

The background of the slide is a composite image. The left side shows a dark, atmospheric view of the Piazza del Duomo in Milan, with the Galleria Vittorio Emanuele II visible in the distance. The right side shows a bright, clear view of the facade of the Milan Cathedral (Duomo di Milano), highlighting its intricate Gothic architecture and numerous spires.

ICCBBA Learning Lab

The ISBT 128 Standard in Action

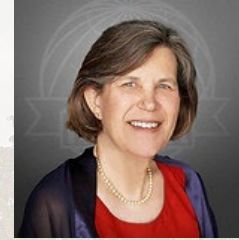
Milan, Italy | 31 May 2025

Welcome!

Today's Team



Eoin McGrath
Executive Director



Karen Moniz
Technical Director



Robin Wilkinson
Deputy Technical
Director



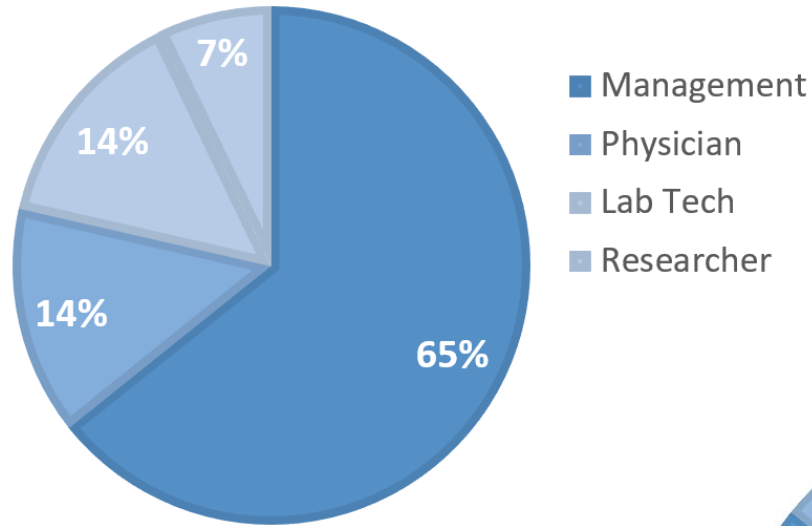
Erwin Cabana
Technical Manager



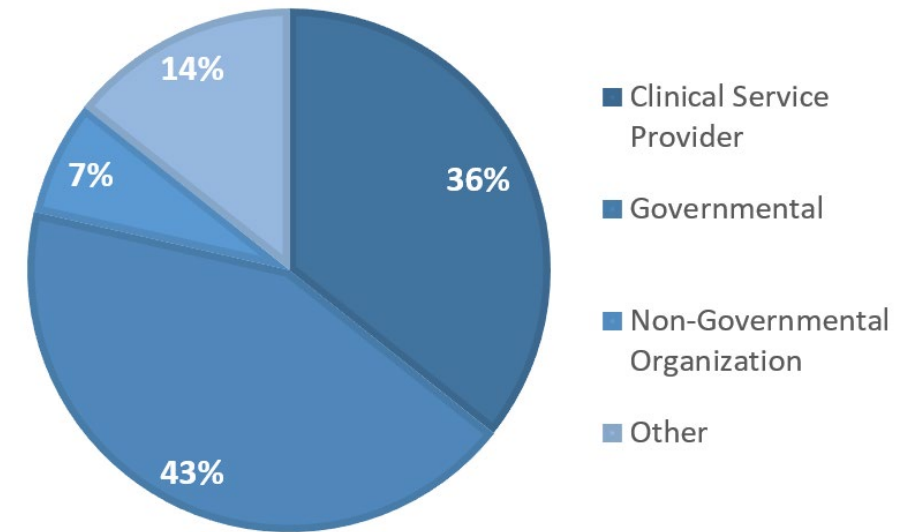
Kayla Perez
Education Specialist

Learning Lab Participants

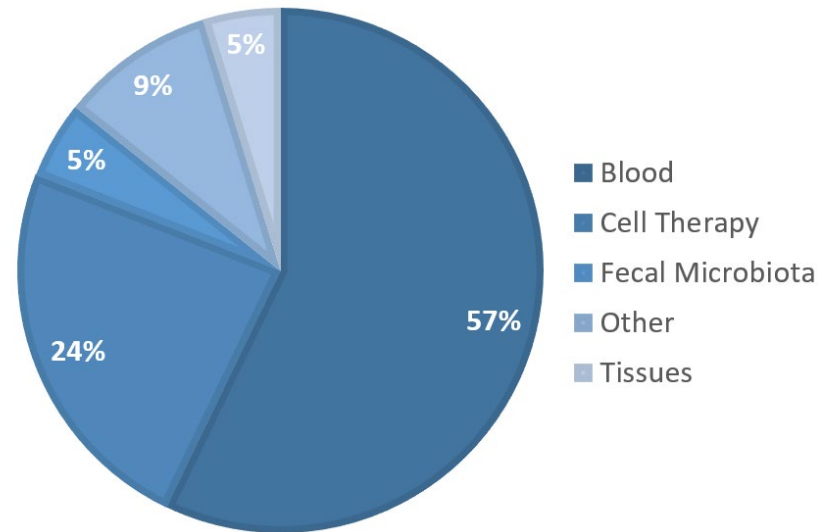
Position/Responsibility



Organization Type

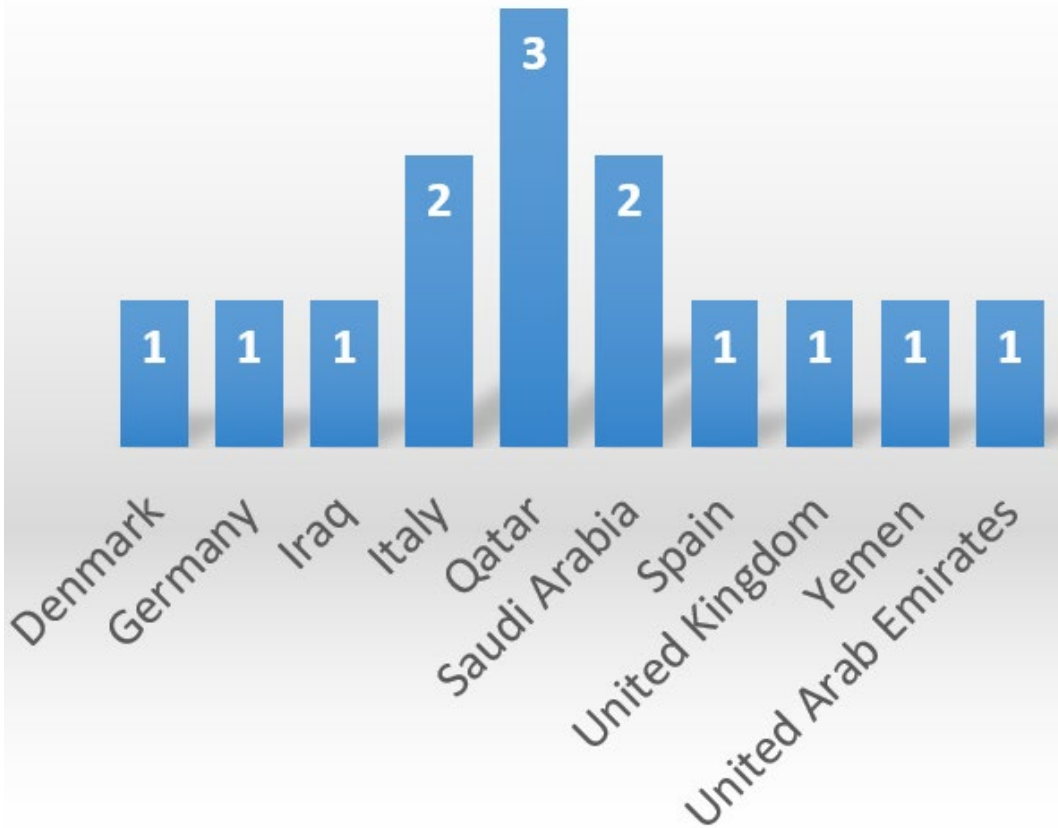


Area of Expertise



Learning Lab Participants

10 Countries



Agenda

1. Introduction to ICCBBA and the ISBT 128 Standard
2. ISBT 128 Implementation
3. ISBT 128 Labeling Part A
4. 15-Minute Break
5. ISBT 128 Labeling Part B
6. Red Cell Antigens and ISBT 128
7. Panel Questions & Answers
8. Survey



An Introduction to ICCBBA and the ISBT 128 Standard

Origins of ISBT 128

- Codabar - no longer adequate for complex product coding needs
- Lack of globally unique donation identification
- Increasing need to exchange blood across regions
- ISBT working group on automation and data processing
- AABB and others joined the effort to develop a global standard
- Ability to bi-directionally trace to/from donor/recipient is essential for global biovigilance of MPHO

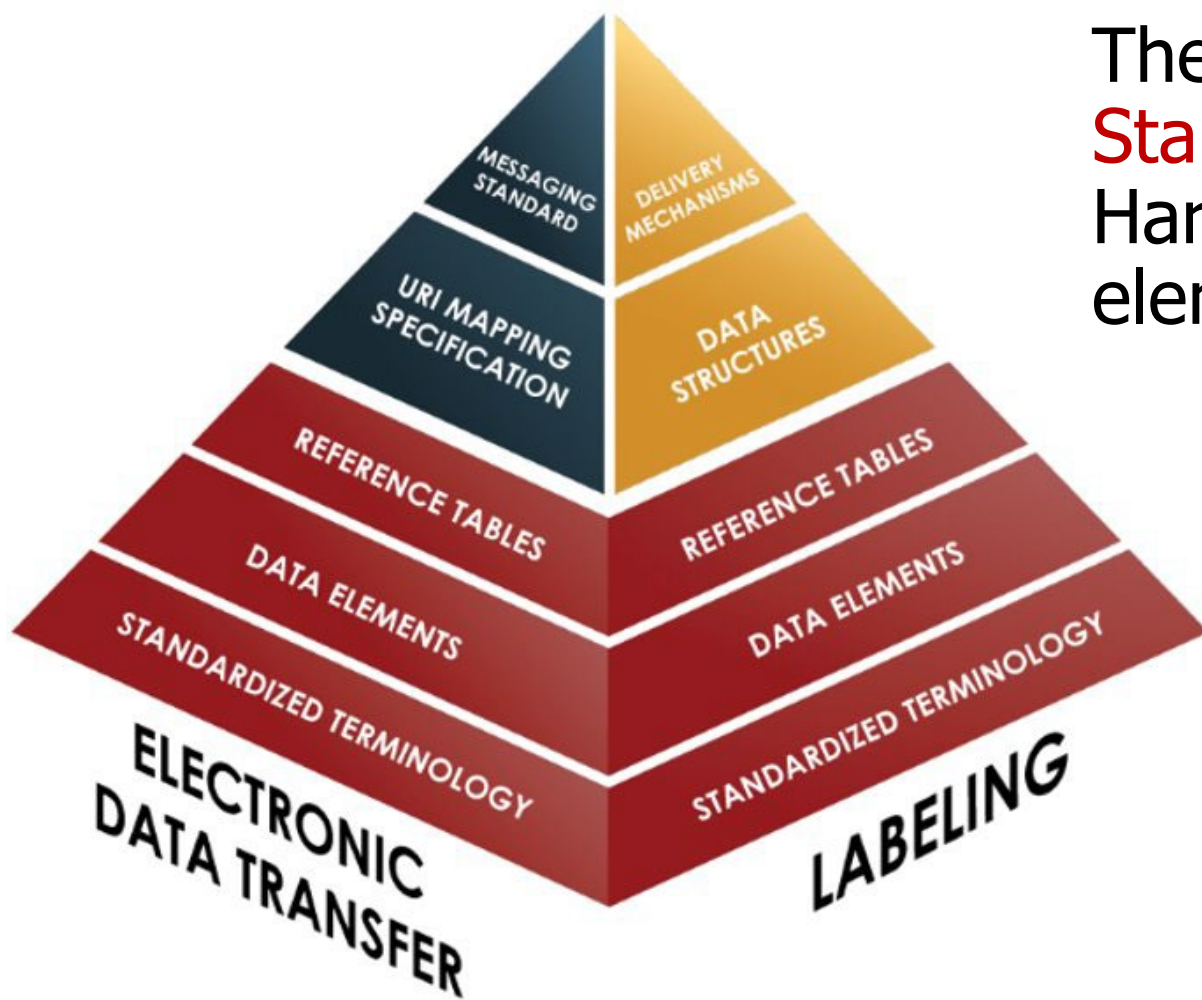


- ICCBBA is an international non-profit, nonstate actor, supported by user fees, tasked with **developing** and **maintaining** the ISBT 128 standards for terminology, globally unique identification, labeling, and electronic data exchange for MPHO.
- ISBT 128 standards and implementation guides are developed with the aid of volunteers via Technical Advisory Groups. In the past 30 years, over 600 volunteers have contributed to developing and maintaining ISBT 128. <https://www.isbt128.org/committees>



ISBT 128 Information Environment

The foundation of ISBT 128 is **Standardized Terminology**. Harmonized terminology is a basic element of identification.



Traceability & Blood Safety Value Chain



Connected set of interdependent blood safety activities, enabling:

- Bidirectional Traceability
- Shipping across borders
- Overcoming language barriers
- Accurate documentation in medical records
- Electronic transfer of information

Expanding use of ISBT 128 for MPHO

1994	• ICCBBA formed
1996	• Blood
2000	• Cellular Therapy
2001	• Tissue
2008	• Plasma Derivatives, In Vivo Diagnostics
2012	• Human Milk, Ocular
2013	• Topical, Organs, Reproductive
2014	• Fecal Microbiota
2015	• Regenerated Tissues
2022	• Clinical Trials

The ISBT 128 Implementation Journey

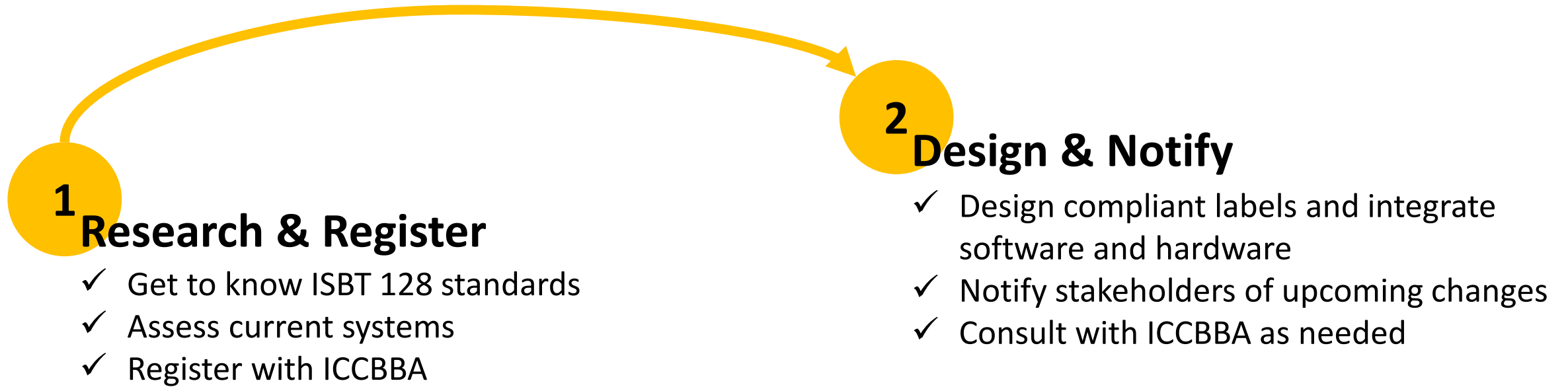
Implementing the ISBT 128 Standard

1

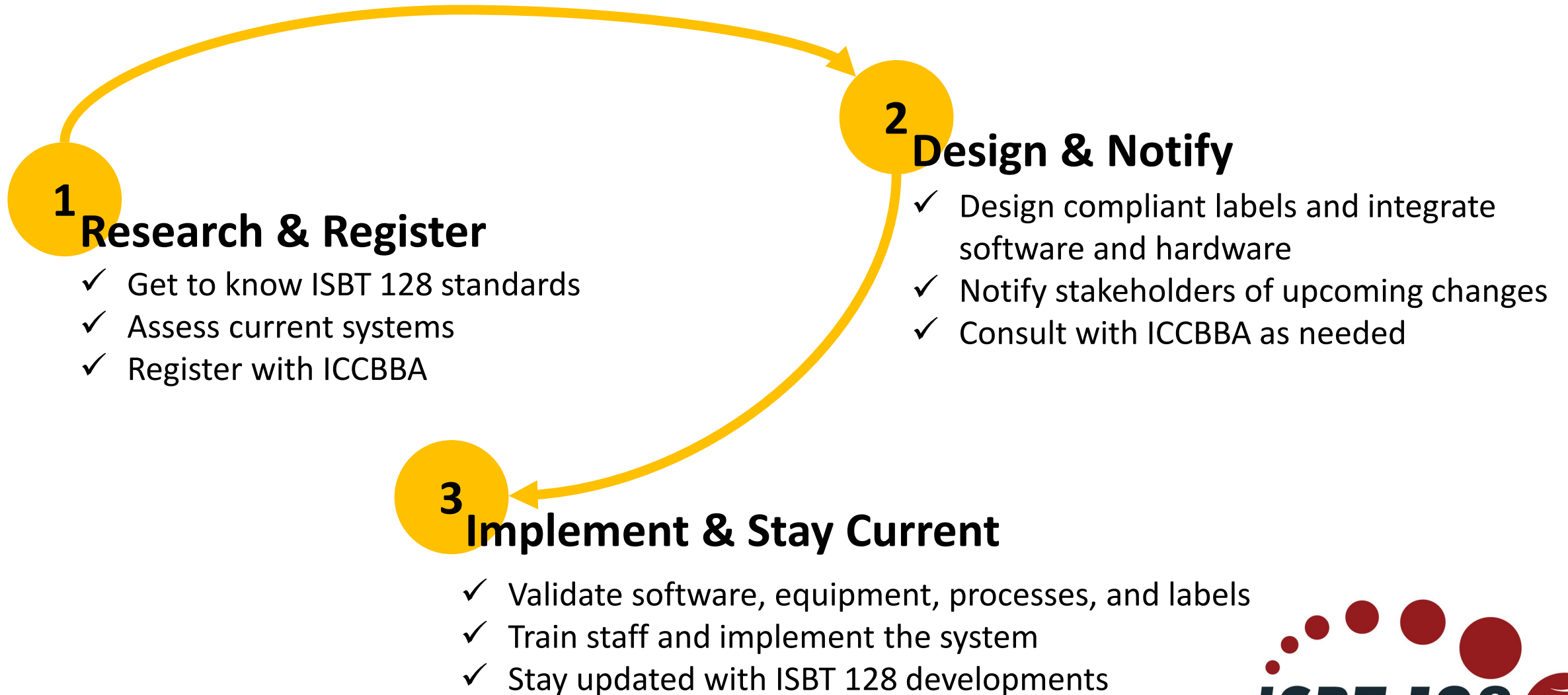
Research & Register

- ✓ Get to know ISBT 128 standards
- ✓ Assess current systems
- ✓ Register with ICCBBA

