



BD Vacutainer® Unique Specimen Identifier (USI) Digital Solution and Traceability

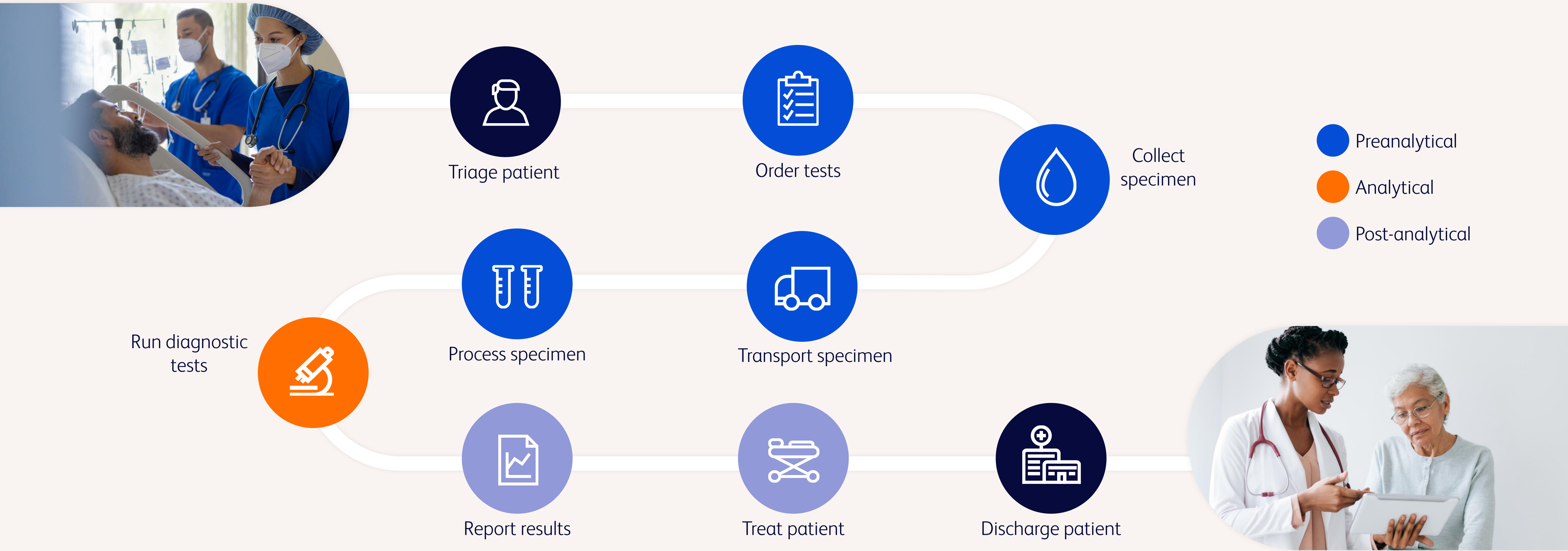
Integrated Specimen Management powered by BD Vacutainer® Unique Specimen Identifier (USI)

Your partner in Unique Sample Identification, ensuring every tube is uniquely linked, tracked, and trusted from collection to result.

Every step in the specimen pathway depends on correct identification. USI **connects the entire workflow end-to-end**, enabling **safe patient–tube association, traceability, and quality** from patient identification through to results - today, tomorrow, and at scale.



