

HCLAB

Laboratory Information System



Empowering the diagnostic
laboratory

HCLAB is a comprehensive, flexible and practical laboratory information system (LIS) that can be easily configured to the needs of your laboratory.

Designed to streamline routine tasks, HCLAB is suitable for medical and diagnostic laboratory disciplines including haematology, coagulation, biochemistry, immunology, urinalysis, microbiology, molecular and anatomical pathology.

HCLAB is highly scalable, making it ideal for any size laboratory, from small dedicated project sites through to complex multi-site healthcare organisations and university hospitals.

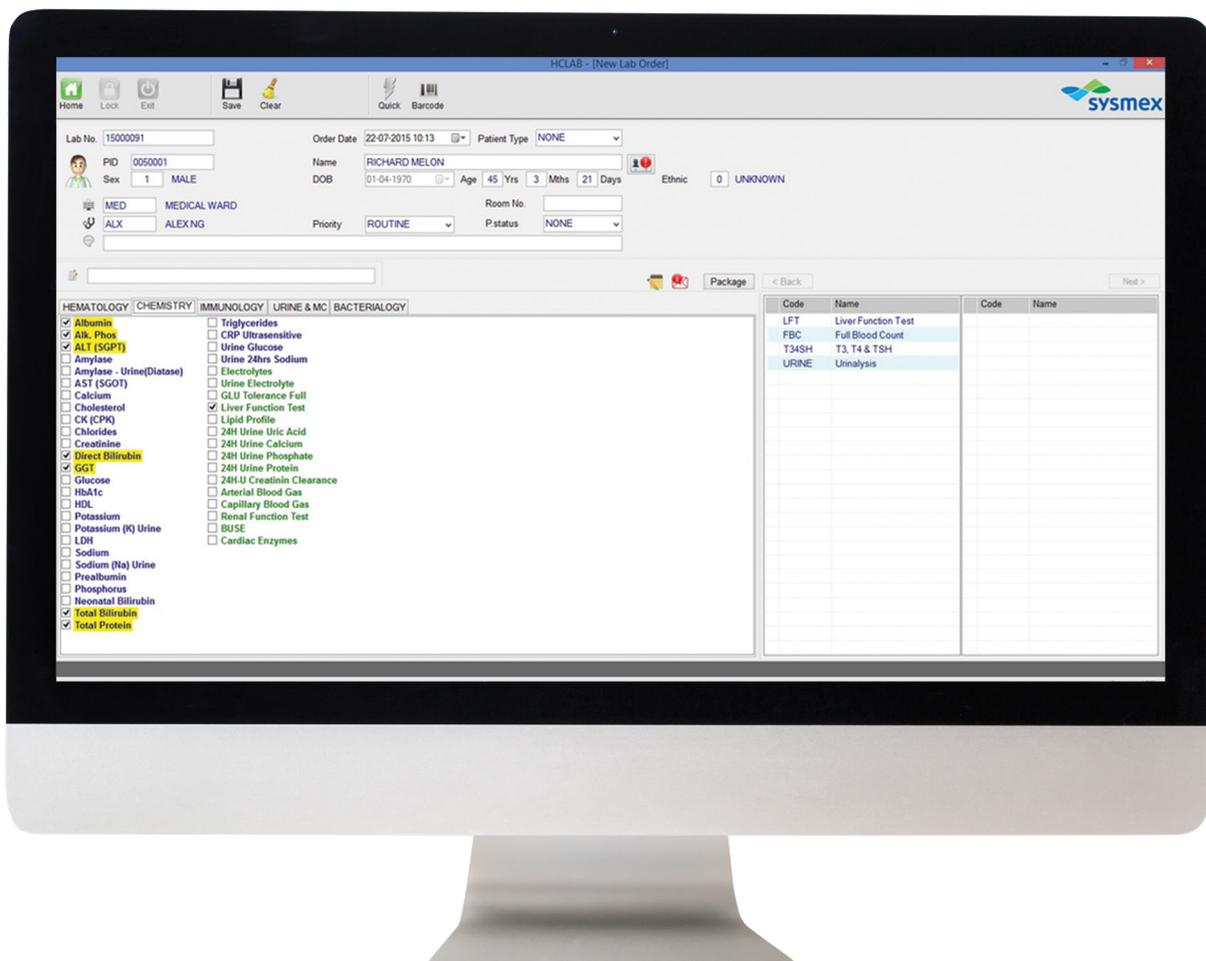
HCLAB ensures end-to-end information management, from initial test request through to results reporting and delivery.

