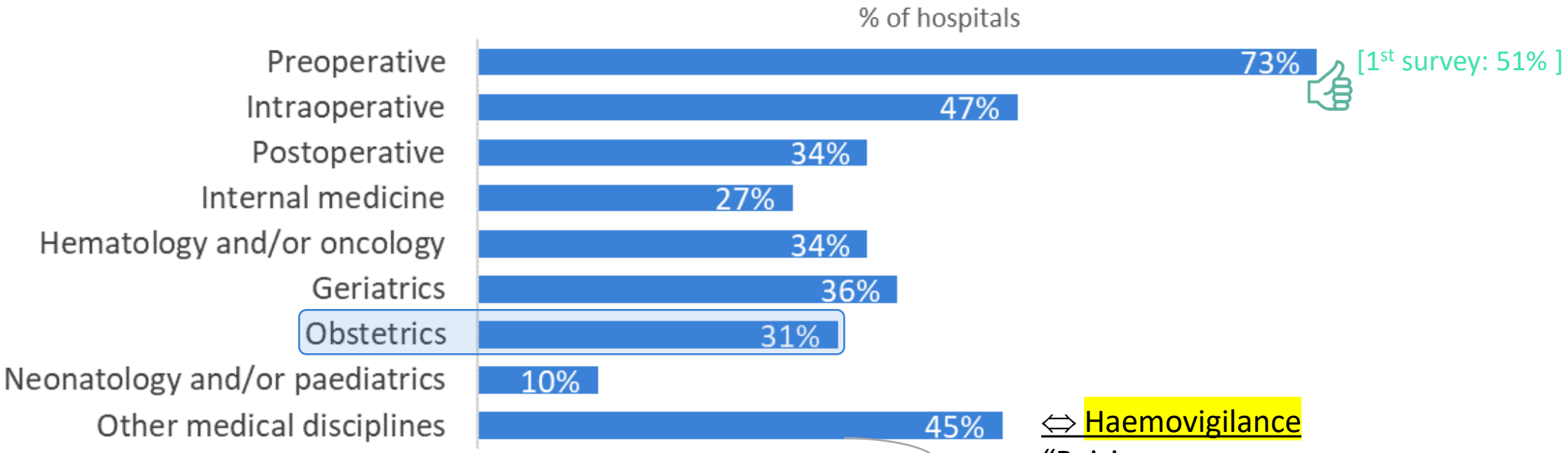
[b]only 18 [19%]

[c]only 14 [15%]

Health
Food Chain Safety
Environment

.be

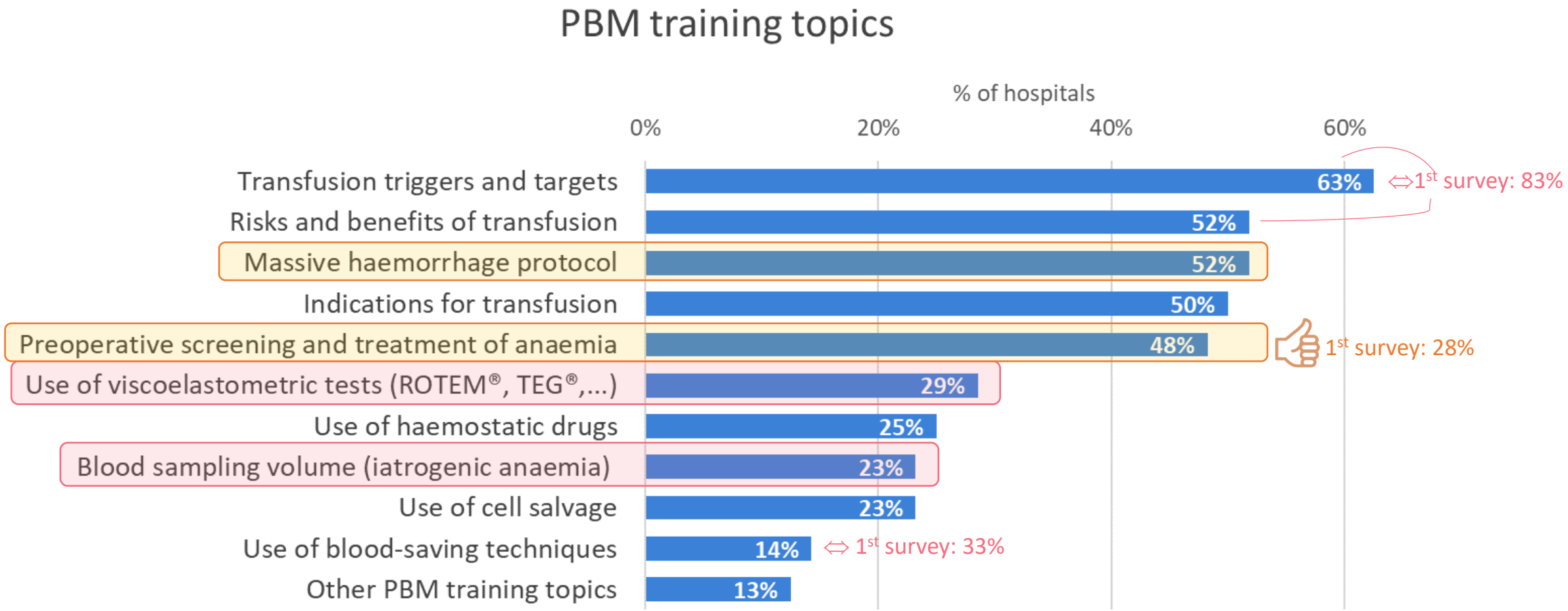
Concerned medical disciplines in PBM projects 2020-2023



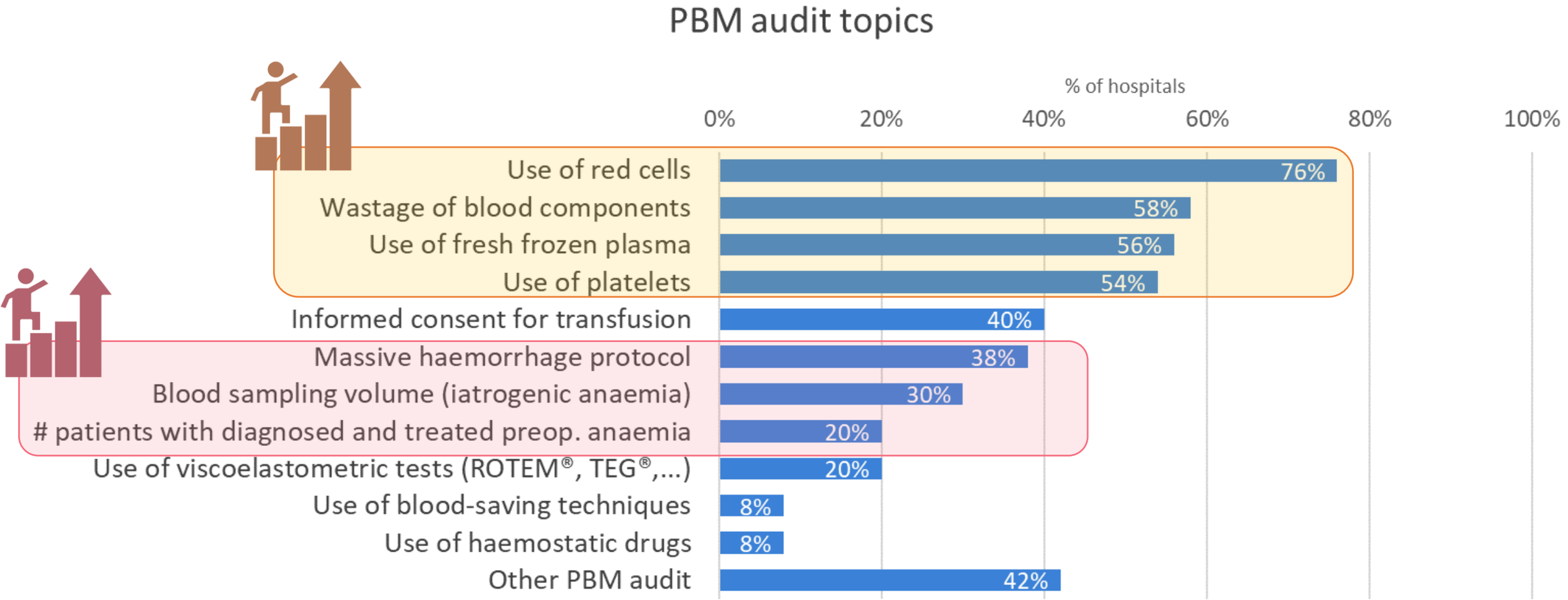
[1st survey: 51%]

⇔ Haemovigilance
"Raising awareness on transfusion reaction reporting"

[n=77]

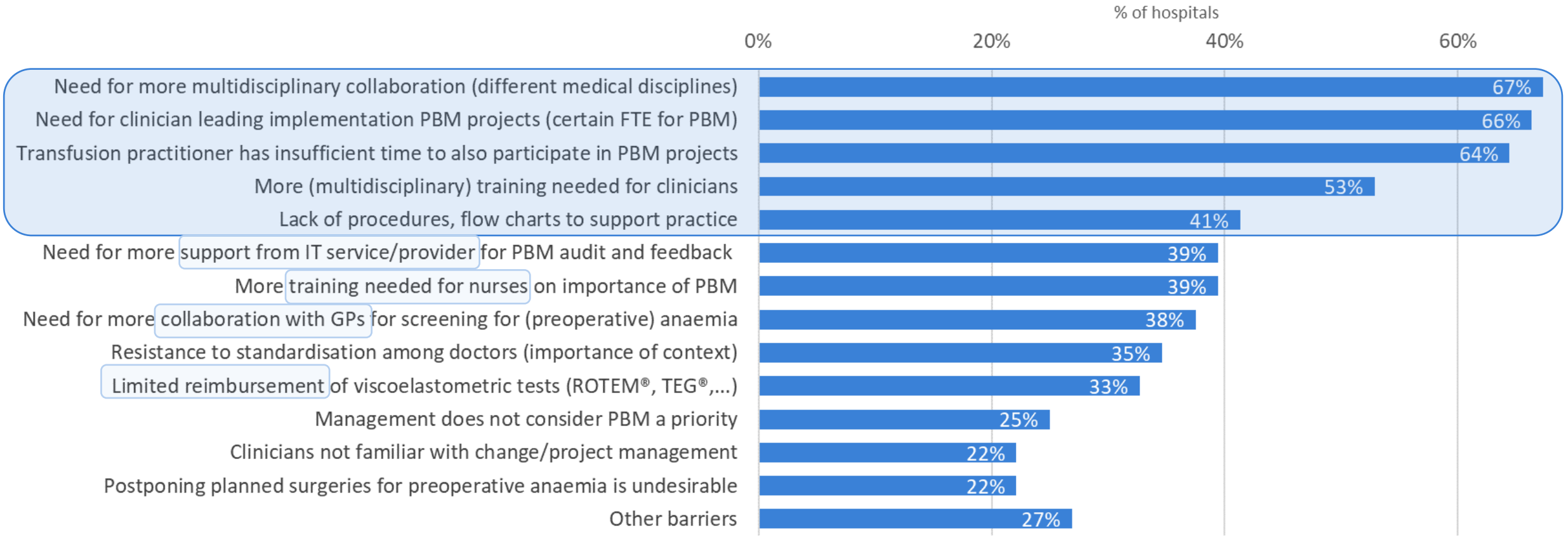

PBM training topics
% of hospitals
0%
20%
40%
60%
Transfusion triggers and targets
63%
⇔1st survey: 83%
Risks and benefits of transfusion
52%
Massive haemorrhage protocol
52%
Indications for transfusion
50%
Preoperative screening and treatment of anaemia
48%
1st survey: 28%
Use of viscoelastometric tests (ROTEM®, TEG®,...)
29%
Use of haemostatic drugs
25%
Blood sampling volume (iatrogenic anaemia)
23%
Use of cell salvage
23%
Use of blood-saving techniques
14%
⇔ 1st survey: 33%
Other PBM training topics
13%

[n=56]


PBM audit topics
% of hospitals
0%
20%
40%
60%
80%
100%
Use of red cells
76%
Wastage of blood components
58%
Use of fresh frozen plasma
56%
Use of platelets
54%
Informed consent for transfusion
40%
Massive haemorrhage protocol
38%
Blood sampling volume (iatrogenic anaemia)
30%
patients with diagnosed and treated preop. anaemia
20%
Use of viscoelastometric tests (ROTEM®, TEG®,...)
20%
Use of blood-saving techniques
8%
Use of haemostatic drugs
8%
Other PBM audit
42%

[n=50]

Encountered barriers to implementing PBM projects in 2020-2023

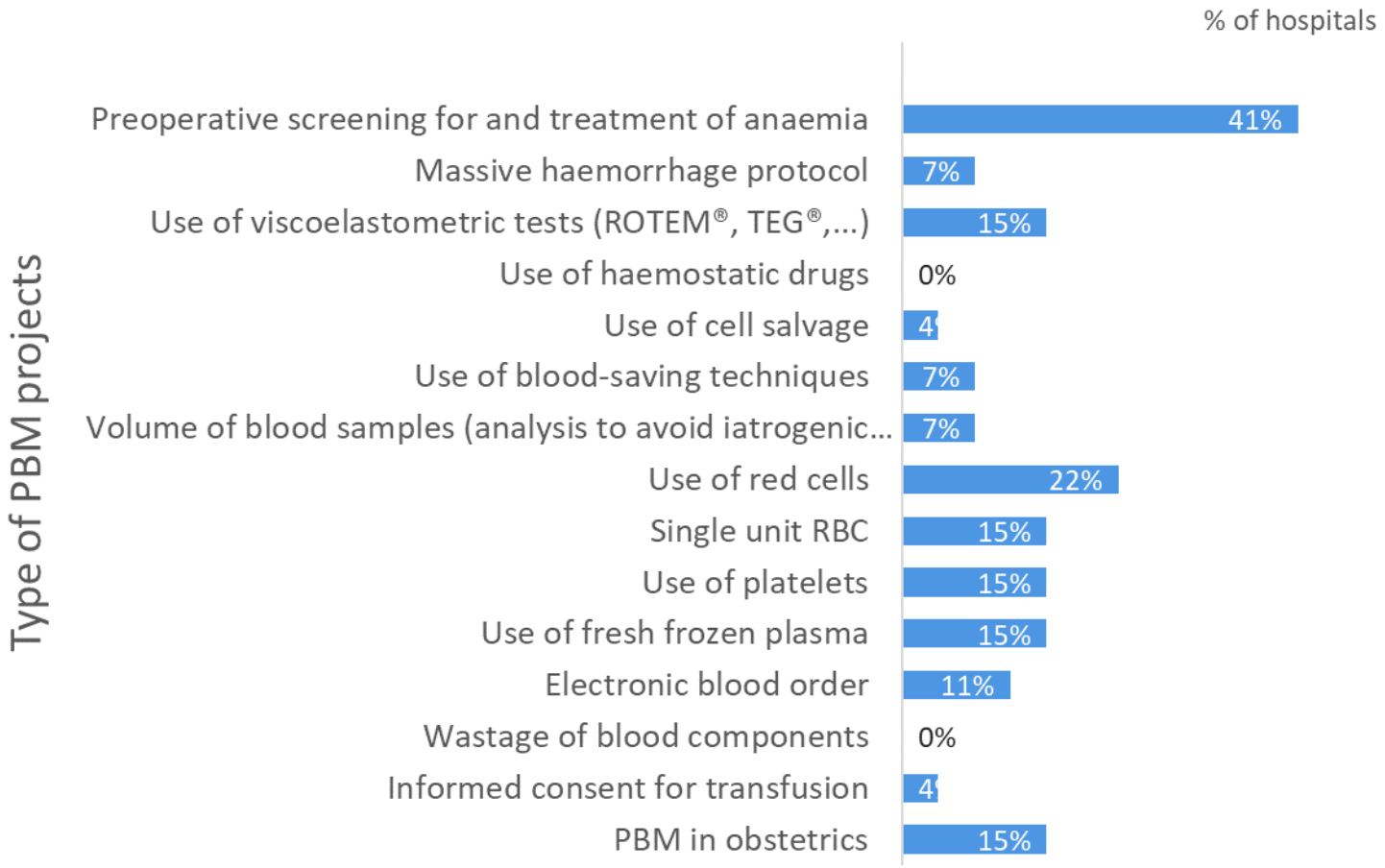


[n=104]
[Barriers stated >20% of hospitals]

Examples of other PBM barriers

- Few incentives for clinicians to apply PBM (1)
  & no clear objectives for clinicians (1)
- Lack of transfusion practitioner (1) / PBM nurse (3)
- Lack of time (4), other priorities during Covid19 pandemic (4)
  Focus on some important transfusion/haemovigilance projects ⇒ lack of time for PBM (2)
- Modification of IT-systems needed for facilitating PBM ⇔ no priority (5)
- Help needed with data analysis (1)
- Difficult consensus about informed consent for transfusion (2)

Planned PBM projects for hospitals without PBM till now



[n=27]

Take home messages

1. **Positive evolution :** more hospitals with ongoing PBM projects compared to 1st PBM survey.

