Survey for Bacterial Testing in Platelet Concentrates in Latin America

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Bacterial Contamination in Platelet Concentrates

- **Bacterial contamination of platelet concentrates (PCs) poses the highest post-transfusion infectious risk in developed countries.**
  - ***There is not extensive information about similar strategies implemented in developing countries.***
    - ***As part of the initiatives of the ISBT WP-TTID, Latin American blood banks were surveyed.***

Methods

- A **Survey Monkey** with 10 comprehensive questions was sent to 43 blood banks in five countries: **Argentina, Brazil, Colombia, Honduras and Mexico**.

- The centers were asked about the type(s) of PCs produced, platelet shelf-life and strategies used to improve platelet safety.
  - Centers performing bacterial testing were questioned regarding
    - the percentage of PCs tested
    - quarantine period after sampling
    - screening system(s)
    - definitions to interpret testing results
    - haemovigilance data on septic transfusion reactions and
    - implementation of pathogen reduction technologies

- Respondents were further surveyed about annual PC production and distribution.

Respondents

- One of the 43 centers does not perform bacterial testing in PCs
- Seven out of the remaining 42 centers (16.7%) (2 from Argentina, 2 from Mexico and 3 from Brazil) answered all survey questions.
  - Reported annual PC production/distribution varies within centers: 3,000-13,800 (Mexico) and 3,300-19,200 (Brazil).

Question 1: Which type(s) of platelets are produced at your center?

Answer Options	Response Percent
Apheresis	0.0%
Whole-blood derived prepared by the platelet-rich-plasma method	0.0%
Whole-blood derived prepared by the buffy coat method	14.3%
Apheresis and Whole-blood derived prepared by the platelet-rich-plasma method	71.4%
Apheresis and Whole-blood derived prepared by the buffy coat method	14.3%

Which percentage?

Question 2

2. What is the platelet shelf life at your center?

- Five days ← 100% respondents
- Seven days
- Other

Other (please specify)

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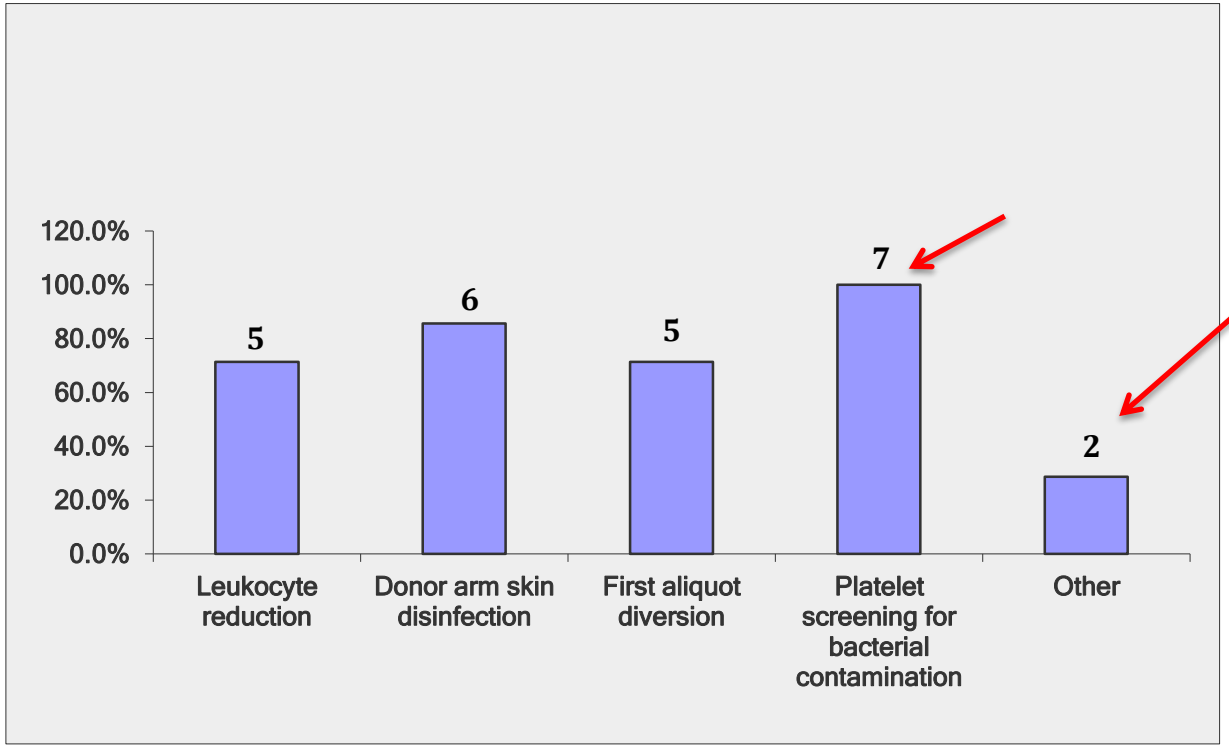
Question 3: Which of the following strategies are implemented at your center ?

