XQ-320

Excellence in quality and usability

SWCA Vision

sysmex | Lighting the way with diagnostics

sysmex

SWCA will be the reliable diagnostics company in West and Central Africa providing medical laboratories with quality testing, operational efficiency, and access to innovative diagnostics that ensure public safety and optimal output from hospital systems.

www.sysmex-wca.com

01

XQ-320 overview and specifications

Concept

Convenient

Faster

Slimmer

Lighter

XQ-320: Fusion of requirements and inheritance

inherit

- XN-Series: Data correlation
- XN-Series: High-end quality
- XN-L Series: Software UI
- XN-L Series: Hardware
- XP-300: Technology, parameters
- XP-300: Reagents

evolve

Market requirements

- QC lockout
- Flexible user management
- Barcode logon
- Assay sheet 2D barcode
- Understandable flagging names
- Higher throughput
- Lower consumption

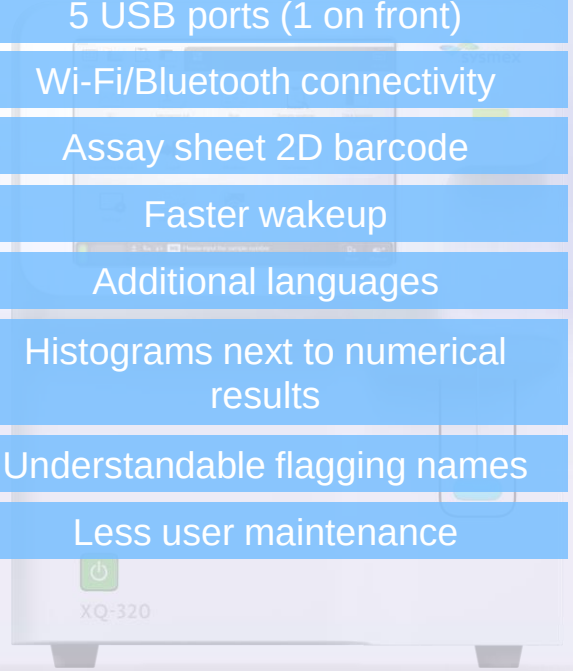
We have listened

- XQ-320 represents the ‘best’ of Sysmex analysers to answer even better to your needs

Laboratory management
QC lockout
Host format XQ/HL7
IPU screen lock (≥ 1 min)
Flexible user management
Up to 500 users
Barcode logon
QC measurement permission

Ease of use
5 USB ports (1 on front)
Wi-Fi/Bluetooth connectivity
Assay sheet 2D barcode
Faster wakeup
Additional languages
Histograms next to numerical results
Understandable flagging names
Less user maintenance

Specifications
Higher durability
Higher throughput
Lower aspiration volume
Smaller bench size
Larger temperature range
Larger humidity range
Larger memory
Larger touch screen
Lower reagent consumption
Lower electricity consumption