2. Each PBM project should include **data** collection & **feedback**, **training** & **protocols**!

3. **Empower the PBM group**:

Appointment of PBM **dedicated staff**: clinical leadership and PBM nurses!

4. **Project management**:

- **Small number** of projects
- SMART goals - Specific, Measurable, **Achievable**, Realistic, Timely
- Step-by-step realization & evaluation

European Commission H. Gombotz , A. Hofmann et al. (2017) Supporting PBM in the EU. A practical implementation guide for hospitals.

Take home messages

6. PBM implementation should be developed in parallel with ongoing projects related to transfusion practice and haemovigilance:

a. **Improving blood ordering and tracking system**

- Clinical decision support system
- Electronic Blood Tracking System ⇒ 10.000 euros/year in the haemovigilance fund for each hospital

b. **Improving adequate blood screening on time:**

- Anticipated first blood group check
- Red cell antibodies screening to ensure the most compatible blood selection and reduce work for nurses and lab technicians
- Anaemia and iron deficiency screening to enable adequate treatment before hospitalisation

c. **Continuous education** for healthcare providers of **risks related to unnecessary transfusion**

d. **Informed consent about the benefits/risks** of **transfusion** or **alternatives to transfusion**

BeQuinT working group for general practitioners

Gastro-enterologist
J. Sabino (UZ Leuven)

- **Anesthesiologists**
  S. Lessire (CHU UCL Namur),
  A. Yepmo (CHR Haute Senne)

- **Haematologists**
  T. Devos (UZ Leuven)
  M. Colard (H.U.B.

- **Clinical biologists**
  E. Lazarova (CHR Haute Senne)
  L. Bogaert (AZ Rivierenland)

Goal: Developing good clinical practices:

1. Anaemia & Iron deficiency
   - When to screen
   - Who to screen
   - How to screen
   - When to treat (e.g. ID without anaemia)
   - How to treat (PO vs IV) (+ benefits versus risks: side effects)
   - When to refer for IV treatment and follow-up by GPs after hospital discharge
   - Dietary advice to optimise uptake of iron

2. Preoperative, gastro-intestinal and gynaecological bleeding risk assessment and intervention
   - List risk factors (in patients) for perioperative bleeding
   - List of surgeries with high risk of bleeding
   - …

2nd chapter: PBM in obstetrics

Dr. M. Beran & Dr. E. Bailleul

Health
Food Chain Safety
Environment

BeQuinT
Belgian Quality in Transfusion

Symposium 14/12/2023

Why do we need to focus on PBM in obstetrics?

PPH still is a major concern worldwide

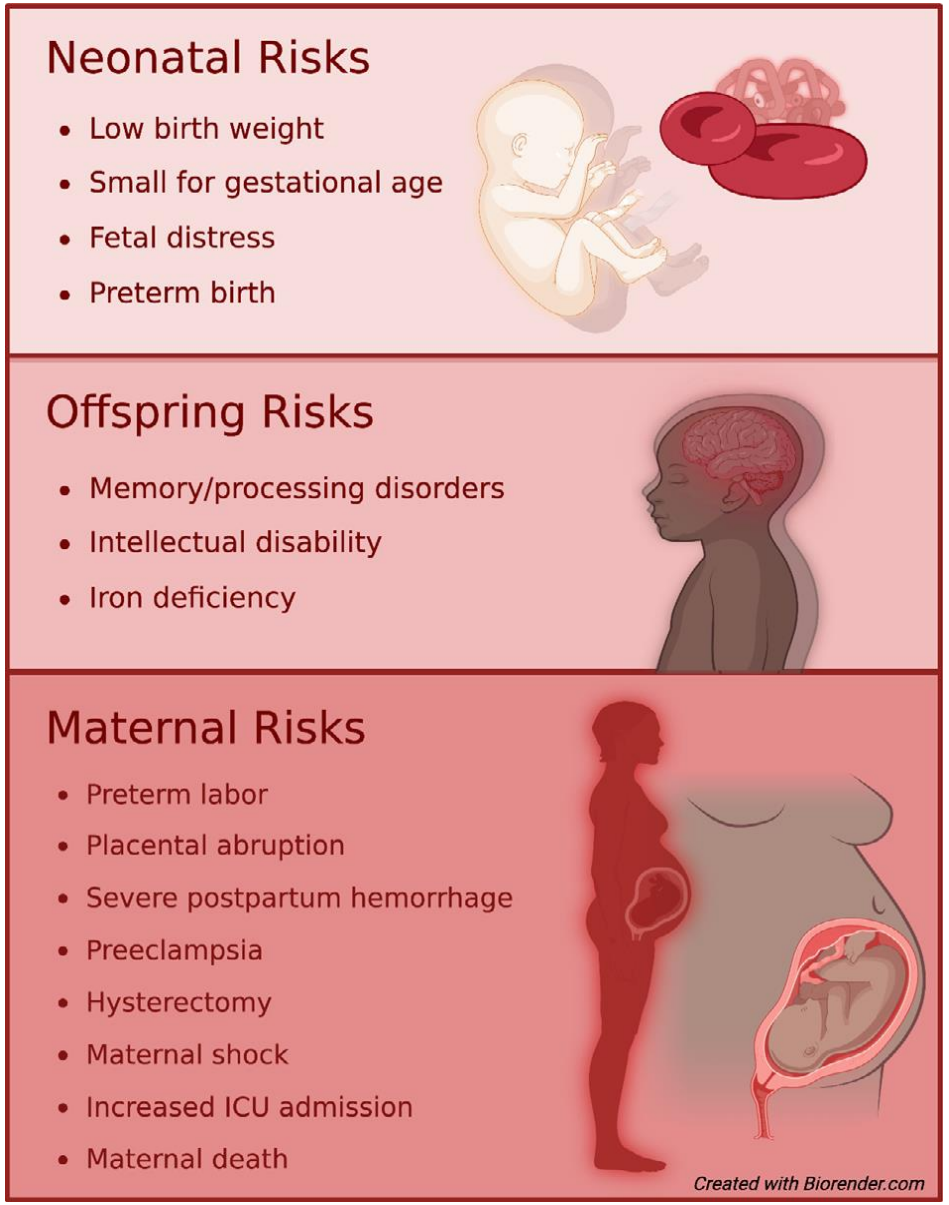
Incidence of PPH is gradually increasing!

High incidence of **iron deficiency anaemia (IDA)** in pregnancy

with negative impact on maternal & fetal outcome if left untreated

Hemolytic Disease of the Newborn (HDN) carries a high fetal and neonatal risk

Maternal and offspring complications imparted by iron deficiency anemia



Benson et al. Eur J Haematol. 2022;109(6):633-642.

PBM in obstetrics – 3 pillars

1. Optimise red blood cell mass before birth
2. Minimise blood loss during birth
3. Correct severe anaemia with iron infusion & avoid unnecessary RBC transfusions

Results BeQuinT survey : baseline to start from!

2.1 Diagnosis and treatment of iron deficiency and anaemia in pregnancy

2.2 Immunohematology in the obstetric setting

2.3 Identification (and preparation) of patients at increased risk of peripartum bleeding

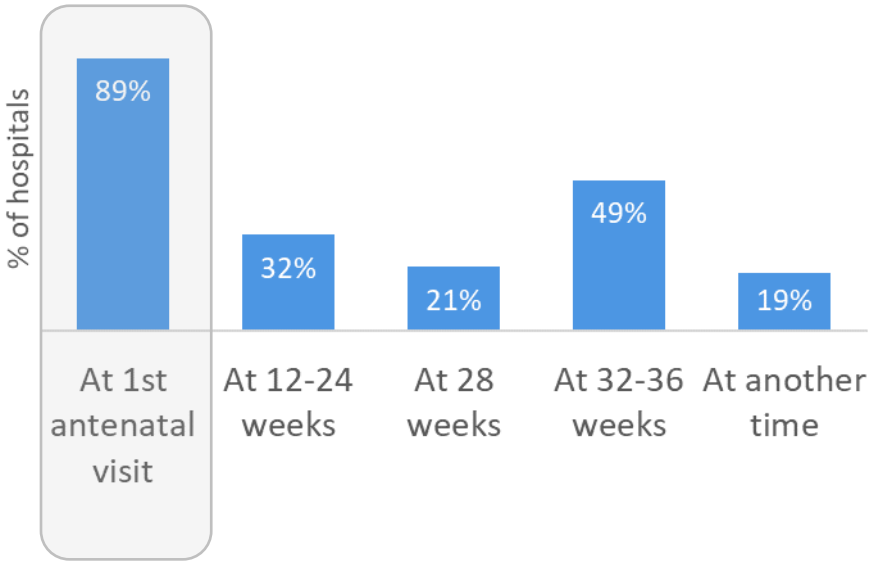
2.4 Management of peripartum bleeding

2.5 Screening and management of postpartum iron deficiency and anaemia

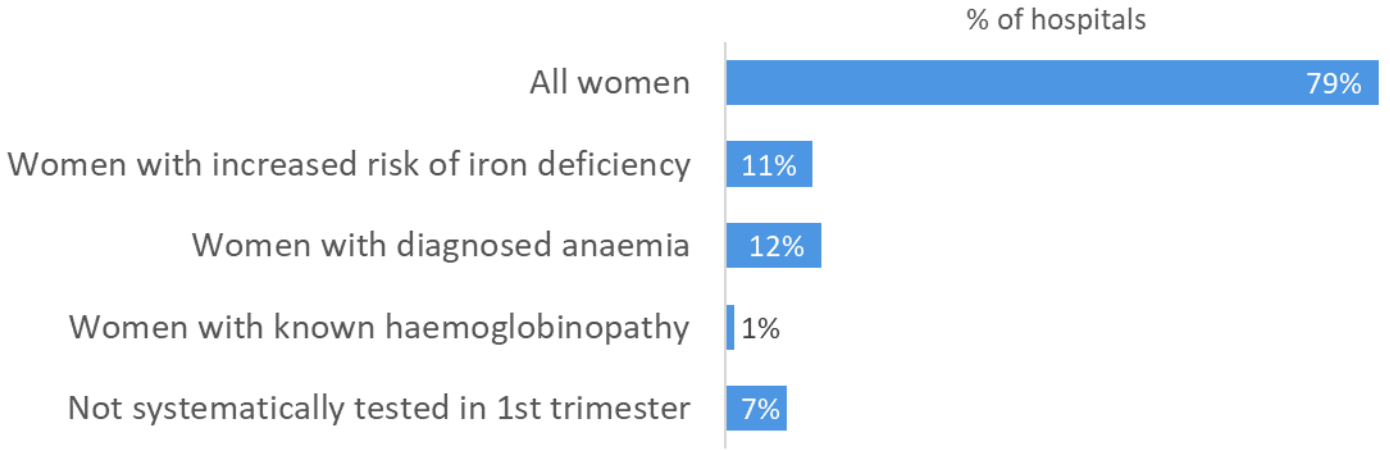
Excl. 9 hospitals without obstetric service

2.1 Diagnosis and treatment of iron deficiency and anaemia in pregnancy

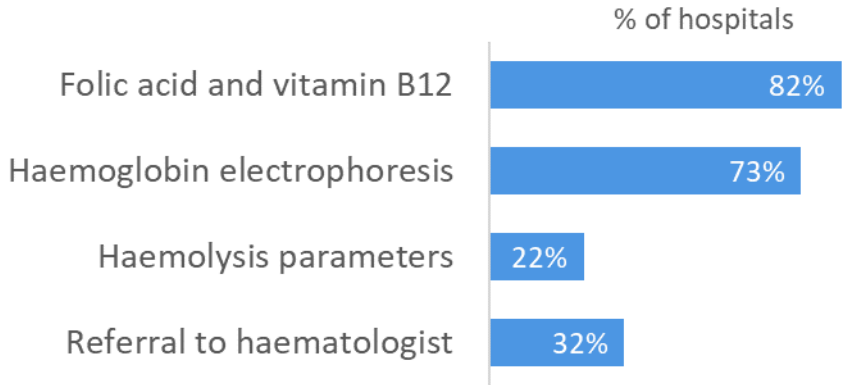
Timing full blood count



Whose serum ferritin is tested in the 1st trimester?



Additional blood testing in case of anaemia without iron deficiency



73% of hospitals with systematic **treatment** of **non-anaemic ID** with **oral iron** supplements in 2nd trim.

Health
Food Chain Safety
Environment

KCE report 248 – Assessment and screening during pregnancy

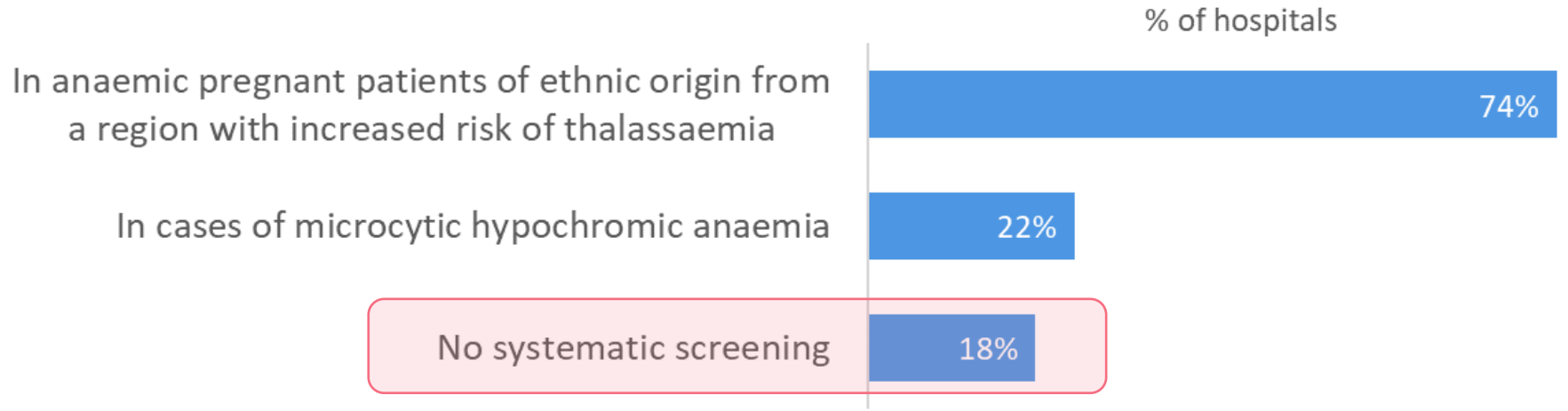
Recommendations anaemia	Strength of recommen-dation	Level of evidence
Offer to test each pregnant woman for anaemia in **early pregnancy.** In addition to the haemoglobin level, it is also useful to measure the MCV, MCH and MCHC levels. A second examination at the **beginning of the 3rd trimester** may be indicated ahead of childbirth. [KCE 2004]	Strong	NA (CBR)*
There is no evidence that platelet and leukocyte counts are useful during pregnancy. However, in Belgium, this test is often routinely performed in the laboratory at the time of anaemia detection. [KCE 2004, amended]	NA	NA

* Level of evidence from Australian 2014 guideline: CBR= Consensus based recommendation because insufficient evidence to support recommendation