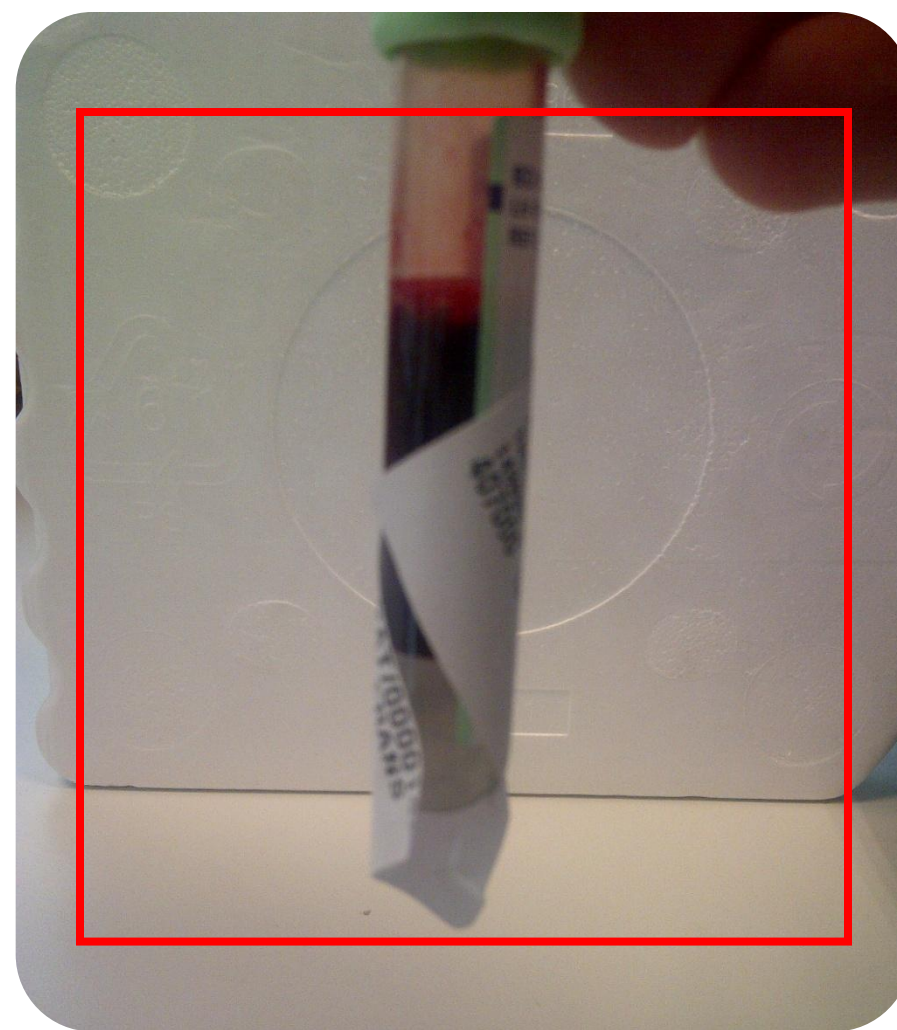
Problems can occur at all points in the pathway that can impact result accuracy, timeliness and cost