XQ-320 at a glance

Integrated IPU

Colour LCD with touch screen

Reagent holder

Power switch

Analysis status indicator

Sample start switch

XQ-320: Built for convenience

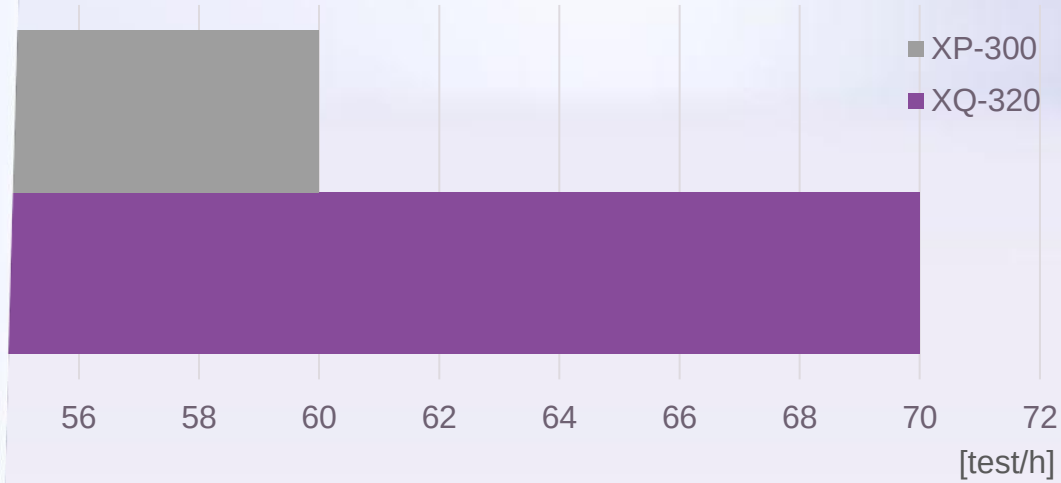
Convenient

- 10.4” display
- Numerous new software features
- Integrated IFU

XQ-320: Built for fast results

Faster

- Short time to result
- Decreased TAT



XQ-320: Compact and robust hardware

XQ-320: Compact and robust hardware

Lighter

Specifications in comparison to XP-300: Overview

Improved usability

	XP-300	XQ-320
Aspiration volume WB mode	50 µL	**16 µL**
Aspiration volume PD mode	200 µL	**65 µL (diluted blood)**
Ambient temperature	15–30°C	15–30°C
Humidity	30–85%	**20**–85%
Interface [USB | LAN | Serial | Parallel]	- | 1 | 1 | 1	**5 | 2 |** 1 | -
Electric power	< 200 VA	**< 160 VA**
Network	Wired	Wired | **Wireless**

Specifications in comparison to XP-300: Memory

Enhanced memory function

	XP-300	XQ-320
Sample storage	40,000	**500,000**
Patient information	Sample ID only	**10,000**
Registered wards	—	**200**
Registered doctors	—	**200**
QC files	6 files | 60 plots/file	**99 files | 300 plots/file**
Calibration log	—	**20**
User management	Operator ID only	**500 users***

