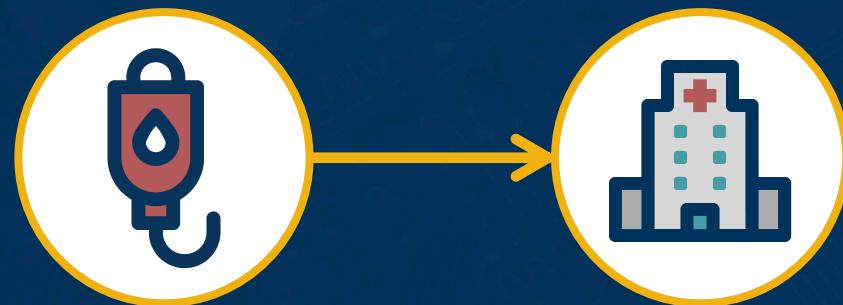


Vein-to-Vein Challenges

C4G Vein-to-Vein



Blood Safety
Information System



Donation

Transfusion



Challenge: Most information currently recorded on paper!



Challenges



Blood Shortage



Unsafe Blood



Blood donation in Africa
particularly low:
5 per 1000 of population



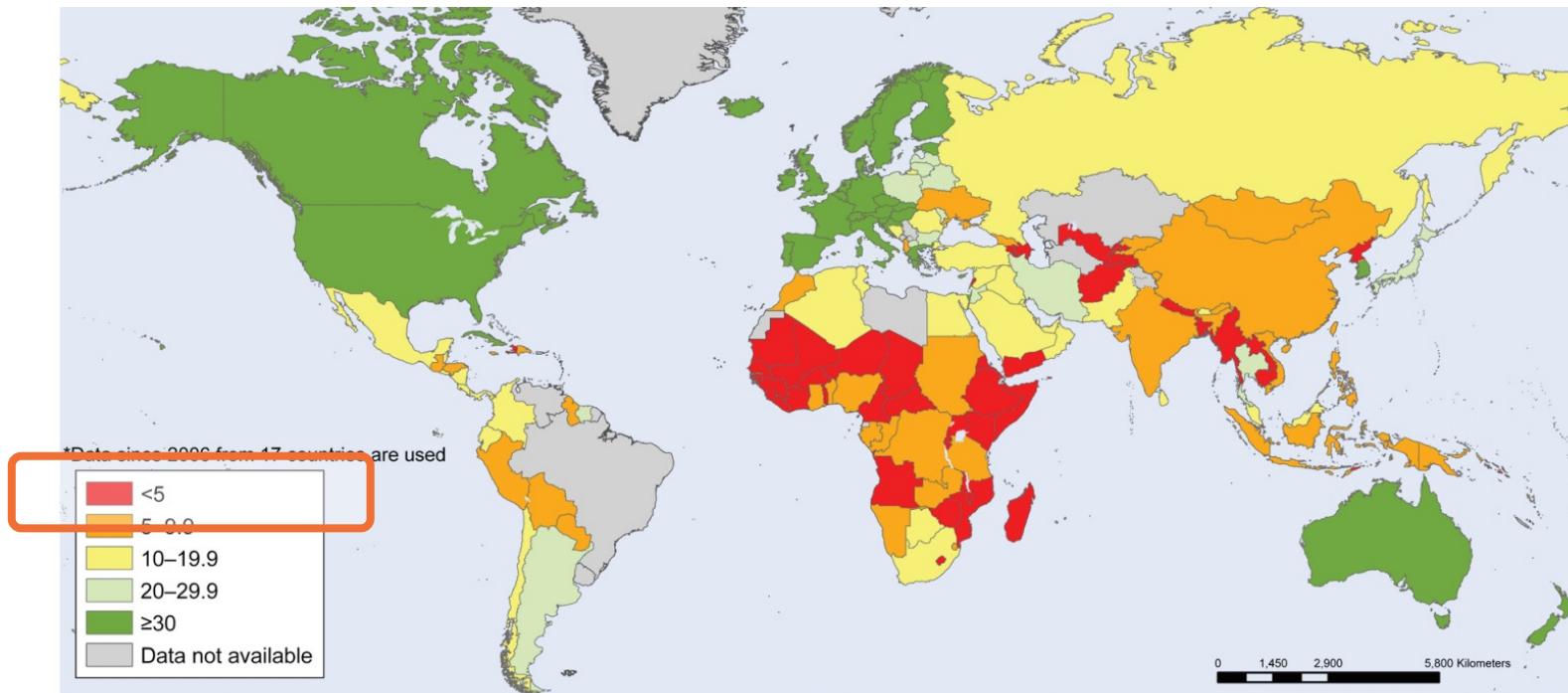
WHO Blood Safety Factsheet 2011:

- ◆ 91.8 million blood units collected worldwide annually
- ◆ 48% in high income countries where 15% of people live
- ◆ Pregnancy, trauma, & anemia related deaths
- ◆ Transfusion of unsafe blood is major cause of transmitting infections

Major Challenges Related to Blood

Blood Safety & Availability Challenges

Whole blood donations per 1000 population, 2008*



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Blood Transfusion Safety (BTS)
World Health Organization

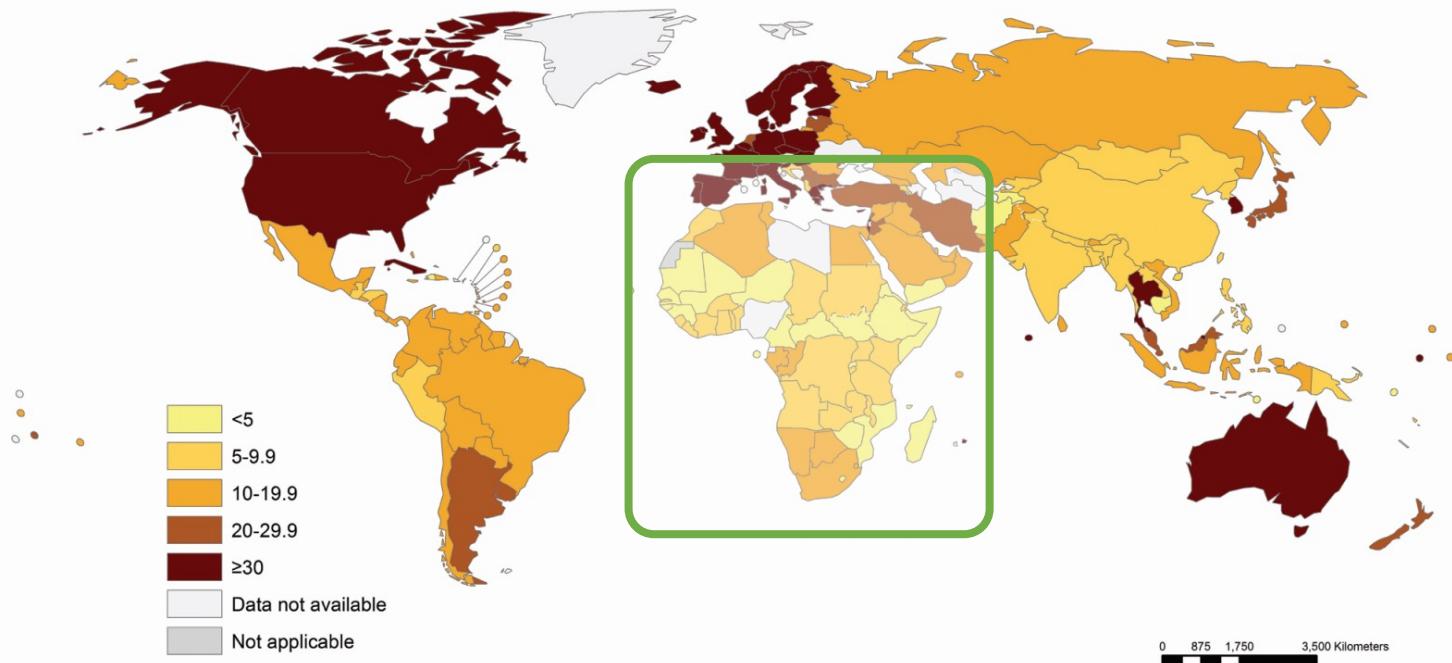


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Blood Safety & Availability Challenges

Georgia Tech

Whole blood donations per 1000 population, 2013*



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Blood Transfusion Safety (BTS)
World Health Organization