Over **60%** of lab diagnostic errors occur in the preanalytical phase¹



Label flagging



Label flagging



Barcode unreadable due to poor print quality

Issues in the preanalytical phase can lead to:^{1,2}



Incorrect or delayed treatment



Increased patient harm



Longer hospital stays



High healthcare costs



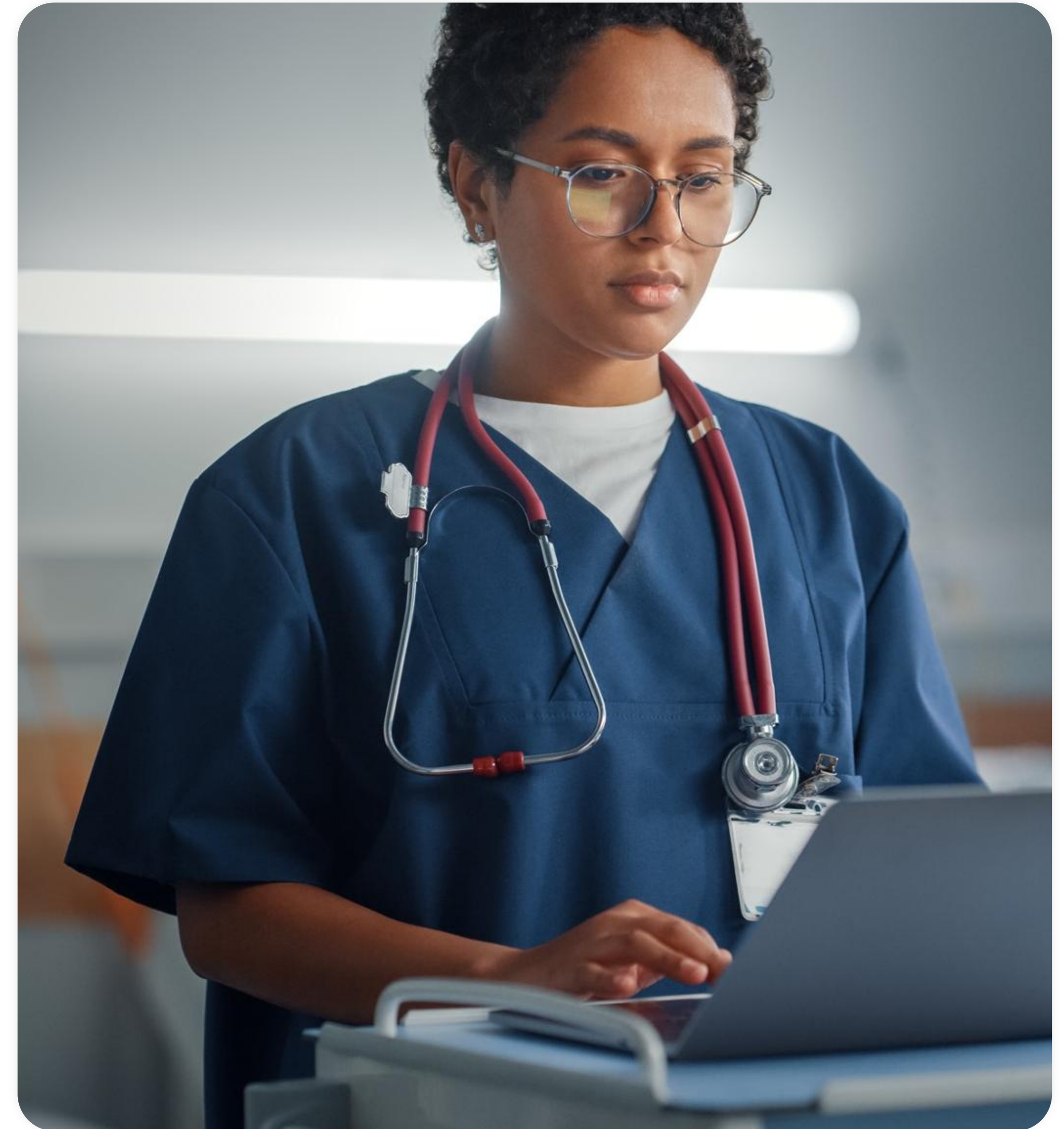
Increased costs

Up to 1.2% of total hospital operating costs may be due to preanalytical errors¹

157€ the estimated average 2013 cost of a preanalytical error in a European institution¹

16,047 patient hours lost per year in an 850-bed European hospital were due to preanalytical errors¹