* Including customisable settings and barcode identification

Specifications in comparison to XP-300: Maintenance

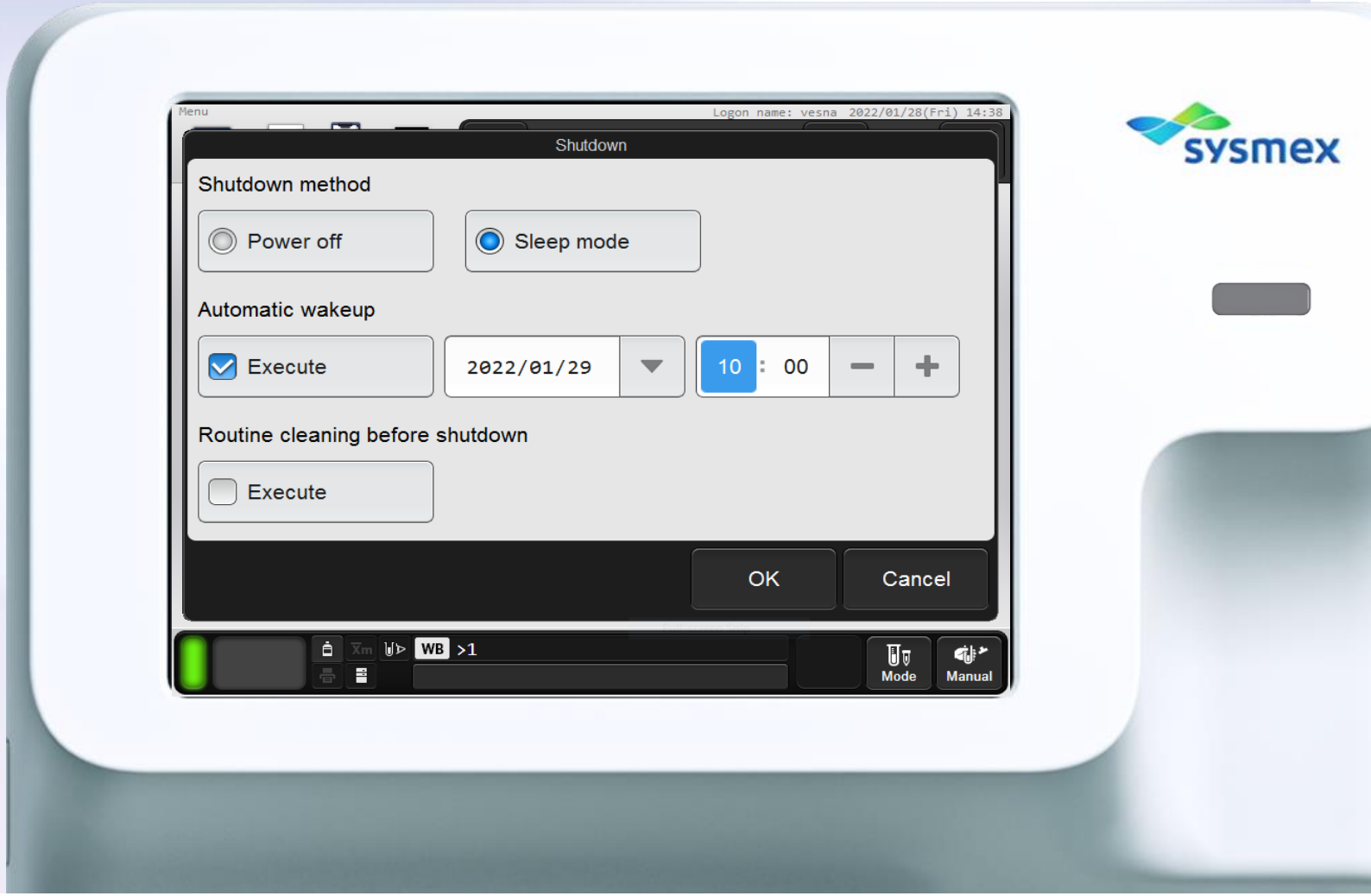
Less user maintenance, increased uptime

	XP-300	XQ-320
Startup	Startup	Startup, **auto wakeup**
Shutdown	Shutdown + Cellclean	Power off, **sleep mode**
Cleaning of SRV tray	Weekly	—
Cleaning of SRV	Every 3 months or 4,500 tests	—
TD cleaning	Monthly or 1,500 tests	—
Waste chamber cleaning	Monthly or 1,500 tests	When needed
Routine cleaning	—	**Weekly** or 400 tests

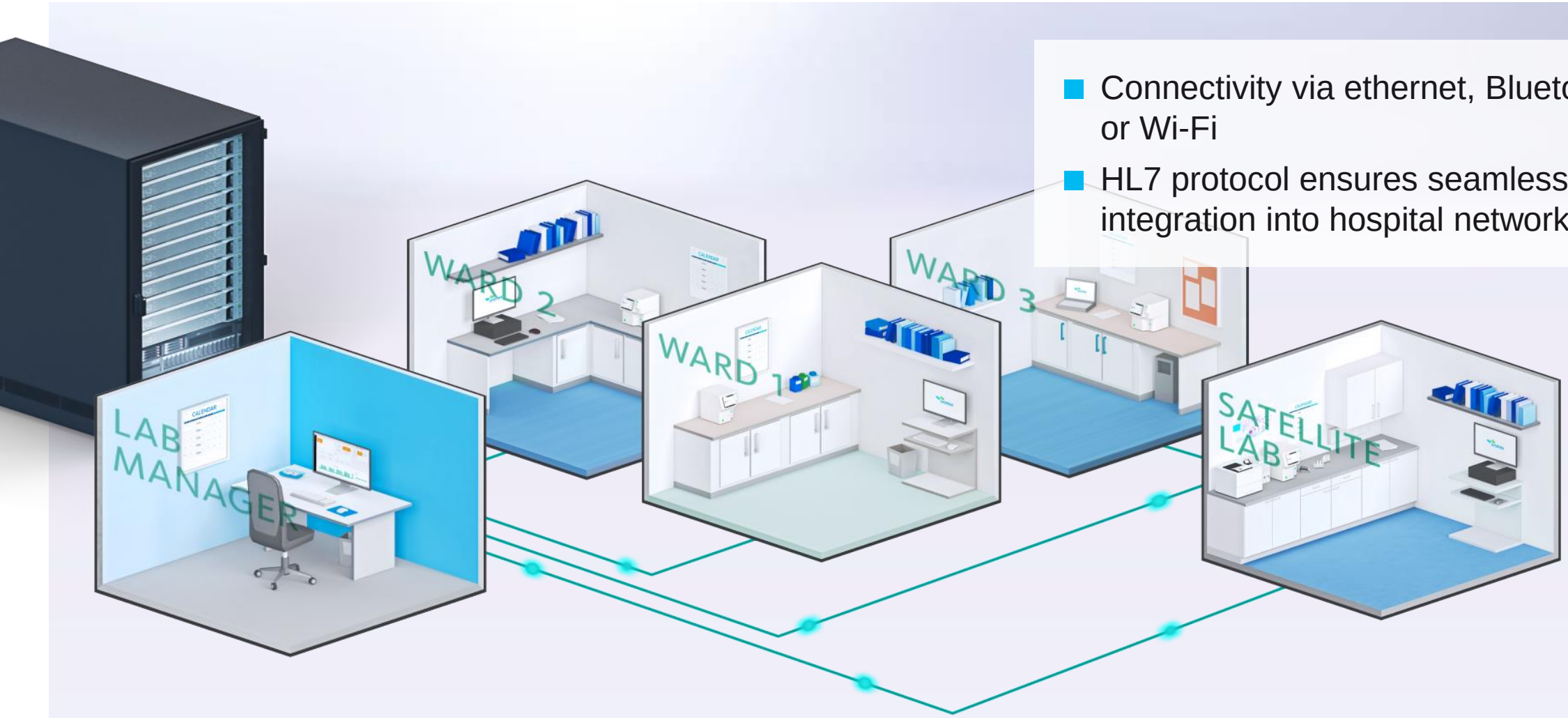
New features: Startup

Power on/Wakeup

- Sequences at startup or wakeup are much faster
- XQ-320 is quickly ready for measurement
- First Sysmex haematology analyser with automatic wakeup schedule function