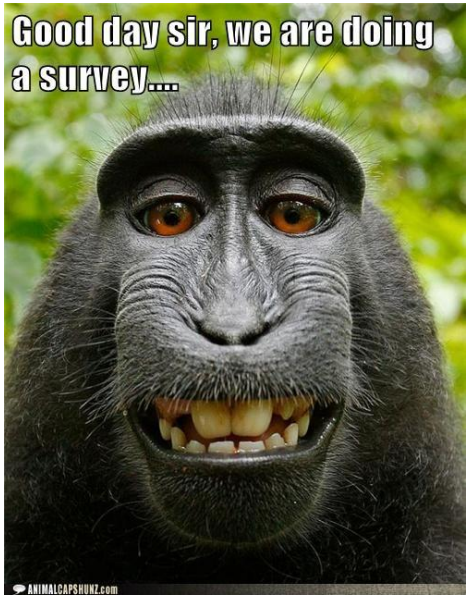


Question 4: If you are screening platelets for bacterial contamination, which proportion of the collection is screened? How long after collection is the sample taken?

Center	Response
1	One per cent in the expiration date
2	100% - 24 hours
3	100%
4	1% of our monthly inventory (at least 4 units per month). Samples are taken at the end of the shelf life.
5	100% - 20 hours after collection
6	Screen 100% - Sample taken 24 hs after collection.
7	1% (It is mandatory)

Question 5: If you test platelets for bacterial contamination, is there a mandatory quarantine period prior to platelet release to inventory once the sample is taken?

- Yes (3 centers, 42.9%)
  - *Two respondents: quarantine for 24 hours*
- No (4 centers, 57.1%)



Question 6: If you perform screening for bacterial contamination as part of routine testing, which system do you use?

Testing system	Percentage	Number
Culture method	85.7%	6
Rapid test	0.0%	0
pH/Glucose	0.0%	0
More than one of the above	0.0%	0
Other (please specify)	14.3%	1

- 100% use a culture method

Question 7: If you perform screening for bacterial contamination with a culture method, which type of culture bottle do you use?

Testing system	Percentage	Number
Culture method	85.7%	6
Rapid test	0.0%	0
pH/Glucose	0.0%	0
More than one of the above	0.0%	0
Other (please specify)	14.3%	1

- 4 centers: BacT/ALERT
- 2 centers: BACTEC
- *All aerobic and anaerobic culture bottles*

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Question 8: If you perform platelet screening for bacterial contamination with a culture method, during the analysis of your results how do you define (if applicable):

Center	Confirmed (true) positive cultures?	False positive results?	Indeterminate results?	False negative results?
1	automated test			
2	Send to reference lab	Send to reference lab	Send to reference lab	Send to reference lab
3	Full pathogen identification as per Clinical Lab			
4	second sample confirmed positive in another lab	second sample negative in another lab	N/A	negative screening sample (48 hs) but positive after release of unit to inventory
5	Perform the test of sample again	Perform the test of sample again	Perform the test of sample again	

Question 9: Do you have haemovigilance data on adverse transfusion reactions due to bacterially-contaminated platelets? If yes, is data available to the public?