Order Entry

HCLAB's smart client workstation provides web access for clinical staff on the ward or branch hospital to request an order, as well as enabling order entry in the laboratory.

Key features include:

- User-definable screen panel for rapid order entry
- Rapid test selections via 'quick mode' – allows patient data to follow
- Rule-based engine provides decision support at the point-of-order, e.g. additional tests, testing instructions
- Alerts on duplicate orders
- Automatic routing of orders to the correct work area or analyser for testing
- Internal messaging function
- Free text patient comment entry
- Specimen barcode label generation



Specimen Management

HCLAB's specimen check-in module enables your laboratory to:

- Capture the specimen arrival date and time
- Generate specimen barcode labels
- Automatically route specimens to the correct work area or analyser
- Use the “Quick Mode” option to speed up specimen check-in (especially useful in a high-volume specimen environment)
- Decline specimens that are technically unsuitable for processing or testing

HCLAB ensures complete management of specimen archiving and tracking, with an advanced search function to enable quick location of stored sample tubes.

Sent Out Test Management

This module is used to manages and tracks samples sent to external laboratories for testing that is not performed in-house. Includes the ability to generate test order lists, monitor turnaround time and scan the report once received from the external lab into HCLAB for reporting.



Result Management and Processing

HCLAB's robust interfaces enable automatic download of results from analysers for review and authorisation, eliminating transcription errors and ensuring result accuracy.

HCLAB interfaces handle results in multiple formats including numerical, textual and graphical.

The online analyser results module provides a real-time overview of the work being processed by each analyser. It enables the user to access results directly, and to view, validate, add or amend tests and order repeat testing for each analyser connected to the HCLAB workstation.

The rules-based engine supports features such as automatic flagging of abnormal results and automatic reflex testing. Additional features include: panic result notification; manual result entry including rich text capabilities; ability to attach images and PDFs to a result.

The screenshot displays the HCLAB LIS Hematology Workstation interface. The main window shows a patient's test results for a Complete Blood Count (CBC) and differential. The patient information includes SID 150020031, Name TEO LI CHEN, Sex FEMALE, DOB 03-09-1949, Age 55Y, and Occupation OBG LABOUR. The test results are as follows:

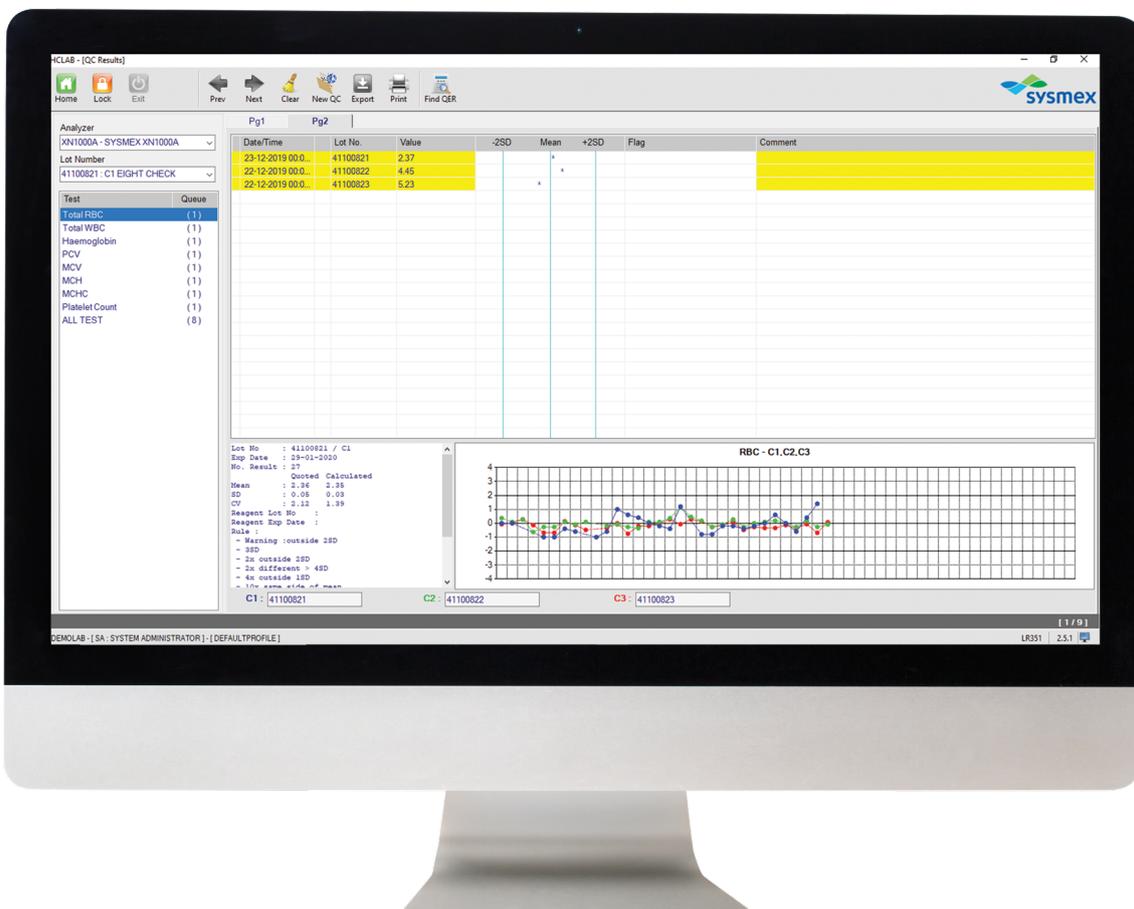
Test Name	Unit	Curr.Result	Prev.Result	Prev.Date	RP	R1	R2	R3	Comment	Unit	Ref. Range
Total WBC	$\times 10^9/L$	H 11.3									4.0 - 11.0
Total RBC	$\times 10^{12}/L$	L 3.3									3.8 - 5.2
Haemoglobin	g/dL	L 10.1									12 - 16
PCV	%	L 31									36 - 46
MCV	fL	96									80 - 100
MCH	pg	31									27 - 34
MCHC	g/dL	32									31 - 36
Platelet Count	$\times 10^9/L$	202									150 - 400
Basophils	%	0									0 - 1
Eosinophils	%	6									1 - 6
Lymphocytes	%	L 11									20 - 40
Monocytes	%	4									4 - 10
Neutrophils	%	H 79									55 - 62

The interface also features a left-hand navigation menu with options like Pending, Partial, Queue, Routine, STAT, Rerun, Unreg, Complete, DIFF, Smear, and TotHost. On the right, there are graphical displays for WBC-BASO, IM, RET, DIFF, PLT-O, and PLT. The bottom status bar shows 'DEMOLAB - SA - SYSTEM ADMINISTRATOR | [DEFAULTPROFILE]' and 'LR251 | 2.5.1'.

Quality Control

To ensure the highest level of results accuracy, HCLAB includes a comprehensive Quality Control (QC) module. QC features include:

- Support for both numerical and textual QC results
- QC graphs for trend analysis
- Multi-level per assay Levey Jennings plot
- Twelve configurable Westgard rules and real-time Westgard checks
- Calculated sigma value using six sigma technologies



Reagent Inventory Management

This specialised area of HCLAB helps the laboratory to maintain sufficient reagents, avoid any wastage due to expired reagents, monitors analyser consumption and calculates cost per test.

Result Enquiry

HCLAB's flexible and intelligent search engine provides quick and easy access to individual patient results with multiple search options available. Utilizing the advanced rule-based technology, HCLAB also provides the ability to query specific patient result combinations across the entire HCLAB database – a useful tool to support lab and clinical data research studies.

Patient Report Presentation and Delivery

HCLAB report management and delivery is fast, accurate and flexible, helping deliver first-rate customer service.

Patient report presentation formats are fully customisable.

Key features include:

- Consolidated and cumulative patient reports
- Numerical and graphical format
- Automatic color-coded flagging of abnormal, validated and edited results

HCLAB offers a range of report delivery options which can be configured to meet individual customer reporting needs, including print, fax, email, secure access via web browser or mobile device, as well as HL7 to third party EHR or clinical system.



Management Tools

Unlocking the data in the LIS is key to supporting the daily management of your laboratory. HCLAB provides a range of administrative and statistical report tools to support management activities.

The HCLAB Dashboard gives laboratory personnel greater insight into their key performance indicators via an eye-catching user interface.

Collating real-time data from multiple sources in the LIS database, the management dashboard provides a graphical summary of important laboratory statistics, including monitoring of daily performance, key metrics and throughput at the laboratory. It also delivers actionable information enabling more informed decisions to be made easily and quickly.



