

Strategies for Managing Blood Product Shortages

AN ALL-HANDS APPROACH TO DEALING WITH DISRUPTIONS TO OUR BLOOD SUPPLY

Presenter:

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Opinions expressed in this presentation are those of the speaker and do not express the views or opinions of Cardinal Health

Learning Objectives

- Identify the key drivers of blood supply
- Describe how these factors are challenged by routine and extraordinary negative events, such as COVID-19
- Discuss how provider organizations can be as prepared as possible to navigate blood product shortages when they occur
- Develop best practices to implement when experiencing a severe blood product shortage, ensuring optimized access to available resources and existing inventory

Blood Supply Basics

understanding our blood supply

1

Current State of our Blood Supply

COVID-19 impact on blood product availability

2

Strategies for Navigating Shortages

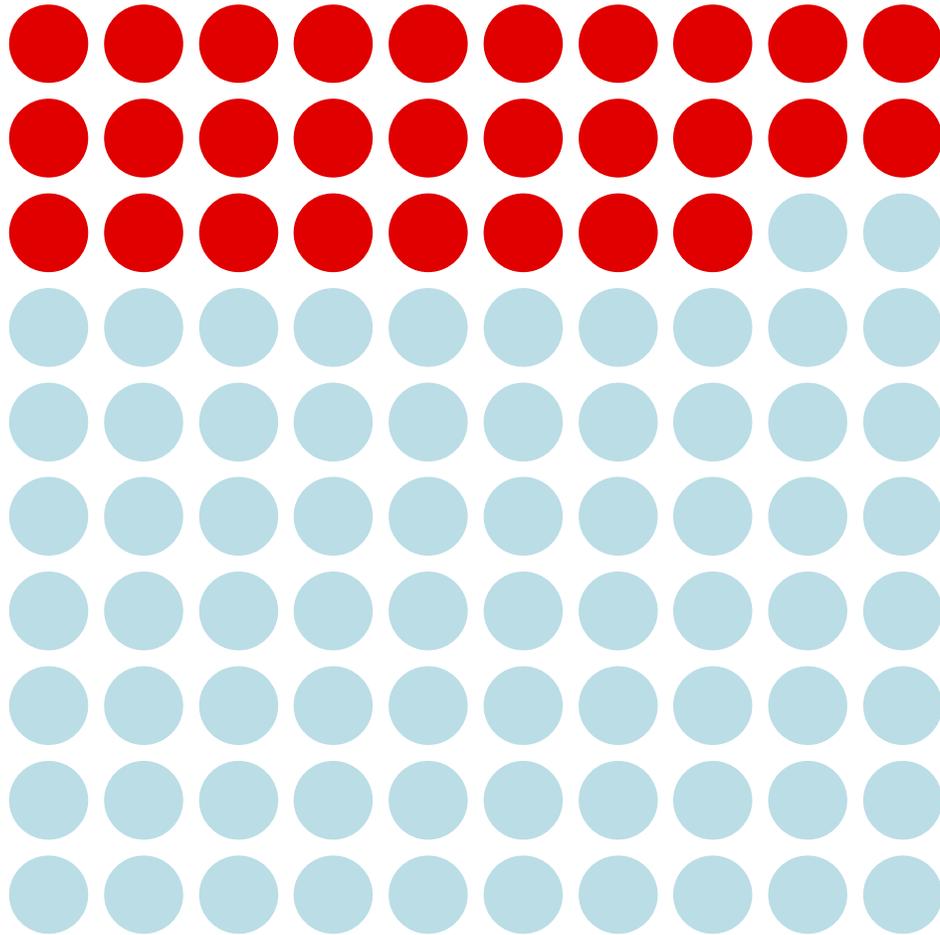
sourcing, inventory management, and communication

3

Conclusion and Questions

final thoughts and valuable resources

4



23%

of hospitals surveyed were forced to cancel elective surgery on one or more days as a result of blood inventory shortages.