⇔ 89% of hospitals: full blood count at 1st antenatal visit

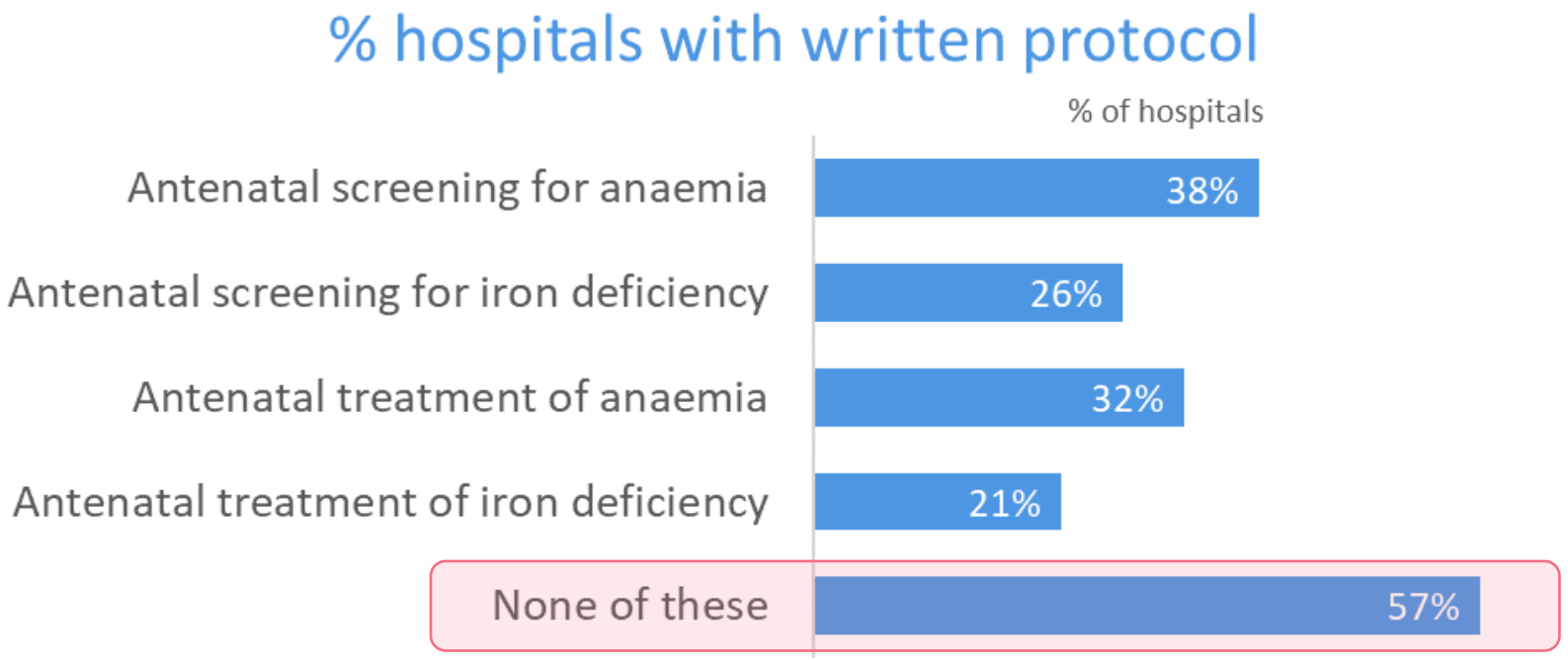
⇔ 49% full blood count at 32-36w

Systematic screening for haemoglobinopathies in pregnant patients



Systematic serum ferritin testing in patients with proven haemoglobinopathy:
81% of hospitals

[n=95]


% hospitals with written protocol
% of hospitals
Antenatal screening for anaemia
38%
Antenatal screening for iron deficiency
26%
Antenatal treatment of anaemia
32%
Antenatal treatment of iron deficiency
21%
None of these
57%

[n=95]

Aim IH in obstetrics: preventing Haemolytic Disease of the Newborn

Haemolytic Disease of the Newborn:

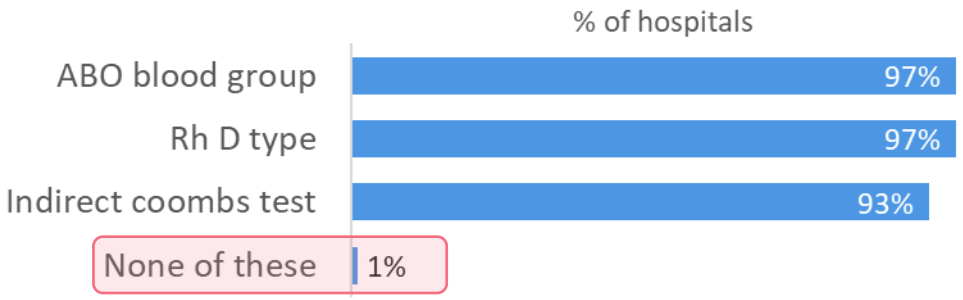
- Estimated incidence of HDN: 3 to 8/100.000 per year
- Before anti-D prophylaxis: responsible for 1% of fetal losses

Red cell antibodies during pregnancy:

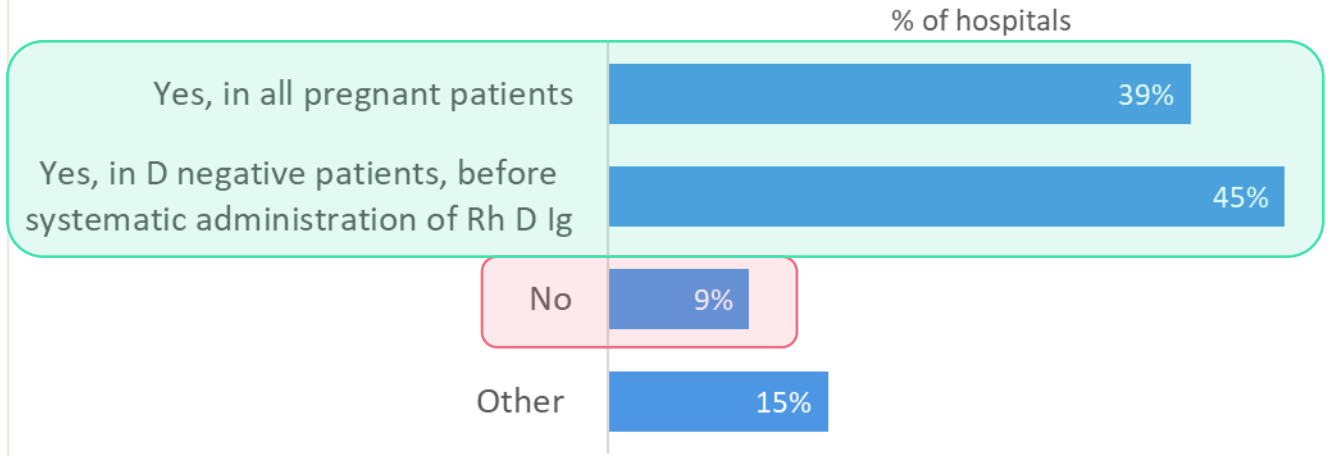
- 15% of pregnancies: ABO incompatible
  - 4% HDN
- 1% of pregnancies during first trimester: development of red cell antibodies:
  - 60% not linked to HDN
  - 40% linked to HDN
    - 8% anti-D
    - 32% non-anti-D (mostly anti-K, anti-c, anti-E)

Myle AK et al. Pediatric Health med Ther. 2021; 12: 491-498.

Systematic blood testing in first antenatal visit



Systematic testing of indirect coombs at 28 weeks of pregnancy



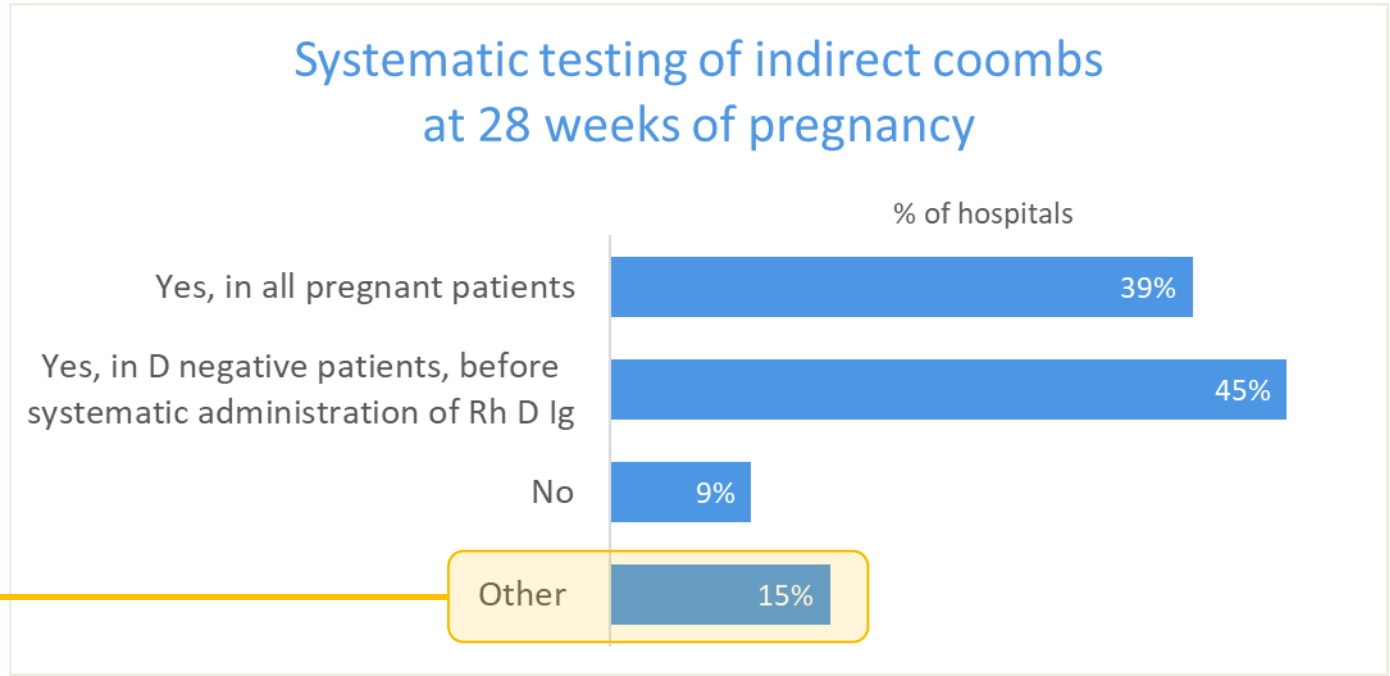
[n=95]

Other:

- together with glucose challenge test at 24 – 25 weeks (3)
- for all RhD negative patients without systematic administration of anti-D Ig (4)
- only for RhD negative mothers with unknown bloodgroup of baby, or known PCR RhD pos (NIPT) (1)

Other timing:

- 24 weeks (1)
- 32 weeks (1)
- 32-36 weeks (1)
- 37 weeks (1)
- between 24-28 weeks, 35 weeks and at birth (1)
- All patients at 32 weeks and all RhD- patients every month (1)



[n=95]

Guidelines

- Systematic testing of ABOD blood group and Indirect Coombs in 1st antenatal visit recommended!
- Repeating Indirect Coombs at 28 weeks: different guidelines!
- References for Belgium:
  - KCE report 248 – 2015
  - Domus Medica rapport – mei 2015
  - VVOG – 2023
  - Guide de consultation prénatale – 2e edition – Fevr 2022; publié avec CRGOLFB

TO DO: NATIONAL RECOMMENDATIONS BY WORKING GROUP

Risk of immunisation

- Without prophylaxis: 14,7%
- With routine postpartum prophylaxis: 1,6%
- With routine 3rd trimester prophylaxis: 0,5%

Crowther CA et al. Cochrane Database Syst Rev. 2000:(2):CD000020.

Rh D negative blood group with Indirect Coombs positive for anti-D

% of hospitals with written protocol that describes:	
Discussion with the lab whether likely to be **passive or preformed** allo-antibodies	41%
Women with **allogeneic anti-Rh D antibodies** do not need (or shouldn't receive) Rh D immunoglobulin	21%

[n=95, multiple answer]

Non-invasive prenatal test (NIPT) for determining fetal Rh D status

% of hospitals with written protocol that describes:	
In all Rh D negative pregnant women (who give consent)	15%

[n=95]

Availability is changing!

RIZIV/INAMI diagnostic rules:

- Rh D negative pregnant woman and invasive test
- Rh D negative pregnant woman with anti-D antibodies

Systematic administration of **antenatal** anti-Rh D prophylaxis to Rh D negative women

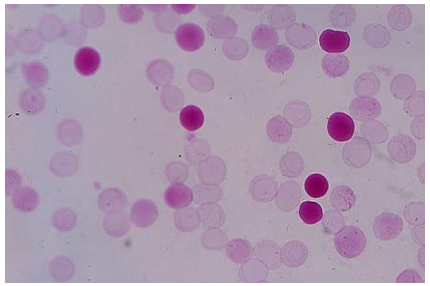
% of hospitals with written protocol that describes:	
No written protocol on anti-Rh D prophylaxis	51%
At 28 -30 weeks	47%
At 34 weeks	1%
Multiple times antenatal	1%

[n=95, multiple answer]

Antenatal anti-Rh D prophylaxis to Rh D negative women **after a sensitising event**

% of hospitals with written protocol that describes:	
Administration of antenatal Rh D Ig within 72h of sensitising event	69%
List of potentially sensitising events	47%
Assessment of feto-maternal bleeding volume after a sensitising event (after 20 weeks) to determine the dose of anti-D Ig	62%

[n=95, multiple answer]



Dosing: 1500 IU (300 µg) anti-D profylaxis for 15 mL FMT

After the delivery by Rh D negative women

% of hospitals with written protocol that describes:	
Assessment of feto-maternal bleeding volume to determine the dose of Rh D Ig	57%
Rh D type and Direct Coombs on cord blood or in newborn	**66%**
Systematic administration of Rh D Ig (at least 500 IU) within 72h of delivery of Rh D positive baby	**78%**

[n=95, multiple answer]

Protocol on prophylactic use of Rh D Ig in obstetrics

None of the previously discussed items in a written protocol:

15%

SHOT : Anti-D Ig Administration in Pregnancy - an aide memoire

International resources

Royal College of Obstetricians & Gynaecologists

Blood transfusion in obstetrics. Green-top Guideline No.47. May 2015

SHOT Serious Hazards of Transfusion

SHOT Bite No. 2 Anti-D Ig Administration.
SHOT Anti-D – an aide memoire.
SHOT – How IT systems can support safe practice in anti-D Ig management in pregnancy.

NATIONAL BLOOD AUTHORITY AUSTRALIA

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

National Blood Authority. Prophylactic use of Rh D immunoglobulin in pregnancy care 2021

National resources

⇨NEED FOR UNIFORM GUIDELINES!

VVOG
VLAAMSE VERENIGING VOOR OBSTETRIE EN GYNAECOLOGIE vzw

Clinical guidance paper 2023.
Preventie en behandeling van allo-immunisatie van erytrocyten.