Implementing the ISBT 128 Standard



Implementing the ISBT 128 Standard



Implementing the ISBT 128 Standard

1

Research & Register

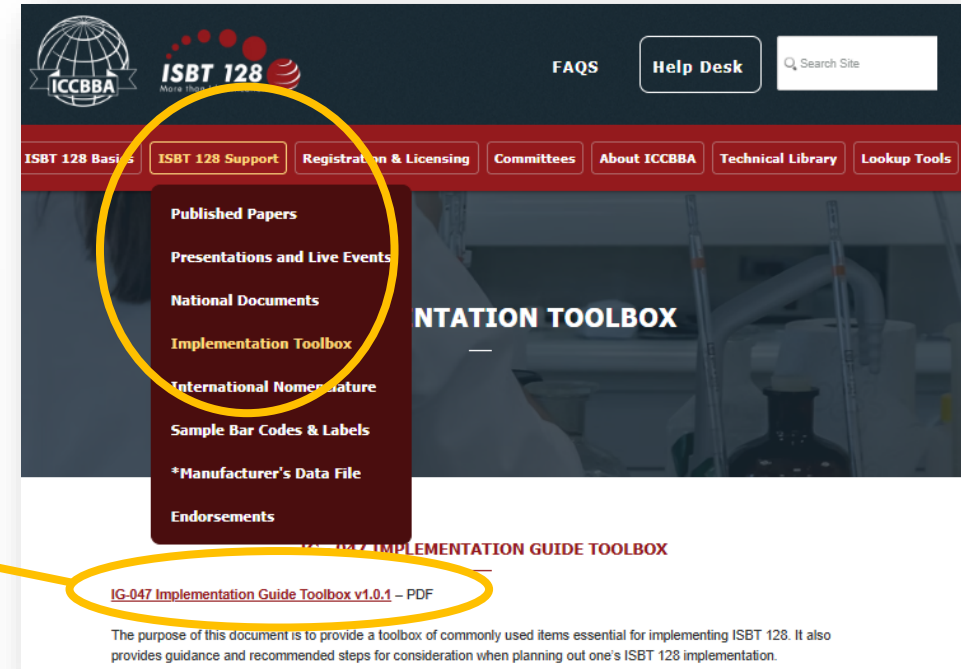
- ✓ Get to know ISBT 128 standards

Implementing the ISBT 128 Standard

1

Research & Register

✓ Get to know ISBT 128 standards



A great place to start!



Implementing the ISBT 128 Standard

1

Research & Register

✓ Get to know ISBT 128 standards

Visit the
Technical
Library and
review the
Table of
Contents in
documents

The screenshot shows the ISBT 128 website. The header includes the ICCBBA logo, the ISBT 128 logo with the tagline 'More than Identification', and navigation links for FAQs, Help Desk, and a search bar. A red navigation bar contains links for ISBT 128 Basics, ISBT 128 Support, Registration & Licensing, Committees, About ICCBBA, Technical Library (highlighted with a yellow circle), and Lookup Tools. Below this, the 'TECHNICAL DOCUMENTS' section is visible, with a paragraph explaining that users can find technical documents and files available to the public. A table of contents for the 'ISBT 128 Standard Technical Specification v6.2.2' is overlaid on the left side of the screenshot.

ISBT 128 Standard Technical Specification v6.2.2

Table of Contents

1	Introduction	8
1.1	Purpose	8
1.2	Scope	8
1.3	Intended Audience	8
1.4	Normative References	8
1.5	Other References	11
1.6	Background	12
1.7	Changes in this Version	13
2	Data Structures	14
2.1	Data Identifiers	14
2.2	The Role of Data Identifiers in ISBT 128 Bar Codes	17
2.3	Data Structure Index	17
2.4	Description of the Data Structures	25
2.4.1	Donation Identification Number [Data Structure 001]	25
2.4.2	Blood Groups [ABO and RhD] [Data Structure 002]	28
2.4.3	Product Code [Data Structure 003]	30
2.4.4	Expiration Date [Data Structure 004]	34
2.4.5	Expiration Date and Time [Data Structure 005]	35
2.4.6	Collection Date [Data Structure 006]	36
2.4.7	Collection Date and Time [Data Structure 007]	37
2.4.8	Production Date [Data Structure 008]	38

TECHNICAL DOCUMENTS

Here you will find technical documents and files available to the public. Please select from the following subject areas below to view their respective documents. Alternatively, learn how ISBT 128 is used in a field other than your own! Browse through [on to learn how ICCBBA's volunteer advisors are helping to advance the ISBT 128 Standard.](#)

the importance of registered vendors to the process of delivering quality services to patients. Suppliers of products licensed to utilize ISBT 128 can be found in the [Vendors section](#).

Blood Transfusion	Cellular Therapy
Medical Devices	Milk Banking
Ocular Products	Organ Transplants
Plasma Derivatives	Regenerative Medicine
Production Products	Transfusion

Implementing the ISBT 128 Standard

1

Research & Register

- ✓ Get to know ISBT 128 standards

Learn about the
Key Elements of Traceability

ISBT 128 Key Elements of Traceability

 A9999 21 123456 8 3 Accurate Blood Center Anywhere, Worldwide	 5100
	 RhD POSITIVE
VOLUNTEER DONOR	
 E0336VAb	 0211602359
RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED LEUKOCYTES REDUCED	Expiration Date 09 JUN 2021
___ mL from 500 mL CPD Whole Blood	
Store at 1 to 6 C Part Ab	

A globally unique identifier can be built by combining the following four key elements of traceability:

ISBT 128 Key Elements of Traceability



The image shows a sample ISBT 128 label. At the top left, a barcode is circled in green, with the text 'A9999 21 123456 8 3' printed below it. To the right of this is another barcode with '5100' below it. Below the first barcode is the text 'Accurate Blood Center' and 'Anywhere, Worldwide'. In the center is a large 'O' with 'RhD POSITIVE' below it. To the left of the 'O' is a small square barcode. Below the 'O' is the text 'VOLUNTEER DONOR'. At the bottom left is a barcode with 'E0336VAb' below it. To the right of this is another barcode with '0211602359' below it and 'Expiration Date' to its right. Below the 'E0336VAb' barcode is the text 'RED BLOOD CELLS', 'ADENINE-SALINE (AS-1) ADDED', and 'LEUKOCYTES REDUCED'. At the bottom left is the text '___ mL from 500 mL CPD Whole Blood' and 'Store at 1 to 6 C' and 'Part Ab'.

A9999 21 123456 8 3

Accurate Blood Center
Anywhere, Worldwide

5100

RhD POSITIVE

VOLUNTEER DONOR

E0336VAb

0211602359

Expiration Date

RED BLOOD CELLS
ADENINE-SALINE (AS-1) ADDED
LEUKOCYTES REDUCED

___ mL from 500 mL CPD Whole Blood

Store at 1 to 6 C
Part Ab

A999921123456

A globally unique identifier can be built by combining the following four key elements of traceability:

- Donation Identifier (DIN)

ISBT 128 Key Elements of Traceability



The image shows a standard ISBT 128 blood unit label. A green oval highlights the top-left barcode and its associated alphanumeric string 'A9999 21 123456 8 3'. A blue circle highlights the bottom-left barcode and its associated string 'E0336'.

A9999 21 123456 8 3

Accurate Blood Center
Anywhere, Worldwide

5100

RhD POSITIVE

VOLUNTEER DONOR

E0336 Ab

RED BLOOD CELLS
ADENINE-SALINE (AS-1) ADDED
LEUKOCYTES REDUCED

0211602359

Expiration Date
09 JUN 2021

___ mL from 500 mL CPD Whole Blood

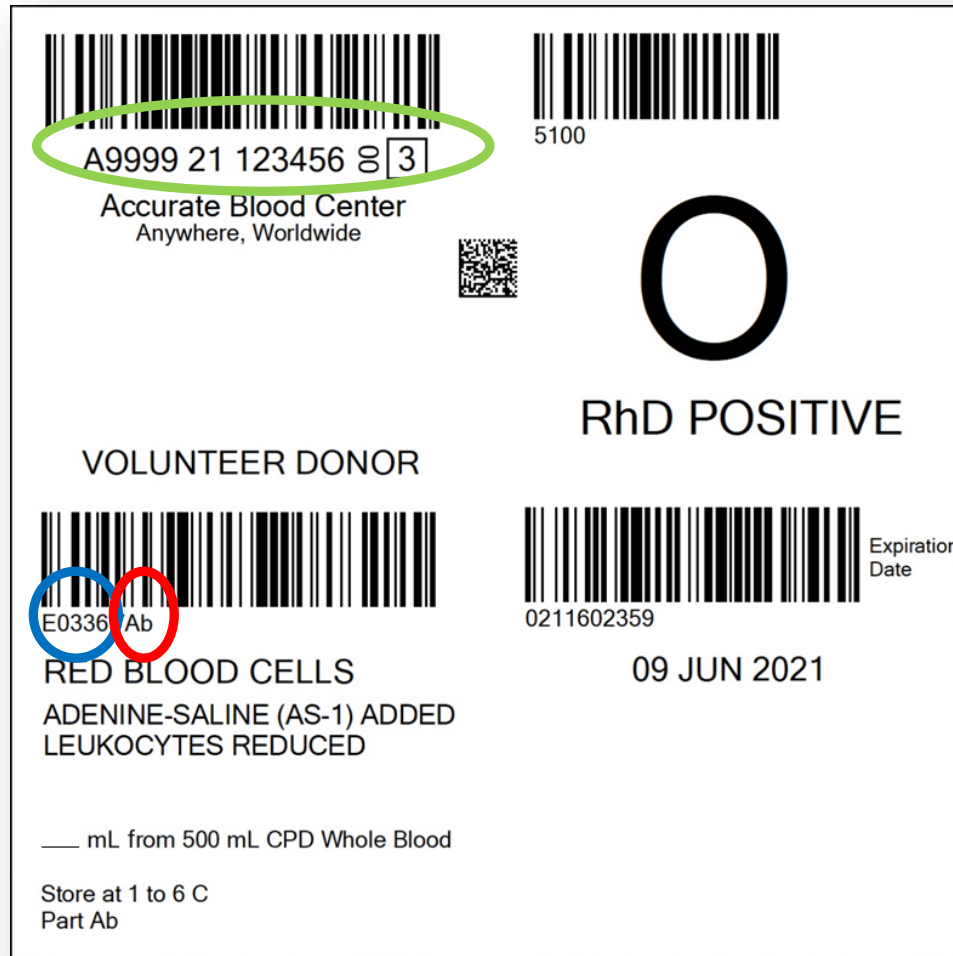
Store at 1 to 6 C
Part Ab

E0336A999921123456

A globally unique identifier can be built by combining the following four key elements of traceability:

- Donation Identifier (DIN)
- Standardized PDC

ISBT 128 Key Elements of Traceability



The image shows a standard ISBT 128 blood unit label. Several elements are highlighted with colored circles to illustrate the components of a globally unique identifier:

- Donation Identifier (DIN):** A green circle highlights the top-left barcode and the alphanumeric string "A9999 21 123456 8 3".
- Standardized PDC:** A blue circle highlights the "E0336" portion of the bottom-left barcode.
- Division Identifier:** A red circle highlights the "Ab" portion of the bottom-left barcode.

Other visible text on the label includes:

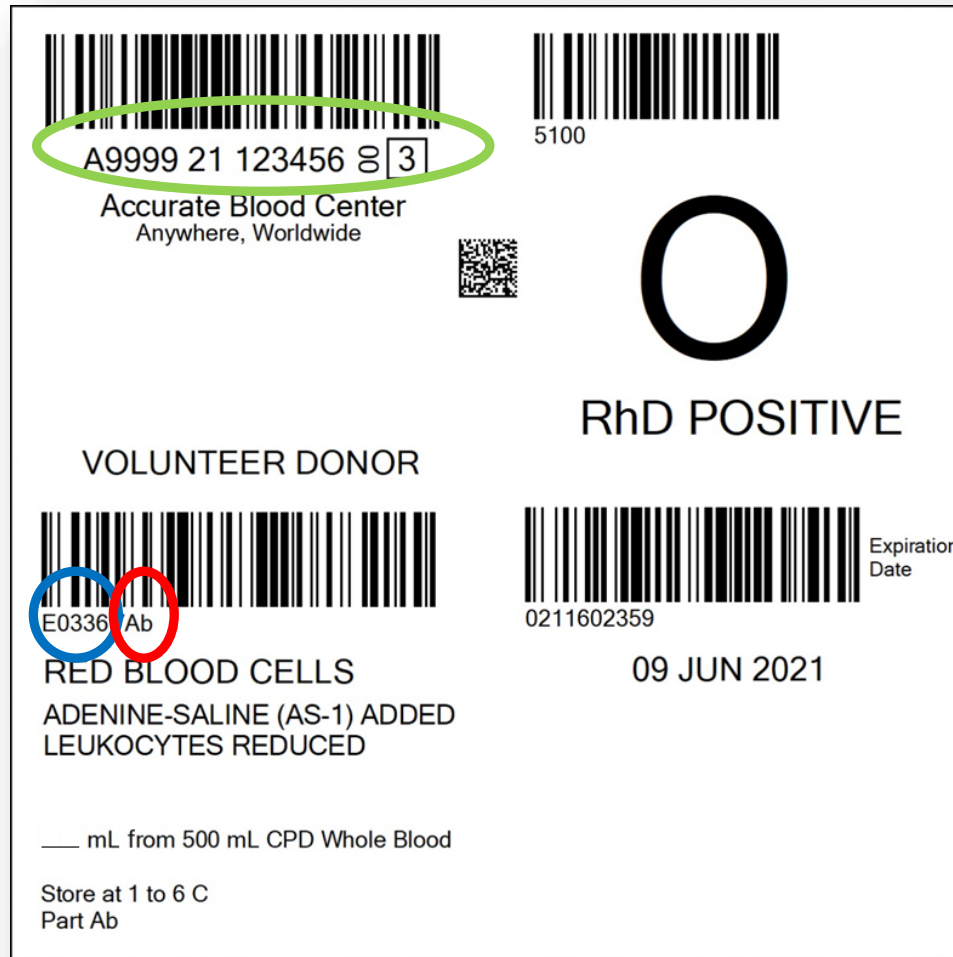
- Accurate Blood Center
Anywhere, Worldwide
- 5100
- RhD POSITIVE
- VOLUNTEER DONOR
- RED BLOOD CELLS
- ADENINE-SALINE (AS-1) ADDED
- LEUKOCYTES REDUCED
- 0211602359
- 09 JUN 2021
- Expiration Date
- ___ mL from 500 mL CPD Whole Blood
- Store at 1 to 6 C
- Part Ab

E0336A999921123456Ab0000

A globally unique identifier can be built by combining the following four key elements of traceability:

- Donation Identifier (DIN)
- Standardized PDC
- Division Identifier

ISBT 128 Key Elements of Traceability



The image shows a standard ISBT 128 blood unit label. Several elements are highlighted with colored circles to illustrate the traceability components: a green circle around the top-left barcode and its alphanumeric data (A9999 21 123456 8 3), a blue circle around the 'E0336' portion of the bottom-left barcode, and a red circle around the 'Ab' portion of the same barcode. The label also features a large 'O' for RhD POSITIVE, a 'VOLUNTEER DONOR' status, and an expiration date of 09 JUN 2021.

