Achiever Medical LIMS for Biobanks and Biorepositories
Making Every Sample Matter to Support Research

Tomorrow's discoveries depend on tissue samples collected and stored today. Scientists are constantly trying to source high quality, well annotated tissue samples to help them further their research. An increasing number of national, international, and global biobanks and biorepositories have been established in order to offer scientists the volumes and range of tissue samples needed to carry out their research. Biobanks and biorepositories are as diverse as the samples they're supplying; from generic through to disease-specific.

Often, the value of samples is not understood until much later when they're used. As a result, when it comes to measuring the success of your biobank the volume of samples that are no longer in storage are equally, if not more, important than those currently in store. It's a strong indication that your samples are being located, requested, and used.

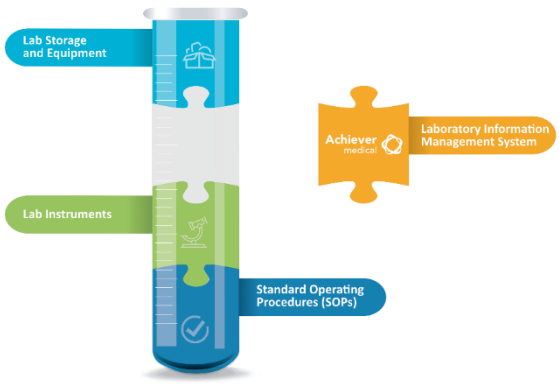
Meeting the demand for diverse and sometimes rare tissue samples coupled with the requirement for accurate, detailed patient information alongside each sample can be challenging – especially when dealing with increasing numbers of samples and their data.

Many biobanks and biorepositories invest in state-of-the-art facilities with automated sample storage systems, liquid handlers and sample identification and handling equipment such as barcode readers and 2D barcoded tubes. However, storing and managing the data required and generated by these systems is often left to spreadsheets and disparate legacy databases. Making it time-consuming and complex to find samples and work with your data.

Benefits of Achiever Medical LIMS

Achiever Medical laboratory information management system (LIMS) could be the missing piece of your biobank and help you *'Make Every Sample Matter'*. Benefits of the LIMS include:

- Increasing efficiency from sample collection and receipt through to request fulfilment and distribution by standardising processes and integrating systems to reduce manual data entry.
- Improving the quality of samples, data, and services with complete traceability and auditing to monitor compliance.
- Optimising resources by understanding sample and service demand and highlighting potential bottlenecks.



- Increasing visibility of samples available for use to further research.

Patient consent and clinical data

Behind a sample is a person. Understanding that person's history such as lifestyle and medical history is invaluable for researchers when sourcing samples. Achiever Medical LIMS enables detailed patient profile, treatment, and disease data to be recorded while protecting personally identifiable data (PII) by encrypting sensitive data 'at rest' and restricting patient data to authorised users only.

In addition, consent details can be captured in the LIMS along with any usage preferences to ensure compliance with a patient's wishes. Plus, the LIMS' consent withdrawal process displays samples linked to the patient – even those dispatched to external researchers or part of a sample pool or Tissue Microarray (TMA) – enabling you to manage them in line with your standard operating procedures (SOPs).

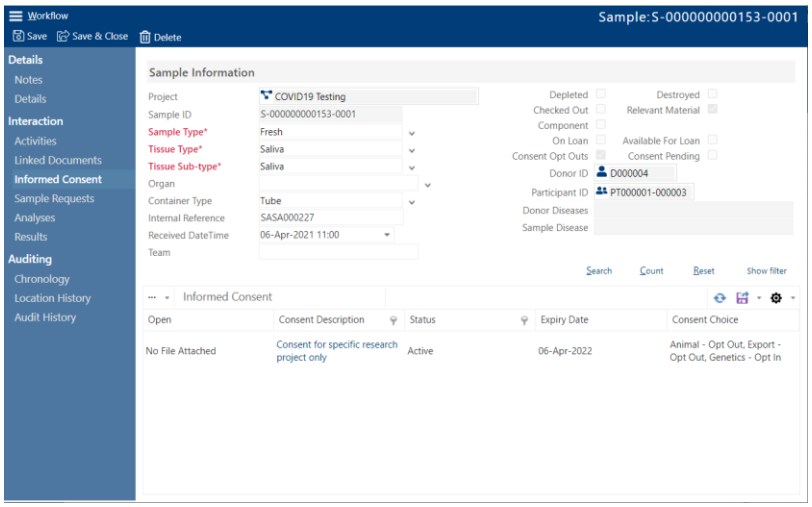


Figure 1: Achiever Medical LIMS Sample Screen with Consent Options

Sample accessioning and storage

Whether you're manually entering a single sample or bulk importing data from Excel or a CSV file Achiever Medical LIMS enables you to capture complex sample data consistently. The LIMS' data management capabilities make it much quicker and easier for you to search your data as well as analyse by formatting information as you enter it, prompting for mandatory information, or providing options to select from to ensure your data is recorded in a standardised way.