Source: US Dept. of Health & Human Services

Red Blood Cells



- **Function:** Contains hemoglobin, which transports oxygen
- **Shelf Life:** 42 days
- **Treatment:** Chronic anemia or acute blood loss due to trauma
- **High Volume Products:**
 - Leuko-reduced
 - Antigen negative
 - Irradiated
 - CMV negative

Platelets



- **Function:** Aid in clotting by sticking to the lining of blood vessels
- **Shelf Life:** 3-4 days
- **Treatment:** To prevent massive blood loss or depletion due to chemo
- **High Volume Products:**
 - Apheresis - Single donor platelets
 - Pooled platelets
 - Pathogen inactivated

Plasma



- **Function:** Liquid containing several clotting proteins
- **Shelf Life:** 12 months
- **Treatment:** To treat blood loss and key for massive transfusion protocols
- **High Volume Products:**
 - FP-24 & FFP
 - CCP
 - Jumbo plasma
 - Cryosupinate

Cryoprecipitate

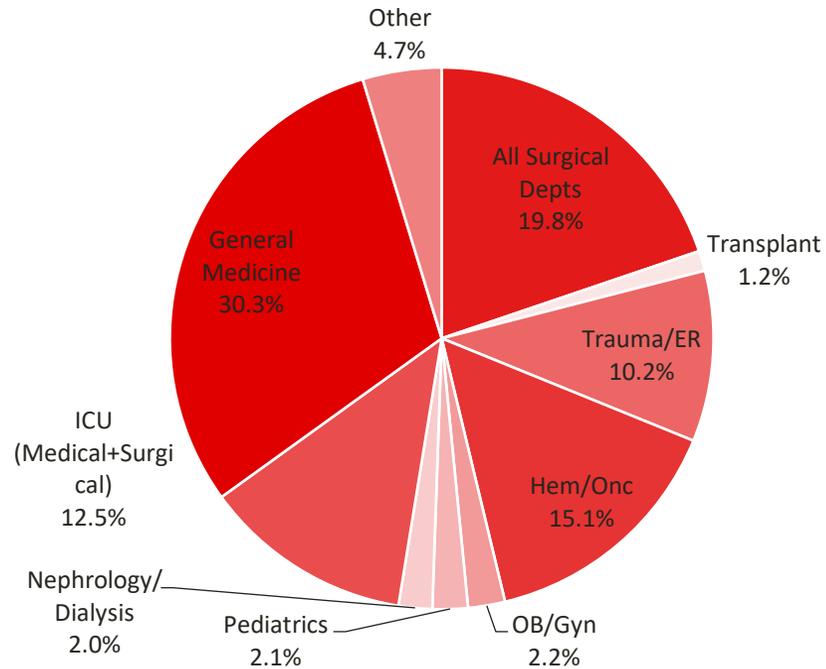


- **Function:** Cryo AHF is the portion of plasma rich in clotting factors
- **Shelf Life:** 12 months
- **Treatment:** To prevent and control bleeding in individuals
- **High Volume Products:**
 - Pooled Cryo (6)
 - Pooled Cryo (5)
 - Pooled Cryo (4)
 - Single Cryo