CRGB

Guide de consultation prénatale – 2e edition – fevrier 2022
COLLÈGE ROYAL DES GYNÉCOLOGUES OBSTÉTRICIENS DE LANGUE FRANÇAISE DE BELGIQUE

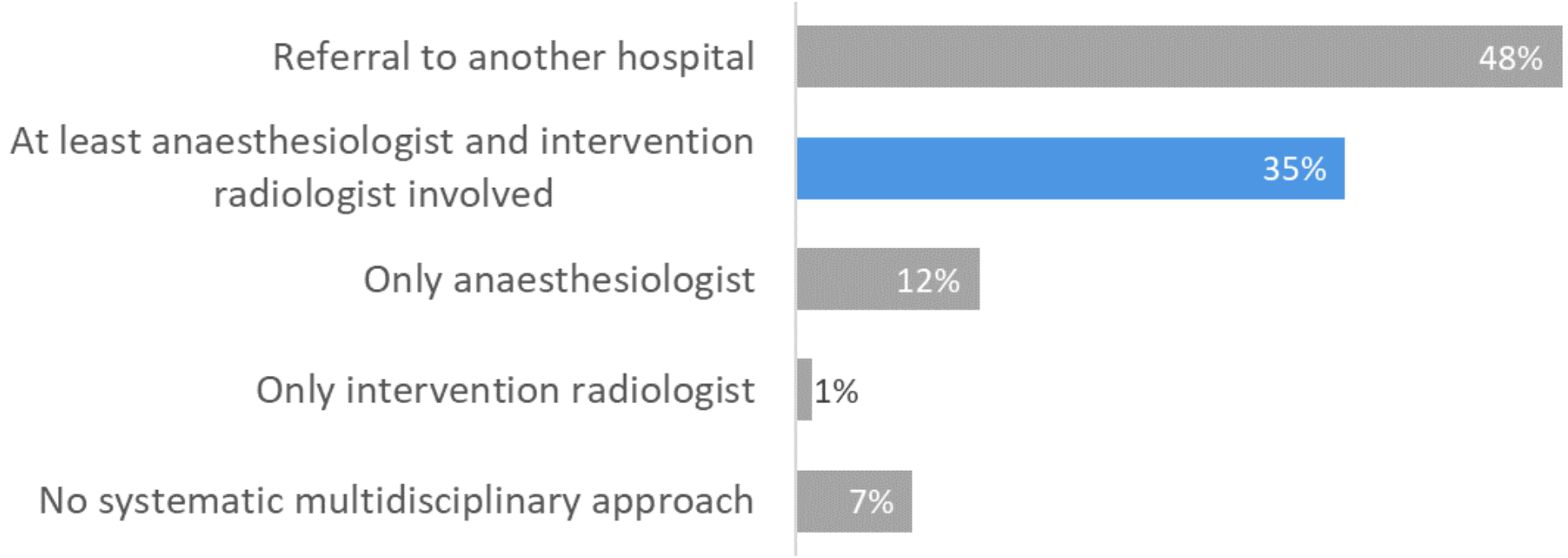
KCE
FEDERAAL KENNISCENTRUM VOOR DE GEZONDHEIDSZORG

KCE report 248 – 2015: what are the recommended clinical assesment and screening tests during pregnancy?

DOMUS MEDICA
ALLES VOOR HUISARTSEN

Richtlijn zwangerschapsbegeleiding - 2015

Systematic multidisciplinary planning and approach in pregnant patients with suspected Placenta Accreta Spectrum



[n=95]

Written protocol on multidisciplinary management of PPH

(activation of the protocol, gynaecological management, (Point-Of-Care guided) transfusion algorithm, embolisation, etc.)

	% of hospitals
Specific protocol on peripartum haemorrhage	85%
General protocol on massive haemorrhage	15%

[n=95]
PPH = peripartum haemorrhage

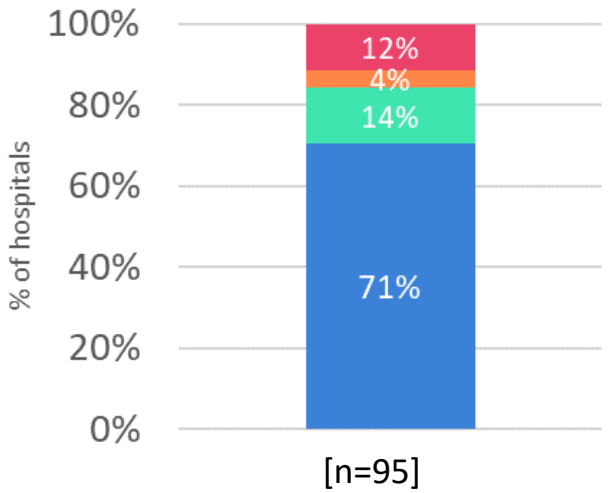
Involvement of anaesthesia in early stage of severe peripartum haemorrhage

(even in the absence of haemodynamic instability)

	% of hospitals
Yes	66%
No	34%

[n=95]

Systematic coagulation testing during serious peripartum bleeding

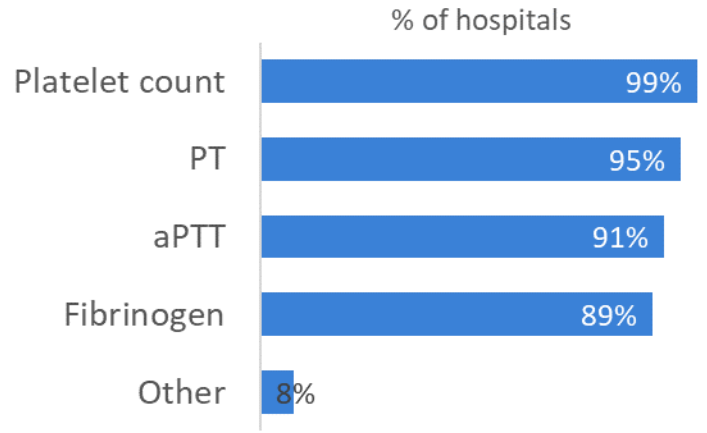


No systematic testing

By viscoelastic tests → [100%, n=4] → Correction of low fibrinogen < 2 g/L (or ROTEM: FIBTEM A5 < 12 mm)

By standard lab tests and sometimes by viscoelastic tests

By standard lab tests → Which standard coagulation tests? [n=80]



Cell salvage during C-section

	% of hospitals
Never	85%
In patients who refuse transfusion	11%
When RBC are not readily available	5%
Routinely in patients at high risk for PPH	6%

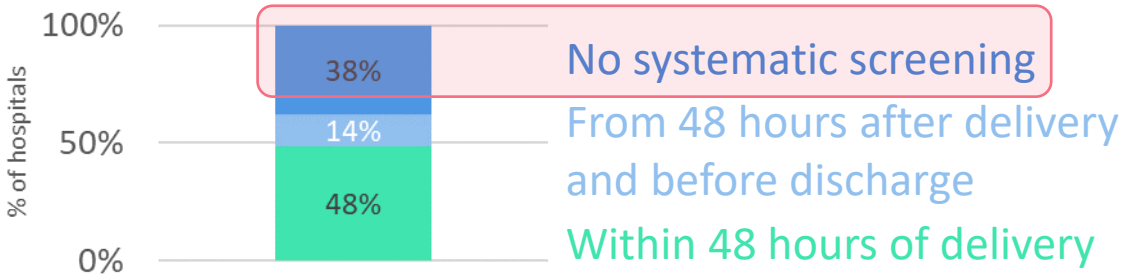
[n=95]
PPH = peripartum haemorrhage

Training on PPH management protocol in past 2 years

	% of hospitals
For obstetricians	55%
For midwifes	61%
For anaesthesiologists	17%
No training	33%

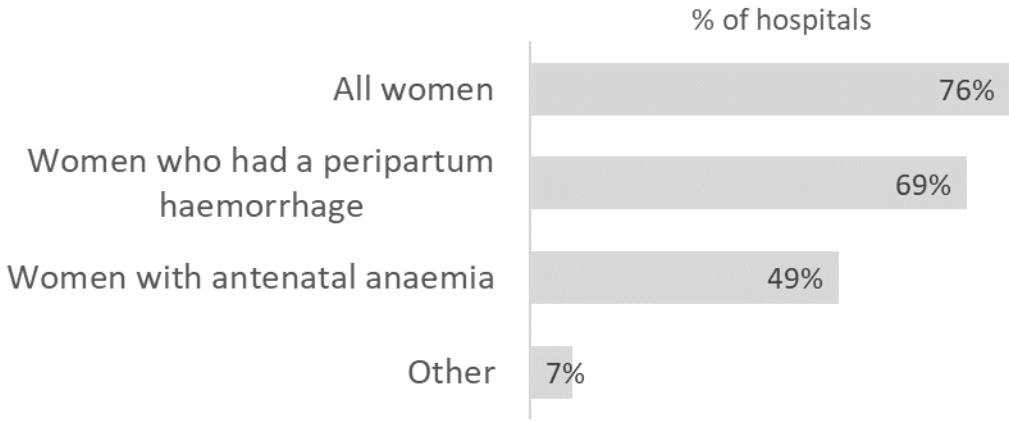
[n=95]
PPH = peripartum haemorrhage

Systematic screening for postpartum iron deficiency and anaemia

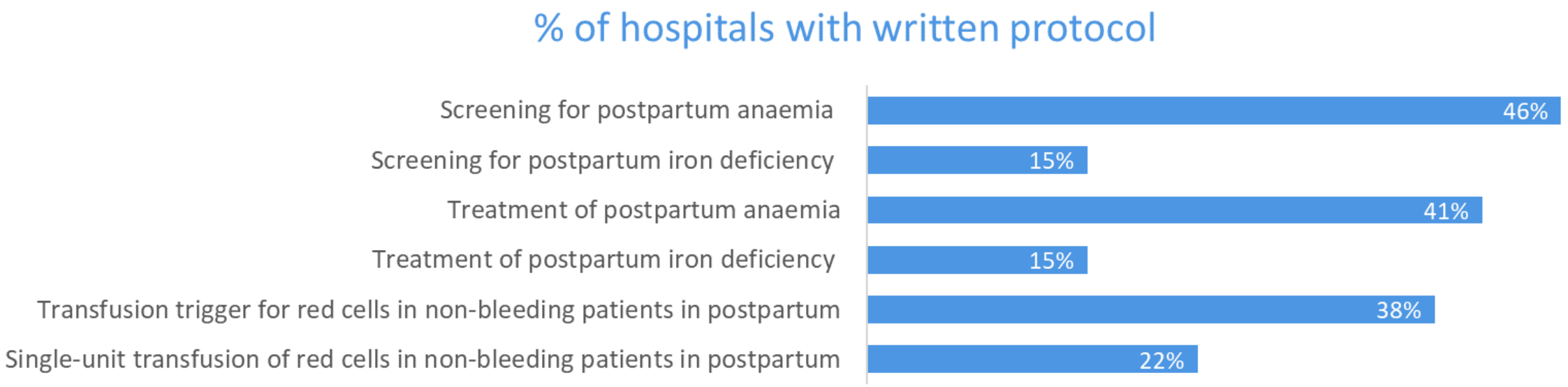


[n=95]

Who is systematically screened for postpartum iron deficiency and anaemia?



[n=59]


% of hospitals with written protocol
Screening for postpartum anaemia
46%
Screening for postpartum iron deficiency
15%
Treatment of postpartum anaemia
41%
Treatment of postpartum iron deficiency
15%
Transfusion trigger for red cells in non-bleeding patients in postpartum
38%
Single-unit transfusion of red cells in non-bleeding patients in postpartum
22%

[n=95]

Take home messages

1. **Anaemia** should be addressed early in pregnancy!

2. All obstetric units should have a uniform **written protocol** on the **treatment of IDA!**

3. Systematic **testing of blood group and antibodies** in first antenatal consult is needed

4. **Guidelines** on monitoring of **indirect coombs, antibodies and titers** during pregnancy should be **uniform!**

5. Need for **written and uniform protocols** concerning anti-D prophylaxis

6. **PCR** Foetal Rhesus D in **maternal blood** is more available

Take home messages

7. A **multidisciplinary** approach and planning should apply to all pregnant women at increased **risk for PPH!**

8. All obstetric units should have a **multidisciplinary protocol on the management of PPH** (including transfusion algoritm)

9. Everyone involved (gynaecologists, midwives, anesthesiologists) should be trained on a regular basis!

10. All obstetric units should have a **written protocol on the management of postpartum anemia** (to ensure optimal management and improve maternal (functional) outcome)

Goals BeQuinT working group PBM in obstetrics

1) **2024: Webinar(s) PBM in obstetrics**
   - Diagnosis and treatment of IDA in pregnancy
   - Postpartum hemorrhage management
   - Immunohematology in pregnancy

2) **Recommendations on how to implement PBM in obstetrics**

   (based on existing international guidelines)

BeQuinT working group PBM in obstetrics

M. Beran (Anaestesiologist, ZOL)
L. Bogaert (clinical biologist, AZ Rivierenland)

Clinicians:

- Obstetricians
  T. Mesens (ZOL, VVOG)
  E. Pazzaglia / D. Goldman (CHU Charleroi)
  S. Hollemaert (CHU Tivoli, CRGOLFB)
  G. Vandenberghe (UZ Gent)

- Anaesthesiologists
  L. Balant (CHU Charleroi)

- Haematologist
  M. Colard (Erasme)

Clinical biologists

- G. Bulliard (Croix-Rouge de Belgique)
- L. Moreno (CHU UCL Namur)
- A. Devey (CHU de Liège)

3rd chapter: Use of Rh D negative red cells

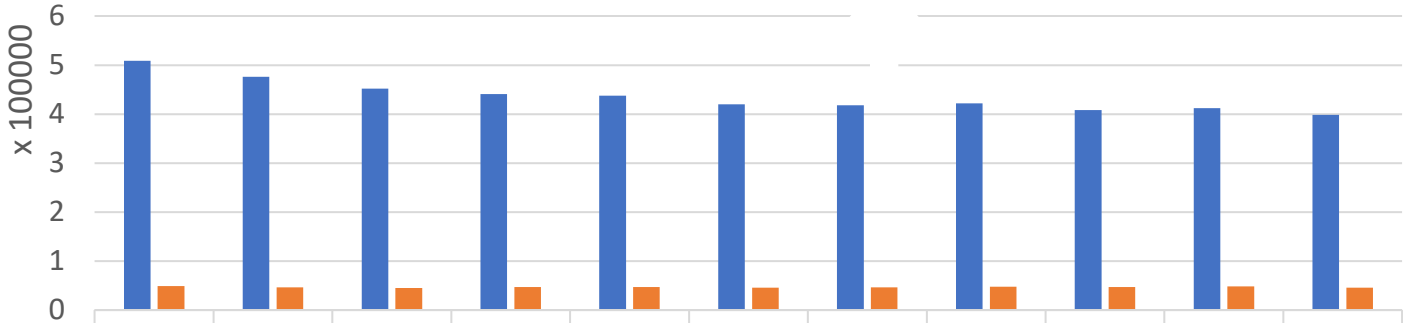
Dr. R. Seghaye & Prof. Dr. V. Deneys

Health
Food Chain Safety
Environment

BeQuinT
Belgian Quality in Transfusion

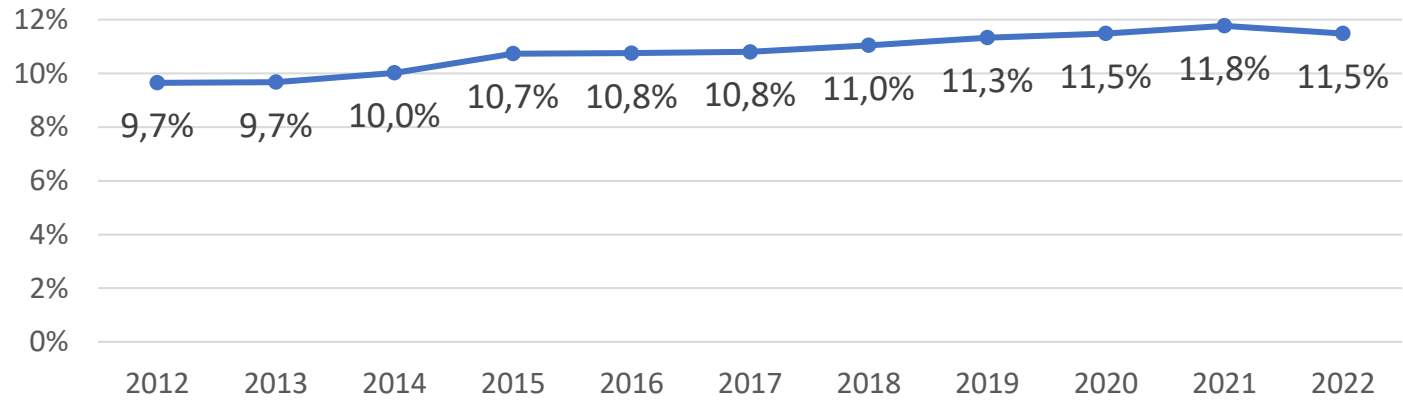
Symposium 14/12/2023

General trend: number of distributed RBC is ↘



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total (all blood types)	508594	476425	451883	440859	437663	420228	418008	422203	408125	411902	398422
O negative	49062	46074	45260	47320	47047	45399	46143	47852	46862	48468	45750

Supply vs demand: % of distributed O negative RBC is ↗



⇔ 6-7% O neg. of Caucasian population

Data from FAGG/AFMPS

Emergency use of uncrossmatched O D negative red cells is not without risk

- Not universally compatible with all patients:

  unexpected antibodies targeting other RBC antigens like E, Kell, Duffy,…

- Can cause immunisation in O D positive female patients with childbearing potential (phenotype CC or EE)

- Extravascular hemolysis: rarely life threatening

  ⇔ circulating life span of transfused RBC (=effectiveness) ↘

Should uncrossmatched RBC be RhD+ or RhD- ?