New features: Connectivity

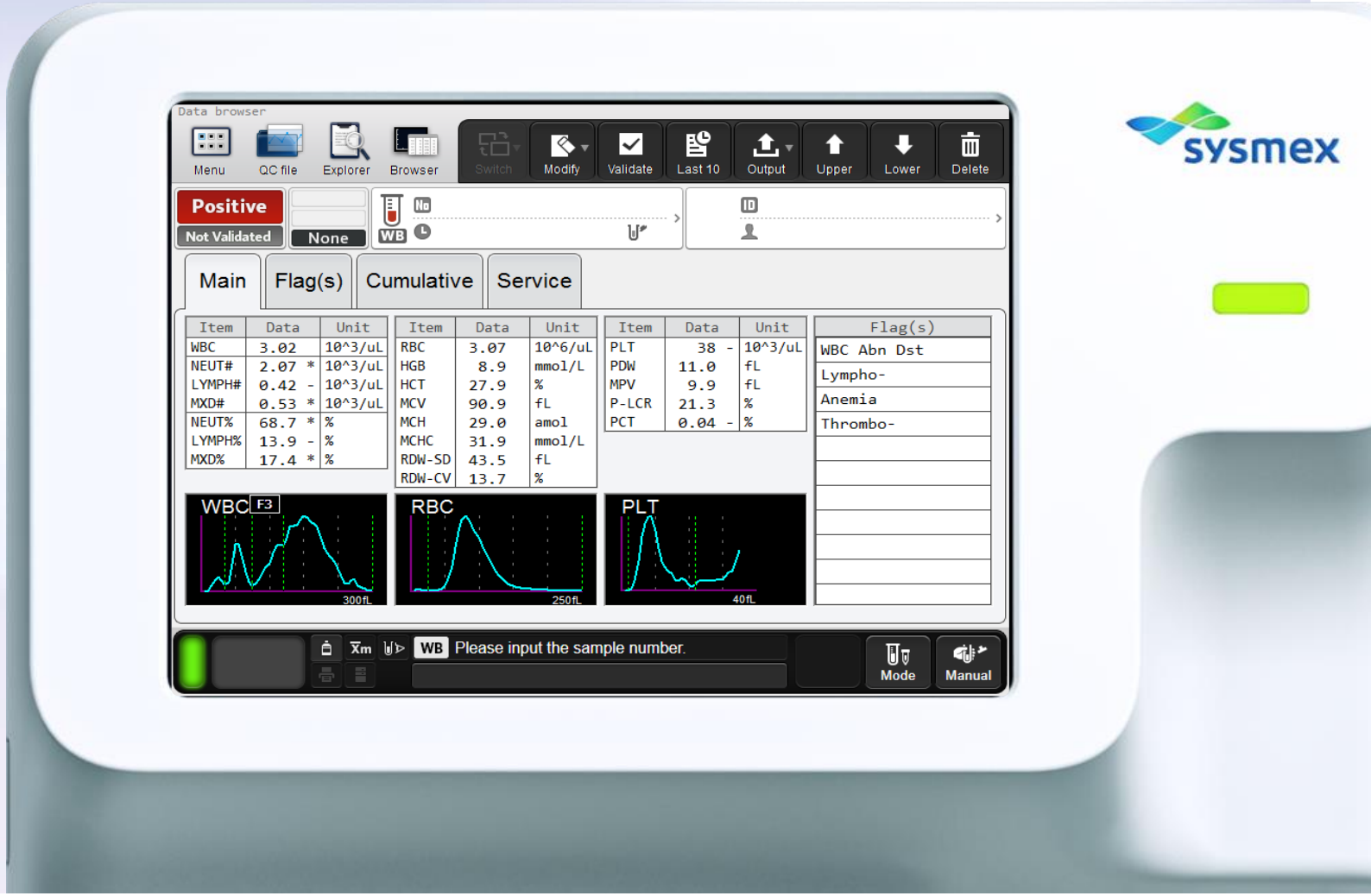


- Connectivity via ethernet, Bluetooth or Wi-Fi
- HL7 protocol ensures seamless integration into hospital networks

Result screen

Everything at a glance

- Parameters, histograms and messages on one screen
- Easy to read flags
- 20 diagnostic parameters



Diagnostic parameters

Channel	Parameters
WBC*	WBC, NEUT#/%, LYMPH#/%, MXD#/%
RBC/PLT	RBC, HCT, MCV, MCH, MCHC, PLT, RDW-SD, RDW-CV, PDW, MPV, P-LCR, PCT
HGB	HGB

* WBC parameter names can be adapted: LYM% (W-SCR), MXD% (W-MCR), NEUT% (W-LCR), LYM# (W-SCC), MXD# (W-MCC), NEUT# (W-LCC)