A9999 21 123456 8 3
Accurate Blood Center
Anywhere, Worldwide

5100

RhD POSITIVE

VOLUNTEER DONOR

E0336 Ab
RED BLOOD CELLS
ADENINE-SALINE (AS-1) ADDED
LEUKOCYTES REDUCED

0211602359
09 JUN 2021
Expiration Date

___ mL from 500 mL CPD Whole Blood

Store at 1 to 6 C
Part Ab

00000E0336A999921123456Ab0000

A globally unique identifier can be built by combining the following four key elements of traceability:

- Donation Identifier (DIN)
- Standardized PDC
- Division Identifier
- Processing Facility FIN

Implementing the ISBT 128 Standard

1

Research & Register

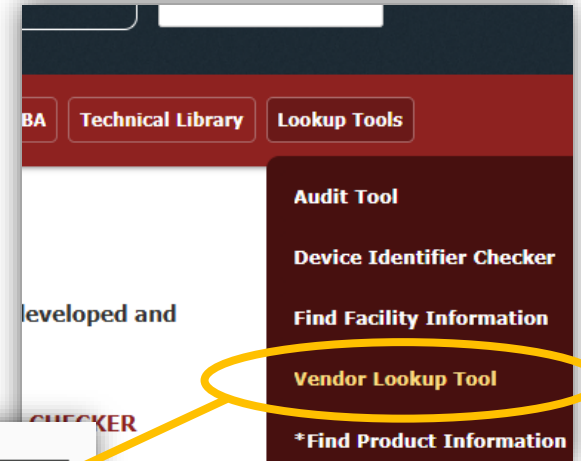
- ✓ Get to know ISBT 128 standards
- ✓ **Assess current systems**

Implementing the ISBT 128 Standard

1

Research & Register

- ✓ Get to know ISBT 128 standards
- ✓ Assess current systems

A screenshot of the 'Vendor Lookup Tool' search interface. It features three search criteria, each with a text input field and a dropdown menu. The first criterion is 'Search by Vendor Name' with an empty text field. Below it, separated by 'AND/OR', is 'Search by Categories' with a dropdown menu showing 'Labeling (Blood)'. Below that, also separated by 'AND/OR', is 'Search by Region' with a dropdown menu showing 'Africa'. A yellow arrow points from the 'Vendor Lookup Tool' link in the menu above to the search fields.

Search for label,
software, and hardware
vendors with ICCBBA's
Vendor Lookup Tool

<https://www.isbt128.org/vendor-lookup-tool>

Implementing the ISBT 128 Standard

1

Research & Register

- ✓ Get to know ISBT 128 standards
- ✓ Assess current systems

Does the software
implement the Standard
standardly?



Implementing the ISBT 128 Standard

1

Research & Register

- ✓ Get to know ISBT 128 standards
- ✓ Assess current systems
- ✓ Register with ICCBBA

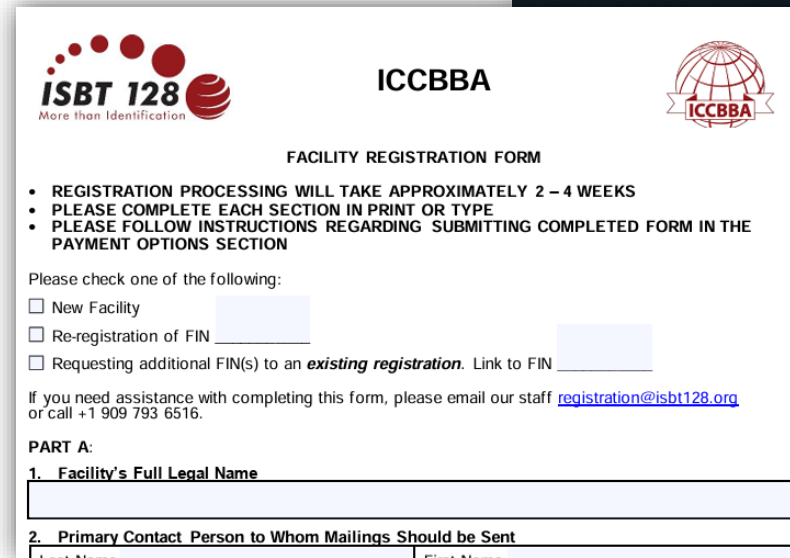
Implementing the ISBT 128 Standard

1

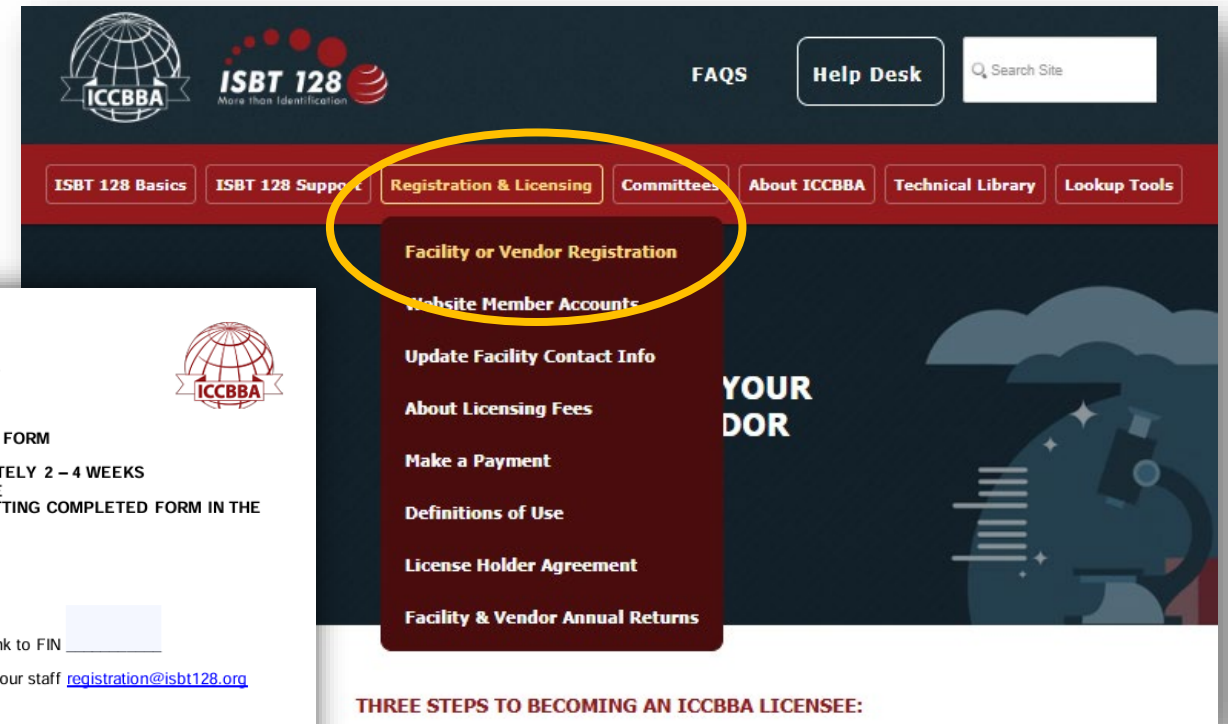
Research & Register

- ✓ Get to know ISBT 128 standards
- ✓ Assess current systems
- ✓ Register with ICCBBA

- Obtain a FIN
- Access the PDC Database

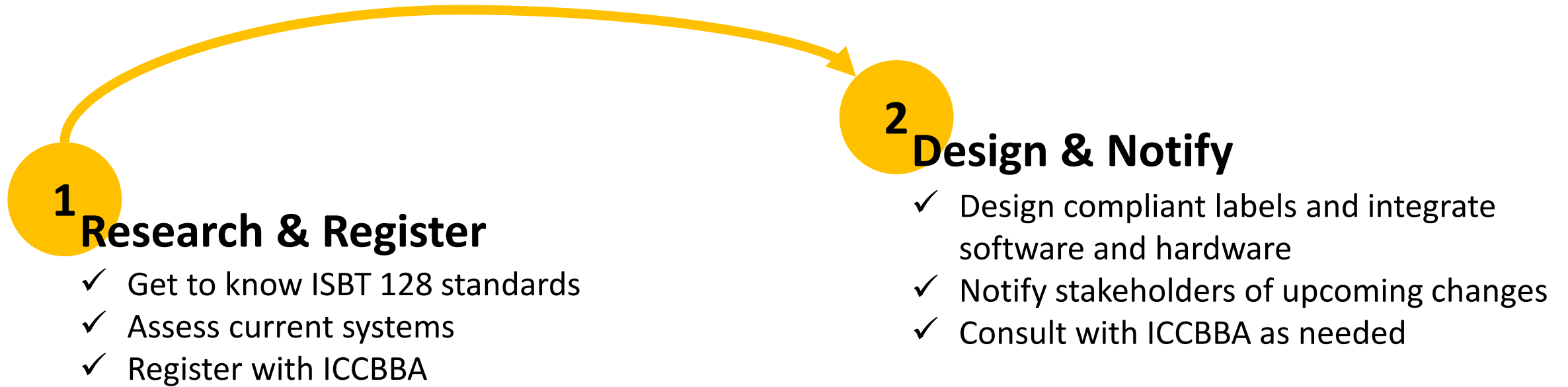


The image shows a screenshot of the ICCBBA Facility Registration Form. At the top, there are logos for ISBT 128 and ICCBBA. The form is titled "FACILITY REGISTRATION FORM". It includes instructions: "REGISTRATION PROCESSING WILL TAKE APPROXIMATELY 2 - 4 WEEKS", "PLEASE COMPLETE EACH SECTION IN PRINT OR TYPE", and "PLEASE FOLLOW INSTRUCTIONS REGARDING SUBMITTING COMPLETED FORM IN THE PAYMENT OPTIONS SECTION". Below these instructions, there is a section titled "Please check one of the following:" with three options: "New Facility", "Re-registration of FIN", and "Requesting additional FIN(s) to an existing registration. Link to FIN". Each option has a corresponding input field. At the bottom, there is a section titled "PART A:" with two numbered questions: "1. Facility's Full Legal Name" and "2. Primary Contact Person to Whom Mailings Should be Sent". Each question has a corresponding input field.



<https://www.isbt128.org/how-to-register>

Implementing the ISBT 128 Standard



Implementing the ISBT 128 Standard

2

Design & Notify

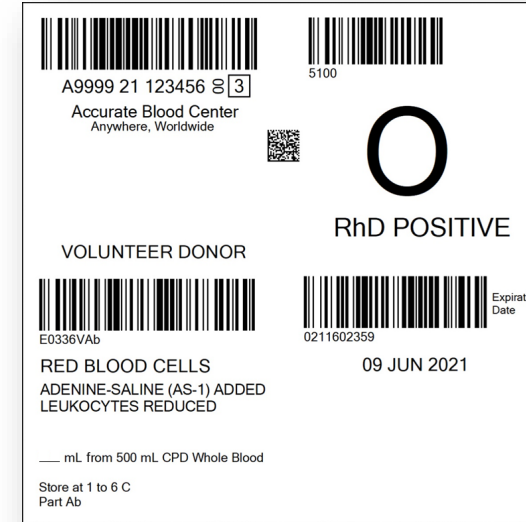
- ✓ Design compliant labels and integrate software and hardware

Implementing the ISBT 128 Standard

2

Design & Notify

- ✓ Design compliant labels and integrate software and hardware



ICCBBA's help desk can
check your labels!

support@isbt128.org

Implementing the ISBT 128 Standard

2

Design & Notify

- ✓ Design compliant labels and integrate software and hardware
- ✓ Notify stakeholders of upcoming changes

Implementing the ISBT 128 Standard

2

Design & Notify

- ✓ Design compliant labels and integrate software and hardware
- ✓ **Notify stakeholders of upcoming changes**



Implementing the ISBT 128 Standard

2

Design & Notify

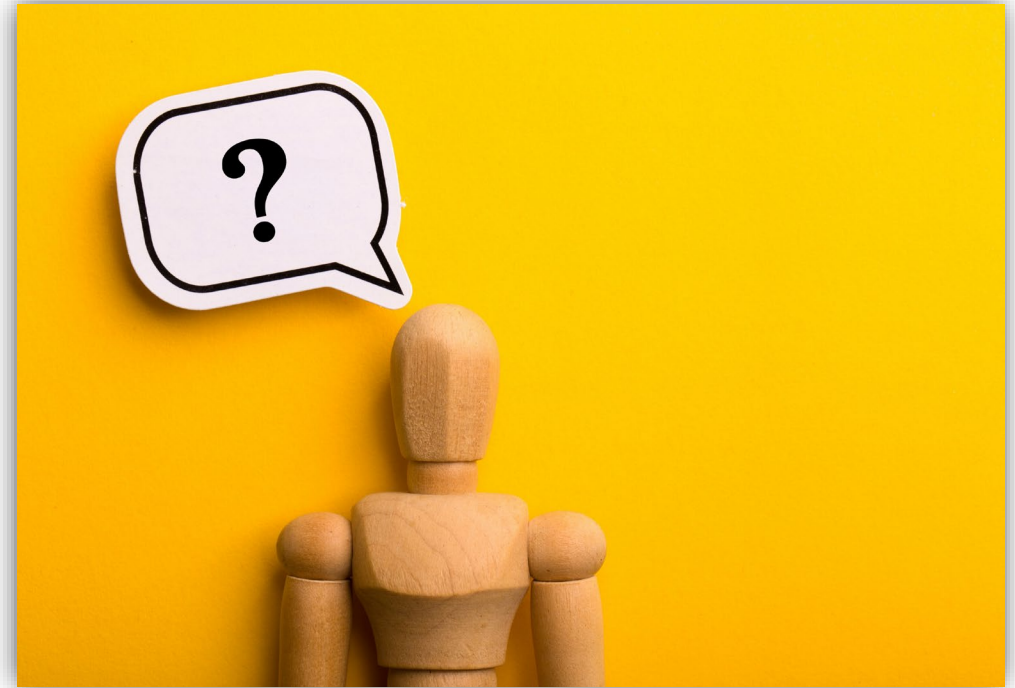
- ✓ Design compliant labels and integrate software and hardware
- ✓ Notify stakeholders of upcoming changes
- ✓ Consult with ICCBBA as needed

Implementing the ISBT 128 Standard

2

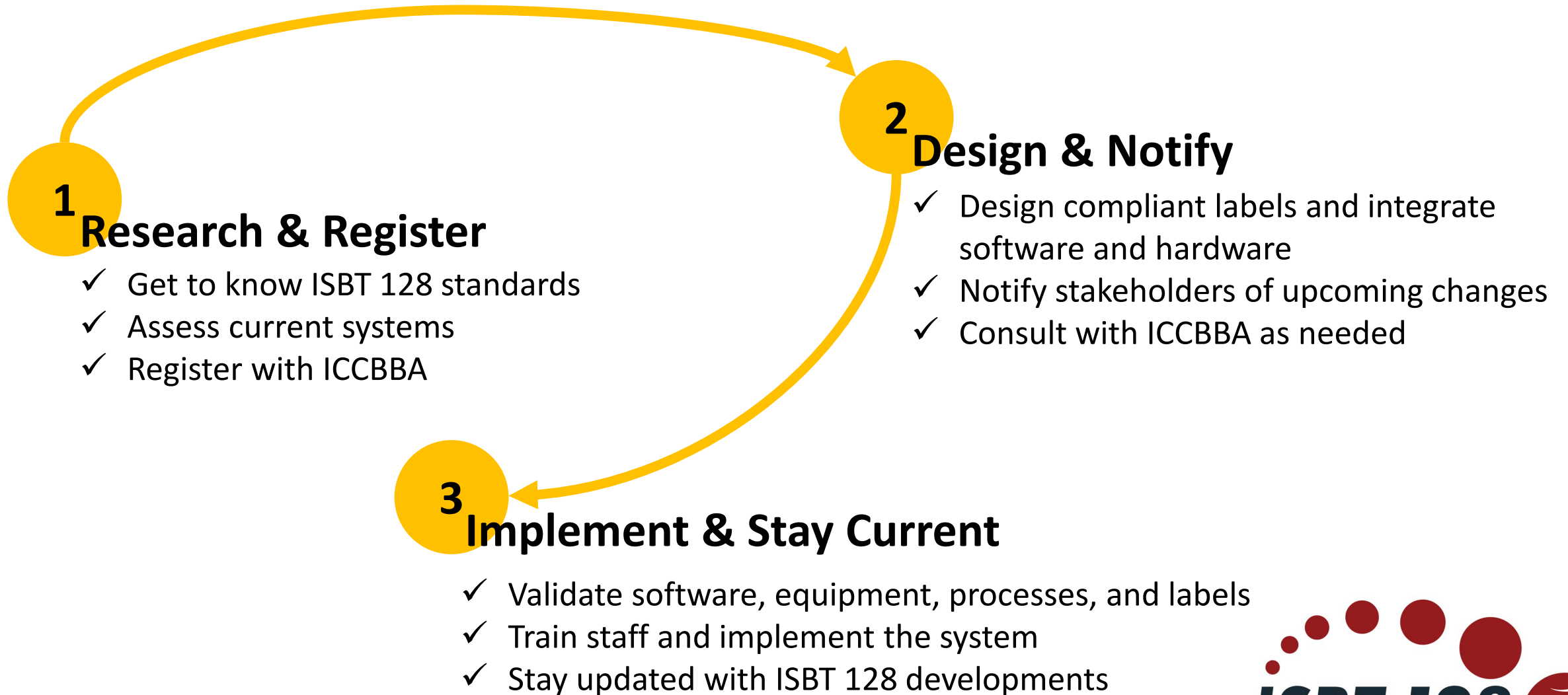
Design & Notify

- ✓ Design compliant labels and integrate software and hardware
- ✓ Notify stakeholders of upcoming changes
- ✓ Consult with ICCBBA as needed