<u>Rhesus D negative red cells:</u>

⇏ D-alloimmunisation with potential for haemolytic disease of the fetus and newborn (HDFN)

⇔ very scarce products compared to RhD-positive red cells

⇨ Ideally: RhD-negative red cells to females of childbearing potential, if her RhD-type is negative or unknown

Possible consequences of D-alloimmunisation

1) Future routine transfusions could be delayed

2) Extravascular haemolytic reaction

   (if patients' anti-D is active or after alloimmunisation in future RhD-positive emergency RBC transfusion)

3) HDFN during a subsequent pregnancy

Yazer 2023 Hematology;28(1):2161215

Use of O RhD negative units depends also on inventory management in hospital blood banks

- To prevent time expiry?
- Patient-specific blood group not held in inventory?
- Insufficient stock/blood shortages?
  - Rh neg
  - other blood groups
- …

Health
Food Chain Safety
Environment

https://www.health.vic.gov.au/publications/the-use-of-o-rhd-negative-red-blood-cells-according-to-guidelines-audit-report-2018

.be

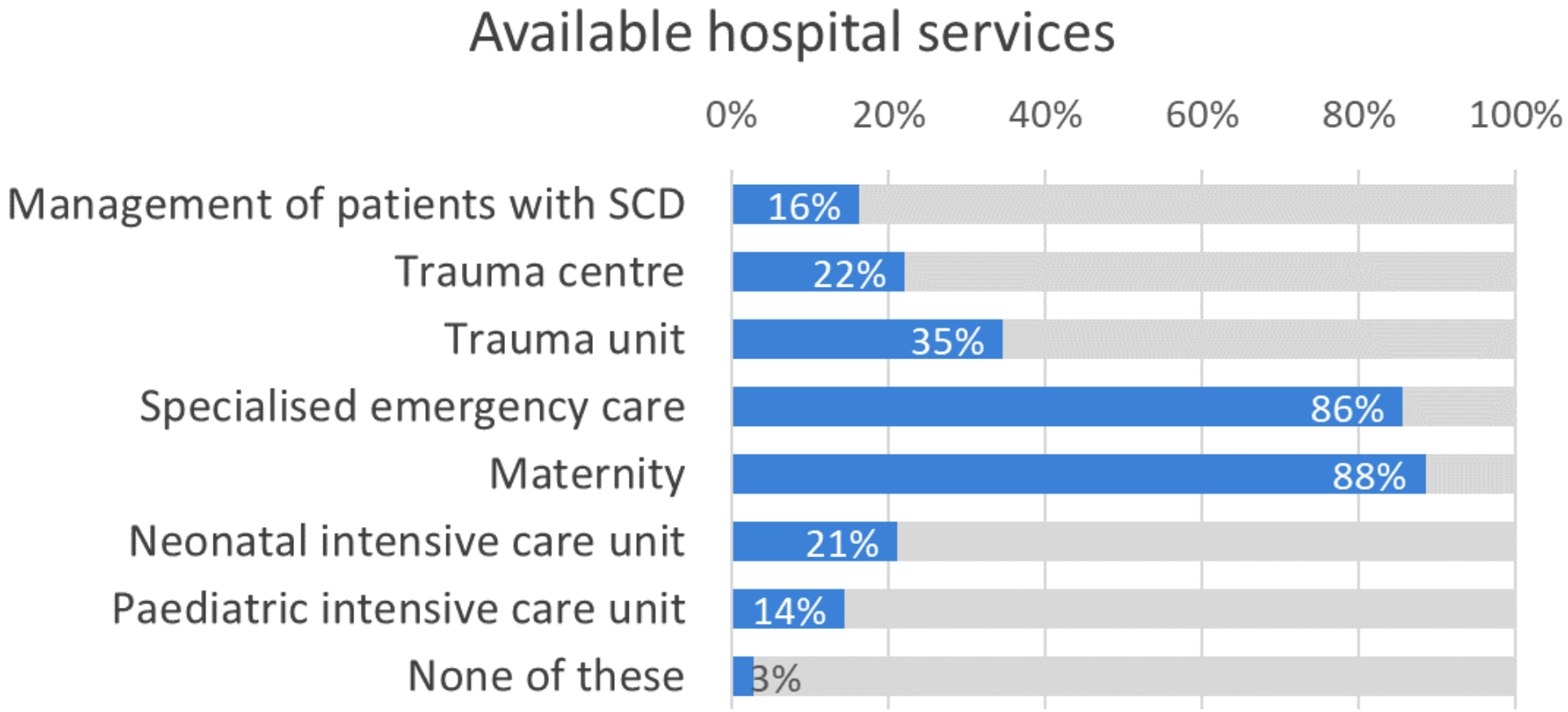
Use of O RhD negative units & SCD

- Genetic red cell disorder which mostly affects people of black ethnicity
- Europe: prevalence ~30/100,000 ⇔ scarce & fragmented epidemiology sources[1]
- End of 2012: 469 SCD patients regularly followed and registered by 8 Belgian hospitals[2]
- People with SCD need regular transfusion, most often with the specific blood sub-type R_0
- Published alloimmunisation rate ranges from 20 to 50% [3]

  ↘ rate by matching for Rh (C,D,E) and K antigens

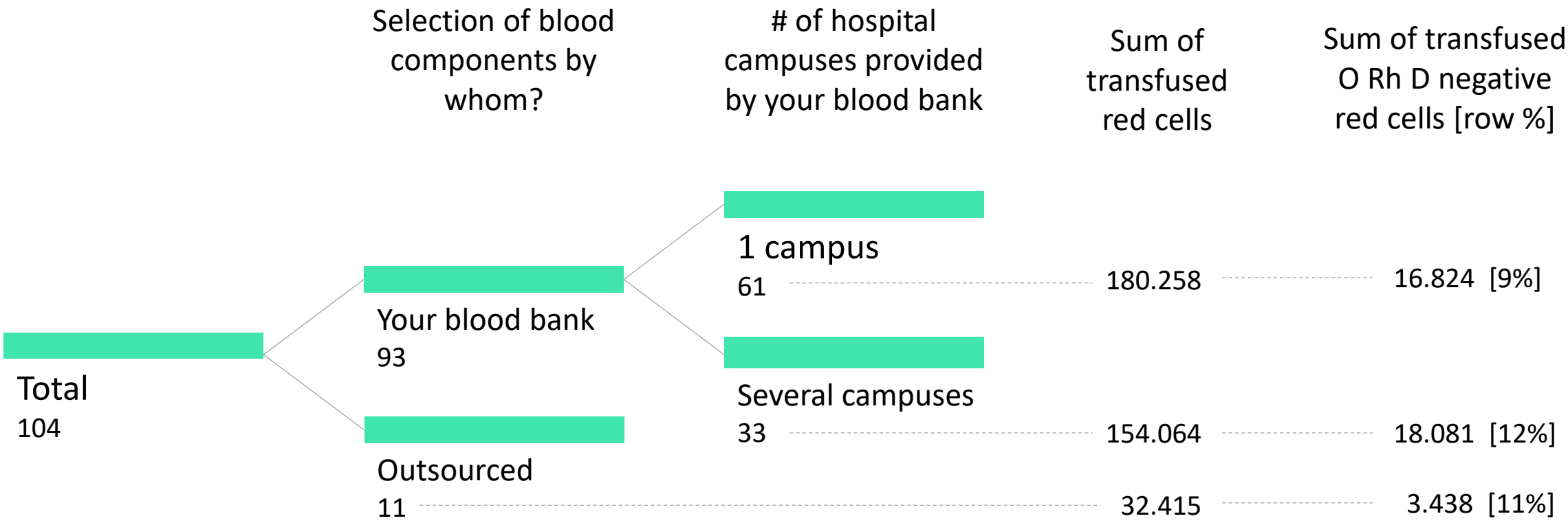
1. Colombatti et al. J Clin Med. 2023;12(17):5538.
2. Gulbis et al. Int J Neonatal Screen. 2018 ;4(4):37.
3. Yazdanbakhsh K et al. Blood. 2012;120(3):528-37.

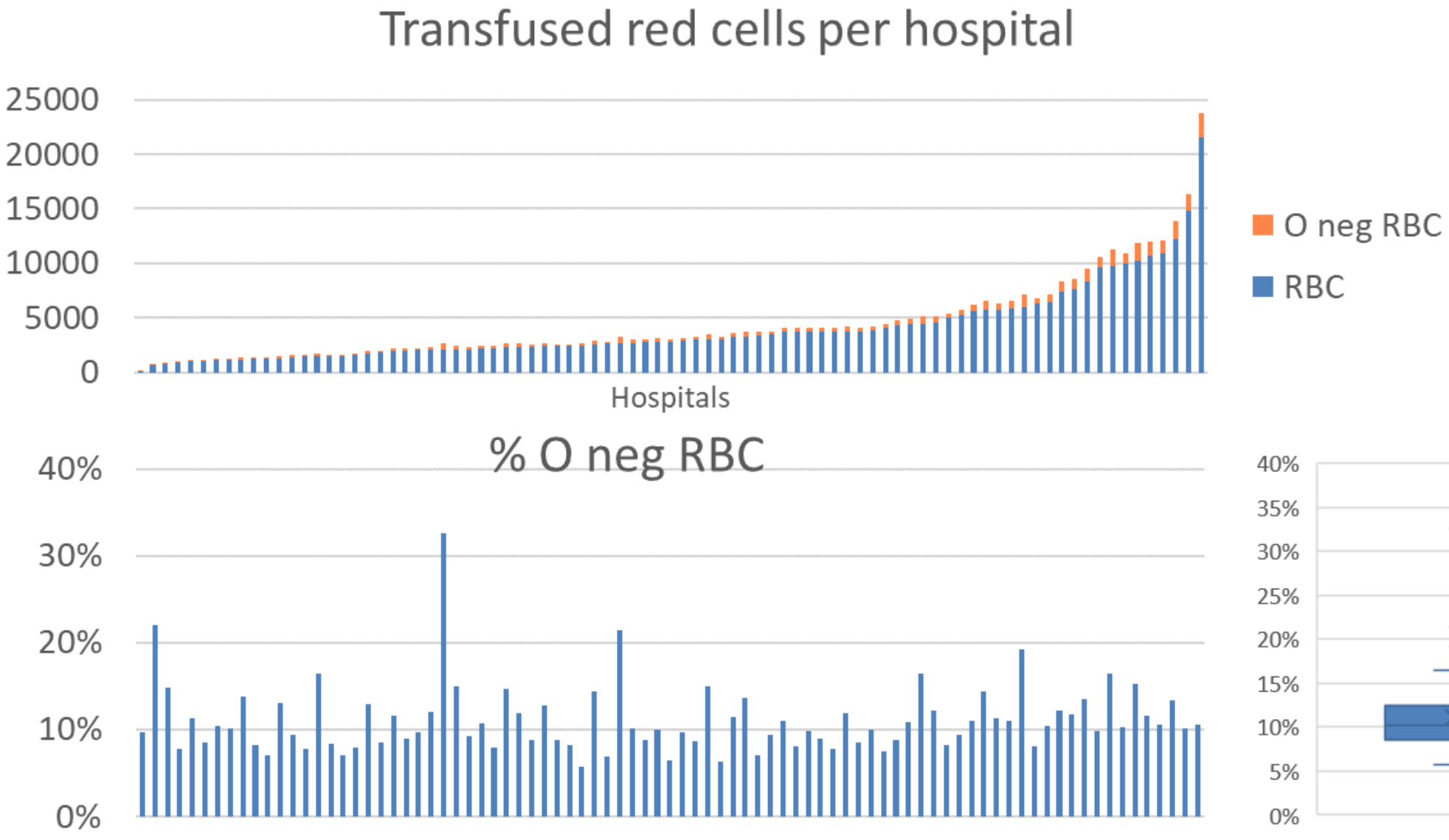
General overview



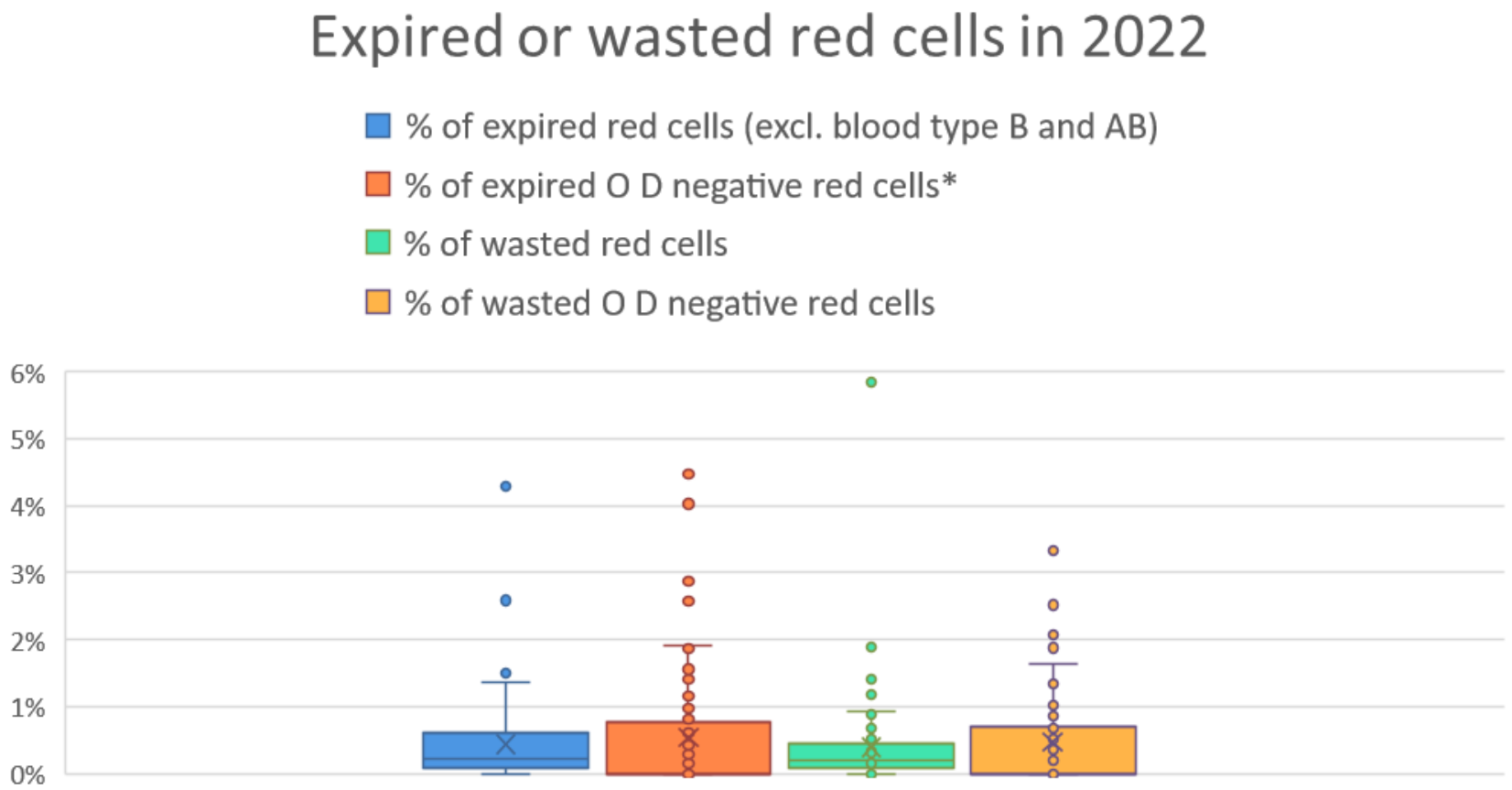
[n=104]

General overview





n=85, only hospitals with number of transfused red cells (all + O D negative)



Expired or wasted **units** per hospital

0-149 (0-4,3%)