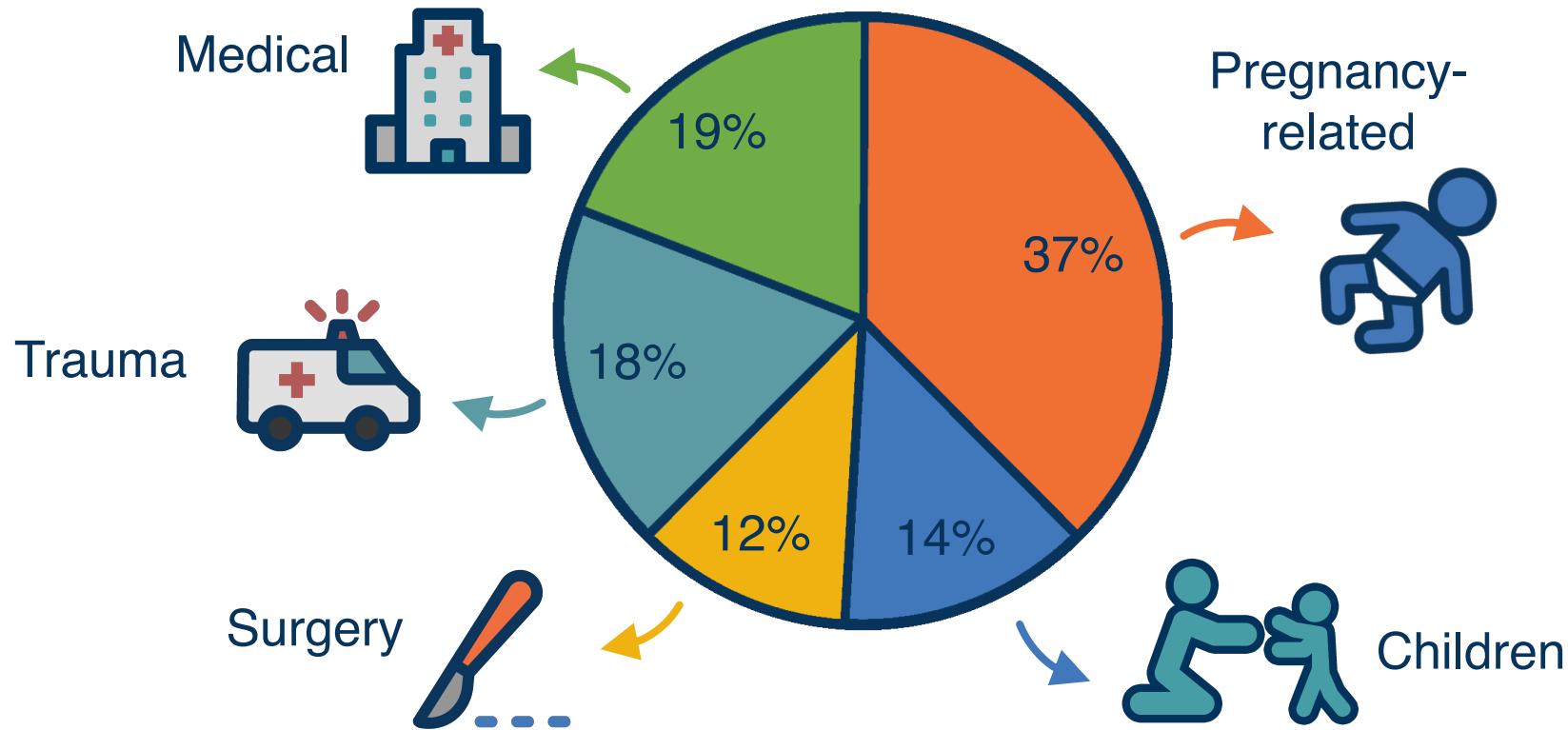


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Blood Safety & Availability Challenges



Estimated use of red cell transfusion in developing countries



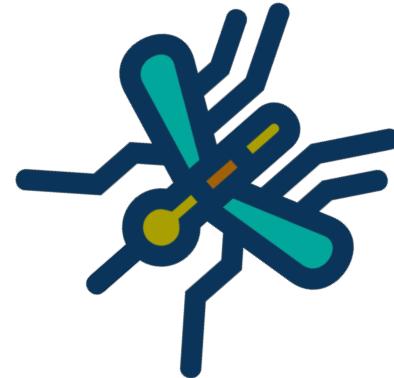
Blood Safety & Availability Challenges



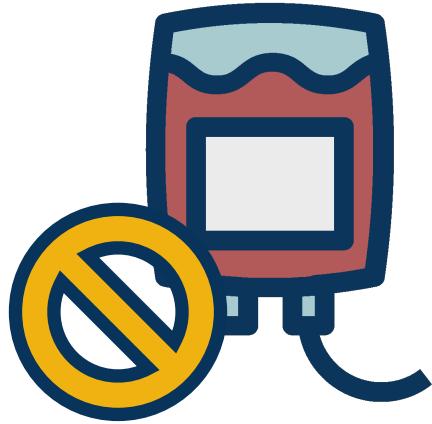
Rate of HIV Infection
through unsafe blood products is
95-100%