96% additional patient treatment time
4% specimen redraw/processing time



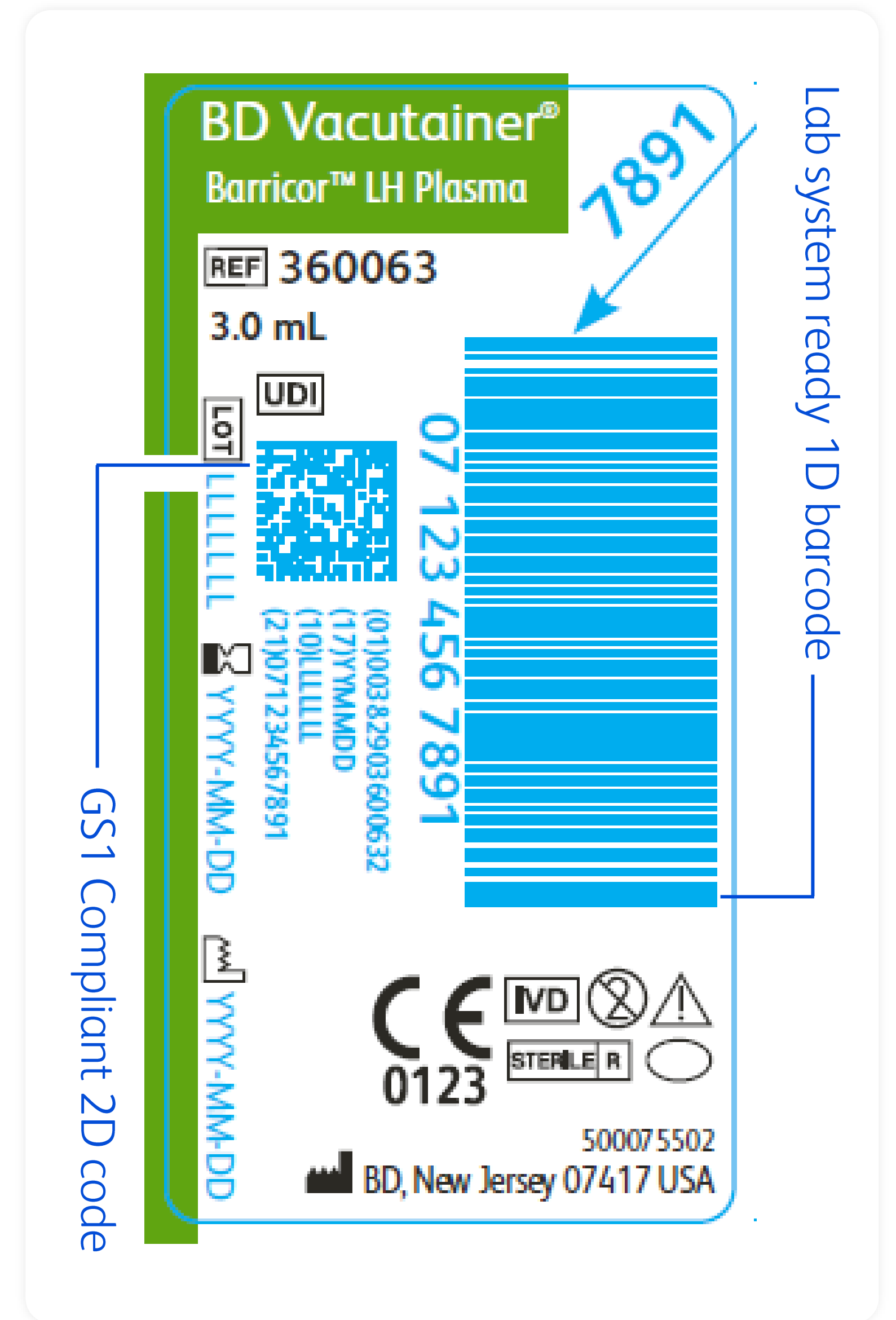


USI Tubes

A portfolio of tubes that are pre-barcoded at the point of manufacture with a **unique tube identification** (including supply information)*.