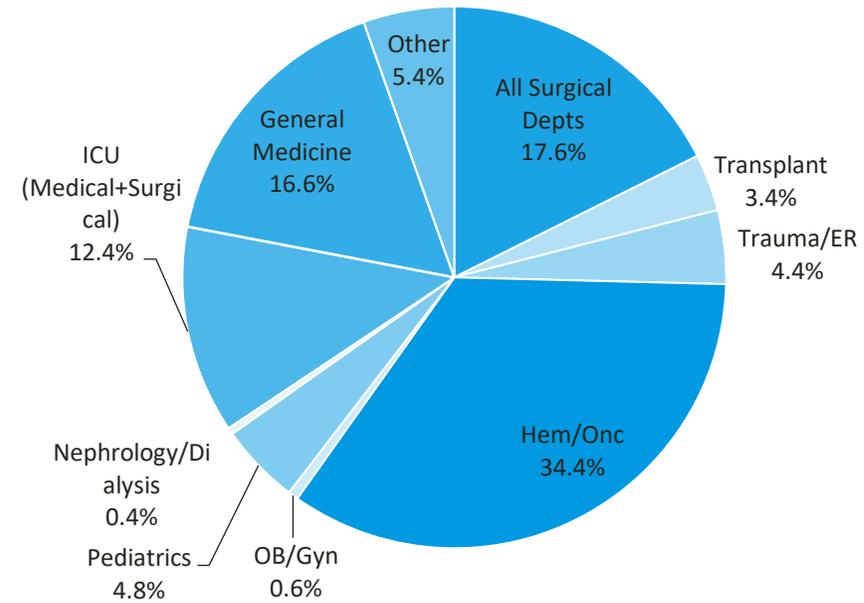
Blood Product Utilization

MAJOR COMPONENT USE BY HOSPITAL DEPARTMENT

Red Blood Cells



Platelets



Source: US Dept. of Health & Human Services

Blood is a Mission-Critical Resource

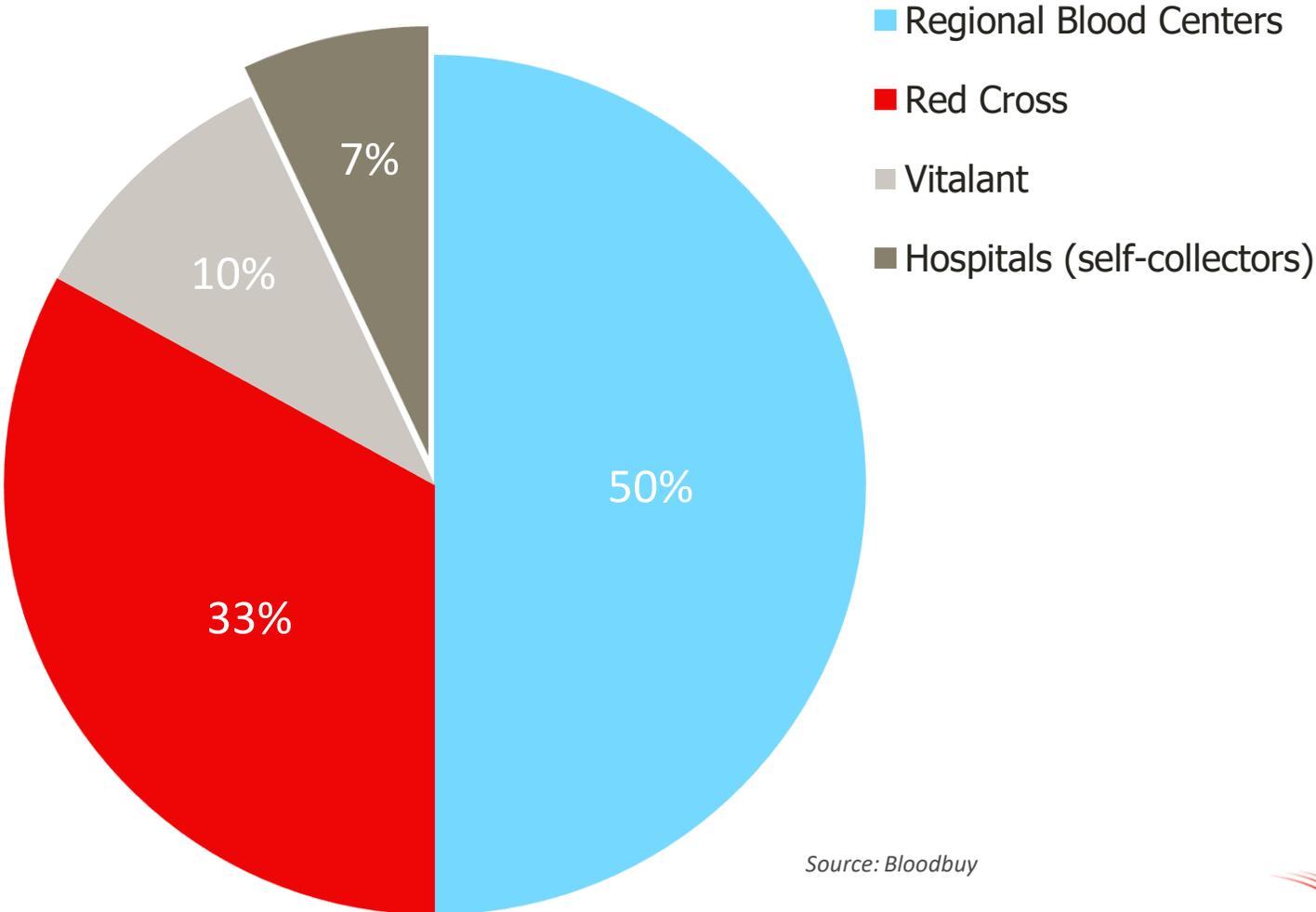
IT FUELS THE DELIVERY OF HEALTHCARE SERVICES

The critical path for multiple key service lines begins with blood product availability. Blood bank is a 24/7/365 operation.