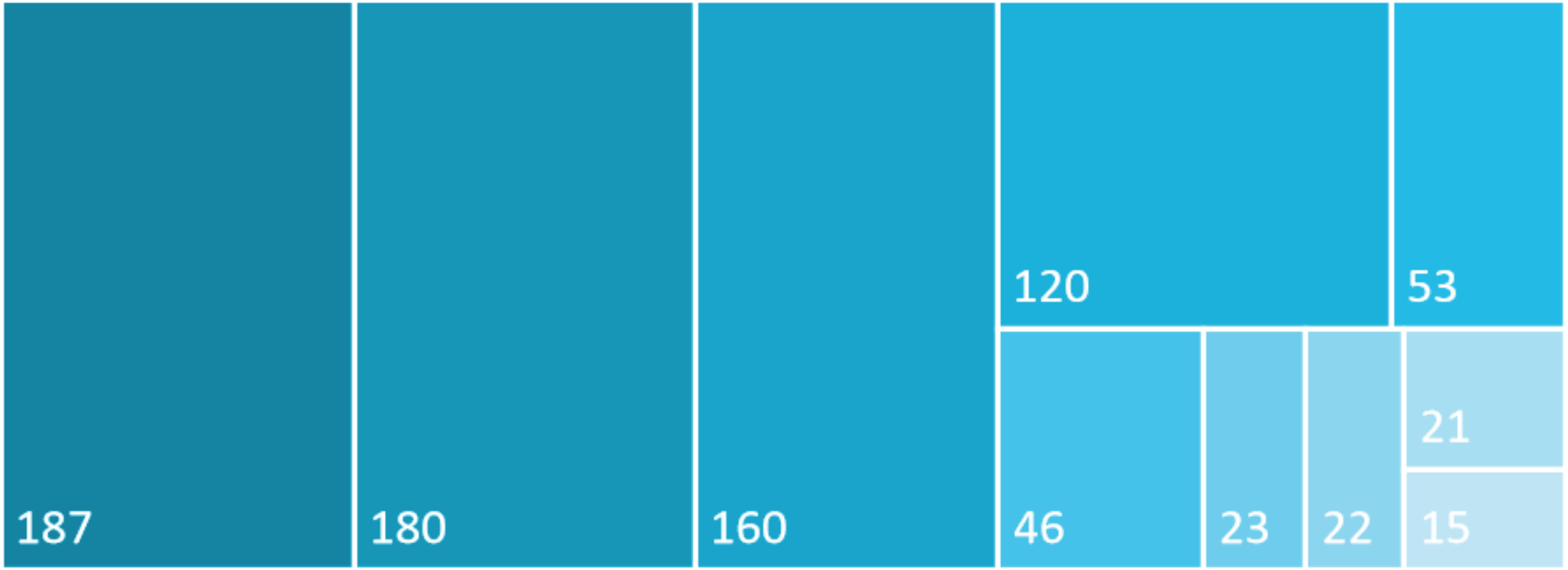
0-18 (0-15,7%)

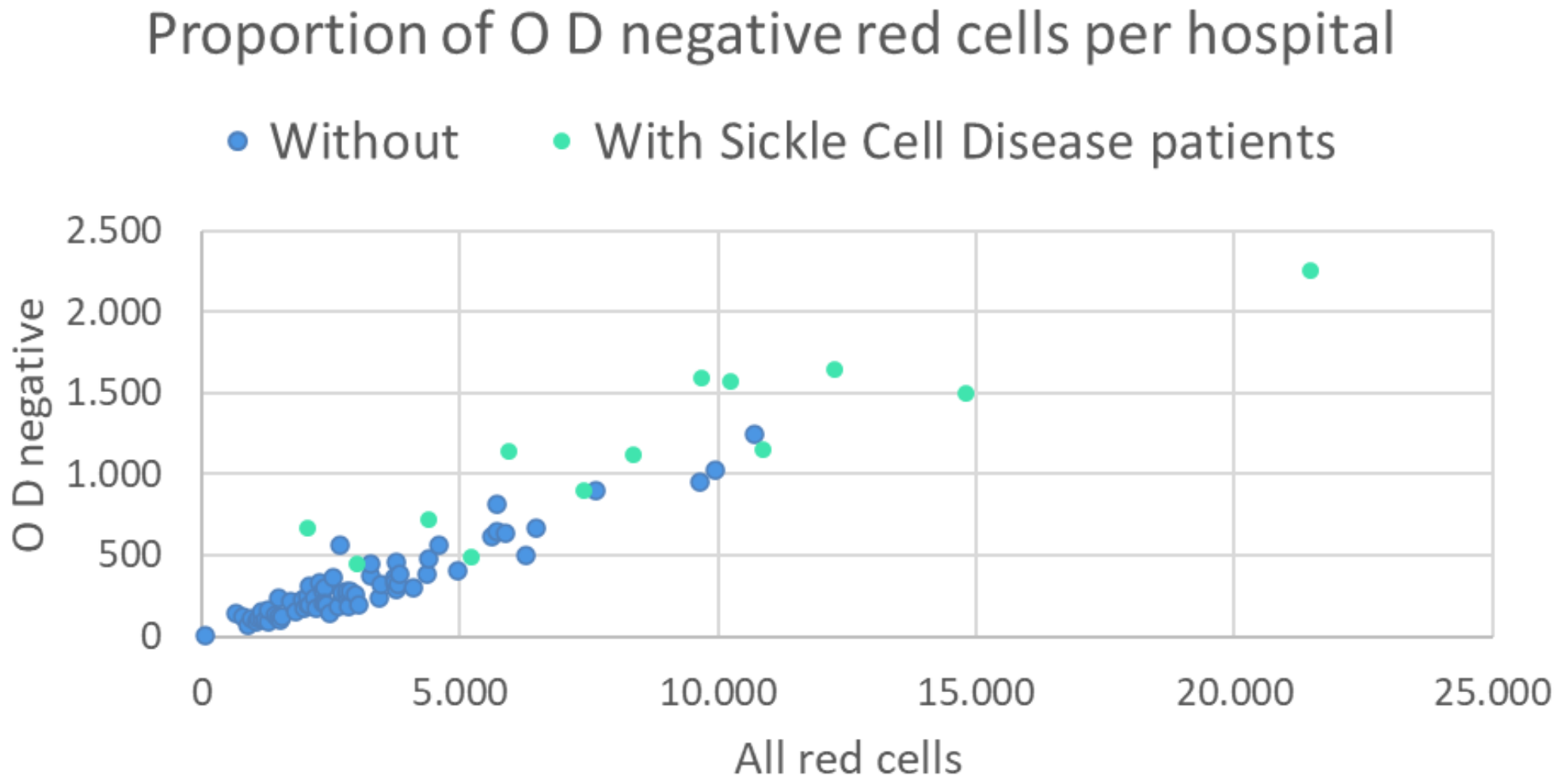
0-303 (0-5,8%)

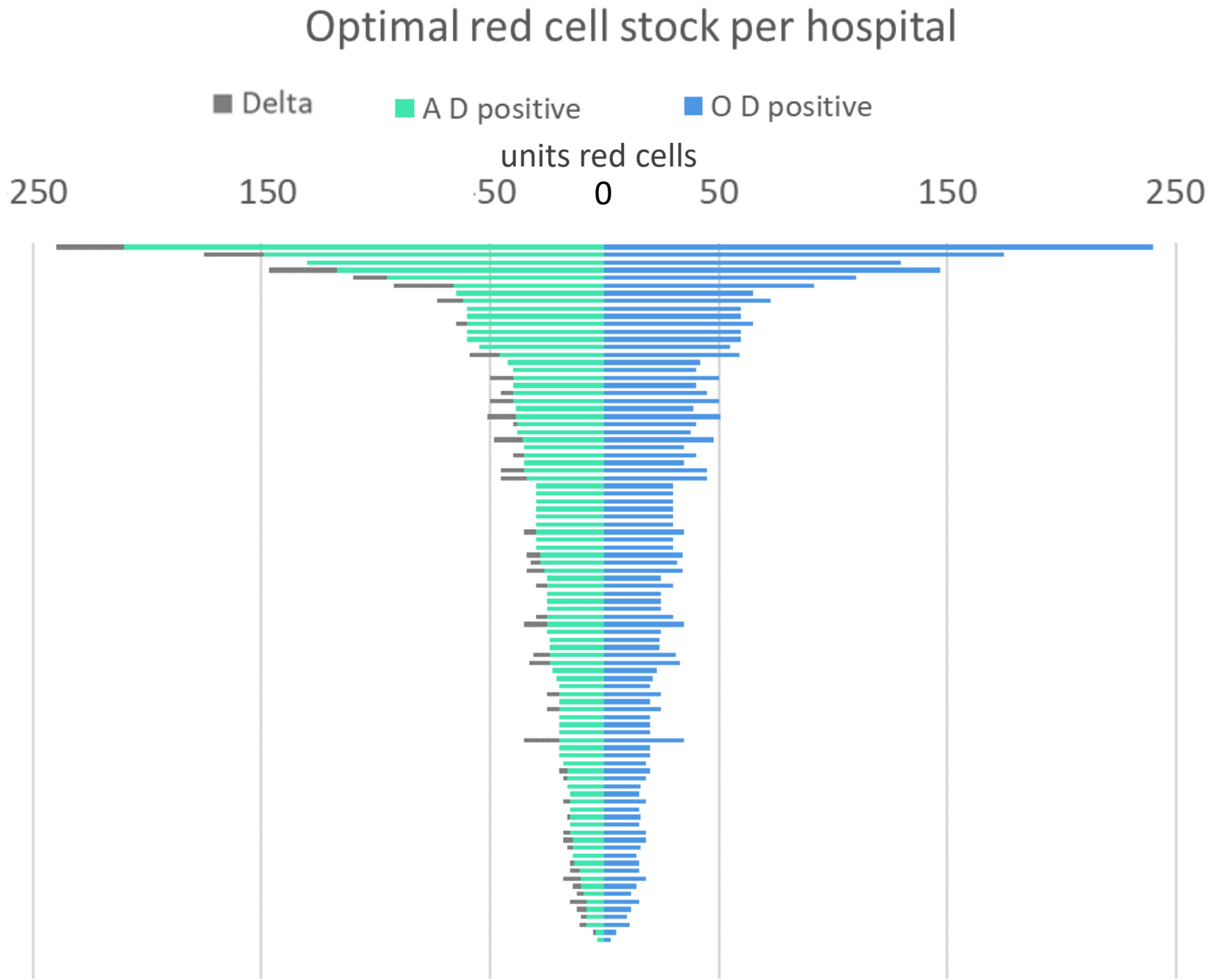
0-60 (0-3,3%)

[n=78, only hospitals with these 4 indicators available]

17 hospitals manage patients with Sickle Cell Disease:
10 hospitals with exact number of patients in 2022




Proportion of O D negative red cells per hospital
Without
With Sickle Cell Disease patients
O D negative
2.500
2.000
1.500
1.000
500
0
0
5.000
10.000
15.000
20.000
25.000
All red cells



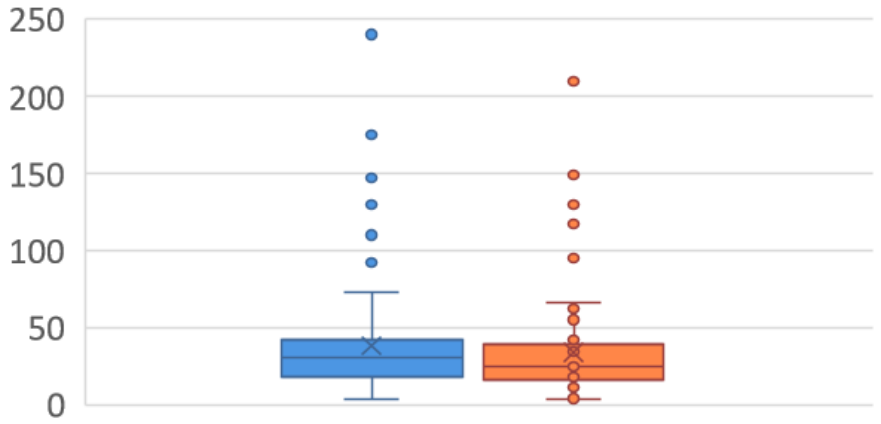
Distribution of ABOD blood group in Belgian population (HV report FAMHP 2019):

A D pos: 37%

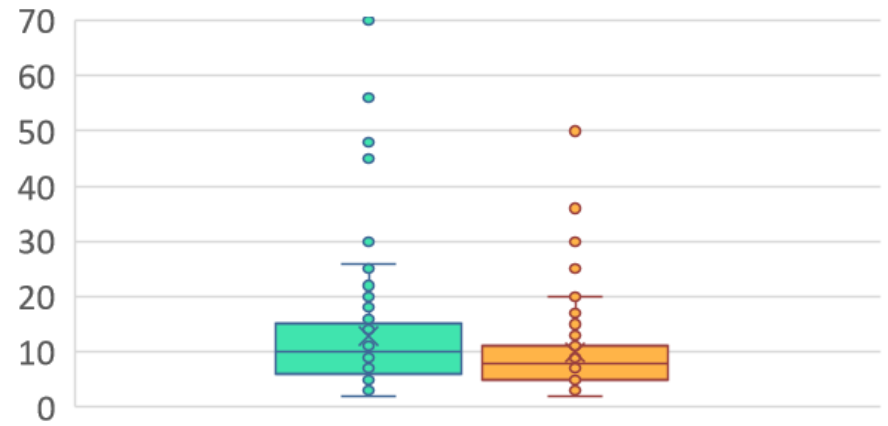
O D pos: 39%

Optimal red cell stock* per hospital

O D positive (median = **30**) A D positive (median = **25**)



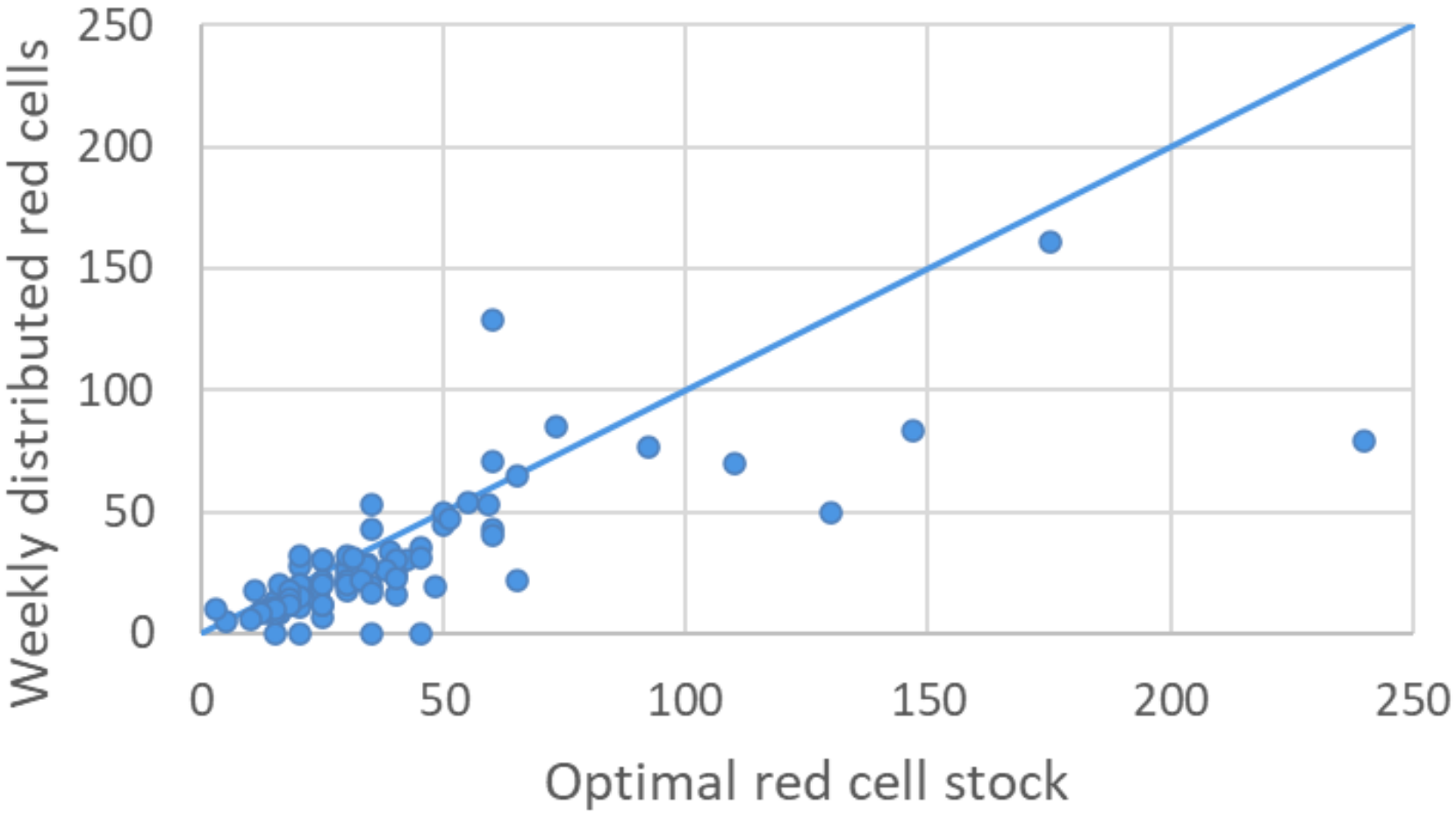
O D negative (median = 10) A D negative (median = 8)