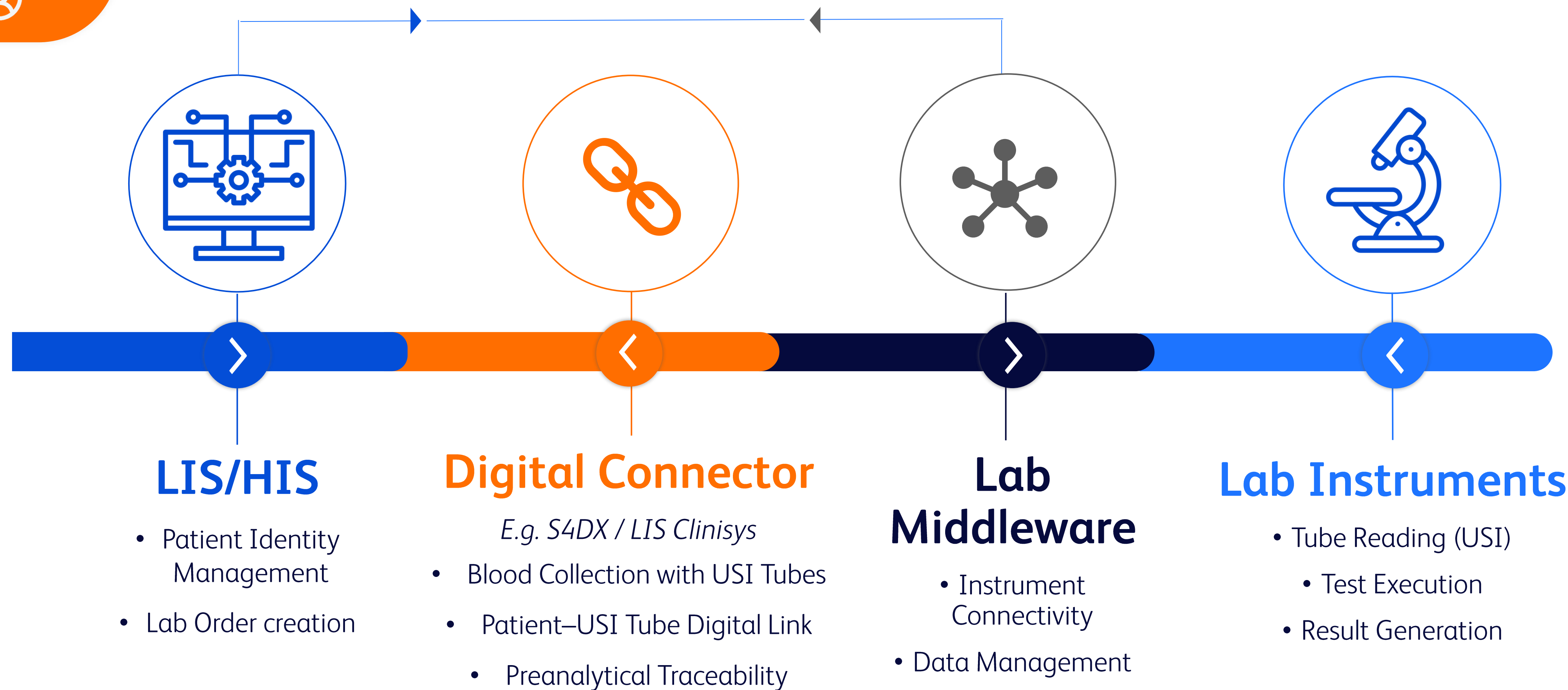
Supporting you with connected test prescriptions, with an aim to **improve sample to result turnaround time** by helping to reduce:

- Pre-analytical errors as a result of specimen labelling
- Resource intensive specimen reception and associated labelling
- Manual and non-standard identification processes, addressed through future-proofed GS1-compliant **2D coding**





Lab Data Flow



Zoom-in to USI Workflow

- Preanalytical
- Analytical
- Post-analytical



Test order created in LIS/HIS



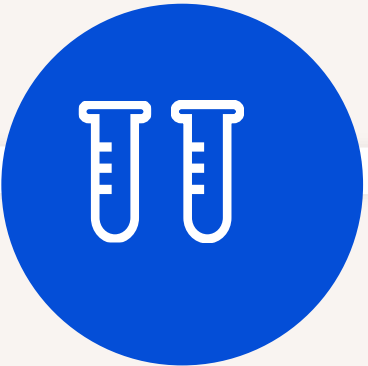
Order data sent to the Digital Connector (e.g., S4DX, Clinisys)



View order details by scanning order/patient details with the Digital Connector app



Scan USI tubes to link digitally samples to the patient



Collect USI tubes for the test



Transport conditions monitored and recorded by time, temperature and traceability



Lab Testing



Results Reporting: Test results are reported together with supporting pre-analytical variables to aid accurate interpretation



Insight Generation: Recorded data enables labs to identify priority areas for targeted efficiency improvements





USI Portfolio

Blood Collection Tubes

	Family Name	Availability	Draw Volume (mL)
	Sodium Citrate	3 options	1.8 / 2.7 (x2)
	Serum with Clot Activator	4 options	2.0 / 4.0 / 6.0 / 10
	BD SST™ II Advance	6 options	2.5 / 3.5 / 4.0 / 5.0 / 6.0 / 8.5
	BD Barricor™	4 options	3.0 / 3.5 / 4.5 / 5.5
	Lithium and Sodium Heparin	5 options	2.0 / 4.0 (x2) / 6.0 / 10.0
	BD PST™ II	3 options	3.0 / 4.5 / 8.0
	Glucose	4 options	2.0 (x2) / 4.0 (x2)
	K ₂ EDTA	5 options	2.0 / 3.0 / 4.0 / 6.0 / 10.0
	Trace Elements	2 options	6.0 (x2)
	Other Tubes	3 options	0.5 / 3.0 / 8.5

Urine Collection Tubes

	Family Name	Availability	Draw Volume (mL)
	Culture and Sensitivity	2 options	4.0 / 10.0
	Urinalysis Preservative	1 options	8.0
	Plain tubes	4 options	4.0 / 6.0 / 9.5 / 11.0



USI Barcode Labelled Tubes



To ensure reliable order fulfillment, annual volume forecast must be shared at least **3 months** prior to conversion.