- Surgical Procedures
- Cancer Treatment
- Labor & Delivery
- Emergency Department
- Trauma Treatment
- Intensive Care
- General Medicine
- Pediatrics
- Transplant
- Cardiovascular

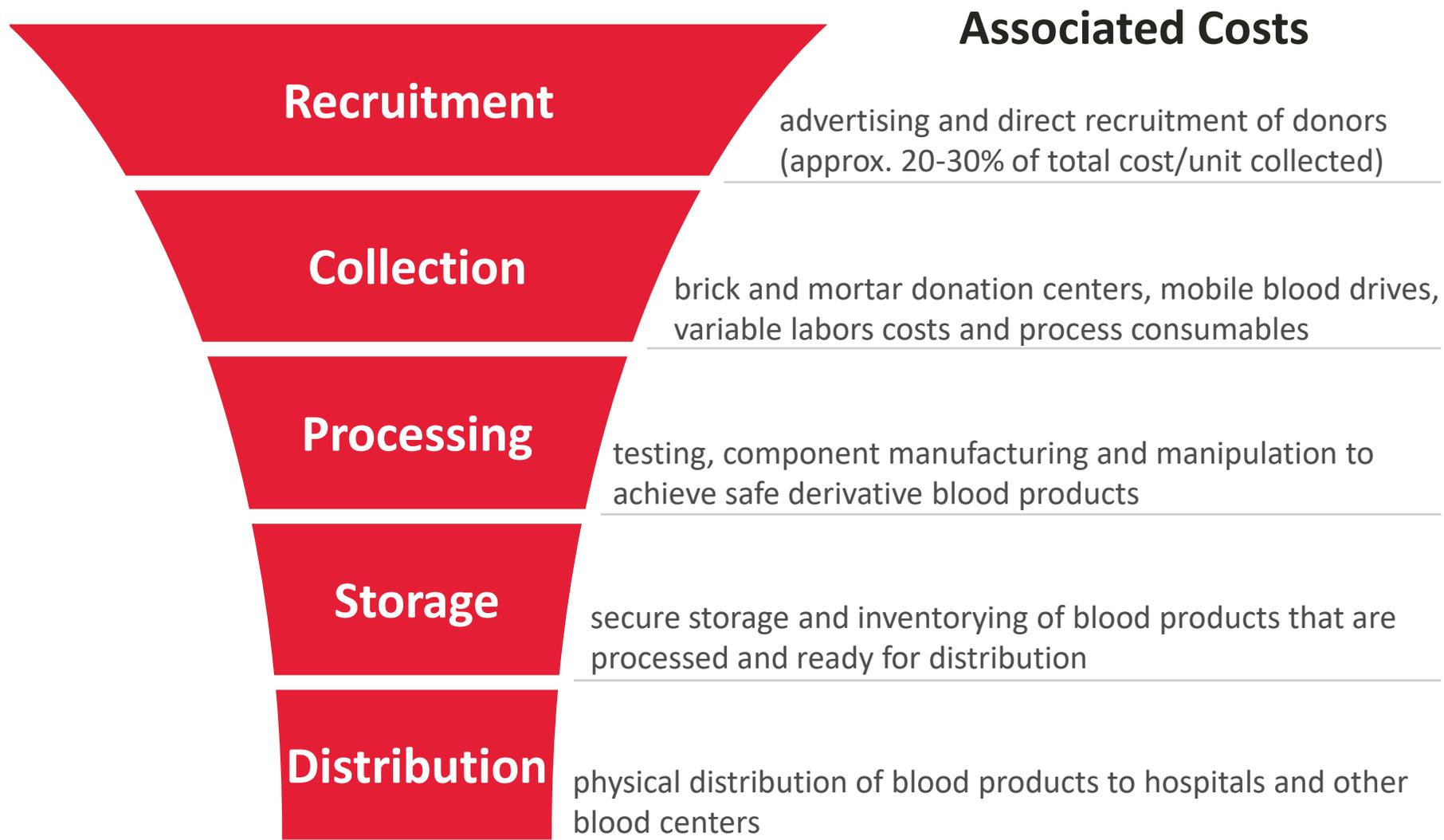
Primary Sources of Blood

SUPPLIER MARKET SHARE



Source: Bloodbuy





Blood Supply Disruptions

SEASONAL AND EVENT-DRIVEN CHALLENGES

Common issues that create challenges for blood collection:

- Seasonal shortages due to holidays and school schedules
 - Summer shortages due to high schools and colleges being out-of-session
 - Spring break shortages
 - Holiday shortages due to donor distractions (e.g., July 4th, New Year's Day)
- Acute spot shortages due to severe weather
 - Winter storm related shortages
 - Hurricane related shortages
- Product recall related shortages
 - Hardware, consumable, or testing recalls (e.g., filters, bags, etc.)