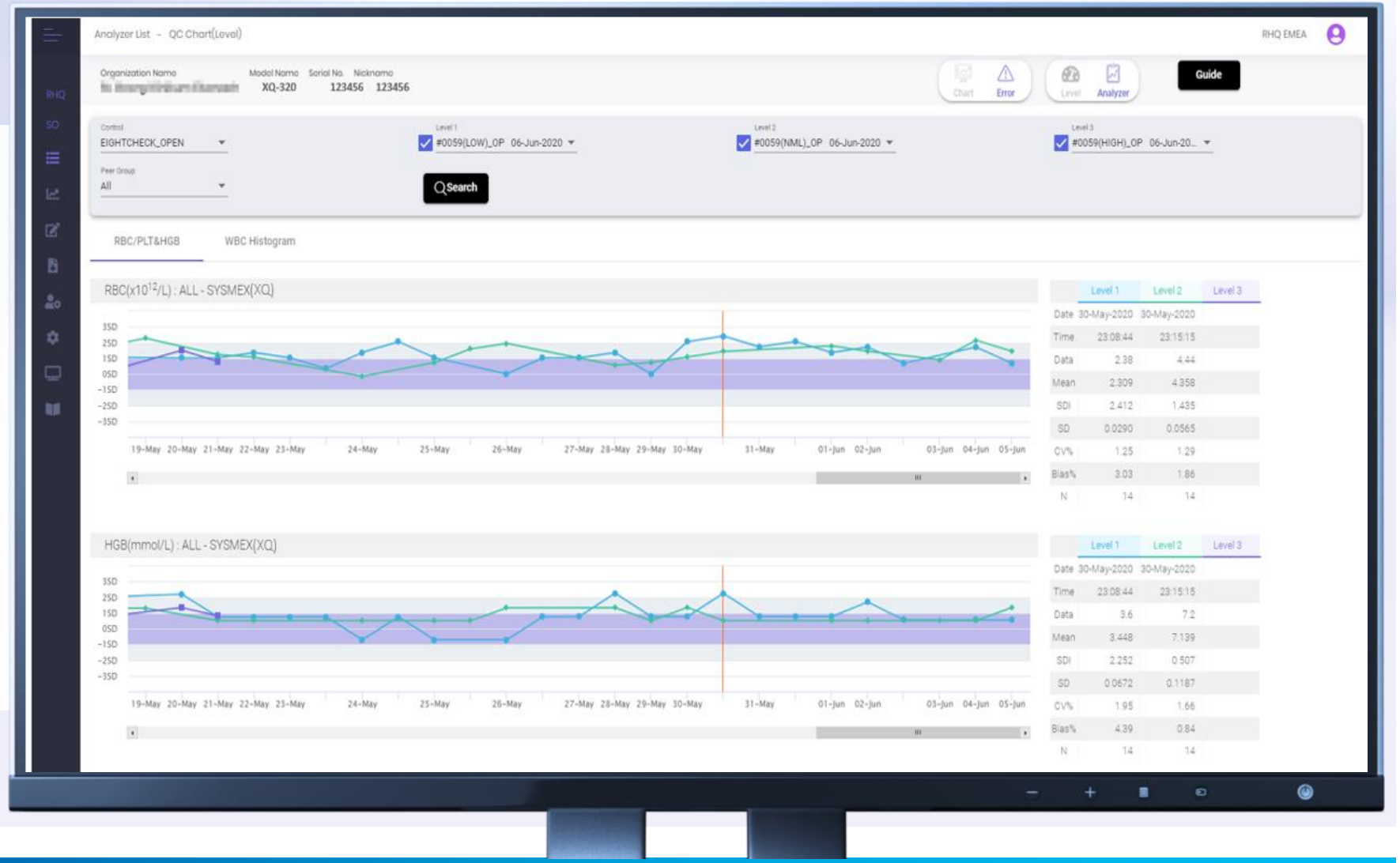
Reagents

Function	Reagent name	Standard	Option
Diluent	Cellpack	1 x 20 L (politainer)	1 x 10 L (politainer)
Lysing reagent	Stromatolyser-WH	3 x 500 mL (bottle)	
Detergent	Cellclean	Cellclean (1 x 50 mL)	

Caresphere™ XQC - interlaboratory comparison

Caresphere™ XQC

- Caresphere™ XQC judges the performance of an individual analyser by comparing its QC results to peer group data.
- Outliers are quickly identified.
- No additional measurements or materials are needed.