Help Desk: support@isbt128.org

Implementing the ISBT 128 Standard



Implementing the ISBT 128 Standard

3

Implement & Stay Current

- ✓ Validate software, equipment, processes, and labels

Implementing the ISBT 128 Standard

3

Implement & Stay Current

- ✓ Validate software, equipment, processes, and labels



Implementing the ISBT 128 Standard

3

Implement & Stay Current

- ✓ Validate software, equipment, processes, and labels
- ✓ Train staff and implement the system

Implementing the ISBT 128 Standard

3

Implement & Stay Current

- ✓ Validate software, equipment, processes, and labels
- ✓ Train staff and implement the system



Created by Imagen AI

Implementing the ISBT 128 Standard

3

Implement & Stay Current

- ✓ Validate software, equipment, processes, and labels
- ✓ Train staff and implement the system
- ✓ Stay updated with ISBT 128 developments

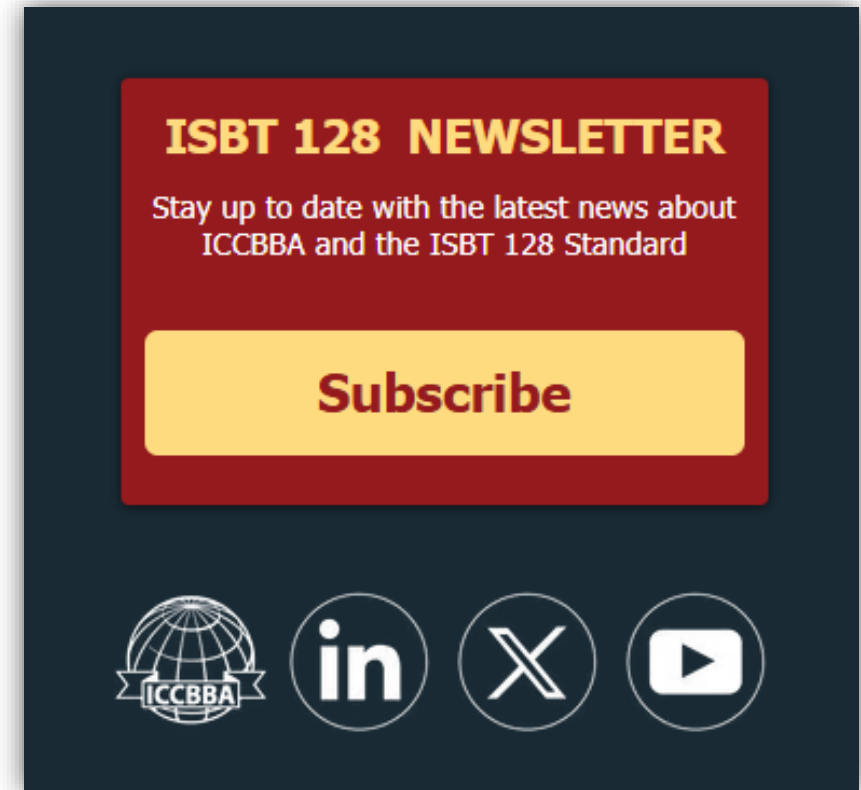
Implementing the ISBT 128 Standard

3

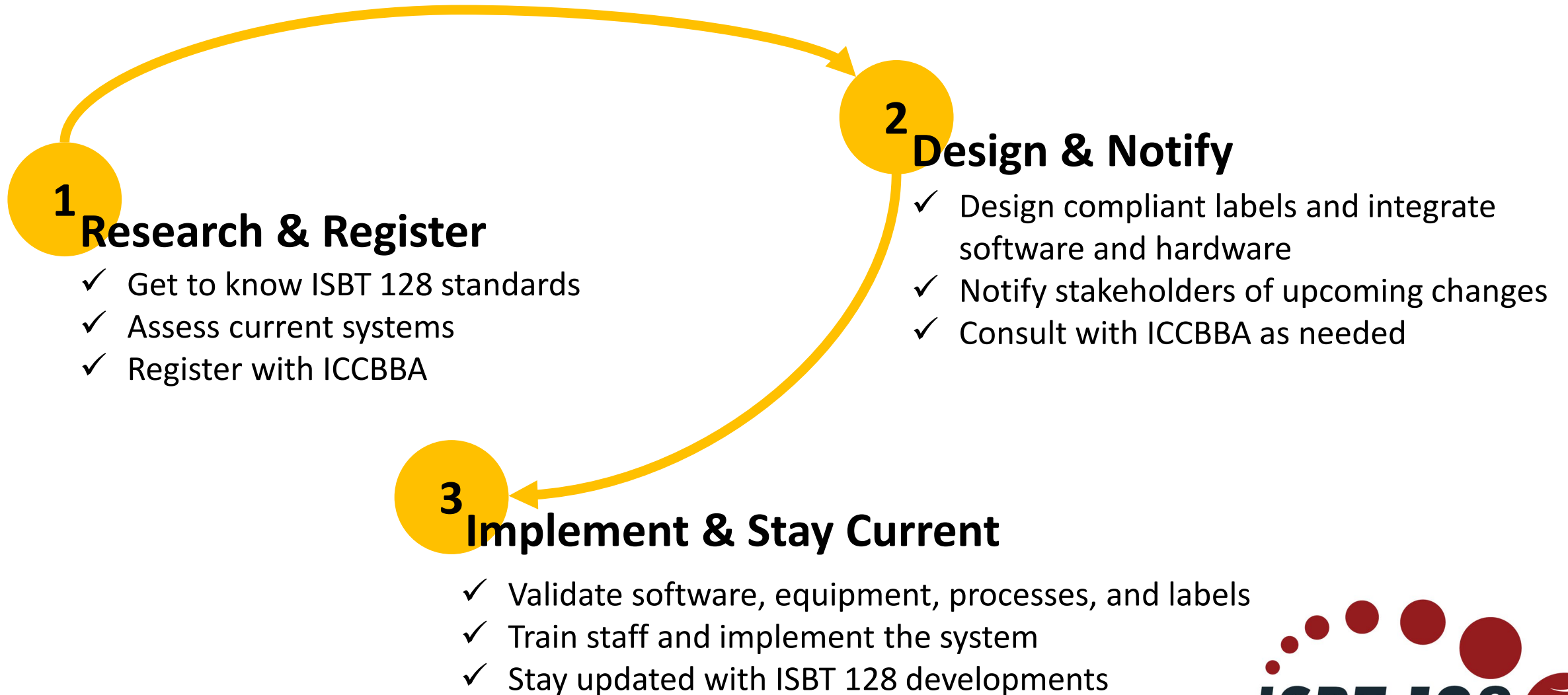
Implement & Stay Current

- ✓ Validate software, equipment, processes, and labels
- ✓ Train staff and implement the system
- ✓ Stay updated with ISBT 128 developments

- Complete annual reports
- Subscribe to the newsletter
- Follow ICCBBA online



Implementing the ISBT 128 Standard



The ISBT 128 Implementation Journey

Learning Lab & Reflection

Implementation Learning Lab

- Please work with your group to solve the scenario provided to you. You will develop an action plan for how you could implement ISBT 128.

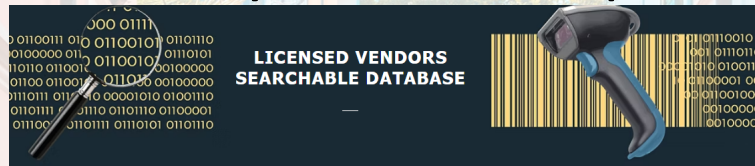
- What will you need?

- Computer
- ISBT128.org
- Writing materials
- Scenario card

Time: 20 minutes

10 minutes group work

10 minutes presenting/questions



Below is the Licensed Vendor Lookup Tool. Vendors may be found by Name, Category, or Region, or any combination therein.

The "Name" box searches in real time, as long as the user has entered three or more characters.

If you would like to clear one or more of the boxes, please hit "Reset" and try the search again.

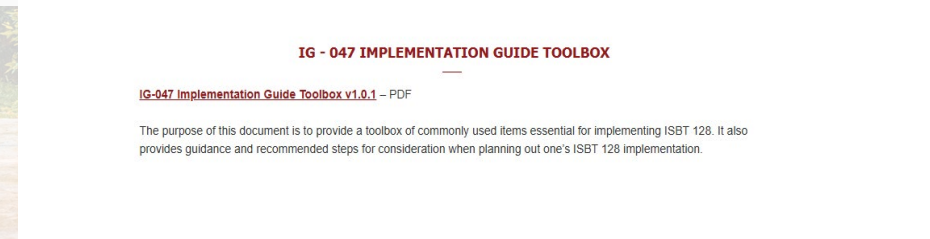
Search by Vendor Name

AND/OR

Search by Categories Select

AND/OR

Search by Region Select



ISBT 128 Labeling, Part A

Learning Objectives

At the end of this presentation, participants will:

- Know the size of a standard ISBT 128 final blood label
- Know what type of information belongs in each quadrant
- Know which bar codes are required
- Be familiar with the placement of the 2-D symbol

ISBT 128 Standardized Blood Label

- 100mm x 100mm
 - 4 equal quadrants of 50mm x 50mm each

 A9999 25 123456 9 Accurate Blood Center Anywhere, Worldwide  Collection Date  0251092359 19 APR 2025	 5100  RhD POSITIVE
 E6217V00 RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED ___ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	 0251512359 Expiration Date 31 MAY 2025  N0008 Anti-CMV Neg.

100mm x 100mm Requirement

- **ST-005** ISBT 128 Standard Labeling of Blood Components (www.isbt128.org/ST-005)

4.4 Final Label Dimensions

4.4.1 100 mm by 100 mm Final Label

The default size of the final label is 100 (+/-2) mm by 100 (+/-2) mm. The final label may be applied as a single 100 mm x 100 mm label or may be built up with smaller labels applied at different stages during the process.

4 Equal Quadrants

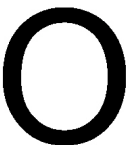
- **ST-005** ISBT 128 Standard Labeling of Blood Components (www.isbt128.org/ST-005)

4.5 Final Label Bar Code Placement

When linear bar codes are used, the final label design shall be based upon the concept of four equal 50 (+/-1) mm by 50 (+/-1) mm quadrants.

Upper Left Quadrant

- Donation Identification Number (**required**)
- Collection date/time (**optional**)

 A9999 25 123456 9	 5100
Accurate Blood Center Anywhere, Worldwide	
Collection Date  0251092359 19 APR 2025	 RhD POSITIVE
 E6217V00 RED BLOOD CELLS	 0251512359 31 MAY 2025
ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED ___ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	 N0008 Anti-CMV Neg.

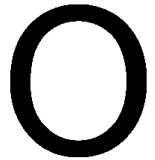
Upper Right Quadrant

- ABO/RhD Blood Groups (**required**)

	
A9999 25 123456  9	
Accurate Blood Center Anywhere, Worldwide	
Collection Date  0251092359 19 APR 2025	O RhD POSITIVE
 E6217V00	 0251512359 Expiration Date 31 MAY 2025
RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED	 N0008 Anti-CMV Neg.
___ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	

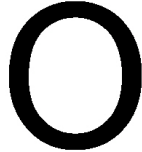
Lower Left Quadrant

- Product Code (**required**)

 A9999 25 123456 9	 5100
Accurate Blood Center Anywhere, Worldwide	
Collection Date  0251092359 19 APR 2025	 RhD POSITIVE
 E6217V00	 0251512359 Expiration Date 31 MAY 2025
RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED ____ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	 N0008 Anti-CMV Neg.

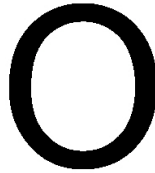
Lower Right Quadrant

- Expiration Date/Time (**required**)
- Special Testing (**optional**)

 A9999 25 123456 $\approx$ 9	 5100
Accurate Blood Center Anywhere, Worldwide	
Collection Date  0251092359 19 APR 2025	 RhD POSITIVE
 E6217V00	 0251512359 31 MAY 2025
RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED ____ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	 N0008 Anti-CMV Neg.

Transition Label

- 2-D symbol
 - DIN
 - ABO/RhD
 - Product Code
 - Expiration
 - Special Testing
 - Collection Date

	
A9999 25 123456 9	5100
Accurate Blood Center Anywhere, Worldwide	
Collection Date  0251092359 19 APR 2025	 RhD POSITIVE
 E6217V00	 0251512359 Expiration Date 31 MAY 2025
RED BLOOD CELLS	
ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED	
 N0008	
___ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	Anti-CMV Neg.

2-D Symbol

- Required to use Data Matrix
 - ST-001 ISBT 128 Standard Technical Specification (<https://www.isbt128.org/tech-spec>)

6.2 2-D Symbols

6.2.1 General Requirements

Data Matrix (ECC 200) shall be used as the 2-D symbology for ISBT 128 container labels. The ISO/IEC 16022 Information technology—International symbology specification—Data Matrix shall be followed.

For applications of ISBT 128 other than container labels, Data Matrix is recommended.

Final 2-D Blood Label Example

- Encoded in 2-D
 - DIN
 - ABO/RhD
 - Product Code
 - Expiration

Optionally

- RBC antigen test results

 A9998 21 123456 8 0	 RhD POS
Product: E4306V00 Apheresis RED BLOOD CELLS	Exp: 31 MAY 2021 23:59 250 mL
Store at 2C to 6C This component must not be used if there are visible signs of deterioration. Always check patient/component compatibility/identity	Negative for: C, E, K, Fy(a), Jk(a), S, Js(b) CMV, HbS, H.T.
Risk of infection including vCJD. Do not vent. This component must be administered through a transfusion set incorporating a 170 to 200µm filter. Contains phthalate (DEHP). Latex free.	
This component was collected into 63ml of CPD anticoagulant with the composition in. Anhydrous Glucose 120 Sodium Citrate 89.4 Citric Acid Monohydrate 15.6 Sodium Dihydrogen Phosphate Dihydrate 16.1	
Collection Facility: Euro Blood Center Megapolis, EU	

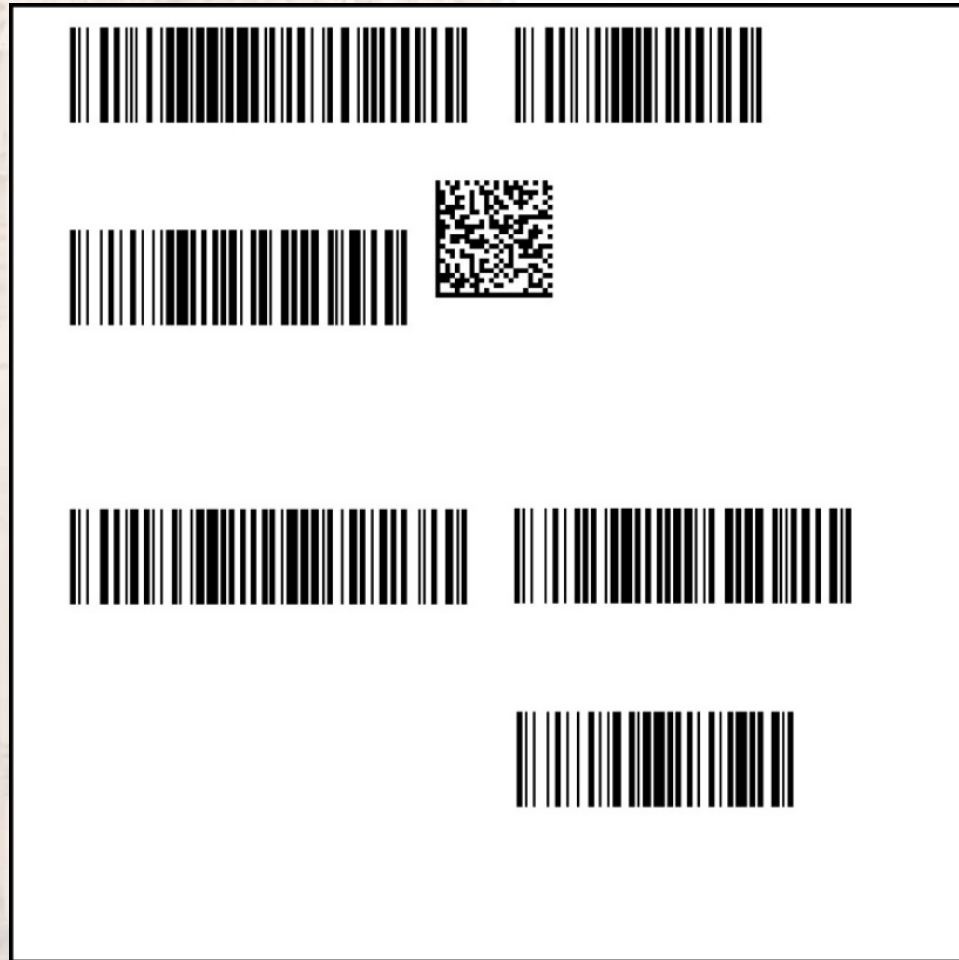
Summary

- Label size
- 4 quadrants
- Bar codes in each quadrant
- Use of 2-D symbol

ISBT 128 Labeling, Part A

Learning Lab & Reflection

Labeling Learning Lab, Part A



- Please work with your group to match the ISBT 128 blood label components to their correct location on the label.
- What will you need?
 - Blank label
 - Velcro Attachments

Time: 10 minutes

5 minutes of group work

5 minutes of debriefing

Labeling Learning Lab, Part A (Answers)

Donation Identification
Number (DIN)

ABO and RhD

Collection or Production
Date or Date and Time



Data Matrix
Symbol

Product Code

Expiration
Date and Time

Special Testing

You will need a bar code scanning/reading app on your cell phone for the next session.