- Yes (3 centers, 42.9%)
  - *No data available to the public*
- No (4 centers, 57.1%)

Question 10: Have you implemented or considered implementing pathogen reduction at your center?

- **Yes (2 centers, 28.6%)**
  - ***Two centers have considered implementation***
    - ***One center is at a preliminary phase of consideration***
    - ***For the second center, the technology is not available in their country***
- **No (5 centers, 71.4%)**

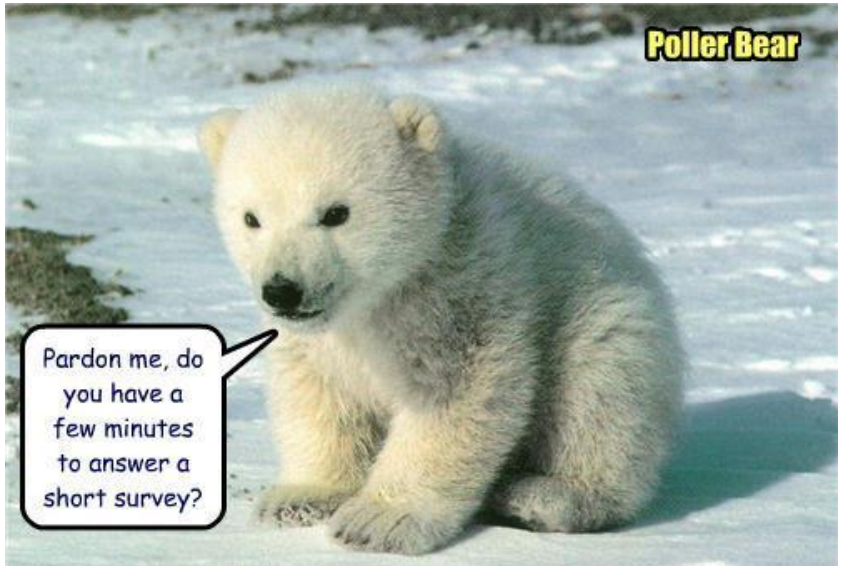
Table 1
Summary of publications reporting routine bacterial screen testing with the BacT/ALERT culture system

Reference	Year published	Country	AP platelets	BC platelets	PRP platelets	Diversion	Skin preparation	Leukoreduced	AP technology	PAS	Delay before sampling (h)	volume per bottle (mL)	Laminar flow hoods
Jenkins et al	2011	Canada	X			100%	IPA/TI Chloro (1)	Yes	MCS+, Spectra, Trima	No	24-48	4-10	Yes
Souza et al	2012	USA	X			>90%	IPA/TI Chloro (1)	Yes	MCS+, Spectra, Trima, Amicus	No	24-36	4	No
Souza et al	2012	USA	X			100%	Chloro (1)	Yes	MCS+, Spectra, Trima, Amicus	No	24-36	8	No
Su et al	2008	USA	X			91%	IPA/TI Chloro (1)	Yes	MCS+, Spectra, Trima, Amicus	No	24-36	4-5	No
Benjamin et al	2013	USA	X			100%	PI (2) Chloro (1)	Yes	Amicus, Trima	No	24-36	8-10	Yes
Eder et al	2009	USA	X			100%	PI (2)	Yes	Amicus, Trima	No	24-36	8-10	Yes
Eder et al	2007	USA	X			39%	PI (2)	Yes	Spectra, Trima, Amicus	No	24-36	4-5	Yes
Su et al	2008	USA	X			100%	Chloro (1)	Yes	MCS+, Spectra, Trima,	No	24-36	4-5	No

What is next?

Expand the survey to Asia and Middle East

- **Need participants !!!**



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Thank you

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