Summary of XQ-320 benefits

Some Benefits of the XQ-320 over XP-300 at a Quick Glance

	XQ-320	XP-300
Reagent consumption	Consumes relatively less Cellpack=30ml Stromatolyser=0.8ml Cell clean= once/week	Consumes relatively more Cellpack=34ml Stromatolyser=1ml Cell clean= every shutdown
Throughput	Higher through put -Relatively Faster Whole blood mode=70 tests/hour	Lower through put -Relatively Slower Whole blood mode=60 tests/hour
Maintenance	Less maintenance activity (apart from start-up and shutdown) – routine cleaning	More maintenance activity (apart from start-up and shutdown) - Cleaning of SRV tray; Cleaning of SRV; TD cleaning
Sample Aspiration volumes	Requires relatively less sample volume: Whole blood - 15ul Predilution – 65ul	Requires relatively more sample volume Whole blood - 50ul Predilution – 200ul
Weight	Relatively lighter 22kg	Relatively heavier 30kg
Dimensions	Relatively slimmer 365(W) x 440(D) x 450(H) mm	Relatively larger 420(W) x 355(D) x 480(H) mm
Data Storage	Stores more data: Sample data - 500, 000 samples including histograms QC files - 99 files | 300 plots/file Patient info - 10,000	Stores relatively less data: Samples data-40,000 samples including histograms QC files - 6 files | 60 plots/file Patient info - Sample ID only
Network connection	Wired and Wireless	Wired

02

Market Analysis and product strategy

3 PD market in West Africa

Market/ Environment Analysis	• Biggest than 5 PD market in volume • Primary healthcare - Medium and low size hospitals and private clinics • Remote country • General medicine (+++), less specialities • 15- 30 samples /day on average • Price sensitive market (+++)
Competitor Analysis	• Lot of Chinese brands: Mindray 3PD, Rayto 3PD, URIT 3PD • Manual count
Stakeholder Analysis	• Hospital management: Medical doctors or pharmacists are decision makers (+++) • Lab manager: generally involved in the purchase process as advisor or decision makers • Others: procurement managers, director… • MOH in case of tenders

Behaviour change

1 **Key Issue or Opportunity**	No differentiation of infections in primary care settings (bacterial vs viral)
2 **Stakeholder Description**	GPs (+++), lab scientist / technician

3 Behavior Now	4 Future Behavior
They give the overall granulocytes (NEUT, BAS, EOS) count to GPs, without differentiating bacterial to viral infections	XQ-320 first choice in 3 PD market in resource limited - low and medium market segment

5 Attitude Now	7 Barrier/s	6 Future Attitude
Overprescription of ATBs to children (+++) and adults	Low awareness on dedicated Neutrophils count with our 3 PD analysers (infection differentiation is possible)	Give the right treatment when patient has an infection and act efficiently

Stakeholder Change Task	Cross functional team (Application and Scientific specialist – Sales and marketing – Technical specialist)

Product strategy

Vision	**Best in class in the 3 PD market in West Africa to answer more than customers needs**			
Positioning	**3PD – part differential with a dedicated neutrophil count for primary healthcare in Africa**			
Strategic Imperatives	**Create awareness about burden of infectious disease**	**Distributors sales and app teams trained**	**Replacement strategy / tenders**	**Product accessibility**
Required stakeholder behavior change	Burden and management of infectious disease (LRTIs in children) **By** GPs and clinicians CMEs in primary care settings(training).	Distributor teams trained about our key differences vs competitions **To** replace competition instruments in the lab **By** .showing the added value of our 3 PD analysers	Product features: low maintenance (+++), low aspiration volume, caresphere **By** selling our service support (technical, application and scientific**)**	• Same price than XP-300
SUCCESS METRIC	• GPs influence lab management to purchase . • Reagent consumption by test prescription	• Market share gained from competition > 10 % first year.	Perception of Sysmex as a MOH partner of choice	Number of units sold / year

25

Commercialization strategy

key message

Key challenges	Unmet needs / Gaps	Strategy
Pricing	Insist on the product added value to counterbalance the pricing argument	▪ Training of distributors sales team on the marketing campaign ▪ meetings with private clinics group.
Tender driven market	Private market need to be more explored	▪ .SPMs about new campaign available in different countries ▪ Optimize supply management
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Application and scientific Affairs development strategy

key message

Key challenges

GPs and clinicians to interprete FBC parameters

Unmet needs / Gaps

Lack of knowledge about diagnostic parameters that can help them better treat patient with infections

Lack of application and clinical training .