Android



Apple



ICCBBA Learning Lab

The ISBT 128 Standard in Action

Milan, Italy | 31 May 2025

Break Period

15:00

ISBT 128 Labeling, Part B

Learning Objectives

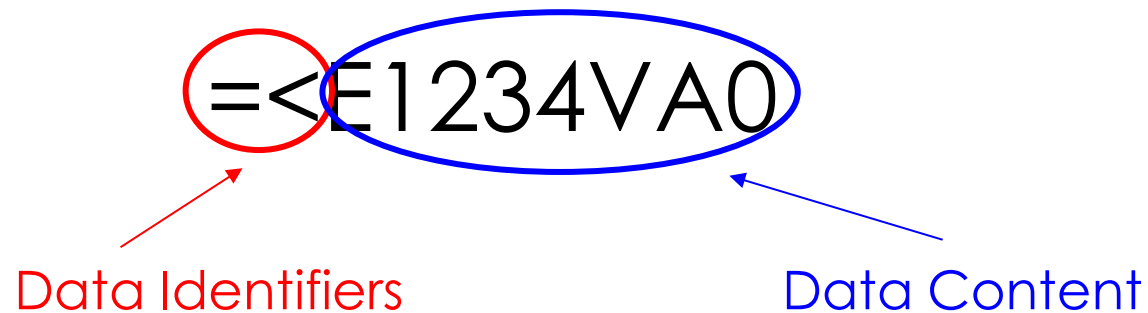
- At the end of this presentation, participants will:
 - Understand what is an ISBT 128 data structure
 - Be familiar with the common data structures used on an ISBT 128 final blood label
 - Be able to differentiate between encoded information vs. eye-readable text vs. label text
 - Know how to use the coding reference tables associated with the DIN, ABO/RhD Blood Groups, and Product Code

ISBT 128 Data Structures

- **A standardized way of conveying specific types of information**
- All ISBT 128 data structures will have:
 - Data Identifiers and
 - Data content

ISBT 128 Data Structure Example

Example of Product Code Data Structure [003]



ISBT 128 Data Structures

- Each ISBT 128 data structure is assigned its own:
 - Data structure number
 - Data identifiers

Examples		
Data Structure Number	Data Identifiers	Data Structure Name
001	=α	Donation Identification Number (DIN)
002	=%	Blood Groups [ABO and RhD]
003	=<	Product Code
005	&>	Expiration Date and Time
007	&*	Collection Date and Time

ISBT 128 Data Structure Example

2.4.5 Expiration Date and Time [Data Structure 005]

Purpose: Data Structure 005 shall indicate the date and time when the product expires.

Structure: **>cyjjjhhmm**

The elements of the Expiration Date and Time data structure are defined as follows:

Element	Length	Type
&	1	data identifier, first character
>	1	data identifier, second character
c	1	numeric {0–9}
yy	2	numeric {0–9}
jjj	3	numeric {0–9}
hh	2	numeric {0–9}
mm	2	numeric {0–9}

The ten (10)-character data content string, **cyjjjhhmm**, shall be encoded and interpreted as follows:

- c** shall specify the century of the year in which the product expires.
- yy** shall specify the year within the century in which the product expires.
- jjj** shall specify the ordinal number within the calendar year (Julian date) on which the product expires.
- hh** shall specify the hour at which the product expires (00 to 23).
- mm** shall specify the minute at which the product expires (00 to 59).

Data Identifiers

- Identifies the type of data that is being conveyed
- Used for process control
 - To ensure data is entered into the appropriate field
 - To ensure a valid data content length
 - To ensure valid characters are used in the data content

Donation Identification Number (DIN)



- Data Structure 001 (defined in [ST-001](#) section 2.4.1)

=**apppppyynnnnnnff**

- Data Identifier
- Data Content consists of:
 - 13-character DIN
 - Flag characters [ff]



Donation Identification Number (DIN)

= **αpppp****yy****nnnnnn****ff**



- The **13**-character **DIN** consists of:
 - 5-character Facility Identification Number (FIN) [αpppp]
 - All assigned FINs are listed in the FIN Database
 - 2-digit Year of assignment [yy]
 - 6-digit Sequence Number [nnnnnn]
- Flag characters [ff] are **NOT** part of the DIN

ISBT 128 FIN Database



- <https://www.isbt128.org/m-databases-ref-tables>
- Must be registered and logged in to access the database

Flag Characters



- NOT part of the DIN
- It is encoded in the bar code as part of the data content
- Printed 90 degrees clockwise to differentiate it from the DIN
- Used for process control



Flag Characters

Table 3 Data Structure 001: Donation Identification Number Flag Characters, ff [RT004]

Value of ff	Meaning When Used with the Donation Identification Number
00	Flag not used; null value
01	Container 1 of a set
02	Container 2 of a set
03	Container 3 of a set
04	Container 4 of a set
05	Second (or repeated) "demand-printed" label
06	Pilot tube label
07	Test tube label
08	Donor record label
09	Sample tube for NAT testing
10	Samples for bacterial testing
11	Match with Unit label
12	Affixed partial label
13	Attached label (intended to be used with affixed partial label)
14	Reserved for future assignment
15	Container 5 of a set
16	Container 6 of a set
17	Container 7 of a set
18	Container 8 of a set
19	Container 9 of a set
20-59	Reserved for assignment and use by each local facility. Therefore the meaning and interpretation of flag values 20–59 may differ with each FIN and should not be interpreted at any other site
60–96	ISO/IEC 7064 modulo 37-2 check character on the preceding thirteen (13) data characters, appppyynnnnnn including the FIN, year and the unit sequence number — value is assigned as 60 plus the modulo 37-2 checksum
97–99	Reserved for future assignment
Alphanumeric using numbers in the range 0-9 and alphas in the range A-N, P, R-Y	Reserved for future assignment

=**appppyynnnnnnff**

- ff** coding values are found in reference table **RT004**
- Default “00” coding values when not used



Check Character



- NOT part of the DIN
- NOT encoded within the data content
- Used as a process control for ensuring that the manual entry of the DIN is accurate
- Calculated based on the 13-character DIN
- When printed, it is enclosed in a box



Check Character Calculation



ICC
DATA

Calculate Mod 37,2 Check Character

Data entry check character computed on
A99925987654 J



Missing "9" from FIN

ICC
DATA

Calculate Mod 37,2 Check Character

Data entry check character computed on
A99992598765 Q



Missing "4" from end

ICC
DATA

Calculate Mod 37,2 Check Character

Data entry check character computed on
A99992598765400 L



Flags included in calculation

ICC
DATA

Calculate Mod 37,2 Check Character

Data entry check character computed on
A999925987654 6



Labeling Example



- Encoded in the bar code:
 - =A99992598765400
 - =apppppyynnnnnnnff
- Eye-readable text below the bar code:
 - A9999 25 987654
 - 00 (rotated 90 degrees clockwise)
 - “6” enclosed in a box
 - Shall not include the data identifier =



ABO/RhD Blood Groups Data Structure

- Data Structure 002 (defined in [ST-001](#) section 2.4.2)

=%**ggre**

- Data identifiers =%

- Data content (**ggre**)

- **gg** coding values are found in reference table **RT005**
- **r** coding values are found in reference table **RT007**
 - This is set to zero when not used
- **e** is reserved for future use and shall be set to “0” (zero)



Reference Table RT005 for gg Values

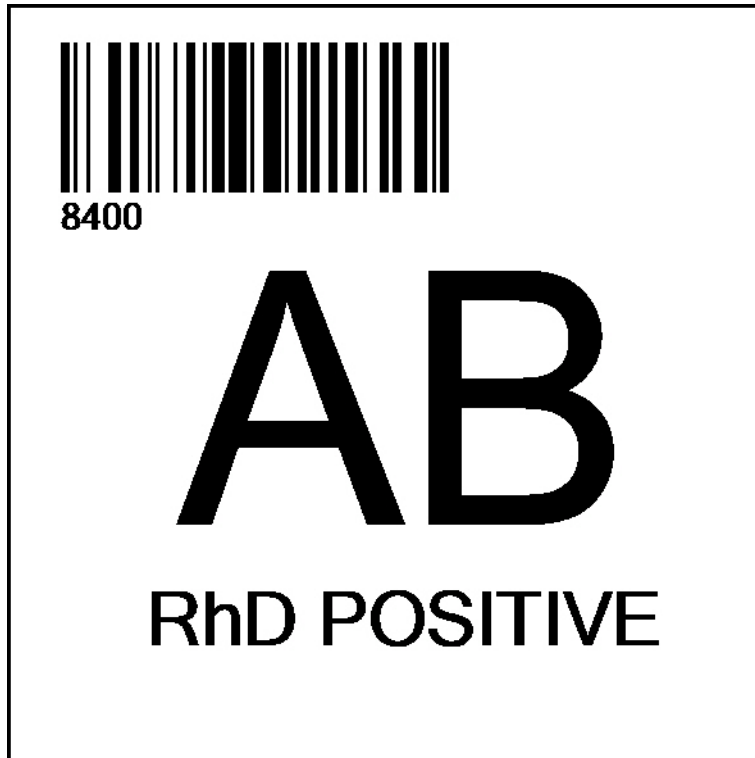
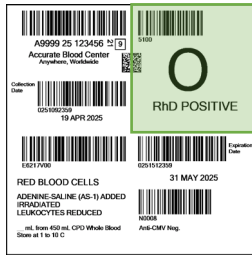
=%**gg**re



Table 4 **Data Structure 002:** Blood Groups [ABO and RhD], Including Optional Type of Collection Information **[RT005]**

ABO and RhD Blood Groups	Default: Intended Use Not Specified	Directed (Dedicated/ Designated) Collection Use Only	For Emergency Use Only	Directed (Dedicated/ Designated) Collection/ Biohazardous	Directed (Dedicated/ Designated) Collection/ Eligible for Crossover	Autologous Collection/ Eligible for Crossover	For Autologous Use Only	For Autologous Use Only/ Biohazardous
O RhD negative	95	91	92	93	94	96	97	98
O RhD positive	51	47	48	49	50	52	53	54
A RhD negative	06	02	03	04	05	07	08	09
A RhD positive	62	58	59	60	61	63	64	65
B RhD negative	17	13	14	15	16	18	19	20
B RhD positive	73	69	70	71	72	74	75	76
AB RhD negative	28	24	25	26	27	29	30	31
AB RhD positive	84	80	81	82	83	85	86	87

ABO/RhD Label Example



- Encoded in the bar code:
 - =%8400
 - =%ggre
- Eye-readable text below bar code:
 - 8400
 - Left justified
 - Shall not include the data identifiers =%
- Corresponding label text:
 - AB RhD POSITIVE (interpreted via RT005)

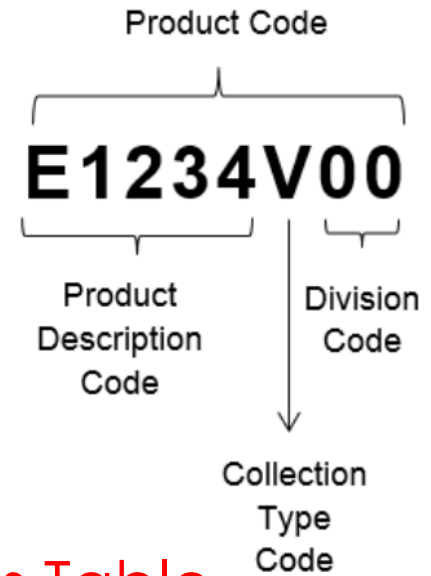
Product Code Data Structure

- Data Structure 003 (defined in [ST-001](#) section 2.4.3)

=<αoooo†ds

- Data Identifiers =<

- Data content (αoooo†ds → Product Code)
 - αoooo coding values found in **Product Description Codes Table**
 - † coding values found in reference table **RT008**
 - ds values represent divisions/aliquots (e.g., 00, A0, B0, Aa, Ba, etc.)



Product Lookup Program



- <https://www.isbt128.org/find-product-info>
- Must be registered and logged in to access the program

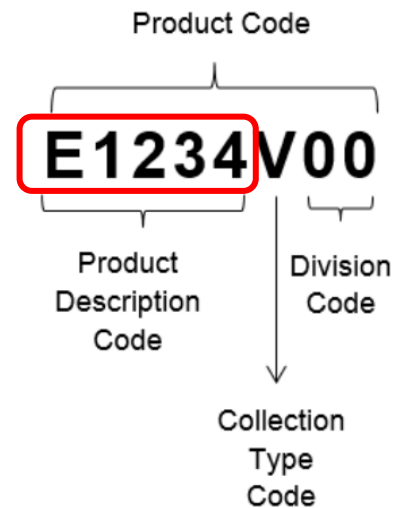
ISBT 128 Product Lookup Program

Search by Product Description Code

E1234

Result Found

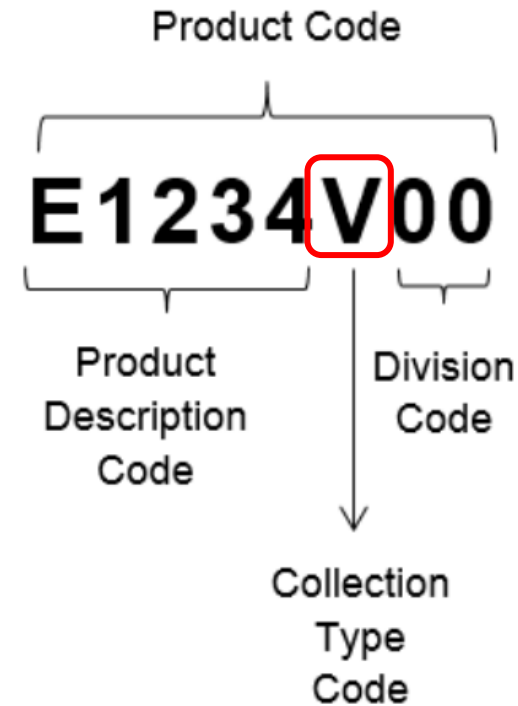
E1234 - Thawed Apheresis FRESH FROZEN PLASMA|ACD-B/XX/refg|Aphr not automated



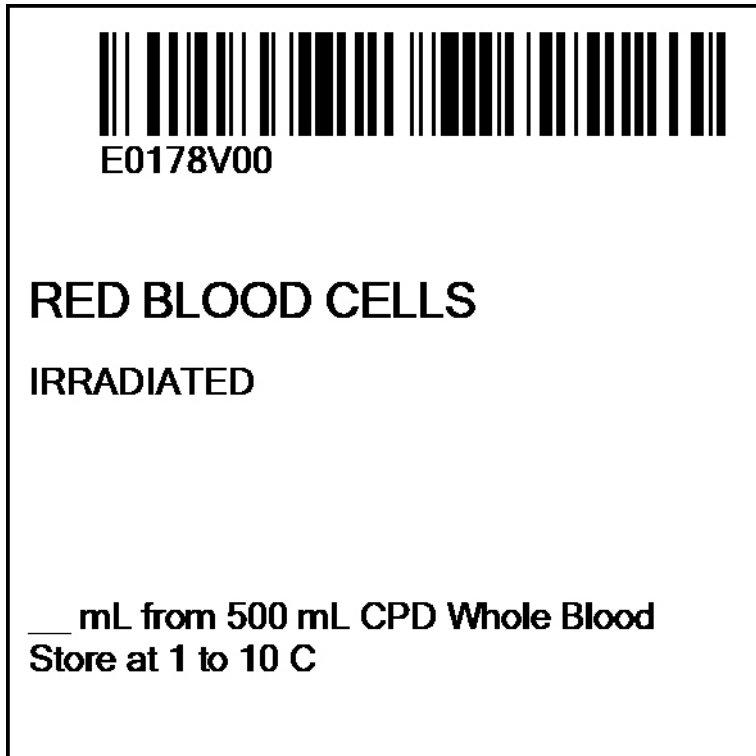
Collection Type Code

Data Structure 003: Type of Collection in 6th Position of Product Code [RT008]