Any SKUs not currently in production will be reviewed and aligned based on customer demand and **manufacturing capacity**.

Production is subject to **minimum order quantities (MOQs)**. Please consult your local BD representative to confirm availability and specific requirements.



USI Customer Breakdown

2025 Overview

- ~5M BD USI tubes shipped in 2025
- 14 active customers

Customer Mix

- 1 x University Hospital
- 4 x Mid Size Hospitals
- 7 x Small Hospitals & Clinics
- 1 x Private Laboratory Group
- 1 x Industry Partner / Reseller

2026 Outlook

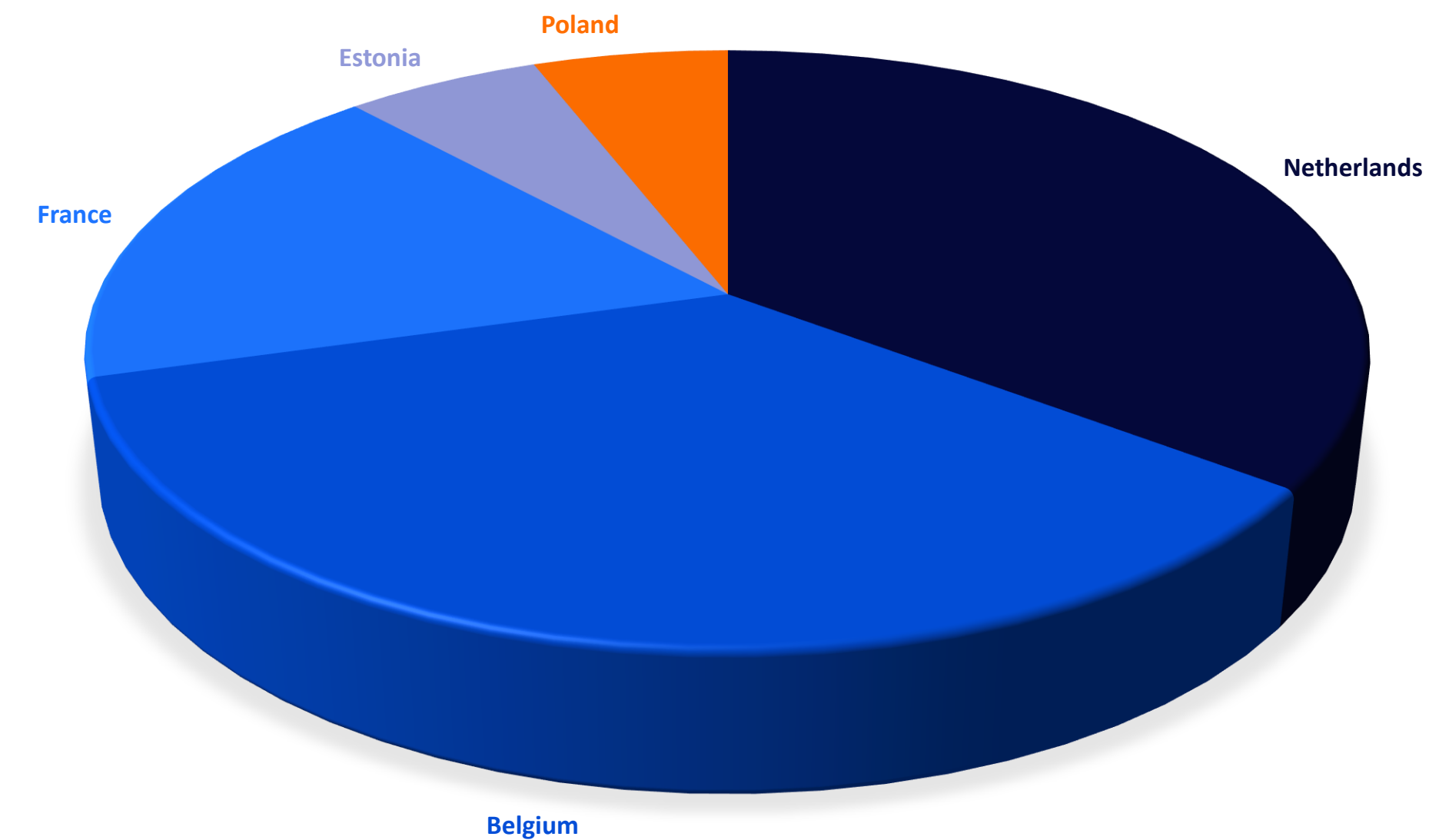
- ~50% increase in total volume vs 2025
- 20 customers total

