WHAT TO DO WITH PLATELETS

A Guide to the FDA Guidance
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VP/Chief Medical Officer
Why Are We Here?

Bacterial Risk Control Strategies for Blood Collection Establishments and Transfusion Services to Enhance the Safety and Availability of Platelets for Transfusion

Guidance for Industry

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Biologics Evaluation and Research
September 2019
Agenda

Current Status

FDA Guidance

LifeStream Plan
The Issue

“Room temperature stored platelets are associated with a higher risk of sepsis and related fatality than any other transfusable blood component.”

-2019 Final Guidance
Not That Innocent

- 1 in 2500-3000 contaminated
- 1 in 100K have reactions
- Almost all on day 4-5
  - 100% of fatals day 4-5
- UNDER-REPORTED!
An Example

**TRANSFUSION MEDICINE**

Detection of septic transfusion reactions to platelet transfusions by active and passive surveillance

Hong Hong,* Wenbin Xiao,* Hillard M. Lazarus, Caryn E. Good, Robert W. Maitta, and Michael R. Jacobs

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**Key Points**

- Bacterial sepsis from contaminated platelet transfusions continues to occur despite recent interventions; additional measures are needed.
- STR to platelet transfusion is frequently not recognized or reported; use of recent AABB criteria showed highest diagnostic sensitivity.

- 51K platelets transfused
- 20 were contaminated
- 5 patient reactions

*Blood* 2016
Why Contaminated?

- Skin contaminants
- Room temp storage
- Donor with low-grade bacteremia
- False negative cultures
Current Culture Method

- Wait 24° before culture, hold 12°
- All products pooled in “mother bag”
- Single 8 mL culture (aerobic)
Current Status

- 1:2500 contam
- #1 infx risk
- False Negatives
Current Status

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Details

• Issued September 2019
• “Effective” March 2021

FDA’s guidance documents, including this guidance, do not establish legally enforceable responsibilities. Instead, guidances describe the FDA’s current thinking on a topic and should be viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in FDA’s guidances means that something is suggested or recommended, but not required.
FDA Guidance on Bacterial Safety 9/30/19

**Single Step Strategies**

- **Pathogen Reduction**
  - Day 0: PR
  - Day 1: Available for transfusion

- **LVDS ≥ 36 hr**
  - Sample ≥36h
  - Hold ≥12h
  - Available for transfusion

- **LVDS ≥ 48 hr**
  - Sample ≥48h
  - Hold ≥12h
  - Available for transfusion

**Two Step Strategies**

**Step 1**

- **Primary Culture**
  - Sample ≥24h
  - Hold 12h

- **LVDS**
  - Sample ≥36h
  - Hold 12h

**Step 2**

- **2nd Culture ≥ Day 3**
  - Sample + Incubate
  - Available for transfusion

- **2nd Culture ≥ Day 4**
  - Sample + Incubate
  - Available for transfusion

- **2nd Rapid Testing**
  - Secondary rapid test performed in accordance with device labeling
  - Test ≤ 24 hours prior to transfusion

Image courtesy Cerus Corp
Current Bacterial Detection

- Wait 24° before culture, hold 12°
- All products pooled in "mother bag"
- Single 8 mL culture (aerobic)
Hospital-based Options

Two Step Strategies

Step 1

Primary Culture\(^2\)

LVDS\(^2\)

Step 2

2\(^\circ\) Culture ≥ Day 3\(^5\)

OR

2\(^\circ\) Culture ≥ Day 4\(^2\)\(^4\)

OR

2\(^\circ\) Rapid Testing\(^4\)

Day 0 1 2 3 4 5 6 7

- Improved safety:
  - 2\(^\circ\) culture: No clear data
  - 2\(^\circ\) Rapid Testing: 63%

Image courtesy Cerus Corp
Blood Center-based Options

Improved safety:
- LVDS: 71-94%

Wait 36/48°, hold 12°
Culture each bag
Aerobic/anaerobic

Image courtesy Cerus Corp
Blood Center-based Options

Improved safety:
- PRT: 99.99%
- LVDS: 71-94%

No irradiation or CMV testing

Image courtesy Cerus Corp
Realities

- All options will come at increased cost (more to follow)
- Performing $2^0$ culture and $2^0$ rapid testing to take product to 7 days requires hospital FDA registration
- 100% Pathogen-reduced inventory is not realistic (may have dual inventory)
Current Status

- 1:2500 contam
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FDA Guidance

- Multiple options
- All increase cost
- FDA reg. issues

LifeStream Plan
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FDA Guidance
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LifeStream Plan
Our Plan

We do not believe most of our hospitals are interested in performing 2º cultures or 2º rapid bacterial testing.
Timing

- LVDS 48° not yet approved for 7-day PLTs
  - To be submitted Jan/Feb 2020
  - Anticipated approval Fall 2020
- LVDS 36° can be implemented any time
  - Our plan is to transition late 2020/early 2021
- PRT in planning stages at LifeStream
  - Intend to implement late 2020
COST!

• It’s all going to cost more!
• Implementing 2⁰ culture/rapid testing will increase cost to hospitals
  • Current estimate: $20-40 per day for Verax
• PRT and LVDS both increase costs of collection and processing
Bottom Line

• LVDS 36° and 48°
  • Estimated increase: $80-100 per unit

• Pathogen-reduced platelets
  • Estimated increase: $165 per unit
  • NOTE: No irradiation or CMV costs with PRT
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FDA Guidance
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LifeStream Plan
- LVDS 48
- PRT
- Late 2020
For More on The Guidance

BBGuy.org/076

076: FDA Platelet Bacteria Guidance with Pat Kopko

Joe Chaffin  |  Oct 11, 2019  |  BBGuy Podcast, Blood Products, Transfusion Complications  |  0 comments

On September 30, 2019, the United States FDA released the long-awaited final guidance regarding bacterial contamination in platelets. Pat Kopko is here to help you understand what to do now!
THANK YOU!