With over 1000 installations and more than 500 analyser interfaces throughout the Asia Pacific region, HCLAB has earned its reputation as a comprehensive and versatile state-of-the-art laboratory information system.



HCLAB Modules

<p>HCLAB Microbiology</p>	<p>Paperless solution for processing micro requests through the HCLAB LIS analyser interfaces, enabling electronic data flows and eliminating transcription errors and saving time.</p> <p>Intuitive electronic worksheets eliminate the need for paper documentation.</p> <p>Simplifies result and report management.</p>
<p>HCLAB AP</p>	<p>Paperless electronic workflow management system.</p> <p>Streamlines workflow and processes throughout the Anatomical Pathology laboratory.</p> <p>Significantly improves throughput in the AP laboratory.</p>
<p>HCLAB Blood Bank</p>	<p>Flexible electronic data management for blood banks.</p> <p>Allows for efficient and reliable blood product management.</p>
<p>HCLAB WAM</p>	<p>Advanced middleware that supports the processes and workflow specific to Sysmex haematology and urinalysis work areas.</p> <p>Applies rules to determine slide review, auto verify test results, real-time delta checking and auto repeat and reflex testing.</p> <p>Intuitive user-friendly GUI provides control of the entire testing process.</p>
<p>Online Results HCLAB Dr Portal HCLAB Ward Enquiry</p>	<p>Healthcare providers (Doctors, specialists, midwives, pharmacists) can securely access all results and diagnostic reports for their patient in one central place, via a website or on a mobile device</p> <p>Provides an intuitive user interface which presents all laboratory results clearly and accurately including abnormal highlighting, cumulative and graph view plus tools to manage results</p> <p>Supports two-factor authentication for easy remote access</p> <p>Patient confidentiality is safeguarded, with the ability to restrict access and maintenance of a full audit trail</p>

HCLAB Technology Features

Smart client application	<p>Delivers the application over a web Hypertext Transfer Protocol (HTTP) connection.</p> <p>Provides automated installation and updates.</p> <p>Has the look and feel of a desktop application.</p>
Multisite configuration	<p>HCLAB Smart Client HTTP connection means that system access is available from any location that has web connectivity. The most important benefit of this feature is that it provides a centralized system enabling multi-lab configuration where each remote site can be configured to support its own operation without having their own LIS server. This also means a lower cost of ownership.</p>
Rules-based engine	<p>Supports customisable rules to aid in decision making for order entry, auto verification of patient results, reflex additional testing, adding automatic comments and result query. An easy to use UI allows administrators to build rules on numerous data points, including test results, instrument flags, delta violations, wards/clinics, clinicians, patients, order priorities, patient clinical info, patient gender, and patient ages.</p>
Standards and interoperability	<p>HCLAB utilises the latest standards including Microsoft technologies and Oracle relational databases.</p> <p>Creates a standard environment providing users with peace of mind, the ability to link with other systems and provision for future expansion.</p> <p>HL7 interface standards for easy integration into both the laboratory and hospital environments.</p> <p>Ensures dynamic, diverse communication between systems at all times.</p>
High Connectivity	<p>An extensive library of over 500 instrument interfaces ensures wide ranging connectivity and support for major clinical instrumentation vendor giving laboratories flexibility.</p> <p>HCLAB conforms to HL7 and ASTM for host interfacing ensuring integration with other medical systems such as EMR / HIS.</p>
Security	<p>Security is enforced at user login level through the use of system IDs and passwords.</p> <p>Access is based on group definition, allowing access to predefined features for that group.</p> <p>All actions are logged, creating a full audit trail which can be easily viewed by the administrator.</p>
Single sign-on	<p>Supports centralised authentication with Lightweight Directory Access Protocol (LDAP).</p>

With over 1000 installations and more than 500 analyser interfaces throughout the Asia Pacific region, HCLAB has earned its reputation as a comprehensive and versatile state-of-the-art laboratory information system.

Designed, developed and supported by Sysmex, HCLAB offers the diagnostic laboratory an extensive breadth of functionality while ensuring rapid installation and regular software updates. Sysmex are committed to the continued development of HCLAB and feed customer requirements into the product development roadmap.

For more information or for a case study on an HCLAB implementation, please contact your local Sysmex representative.

Design and specifications may be subject to change without prior notice due to further product development.

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