Drivers of Expansion

- 2 x University Hospitals
- 6 x Mid Size Hospitals
- 7 x Small Hospitals & Clinics
- 1 x Private Laboratory Group
- 1 x Industry Partner / Reseller

We are currently engaged with ~50 accounts exploring a transition to USI tubes, with strong interest from large University Hospitals and Private Lab groups.

Geographical Split



Typical Annual Collection Volumes

- University Hospitals: ~500K tubes / year
- Mid-size Hospitals: 100K–200K tubes / year
- Small Hospitals & Clinics: <100K tubes / year

Value for Customers

DSP transforms every step of the pre-analytical phase into actionable data - enabling real-time visibility, predictive insights, and ongoing optimization. DSP converts manual processes into structured digital information.





When USI Shows Impact



Efficiency



Automation



Sustainability

1. Efficiency

- Labelling represents a **bottleneck** in the overall process
- Labelling drives both direct (labels, printers, maintenance) and indirect (FTE) **costs**
- Labelling errors negatively impact overall laboratory **efficiency**
- There is potential to generate additional **value** through improved supply tracking

Potential Labelling Errors

- A label is applied to a tube belonging to the **wrong patient**
- A label is applied to the **incorrect tube** (e.g., a serum tube receives an EDTA label)
- A label is **incorrectly applied** (e.g., wrapped spirally around the tube, horizontal barcode, etc.)
- The label is positioned such that analyzer scanners cannot read it
- The use of **manual handwritten** labels increases the risk of labelling errors in non-digital workflows

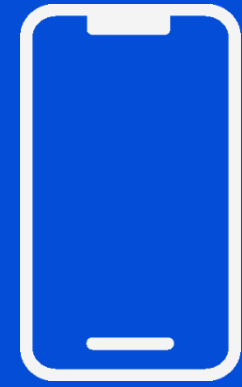
2. Patient Safety

- Positive patient **identification**
- Tube–patient **association**

3. Traceability

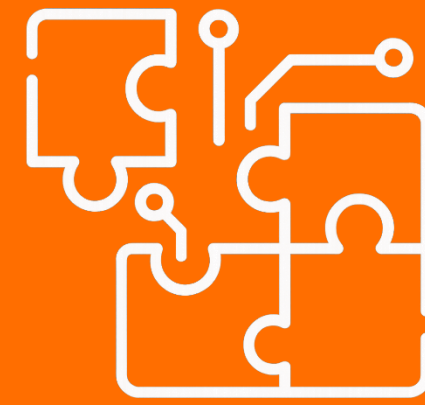
- Sample **tracking** & process **optimization** from phlebotomy through result delivery

USI Transition Requirements



Hardware

Availability of scanners, supporting electronic infrastructure, and any required hardware modifications to ensure seamless integration and reliable system performance.



Middleware (Digital Connector)

Configuration and integration of HIS/LIS software (e.g. S4DX), including workflow setup, interface adjustments, and data exchange capabilities required to support the solution.

From: Having a patient + Order ➔ Printing a number/label & applying it to a sampler container

To: Having a sample container pre-barcoded number ➔ Linking it to your patient



Thank You

BD Switzerland Sàrl, Terre Bonne Park - A4, Route de Crassier 17,
1262 Eysins, Switzerland

bd.com

BD, the BD Logo, BD Vacutainer are trademarks of
Becton, Dickinson and Company or its affiliates. ©
2023 BD. All rights reserved. BD-105423