Character	Type of Collection
0 (zero)	Not specified (null value)
V	Volunteer homologous (allogeneic) (default)
R	Volunteer research (Product not intended for human application)
S	Volunteer source
T	Volunteer therapeutic
P	Paid homologous (allogeneic)
r	Paid research (Product not intended for human application)
s	Paid source
A	Autologous, eligible for crossover
1 (one)	For autologous use only
X	For autologous use only, biohazard
D	Volunteer directed, eligible for crossover
d	Paid directed, eligible for crossover
2	For directed recipient use only
L	For directed recipient use only, limited exposure
E	Medical exception, for specified recipient only (allogeneic)
Q	See (i.e., read [scan]) Special Testing bar code
3	For directed recipient use only, biohazard
4	Designated
5	Dedicated
6	Designated, biohazard



Product Code Label Example



- Encoded in the bar code:
 - =<E0178V00
 - =<αooooots
- Eye-readable text below bar code:
 - E0178V00
 - Left justified
 - Shall not include the data identifiers =<
- Corresponding label text
 - Class name
 - Attributes
 - Additional information

Expiration Date and Time Data Structure

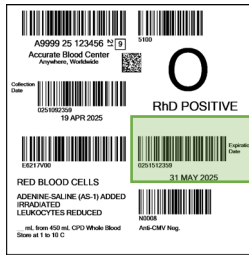
- Data Structure 005 (defined in [ST-001](#) section 2.4.5)

&>cyyjjjhhmm

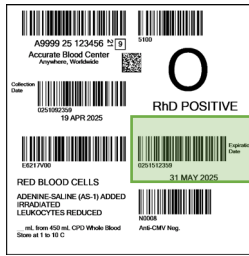
- Data Identifier &>

- Data content

- c = Century (for 2025, c = 0)
- yy = Year (for 2025, yy = 25)
- jjj = Julian Date (Jan 1 = 001; Dec 31 = 365; May 31 = 151)
- hh = Hour (for 9am, hh = 09; for 11pm, hh = 23)
- mm = Minute (for 10:45, mm = 45)



Expiration Date and Time Label Example



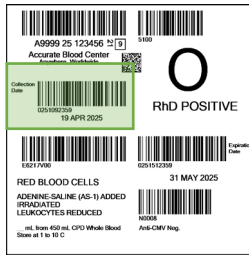
- Encoded in the bar code:
 - &>0251511200
 - &>cyjjjjhhmm
- Eye-readable text below bar code:
 - 0251511200
 - Left justified
 - Shall not include the data identifiers &>
- Corresponding label text
 - Only two date format options allowed to display
 - **31 May 2025 12:00**
 - **2025-05-31 12:00** (ISO 8601-1:2019)
- Time “2359” = End of Day
 - Encoded but not necessarily printed

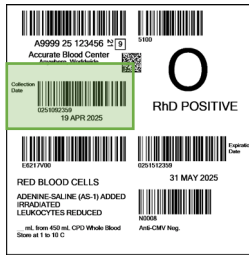
Collection Date and Time Data Structure

- Data Structure 007 (defined in [ST-001](#) section 2.4.7)

&*cyyjjhhmm

- Data Identifier &*
- Data content
 - c = Century (for 2025, c = 0)
 - yy = Year (for 2025, yy = 25)
 - jjj = Julian Date (Jan 1 = 001; Dec 31 = 365; May 31 = 151)
 - hh = Hour (for 9am, hh = 09; for 11pm, hh = 23)
 - mm = Minute (for 10:45, mm = 45)





Collection Date and Time Example

- Collection date and time of May 31, 2025 at 10:45am
- This would be encoded into Data Structure 007 as:

&*0251511045

- “2359” is used as the default time if the specific time is not important
 - Encoded but not printed

Special Testing General Data Structure

- Data Structure 010 (defined in [ST-001](#) section 2.4.10)

&(zzzz

- **Data Identifier** &(

- **Data content** (zzzzzz)

- zzzzzz coding values found in Special Testing General Database



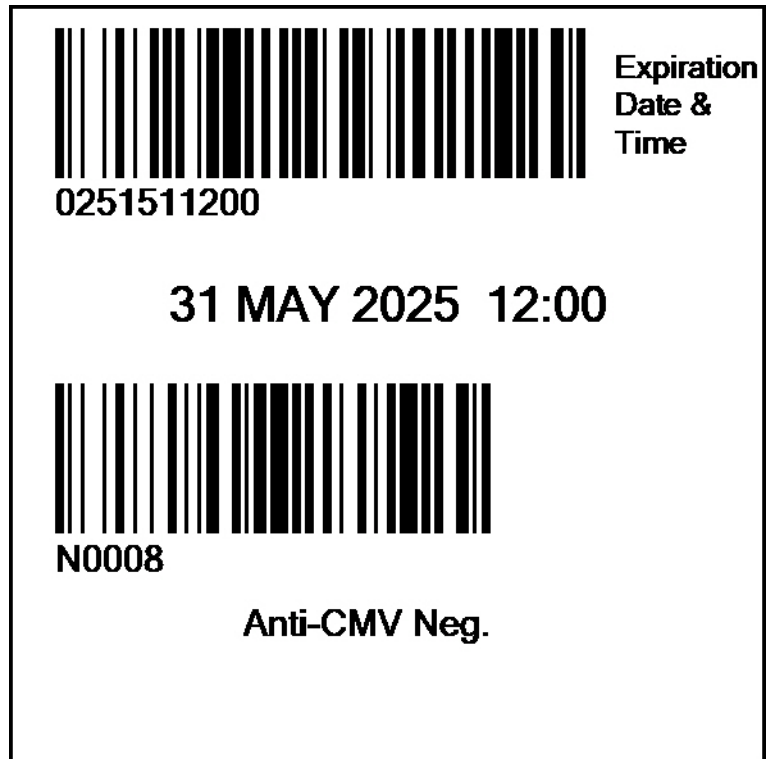
Special Testing General Database



- <https://www.isbt128.org/m-databases-ref-tables>
- Must be registered and logged in to access the database

N0001	HLA phenotyped
N0002	HPA phenotyped
N0003	IgA deficient
N0004	RBC phenotyped
N0005	RBC antibody(ies) present
N0006	RBC antibody absent
N0007	Specific antibody present
N0008	CMV seronegative
N0009	CMV seropositive
N0010	HLA antibody(ies) present
N0011	HLA antibody absent
N0012	HPA antibody(ies) present
N0013	HPA antibody absent
N0014	HLA phenotyped; HPA phenotyped
N0015	HLA phenotyped; IgA deficient
N0016	HLA phenotyped; RBC phenotyped
N0017	HLA phenotyped; RBC antibody(ies) present
N0018	HLA phenotyped; RBC antibody absent
N0019	HLA phenotyped; CMV seropositive
N0020	HLA phenotyped; CMV seronegative
N0021	HLA phenotyped; HLA antibody(ies) present
N0022	HLA phenotyped; HLA antibody absent
N0023	HLA phenotyped; HPA antibody(ies) present
N0024	HLA phenotyped; HPA antibody absent

Special Testing General Label Example



- Encoded in the bar code:
 - &(N0008
 - &(zzzzz
- Eye-readable text below bar code:
 - N0008
 - Left justified
 - Shall not include the data identifiers &(
- Corresponding label text
 - Anti-CMV Neg.

2-D Data Matrix Symbol

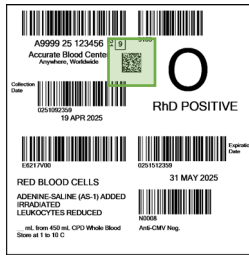
- Uses the Compound Message Data Structure 023

=+aa bbb

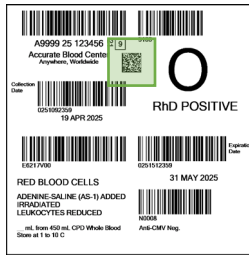
- Data Identifier =+

- Data Content

- aa indicates the number of additional data structures that follow
- bbb can be set to “000”



Compound Message Example



=+04000=A99992598765400=%5100=<E0001V00&>0251512359

- =+04000 (Data Structure 023)
- =A99992598765400 (Data Structure 001)
- =%5100 (Data Structure 002)
- =<E0001V00 (Data Structure 003)
- &>0251512359 (Data Structure 005)

Common ISBT 128 Labeling Errors

- Data identifiers not encoded in the bar code
- Incorrect check character calculation
- Check character not enclosed in a box
- Incorrect eye-readable text beneath the bar code
- Flag characters are not rotated correctly
- Inconsistency between encoded information, eye-readable text, and label text
- Incorrect characters used in the encoded data structure
- Incorrect use of the date format

ISBT 128 Labeling, Part B

Learning Lab & Reflection

Labeling Learning Lab, Part B

 
=A9999 25 123456 N 51
Accurate Blood Center
Anywhere, Worldwide 

Collection Date 
0251092359
19 APR 2025

 E6217  >125151
RED BLOOD CELLS MAY 31, 2025
ADENINE-SALINE (AS-3) ADDED
LEUKOCYTES REDUCED
N0008
Anti-CMV Neg.

Expiration Date

__ mL from 450 mL ACD-A Whole Blood
Store at 1 to 10 C

Label with Errors

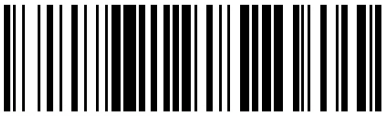
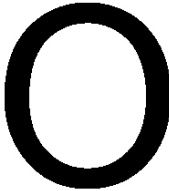
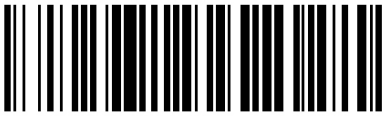
- Please work with your group to find the 4-5 intentional errors on the ISBT 128 blood label in your assigned quadrant.
 - Group 1: Upper left quadrant
 - Group 2: Lower left quadrant
 - Group 3: Upper right quadrant
 - Group 4: Lower right quadrant
- What will you need?
 - Label with errors
 - Bar code scanning app
 - Pencil
 - Quick K Calculator Program (Groups 1)
 - PDC Lookup Program (Groups 2)
 - RT-005 Table (Group 3)

Time: 25 minutes

15 minutes of group work

10 minutes of review

Labeling Learning Lab, Part B (Answers)

 A9999 25 123456 $\approx$ 9	 5100
Accurate Blood Center Anywhere, Worldwide	
Collection Date  0251092359 19 APR 2025	 RhD POSITIVE
 E6217V00	 0251512359 Expiration Date 31 MAY 2025
RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED ____ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	 N0008 Anti-CMV Neg.

You should have a copy of the Answer Key at your table. We will review one quadrant at a time. Please check your answers and feel free to take notes.



ISBT 128 Blood Label: Upper Left Quadrant



 **A9999 25 123456**  

Accurate Blood Center
Anywhere, Worldwide



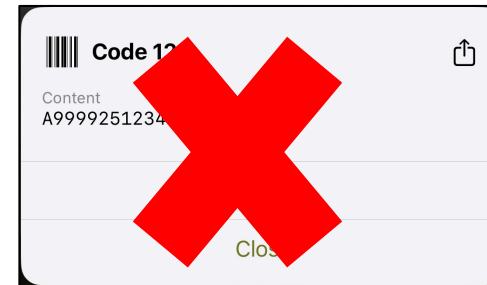
**Collection
Date**



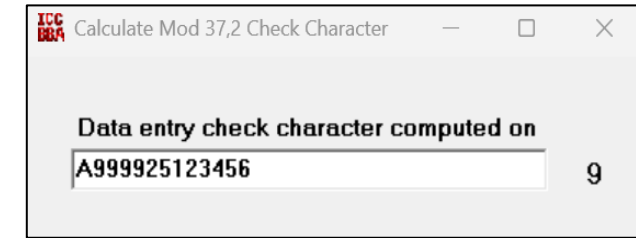
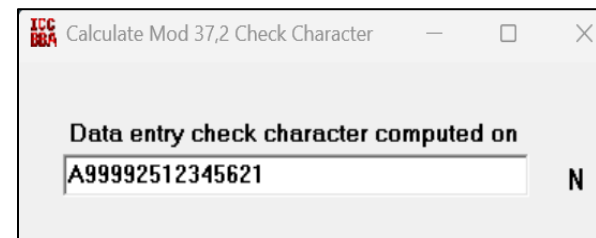
0251092359

19 APR 2025

- The data identifier should not be printed as part of the eye-readable DIN.
- The DIN data identifier is not encoded in the bar code



- Check character is incorrect. The calculation should be based only on the 13-character DIN. It should not include the flag characters.



ISBT 128 Blood Label: Upper Left Quadrant

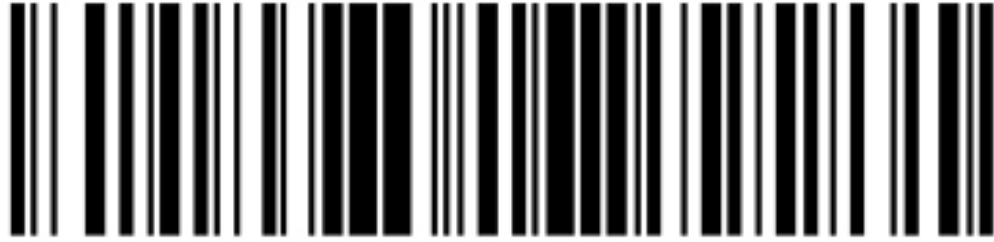


- The check character needs to be enclosed in a box.
- Flag characters should be rotated 90 degrees clockwise. It incorrectly appears rotated 90 degrees counter-clockwise.

Collection
Date



ISBT 128 Blood Label: Lower Left Quadrant



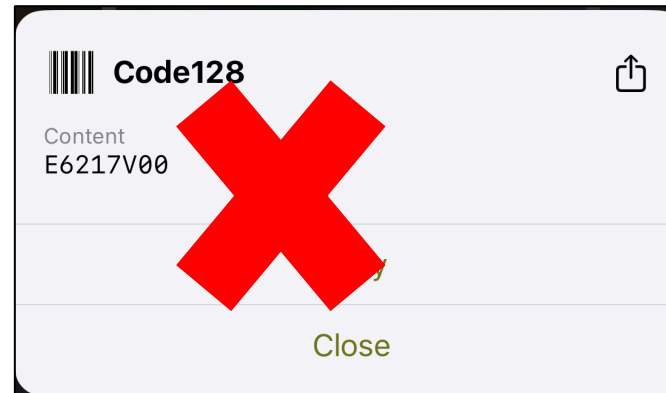
E6217V00

RED BLOOD CELLS

**ADENINE-SALINE (AS-3) ADDED
LEUKOCYTES REDUCED**

**__ mL from 450 mL ACD-A Whole Blood
Store at 1 to 10 C**

- The eye-readable text below the Product Code bar code is missing the collection type code & division code.
- The Product Code data identifiers are not encoded in the bar code.



- The eye-readable text below the Product Code bar code should be left justified.

ISBT 128 Blood Label: Lower Left Quadrant



E6217V00

RED BLOOD CELLS

**ADENINE-SALINE (AS-1) ADDED
IRRADIATED
LEUKOCYTES REDUCED**

**___ mL from 450 mL CPD Whole Blood
Store at 1 to 10 C**

The product text does not match the product description for the encoded PDC (E6217).