*Number of RBC needed to supply hospitals with RBC for 1 week

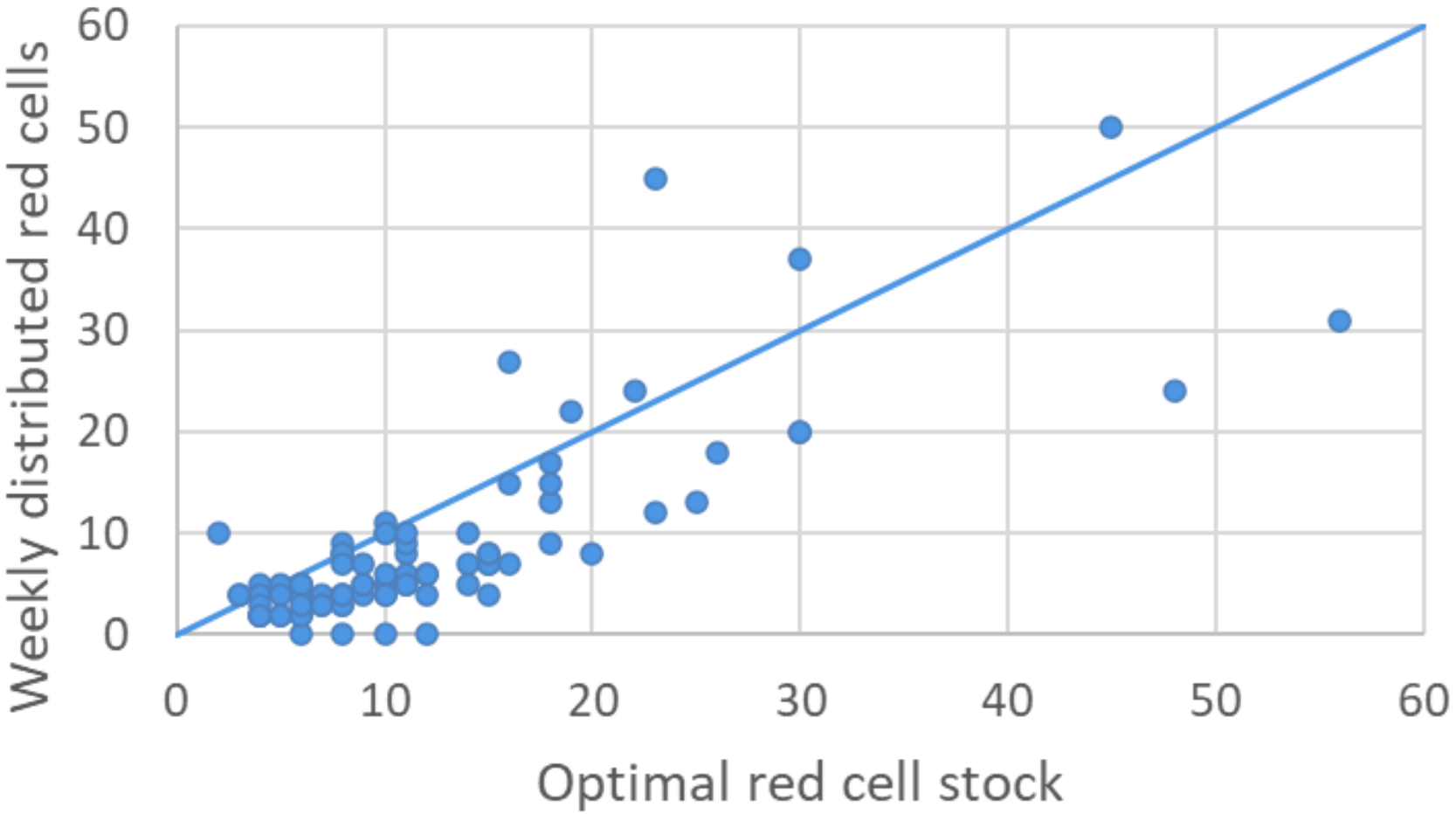
Optimal stock versus distribution:

O D positive

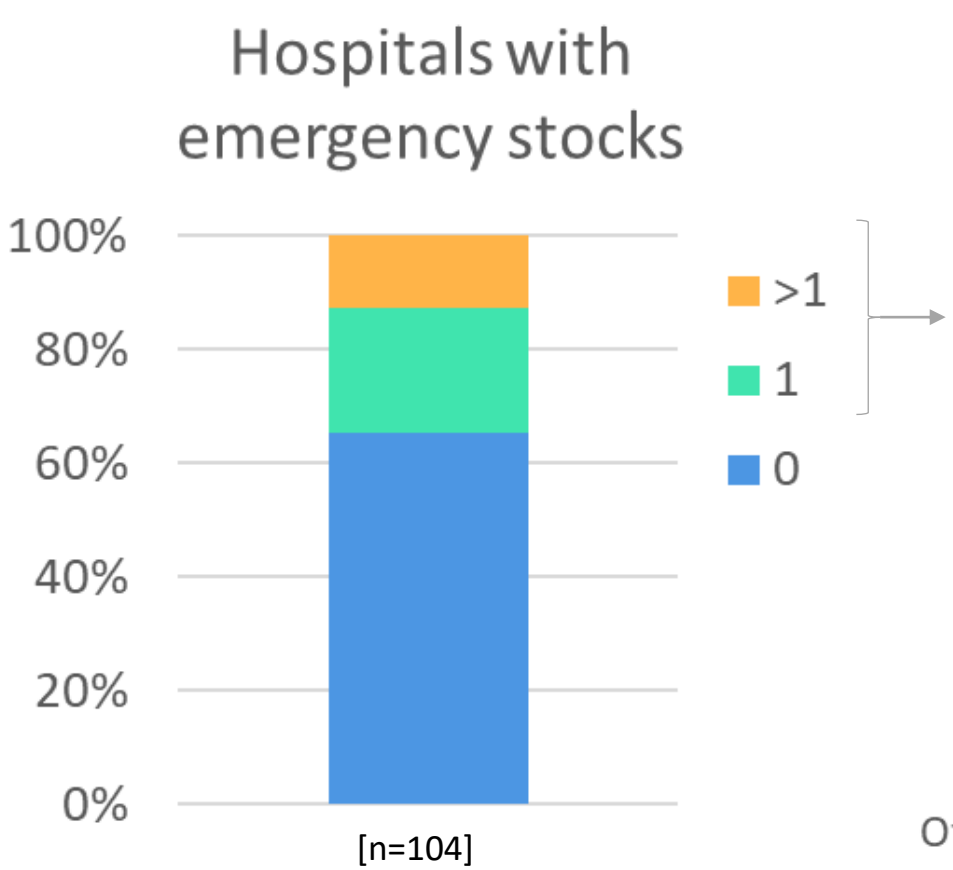


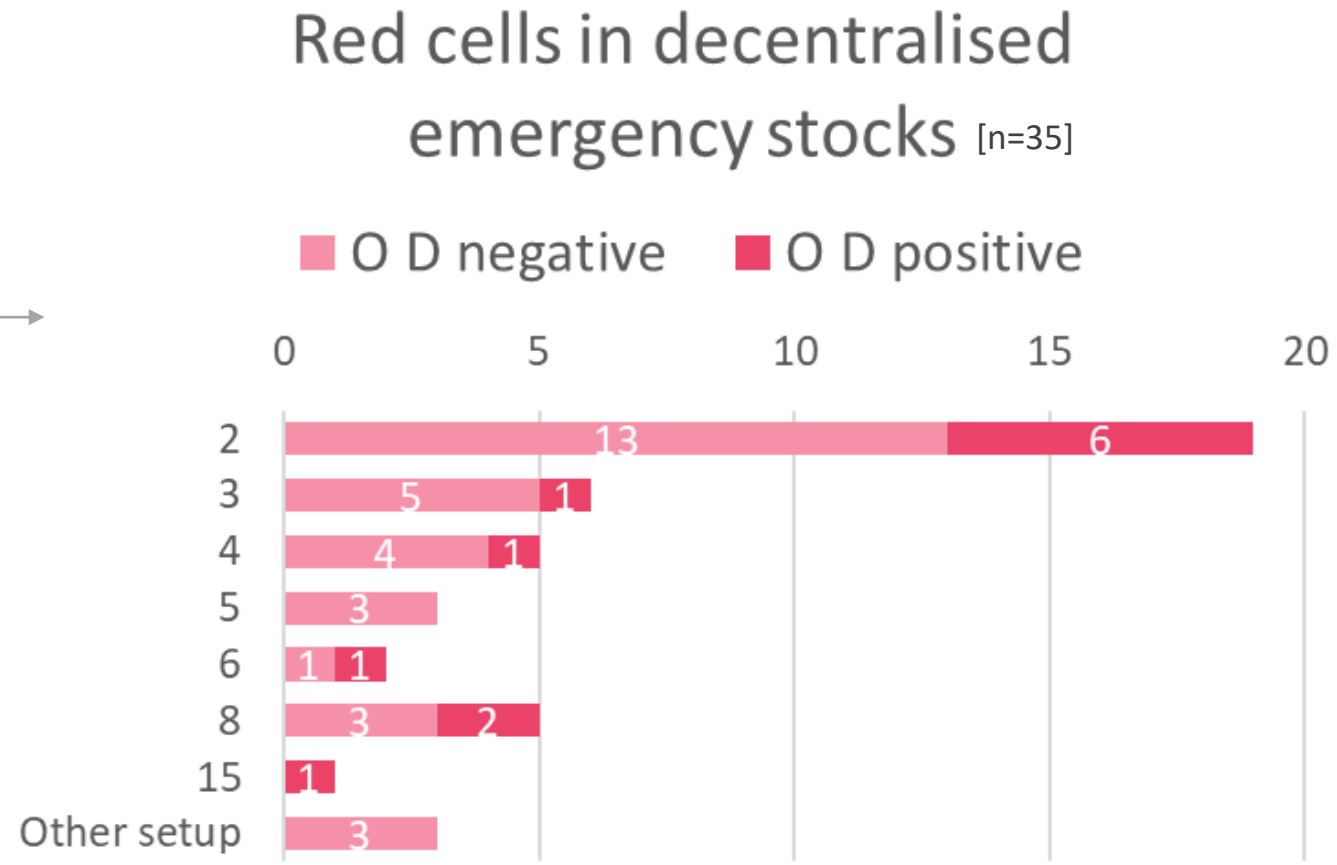
Optimal stock versus distribution:

O D negative



Decentralised emergency stocks with O D positive or O D negative red cells

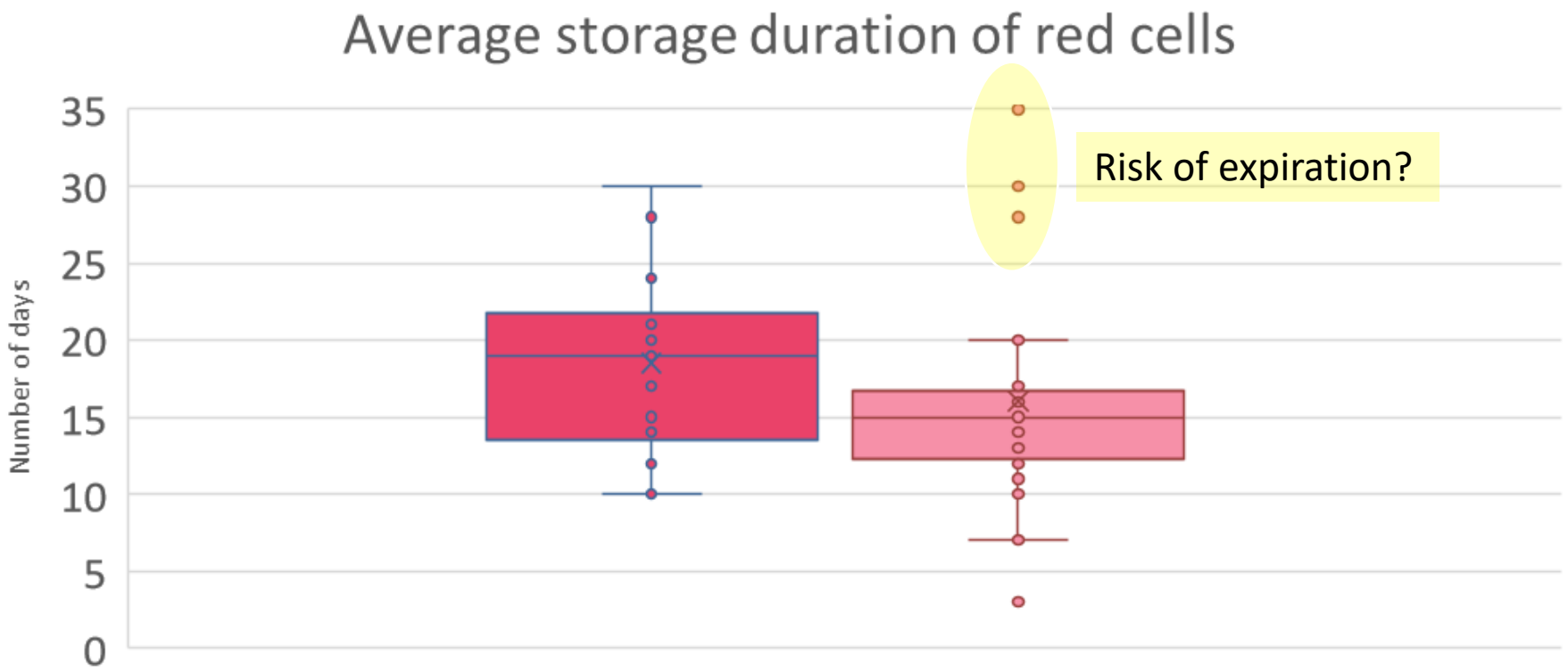




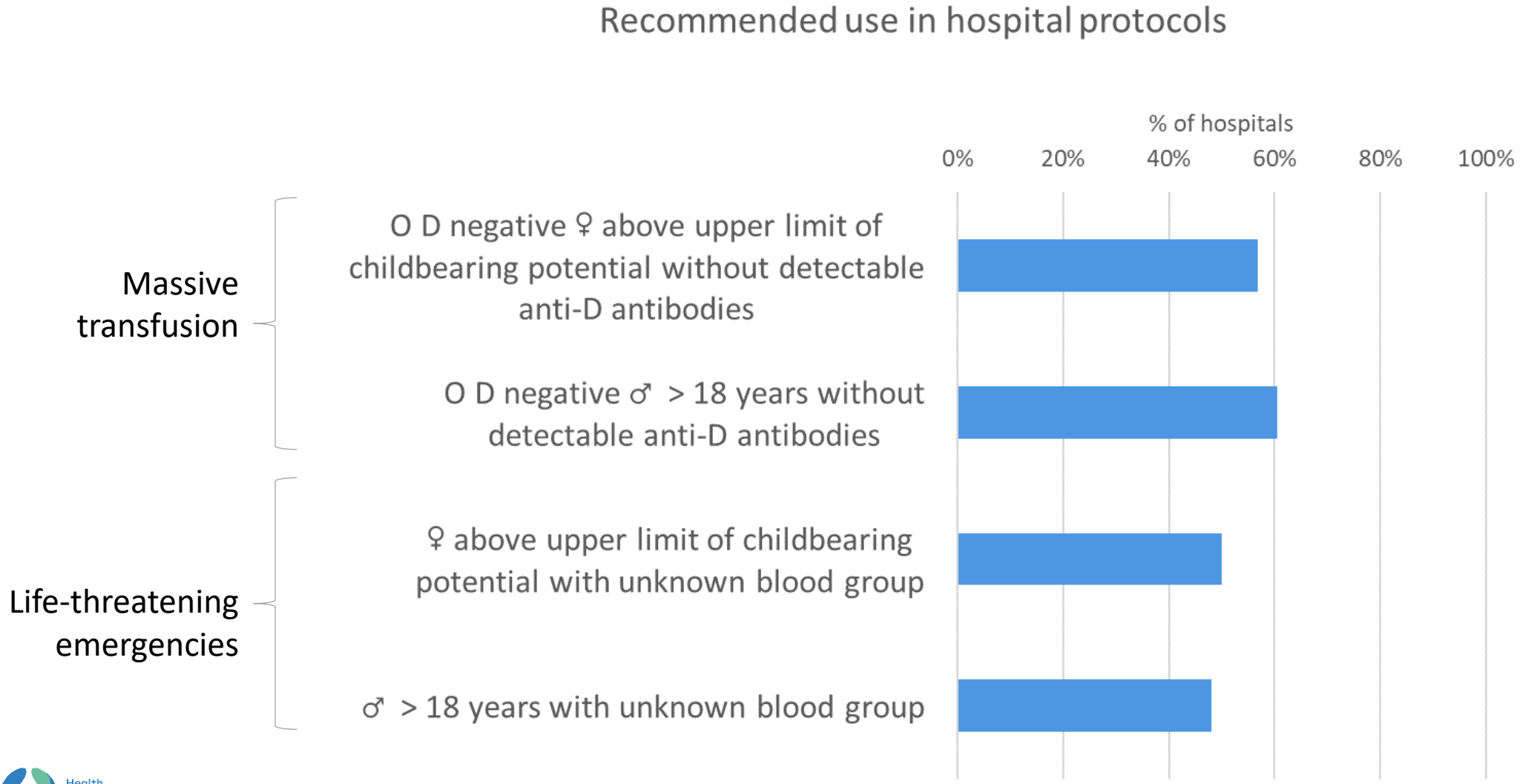
Health
Food Chain Safety
Environment

.be

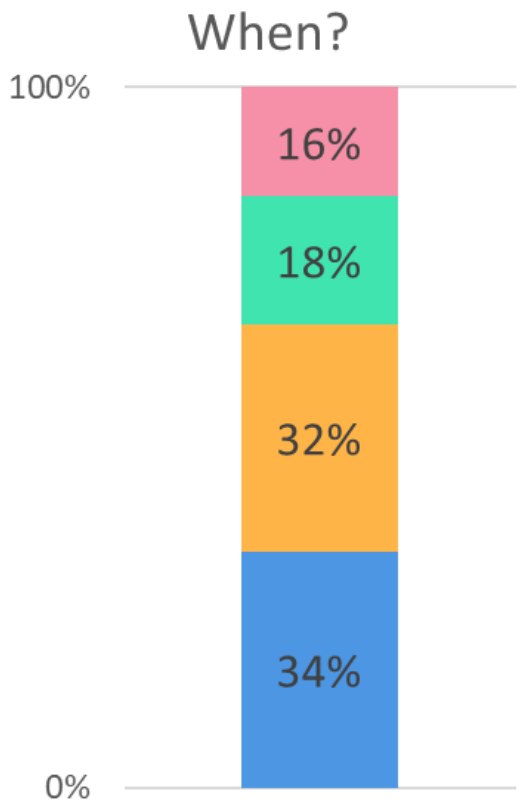
Decentralised emergency stocks with O D positive or O D negative red cells



Use of O D positive red cells in emergencies



Use of O D positive red cells in emergencies



Regardless of available blood supply, for each order exceeding X red cells

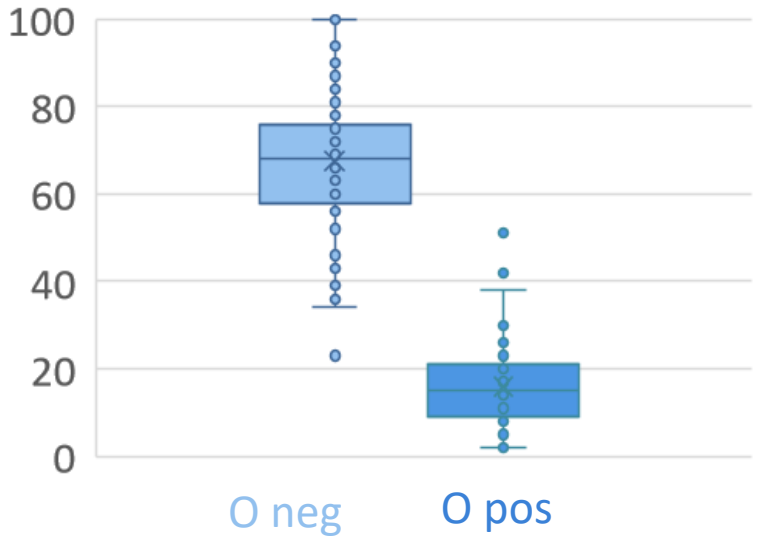
Only when shortage of O D negative red cells & for each order exceeding X red cells

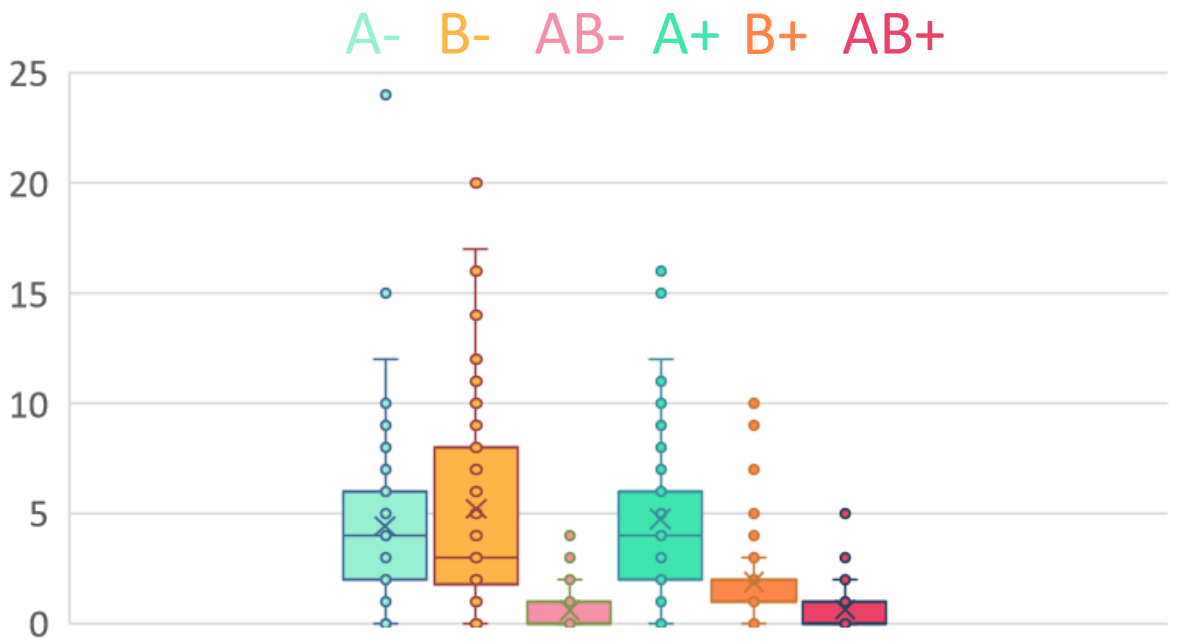
Only when shortage of O D negative red cells

In all circumstances

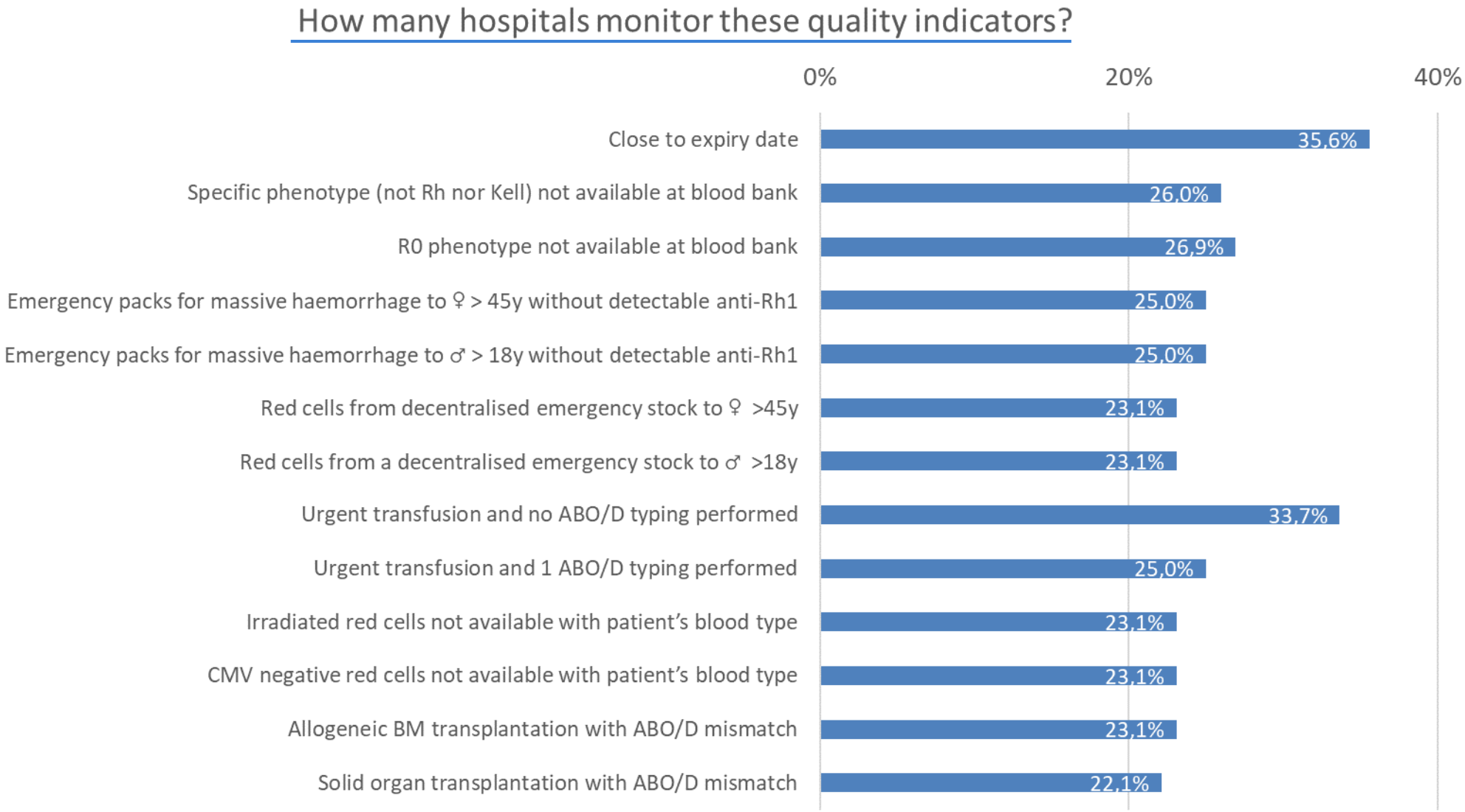
# units when O D negative RBC shortage	# of hospitals
2	7
3	2
4	14
6	3

% of transfused **O D negative** red cells in 2022 to patients with blood type …

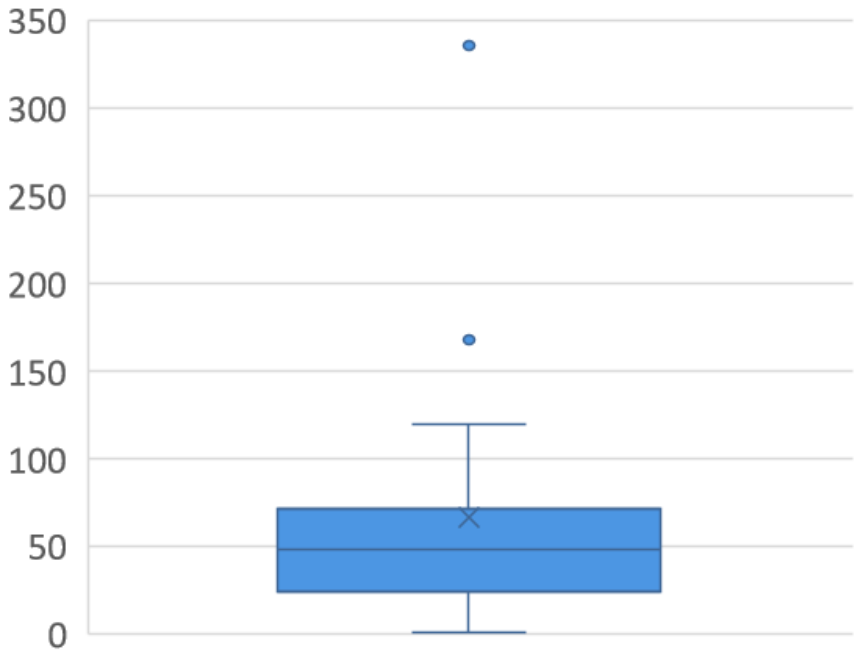




Number of transfused O D negative red cells in 2022 to non-O D negative patients for specific reasons



Number of hours before O D negative red cells are rotated back into stock with enough shelf life remaining to allow the units to be used before expiry date



[n=50]

Take home messages

1. Hospitals should review the local policies on the use of O D positive red cells for unknown or O D negative adult male patient and female patient of non-childbearing potential in case of emergencies (and O D negative shortage and excl. of anti-D antibodies)

2. Hospitals should monitor :
   - number of transfused O D negative red cells:
     - to non-O D negative patients (and the reason why, i.e. to avoid time expiry)
     - in emergencies
   - use of red cells in decentralised emergency stocks:
     - depending on regional stock of O D negative red cells:
       availability of adequate number of O positive red cells to avoid unnecessary use of O D negative
   - In central and decentralised stocks:
     - storage duration of O D negative red cells before transfusion
     - number of wasted blood components

3. Efficient communication between blood establishments to ensure a timely distribution of O (and B) Rh D negative and R_0 units on a national scale

Plans for 2024

- Recommendations by Hoge Gezondheidsraad
  Conseil Supérieur de la Santé

- BeQuinT webinar on the use of O Rh D negative (and positive?) red cells

Programme

Welcome coffee 08:30-9:00

9:00-10:30 **Presentation results 2nd national PBM survey**

The 3 chapters will be discussed:
1) Organisation of PBM
2) PBM in obstetrics
3) Use of O Rhesus negative red blood cells

Break 10:30-10:50

10:50-12:20 **PBM implementation by international experts: education, benchmarking and evaluation**

Is a PBM programme economically reasonable? by Prof. Dr. P. Meybohm

How local and national benchmarking such as the MAPBM can empower hospitals in PBM implementation? by Prof. Dr. E. Bisbe

How to increase PBM knowledge and to build a strong PBM leadership in a country? by Prof. Dr. V. Louw

Lunch 12:20-13:20

13:20-15:00 **Local/national projects in Belgium**

Preoperative anaemia detection and management in elective cardiac surgery patients by Dr. S. Buys

PBM implementation at the CHU UCL Namur : communication with patients and care units by Ms. C. Nobis

National database on RBC antibodies: why and how do we need it? by Dr. E. Lazarova

Technical Interoperability in Belgian eHealth Ecosystem by Mr. J.-M. Polfliet

Conclusions for BeQuinT by Prof. Dr. S. Lessire

[+ **Afternoon break**] 15:00