Strategy

- .Communication and CMEs campaign on dedicated neutrophils count.
- Distributors to hire dedicated application staff to cover customers and clinicians training in-country

Summary XQ-320 WCA Strategy

- **WHERE**- Primary Healthcare Centres (MOH & Privates) / Satellite labs

- **HOW;**

- Local strategies to gain market share in the 3 PD market
  - » Clinicians campaign focused on the importance of dedicated neutrophils count in the management of infection in primary care
  - » End user campaign: XQ features, ease of Use, low sample volume and maintenance, Large screen

- Marketing launch activities in Nigeria, IC, Senegal, Benin DRC, Congo , Gabon , & Cameroun

03

SPMs

GPs and clinicians campaign: How to differentiate infection with a dedicated neutrophils count

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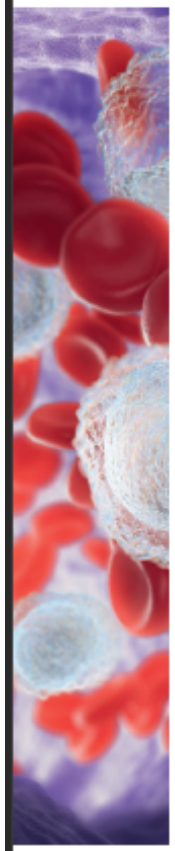


Primary healthcare diseases in Africa

In sub-Saharan Africa, patients with infectious diseases are frequently encountered in general medicine and paediatrics departments. Lower respiratory tract infections (LRTIs) represent a significant cause of mortality ranked third after HIV/AIDS and malaria in sub-Saharan Africa overall, and first in nine African countries [1].

LRTIs are commonly caused by bacteria, including *Streptococcus pneumoniae* (pneumococcus), *Haemophilus influenzae*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Acinetobacter* species, *Streptococcus viridans*, *Pseudomonas aeruginosa*, *Escherichia coli* and *Proteus* species. LRTIs include bronchitis, pneumonia, and bronchiolitis.

The threat posed by pneumonia

Pneumonia is a form of acute respiratory tract infection that affects the lungs. The lungs are made up of small sacs called 'alveoli', which fill with air when a healthy person breathes. When an individual has pneumonia, the alveoli are filled with fluid, which makes breathing painful and limits oxygen intake.

Pneumonia is the single largest infectious cause of death in children worldwide. Pneumonia killed 740 180 children under the age of five in 2019, accounting for 22 % of all deaths in children aged one to five. Pneumonia affects children and families everywhere, but death rates are highest in South Asia and sub-Saharan Africa. It can be caused by viruses, bacteria, or fungi. Children can be protected from pneumonia, as it can be prevented with simple interventions, and treated at low cost, if it is properly diagnosed [2].

Pneumonia caused by bacteria can be treated with antibiotics, but only one third of children with pneumonia receive the antibiotics they need.

references

[1] **Jurgen Schwarzwalder et al.:** Prevalence of respiratory bacterial infections in people with lower respiratory tract infections in africa: the aurora-rca (general overview of meta-analytic protocol, aug-oper...2019;9(1): e024224.

[2] **Pneumonia**. Available from: https://www.who.int/news-room/fact-sheets/detail/pneumonia

How do we differentiate infections?

Clinical symptoms

Laboratory investigations

In a patient with an acute febrile illness, infection must always be considered. The CBC including a dedicated neutrophil count is helpful in guiding the diagnosis towards a bacterial or viral infection, providing the result in only one minute. With this information, physicians will be better able to decide whether or not they need to prescribe any antibiotics.

Overview of CBC parameter result ranges characteristic for viral and bacterial infections:

Parameter	Reference range	Viral infections	Bacterial infections
White blood cells	4–10 × 10^9/L	> 10 × 10^9/L	> 10 × 10^9/L
Neutrophils	1.8–7 × 10^9/L	≤ 7 × 10^9/L	> 7 × 10^9/L
Lymphocytes	1.5–4 × 10^9/L	> 4 × 10^9/L	≤ 4 × 10^9/L

Note: Laboratory diagnostic results must be interpreted by a physician considering the clinical presentation, anamnesis, other laboratory tests and examinations are also necessary to confirm the diagnosis of an infectious disease. Results obtained in point-of-care laboratories should be interpreted in clinical and bacterial infections and should not be used as a stand-alone test.

Clinical case: Meet Kwasi

A mother came to the district hospital with her 3-year-old son Kwasi. Upon presentation to the physician, she complained about his cough. The physical examination showed a raised body temperature of 39.5° C and a weight of 10 kg. When examining the lungs, the physician noted rales during breathing, and tachypnoea. A blood sample was drawn and analysed.