- Additive on the label should be AS-1, not AS-3
- IRRADIATED attribute should be printed on the label
- Anticoagulant on the label should be CPD, not ACD-A

ISBT 128 Product Lookup Program

Search by Product Description Code

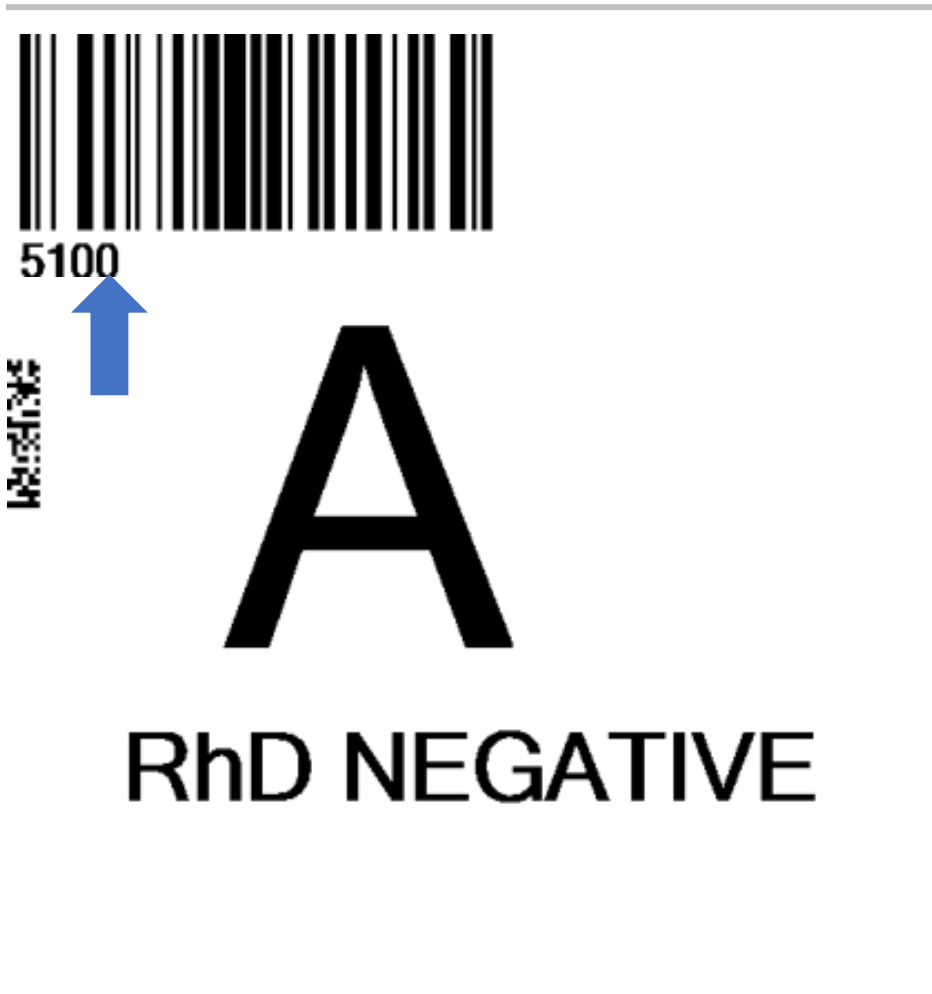
E6217

Lookup

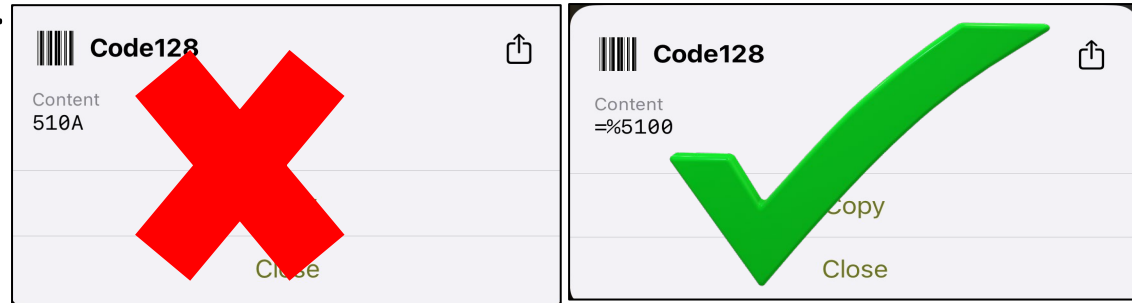
Result Found

E6217 = RED BLOOD CELLS|CPD>AS1/450mL/refg|Irradiated|ResLeu:<1E6

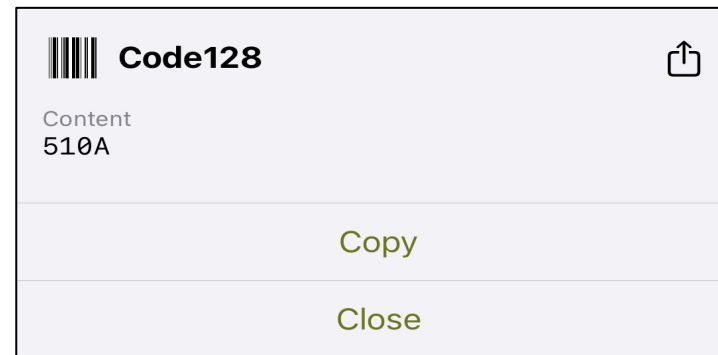
ISBT 128 Blood Label: Upper Right Quadrant



- Data identifiers are missing from the encoded message in the bar code.



- The eye-readable text below the ABO/RhD bar code is missing the 3rd and 4th characters of the data content.
- Improper use of the 4th character in the message. Section 2.4.2 of ST-001 says that the 4th character is reserved for future use and shall always be set to 0 (zero).



ISBT 128 Blood Label: Upper Right Quadrant



51



A

RhD NEGATIVE



- Reference table RT005 defines the value 51 as O RhD Positive, but the label text says A RhD Negative.

Table 4 Data Structure 002: Blood Groups [ABO and RhD], Including Optional Type of Collection Information [RT005]

ABO and RhD Blood Groups	Default: Intended Use Not Specified	Directed (Dedicated/ Designated) Collection Use Only	For Emergency Use Only	Directed (Dedicated/ Designated) Collection/ Biohazardous	Directed (Dedicated/ Designated) Collection/ Eligible for Crossover	Autologous Collection/ Eligible for Crossover	For Autologous Use Only	For Autologous Use Only/ Biohazardous
O RhD negative	05	91	92	93	94	96	97	98
O RhD positive	51	47	48	49	50	52	53	54
A RhD negative	06	02	03	04	05	07	08	09
A RhD positive	62	58	59	60	61	63	64	65
B RhD negative	17	13	14	15	16	18	19	20
B RhD positive	73	69	70	71	72	74	75	76
AB RhD negative	28	24	25	26	27	29	30	31
AB RhD positive	84	80	81	82	83	85	86	87
O	55	P2	P3	P4	P5	P7	P8	P9
A	66	A2	A3	A4	A5	A7	A8	A9
B	77	B2	B3	B4	B5	B7	B8	B9
AB	88	C2	C3	C4	C5	C7	C8	C9
para-Bombay, RhD negative	D6	D2	D3	D4	D5	D7	D8	D9
para-Bombay, RhD positive	E6	E2	E3	E4	E5	E7	E8	E9

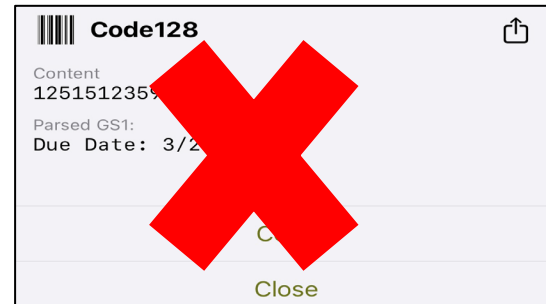
© 2004-2023 ICCBBA, All Rights Reserved

www.isbt128.org

ISBT 128 Blood Label: Lower Right Quadrant

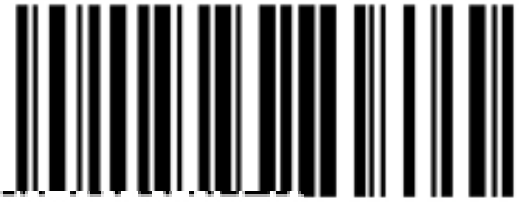


- Expiration date and time data identifiers are missing from the encoded message in the bar code.



- The data identifiers should not be printed as part of the eye-readable text below the expiration date/time bar code.
- The encoded time (2359) is missing from the eye-readable data content text below the expiration date/time bar code.

ISBT 128 Blood Label: Lower Right Quadrant



0251092359



31 MAY 2025

Expiration
Date

2025



- Improper identification of century marker

- Incorrect format for day – month – year on label text (Should be 31 May 2025, or 2025-05-31 per ST-005)



N0008

Anti-CMV Neg.

5.3.4 Dates [Data Structures 004, 005, 006, 007, 008, 009, 024]

Dates shall be printed in compliance with ISO 8601-2004 extended format or in the format day — month — year. In the latter case, the day shall be numerical, the month alphabetical, using a three-letter abbreviation. The year shall be a four-digit numerical representation.

Expiration Date:

2017-03-17

OR

17 MAR 2017

Red Cell Antigens and ISBT 128



This donor unit has been antigen tested and found positive or negative for :

C	K	Jk ^a	AI
☐	☐	☐	☐
c	k	Jk ^b	
☐	☐	☐	☐
E	Fy ^a	S	
☐	☐	☐	☐
e	Fy ^b	s	
☐	☐	☐	☐

Date: _____ Tech: _____

Printed Label Text



- Reverse Printing

k- C+ E- c- e+ K+

- Superscripts/Subscripts

k- M-, S-, E-, c-, C^w-

- Separators

Js(b-); S-; C-, E-; K-; Fy(a-); Jk(a-)

Js(b-), S-, C-, E-, K-, Fy(a-), Jk(a-)

Js(b-) S- C- E- K- Fy(a-) Jk(a-)

Jsb- S- C- E- K- Fya- Jka-

Special Testing: Red Cell Antigens – Data Structure 012

Structure:

=\aaaaaaaaaaaaaaaaaaii

Element	Length	Type
=	1	data identifier, first character
\	1	data identifier, second character
aaaaaaaaaaaaaaaaaaaa	16	numeric {0–9}
ii	2	numeric {0–9}

- Red cell phenotypes
- CMV antibody
- IgA status
- Hemoglobin S
- Etc...

Reference Table RT009 - Data Structure 012

Position	1	2		3	
Antibody					
Antigen	Rh*	K	k	C ^w	Mi ^{a+}
Value					
0	C+c-E+e-	nt	nt	nt	nt
1	C+c+E+e-	nt	neg	nt	neg
2	C-c+E+e-	nt	pos	nt	pos
3	C+c-E+e+	neg	nt	neg	nt
4	C+c+E+e+	neg	neg	neg	neg
5	C-c+E+e+	neg	pos	neg	pos
6	C+c-E-e+	pos	nt	pos	nt
7	C+c+E-e+	pos	neg	pos	neg
8	C-c+E-e+	pos	pos	pos	pos
9	ni	ni	ni	ni	ni

...

	14	15		16	
					CMV
	Js ^a	C*	c*	E*	e*
	nt	nt	nt	nt	nt
	nt	neg	nt	neg	nt
	nt	pos	nt	pos	nt
	neg	nt	neg	nt	neg
	neg	neg	neg	neg	neg
	neg	pos	neg	pos	neg
	pos	nt	pos	nt	pos
	pos	neg	pos	neg	pos
	pos	pos	pos	pos	pos
	ni	ni	ni	ni	ni

Value	Antigen
00	information elsewhere
01	En ^a
02	'N'
03	V ^w
04	Mur*
05	Hut
06	Hil
...	...
96	Hemoglobin S negative
97	parvovirus B19 antibody present
98	IgA deficient
99	no information provided

Reference Table RT011 -Data Structure 012

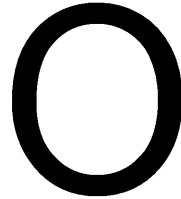


A9999 25 987654 8 6

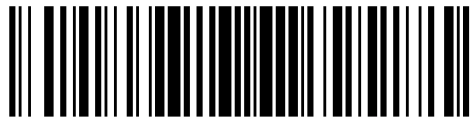
Accurate Blood Center
Anywhere, Worldwide



5100



RhD Positive



E0291V00



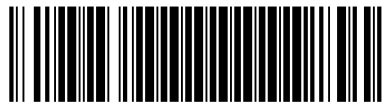
0253652359

Expiration
Date &
Time

31 DEC 2025

RED BLOOD CELLS
ADENINE-SALINE (AS-1) ADDED
LEUKOCUTES REDUCED

__mL from 450 mL CPD Whole Blood
Store at `1 to 6 C

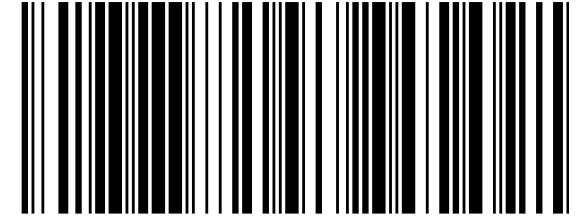


679999999999999900



C+c-E-e+, K+k-,
no other information.

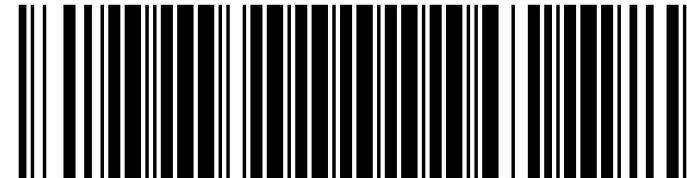
Linear Bar Code



973559957589924796



k-c-E-M-S-Le(a-)Fy(b-)JK(a-)Cq-
Anti-CMV Neg. ; Hgb S Neg.



979999999999924799



k,C+E-ce+,K+
Anti-CMV Neg

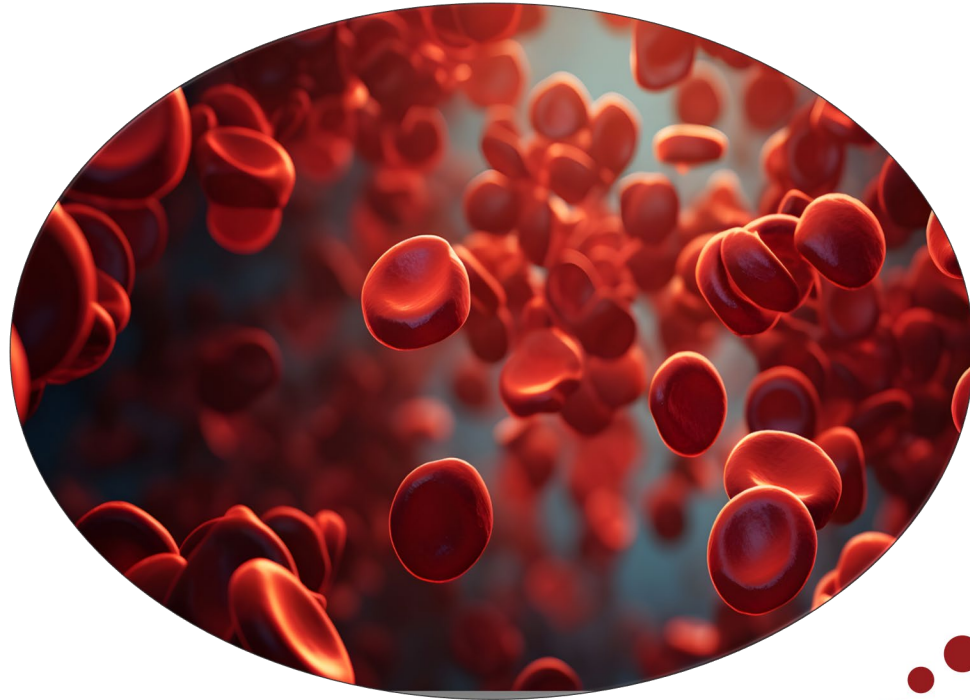
Red Cell Antigen with Test History – Data Structure 030

Element	Length	Type
&	1	data identifier, first character
%	1	data identifier, second character
nnn	3	numeric {0–9}
		Repeating segment (repeats nnn times):
pppppp	6	numeric {0–9}
rr	2	numeric {0–9}
ss	2	numeric {0–9}

- nnn – how many antigens are described
- pppppp – ISBT defined antigen
- rr – result interpretation
- ss – number of tests

Reference Tables for Data Structure 030

- ISBT Defined Antigens – maintained by ISBT
- RT040 – RBC Results
- RT041 – Number of Tests



ISBT Defined Antigens

System		Antigen number												Total in system
		001	002	003	004	005	006	007	008	009	010	011	012	
001	ABO	A	B	A,B	A1	...								4
002	MNS	M	N	S	s	U	He	Mi ^a	M ^c	Vw	Mur	M ^s	Vr	50
003	P1PK	P1	...	p ^k	NOR									3
004	RH	D	C	E	c	e	f	Ce	C ^w	C ^x	V	E ^w	G	56
005	LU	Lu ^a	Lu ^b	Lu3	Lu4	Lu5	Lu6	Lu7	Lu8	Lu9	...	Lu11	Lu12	28
006	KEL	K	k	Kp ^a	Kp ^b	Ku	Js ^a	Js ^b	...	...	Ul ^a	K11	K12	38
007	LE	Le ^a	Le ^b	Le ^{ab}	Le ^{bH}	ALe ^b	BLe ^b							6
008	FY	Fy ^a	Fy ^b	Fy3	...	Fy5	Fy6							5
009	JK	Jk ^a	Jk ^b	Jk3										3
010	DI	Di ^a	Di ^b	Wr ^a	Wr ^b	Wd ^a	Rb ^a	WARR	ELO	Wu	Bp ^a	Mo ^a	Hg ^a	23
011	YT	Yt ^a	Yt ^b	YTEG	YTLI	YTOT	YTGT							6
012	XG	Xg ^a	CD99											2
013	SC	Sc1	Sc2	Sc3	Rd	STAR	SCER	SCAN	SCAR	SCAC	SCAB			10
014	DO	Do ^a	Do ^b	Gy ^a	Hy	Jo ^a	DOYA	DOMR	DOLG	DOLC	DODE			10
015	CO	Co ^a	Co ^b	Co3	Co4									4
016	LW	...	...	...	...	LW ^a	LW ^{ab}	LW ^b	LWEM					4
017	CH/RG	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	WH				Rg1	Rg2	9
018	H	H												1
019	XK	Kx												1

RT040 – Red Cell Results

Value	Meaning
01	Negative – Test methodology not specified
02	Positive – Test methodology not specified
03	Negative – Serological testing
04	Positive – Serological testing
05	Negative – Predicted phenotype based on genotyping
06	Positive – Predicted phenotype based on genotyping

RT041 – Number of Tests

Value	Meaning
01	Tested once on this collection
02	Tested once on prior collection
03	Tested $\geq$ twice on different collections (current and historic) with concordant results
04	Tested $\geq$ twice on different collections (historic only) with concordant results
05	Tested $\geq$ twice on this collection only, different samples, with concordant results
06	Test history not specified.