Maternal deaths:
44% due to severe bleeding during pregnancy



Children:
50% of transfusions to children for **malaria induced anemia**



Unnecessary blood donations:

Blood has a limited storage life



Unnecessary blood transfusions:

Appropriate clinical use of
blood & component
preparation

WHO Aide Memoire for Blood Safety

- ◆ Establishment of a **nationally-coordinated blood transfusion service**
- ◆ **Collection of blood only** from voluntary non-remunerated blood donors **from low-risk populations**
- ◆ **Testing of all donated blood**, including screening for transfusion-transmissible infections, blood grouping and compatibility testing
- ◆ **Reduction in unnecessary transfusions** through the effective clinical use of blood, including the use of simple alternatives to transfusion (crystalloids and colloids), wherever possible.





Policy Information



Social & Demographic information



Track infectious disease markers



Measure HR & logistical capacity



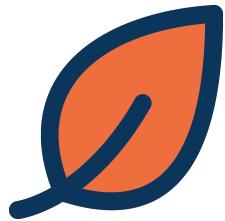
Track Usage



Aggregate information to find patterns

Technical Requirements

Initial Work & BSIS



Resource-scarce environments



Reliable Internet access not available



Power supply interruptions



Level of technical skills

Diverse needs and practices



Commercial Solutions have prohibitive cost

Challenges

Initial Work



John Pitman (CDC)

Image: <https://www.researchgate.net/profile/John-Pitman>



Developed an **Excel based tool** for collecting data from PEPFAR countries



Initial focus on **gathering aggregate data**



Advantages



Everyone knows how to use Excel



Send easily by email



Disadvantages

- ◆ Version tracking
- ◆ Changes made to excel file **not immediately visible** to CDC
- ◆ Errors when merging data from several Excel files
- ◆ **Quarterly reports** - difficult to get data
- ◆ Local blood center **often sent a disk by road** to national center

Data always available
on the Web

Replacement for
Excel tool



BSIS:
Web-based
tool

Audit logs



One stop
solution to get
data



Automatic real-time
aggregation of data



BSIS Web-based Tool



Goals

- ◆ Easy to use
- ◆ Secure
- ◆ Low bandwidth requirements
- ◆ Flexibility to work with different countries



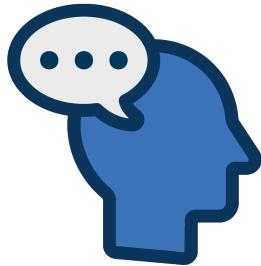
Technology Used

- ◆ PHP, Javascript, MySQL
- ◆ Compatibility with browser





**Onsite evaluation
in Zambia and
Tanzania**



**Pretest survey
questions with
expected difficulty**



**Trial with
Evaluation task list**



Results:

- ◆ Found easier to use over Excel
- ◆ Perceptible initial page load time; Fixed with AJAX

BSIS Evaluation

BSIS: Web-based Tool

Blood Safety - Summary Information
<http://www.blood-safety.org/summary.php>

Blood Safety Data

Report Status

Data Highligh*Click to collapse/expand*

Units Collected:	2000
Units Discarded:	10
Units Available for Screening:	5500
HIV Prevalence:	0.7%
HBV Prevalence:	1.6%
HCV Prevalence:	1.6%
Syphilis Prevalence:	0.2%

Export Options

Tips

Click on the name of an item to show or hide details for that item.

To extract the data for backups or to import into another database or application, use the "Save" links. Each saved file follows XML structure.

This site does not currently have a method to restore from XML backups because of the risk of permanent data loss. To restore from an XML backup, consult the database administrator.

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[Change Password](#) | [Sign Out](#)

Blood Safety
tmp://localhost/~stephen/Blood3/graphs.php

Analyze Data - Vib

OVERVIEW
Current Status

PREPARE DATA
General Information
Blood Supply
Training
Sustainability

ANALYZE DATA
View Graphs
View Reports
Export Information

MANAGE SYSTEM
Users
Regions
Data

OPTIONS
Preferences
Sign Out

Add a new graph

Weekly HIV Prevalence, Central Province

Weekly HIV Prevalence, Eastern Province

W21: 9%

COMPARE REGIONS

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