Laboratory diagnostics

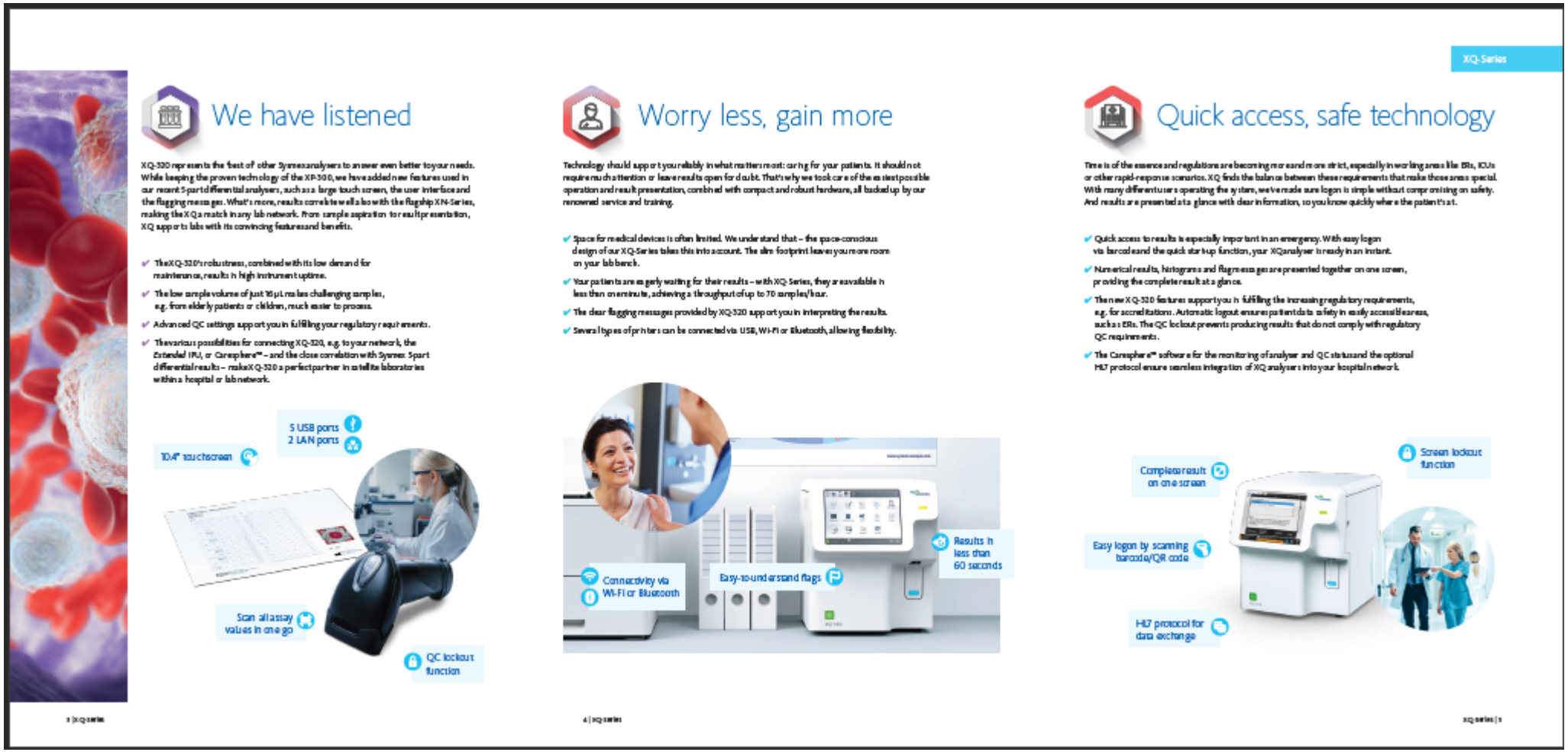
The CBC investigations revealed the following results.

CBC parameters	Kwasi's results	Reference ranges
Haemoglobin	13 g/dL (normal)	12 – 16 g/dL*
Neutrophils	15 × 10^9/L (high)	1.8 – 7 × 10^9/L*
Lymphocytes	1 × 10^9/L (low)	1.5 – 4 × 10^9/L

*Age-dependent reference ranges

The white blood cell results with their high neutrophil and low lymphocyte counts pointed to a bacterial infection. After further investigations, such as testing for other biomarkers like CRP, and obtaining a chest radiograph, it was confirmed that Kwasi had a community-acquired pneumonia. Treatment could then begin without further delay.

End users campaign: product features



04

Sysmex academy training

XQ-320: Training

- **For everyone including Sales colleagues**
  - XQ-320 Basic Online Training on Sysmex Academy platform https://wca.sysmex-academy.com (for every one including potential clients)
  - Video Tutorial: XQ-320 basic training to register via LMS.
  - Haematology Sales and Marketing training will be offered to Sales representatives in our academy.
- **For Field Service Engineer**
  - Additional to XQ-320 Online Training and Video Tutorial: XQ-320 basic training Sysmex Academy platform
  - 'XQ Technical Introduction' online training on LMS for all Engineer already trained SGST 2
  - New technical colleagues will be trained during SGST 2
- **For Application Colleagues**
  - Additional to XQ-320 Online Training and Video Tutorial: XQ-320 basic training
  - XQ Advanced Application Training. Will be available in LMS

XQ-320: More than just an analyser!

Knowledge & training

Scientific & Application support

Technical support

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Thank you for your attention!

XQ-320

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