ISBT 128 Transitional Label with Special Antigen Testing Status Included

Data encoded in the 2-D Data Matrix symbol:

=+05020=A99992598765400=%9500=<E0311V00>0253652359

Compound Message	DIN+Flag	Blood Type	Product Code	Expiration Date & Time
&%0040060010104006002010400900101040080010104				
Red Cell Antigens with Test History				

Red Cell Antigens with Test History
[Data Structure 030]

&%0040060010104006002010400900101040080010104

Number of Repeating Segments

ISBT-Defined Antigen Identifier

RBC Serological Results and Testing Methodology

Number of Tests (Current/Historic/Not Specified)

			
A9999 25 987654 8 6		9500	
Accurate Blood Center Anywhere, Worldwide			
		Rh Negative	
			
E0311V00		0253652359	
RED BLOOD CELLS		31 DEC 2025	
ADENINE-SALINE (AS-1) ADDED LEUKOCYTES REDUCED			
___ mL from 450 mL CPD Whole Blood		K-; k-; Fy(a-); Jk(a-)	
Store at 1 to 6 C			

Electronic Messaging - XML

- Data Element Name: Red Cell Antigen with Test History, Individual
- XML Element Tag: RedCellAntigen
- Example: 0040020104
 - Blood Group System 004 – Rh
 - Blood Group Antigen 002 – C
 - Result Interpretation 01 - Negative – Test methodology not specified
 - Number of Tests 04 - Tested $\geq$ twice on different collections (historic only) with concordant results

Sample XML message

```
<?xml version="1.0" encoding="UTF-8"?>
<MPHOProduct xsi:schemaLocation="https://www.isbt128.org/MPHOProductXSD">
  <MPHOUUniqueIdentifier Identifier="https://www.isbt128.org/uri/MPHOUUniqueIdentifier"
    value="W9999E0001W000020123456A00000"/>
  <DonationIdentificationNumber Identifier="https://www.isbt128.org/uri/DonationIdentificationNumber"
    value="W000020123456"/>
  <CollectionDateTime Identifier="https://www.isbt128.org/uri/CollectionDateTime" value="2020-03-02T14:49:32-
    06:00"/>
  <ABORhD Identifier="https://www.isbt128.org/uri/ABORhD" value="62"/>
  <ProductDescriptionCode Identifier="https://www.isbt128.org/uri/ProductDescriptionCode" value="E0001"/>
  <CollectionType Identifier="https://www.isbt128.org/uri/CollectionType" value="V"/>
  <DivisionIdentifier Identifier="https://www.isbt128.org/uri/DivisionIdentifier" value="A00000"/>
  <ExpirationDateTime Identifier="https://www.isbt128.org/uri/ExpirationDateTime" value="2020-03-02T20:49:32"/>
  <ProcessorFIN Identifier="https://www.isbt128.org/uri/ProcessorFIN" value="W9999"/>
  <TTIResults Identifier="https://www.isbt128.org/uri/TTIResults" value="34441400000000000000"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040020204"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040040104"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040030104"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0040050204"/>
  <RedCellAntigen Identifier="https://www.isbt128.org/uri/RedCellAntigen" value="0060010103"/>
</MPHOProduct>
```

ISBT 128 Labeling for Red Cell Antigens

Learning Lab & Reflection

Red Cell Antigens Learning Lab

- Please discuss the following topic with your group:
 - What options are available for the transfer of red cell antigen status of red cell components?
- What will you need?
 - Discussion card
 - Writing materials

Time: 13 minutes

8 minutes group work

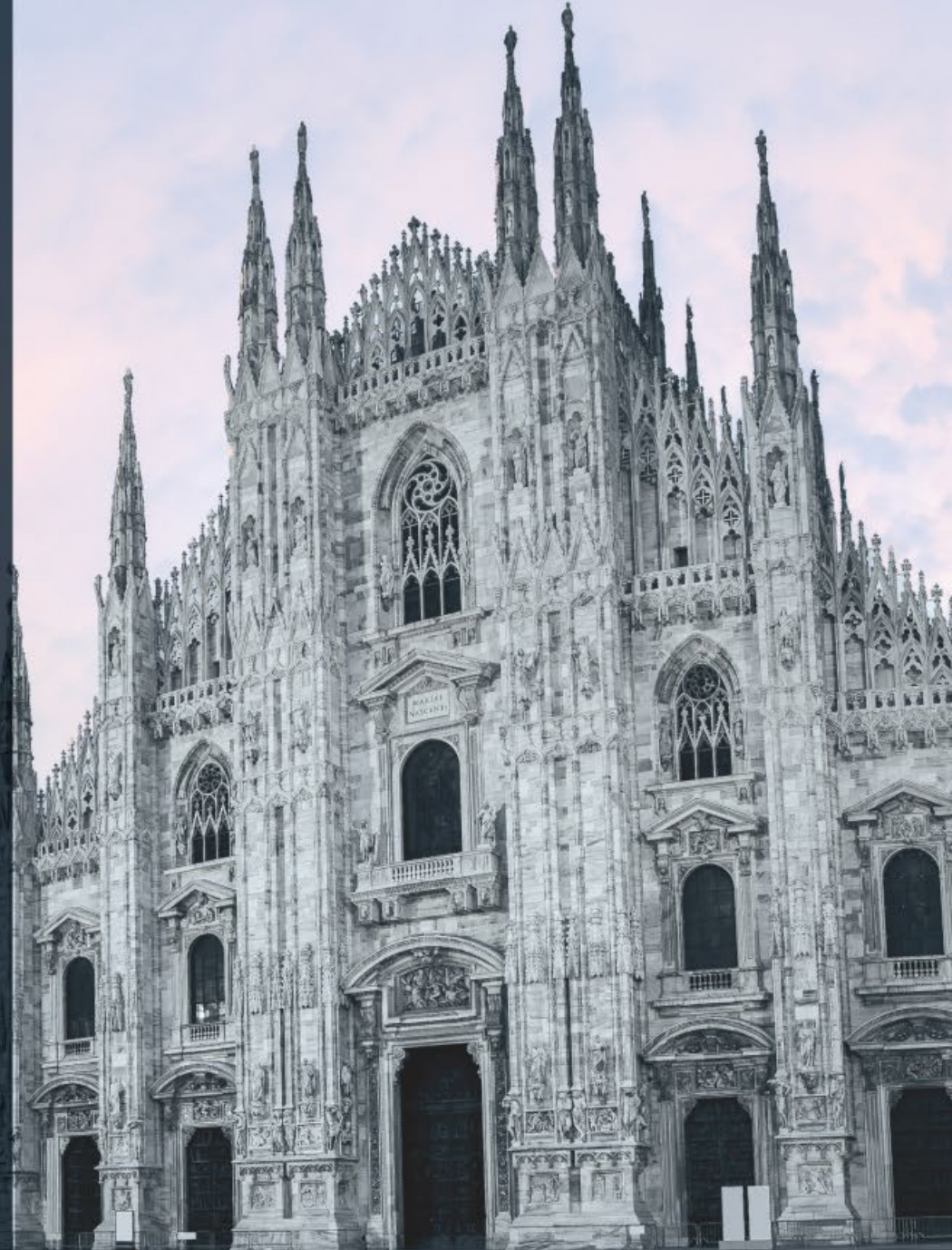
5 minutes for questions/debrief

ICCBBA Learning Lab

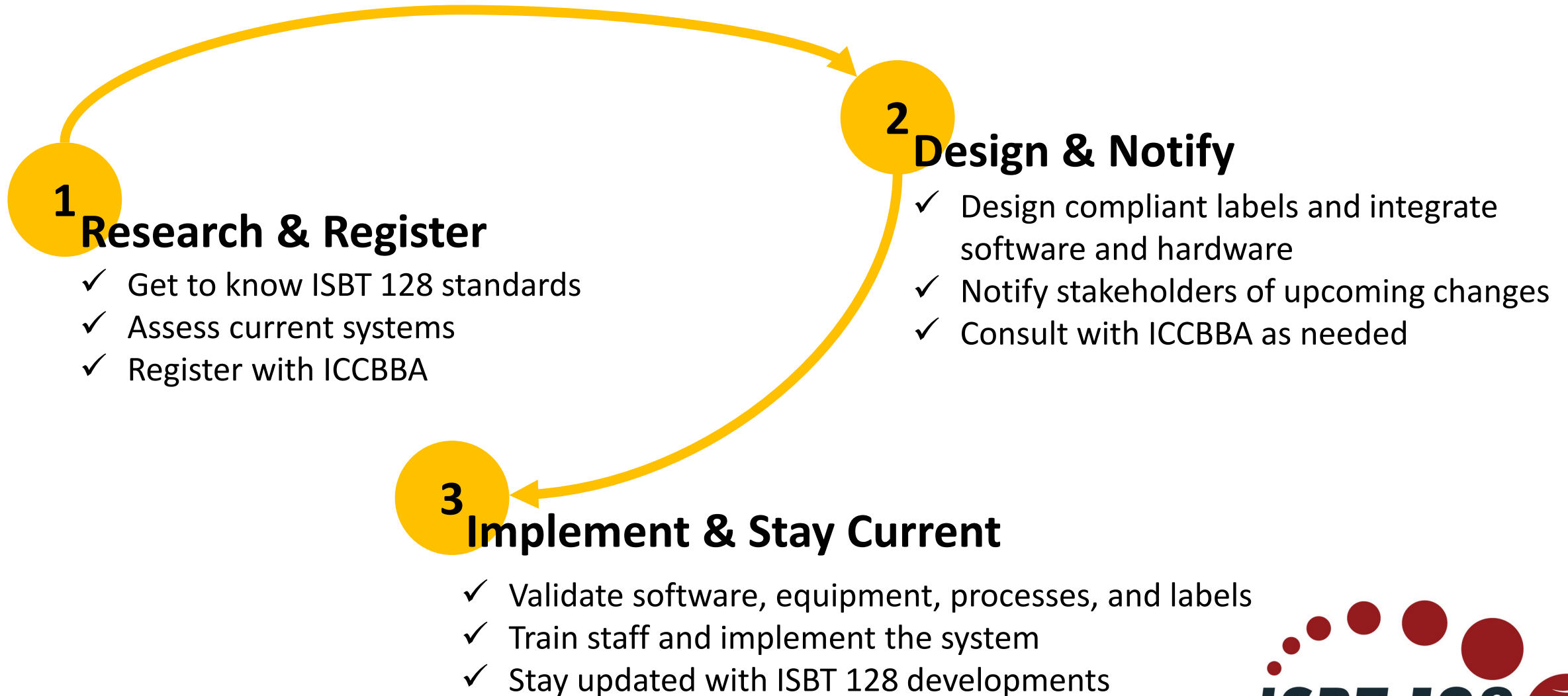
The ISBT 128 Standard in Action

Milan, Italy | 31 May 2025

Summary

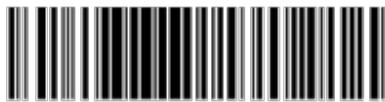
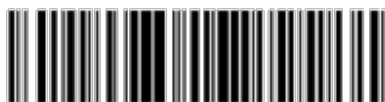
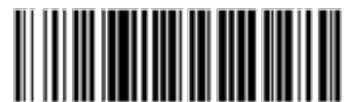
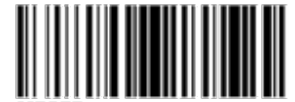


Implementing the ISBT 128 Standard



Labeling with ISBT 128

- ✓ Label size and 4 quadrants
- ✓ Bar codes in each quadrant
- ✓ Use of 2-D symbol
- ✓ Encoded vs. eye-readable text vs. label text
- ✓ Data Structures
- ✓ Coding reference tables
 - ✓ DIN
 - ✓ ABO/RhD Blood Groups
 - ✓ Product Codes

 A9999 25 123456 9 Accurate Blood Center Anywhere, Worldwide  Collection Date  0251092359 19 APR 2025	 5100  RhD POSITIVE
 E6217V00 RED BLOOD CELLS ADENINE-SALINE (AS-1) ADDED IRRADIATED LEUKOCYTES REDUCED ___ mL from 450 mL CPD Whole Blood Store at 1 to 10 C	 0251512359 Expiration Date 31 MAY 2025  N0008 Anti-CMV Neg.

Red Cell Antigens Summary

- ✓ ISBT Defined Antigens – Maintained by ISBT
- ✓ RT040 – RBC Results
- ✓ RT041 – Number of Tests

Data encoded in the 2-D Data Matrix symbol:

=+05020=A99992598765400=%9500=<E0311V00>0253652359
Compound DIN+Flag Blood Product Expiration
Message Type Code Date & Time

&%0040060010104006002010400900101040080010104
Red Cell Antigens with Test History

Red Cell Antigens with Test History
[Data Structure 030]

&%0040060010104006002010400900101040080010104
Number of Repeating Segments
ISBT-Defined Antigen Identifier
RBC Serological Results and Testing Methodology
Number of Tests (Current/Historic/Not Specified)

A9999 25 987654 8 6 9500
Accurate Blood Center
Anywhere, Worldwide

Rh Negative

E0311V00 0253652359
Expiration Date & Time

RED BLOOD CELLS
ADENINE-SALINE (AS-1) ADDED
LEUKOCYTES REDUCED

31 DEC 2025

___ mL from 450 mL CPD Whole Blood
Store at 1 to 6 C

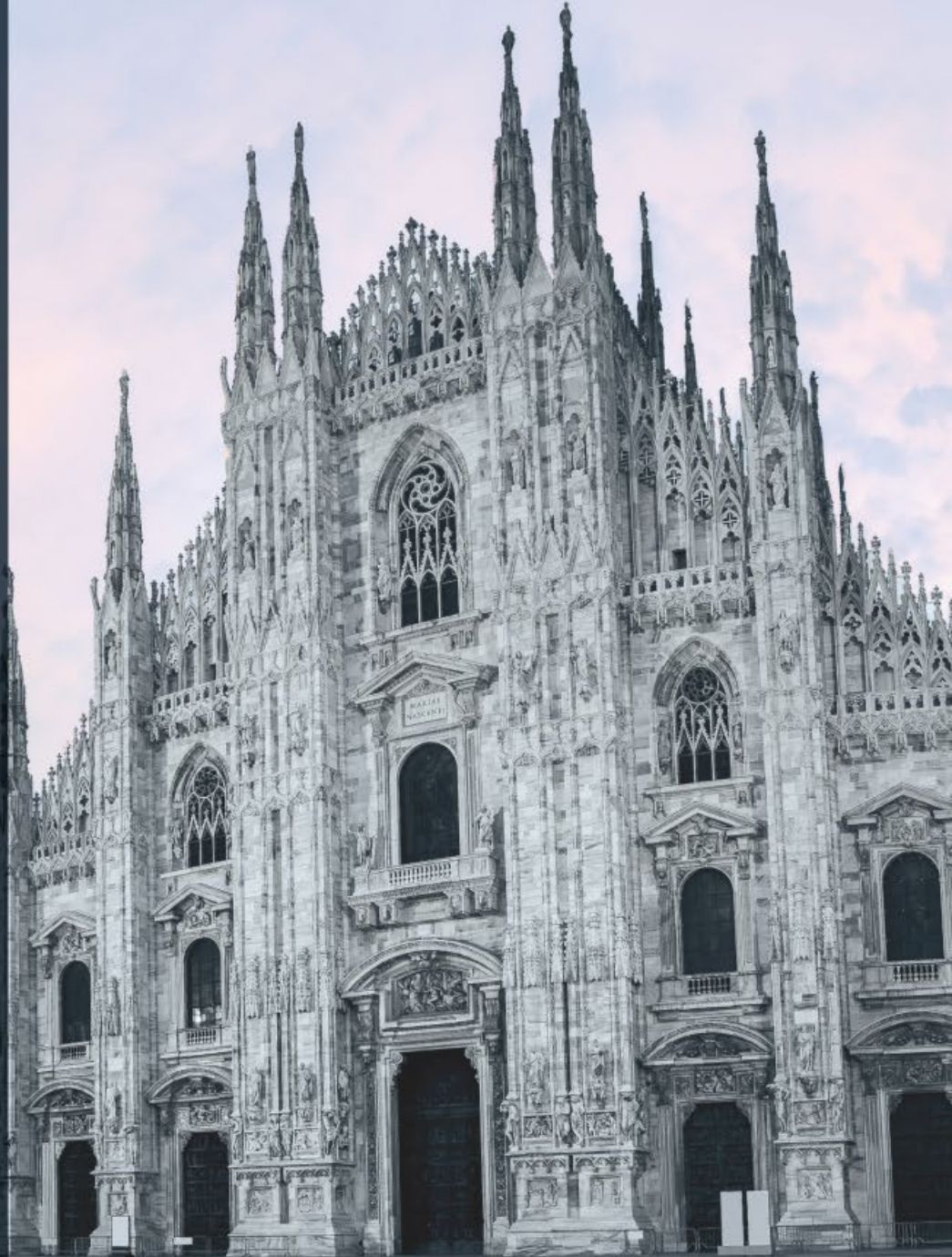
K-; K+:Fy(a-);Jk(a-)

ICCBBA Learning Lab

The ISBT 128 Standard in Action

Milan, Italy | 31 May 2025

Questions?



THANK YOU!

Please Take Our Survey