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THE WALL STREET JOURNAL.

U.S. Blood Reserves Are Critically Low

Majority of nation's blood banks have one-day supply or less of Type O blood, officials say



Even as some businesses, schools and community groups make plans to reopen in coming months, they have told the Red Cross they don't anticipate sponsoring blood drives in the near future.

Extreme Blood Product Shortages

COVID-19 CREATES UNPRECEDENTED CHALLENGES



Situation Report:

- Social distancing measures causing mass cancellations of blood drives nationally
- 1/3 of our blood supply is collected at high schools and universities forced to go remote the past 18 months
- Corporate-sponsored blood drives are cancelled due to nationwide work-from-home policies
- In observation of social distancing, staff shortages, blood centers have shifted heavily to automation and away from whole-blood-derived collections
- The need to make COVID-19 Convalescent Plasma (CCP) has shifted limited blood center resources

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Blood Product Shortages

LEUKOREduced RED BLOOD CELLS (LRBC)



Situation Report:

- Type O red blood cells in extremely short supply
- Type B red blood cells in short supply
- Type A red blood remain readily available
- Shorter-dated products are becoming more common

Strategies:

- Transfuse type specific as often as possible
- Consider low titer type O whole blood (LTOWB) at trauma centers
- Leverage secondary suppliers in other regions for redundancy purposes

Blood Product Shortages

PLATELETS (SDP, LVDS, PRT)



Situation Report:

- Platelet availability has remained relatively strong throughout pandemic
- FDA Platelet Bacterial Guidance implementation actively underway
- Product availability disruptions near-term

Strategies:

- Be as flexible as possible regarding ability to accept LVDS and/or PRT
- No more Verax testing or pooled platelets
- Leverage secondary suppliers in other regions for redundancy purposes

Blood Product Shortages

FROZEN PLASMA (FFP, FP-24)



Situation Report:

- Resources needed to manufacture COVID-19 Convalescent Plasma (CCP) compounded shortages
- AB plasma remains scarce, as usual
- Plasma availability has rebounded as many centers cease making CCP

Strategies:

- Consider cryo-poor plasma as a backup plan
- Consider use of type A plasma for MTP
- Leverage secondary suppliers in other regions for redundancy purposes

Blood Product Shortages

CRYOPRECIPITATE AHF (POOLS, SINGLES)



Situation Report:

- CRYO shortages have been severe during pandemic due to shift to automation and CCP
- CRYO Pool manufacturing has rebounded as many centers cease making CCP
- Spot market cost of CRYO Pools has increased by 35% - 50% based on ABO

Strategies:

- Establish standing orders for CRYO Pools with your blood suppliers
- New Product: Pathogen Reduced Cryo Fibrinogen Complex
- Be flexible on product dating, and stock Singles if Pools are unavailable

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Review of Key Strategies

FOR MANAGING BLOOD SUPPLY DISRUPTIONS

Situation:

1. Severe weather event (e.g., winter storm, hurricane, flooding)
2. Long-duration product shortages caused by COVID-19
3. Platelet shortage due to FDA Guidance implementation
4. Unpredictable transfusion volumes due to COVID-19 externalities



Strategy:

1. Import blood products in advance of event: “disaster preparedness”
2. Actively multi-source from different regions to access pockets of supply
3. Be as flexible (as possible) by accepting LVDS or PRT, as available
4. Actively review Par levels and communicate with primary supplier

Key Resources

FOR MANAGING BLOOD SUPPLY DISRUPTIONS

Resource:

1. AABB 10 Tips for Hospitals to Extend their Blood Supply [Website Link](#)
2. AABB COVID-19 Resources [Website Link](#)
3. FDA Bacterial Risk Control Strategies for Platelets (full guidance) [Website Link](#)
4. American Hospital Association Tools for Blood Shortages [Website Link](#)

Thank you for your time.