Using the LIMS' multi-hierarchical storage structure you can mirror your location format, irrespective of number of shelves and racks or whether ambient temperature locations, freezers or dewars. What's more, the graphical display enables you to visualise your sample's location when placing or removing it as well as check remaining capacity.

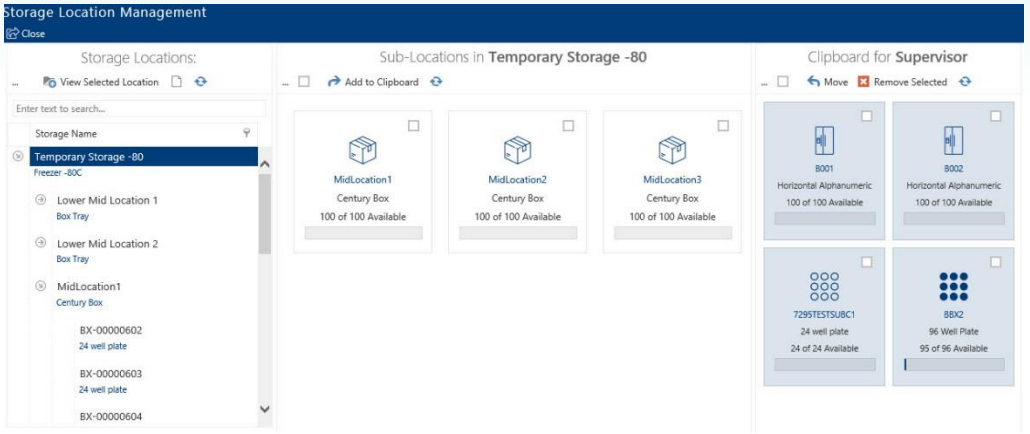


Figure 2: Achiever Medical LIMS Storage Location Visualisation

Analysing samples and integrating with instruments

When it comes to processing, analysing, or conducting experiments on your samples you could be working with a number of instruments and devices from which you may be expecting a variety of outcomes including updated sample properties, newly created aliquots and derivatives, or an output file containing results data.

In Achiever Medical LIMS you can define your lab workflows and track outcomes. The LIMS integrates with rack scanners, instruments, and sample stores through its API which supports Web Services as well as batch file transfer using Secure File Transfer Protocols (SFTP). In addition, real-time data from your existing applications can be viewed within the LIMS using its multi-data source dashboards and screens. Also, you can link any output files in the LIMS.

Whenever sample aliquots or derivatives are created the LIMS maintains a complete genealogy for traceability.

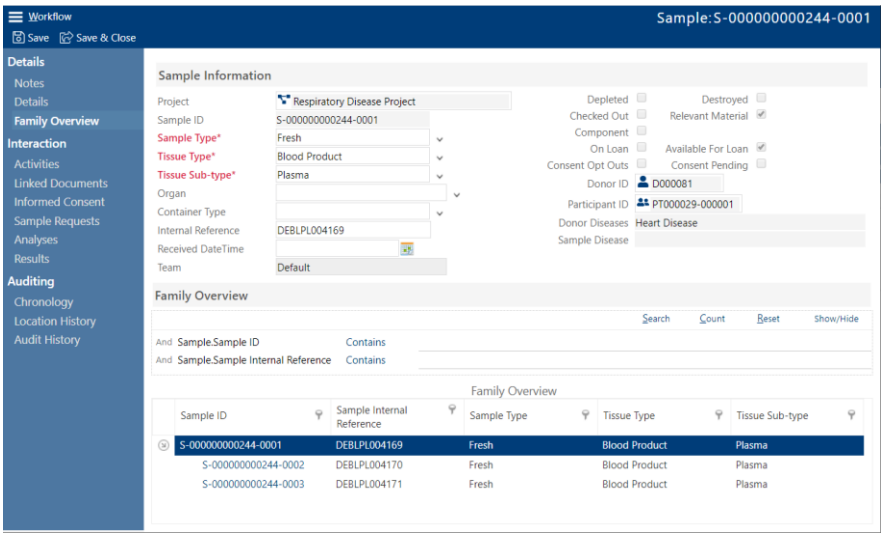


Figure 3:Achiever Medical LIMS Sample with Genealogy

Request management

For your biobank to be successful your samples have to be searchable, requested and used by researchers. Achiever Medical LIMS' researcher portal and in-built applications process streamline the sample search and request process for both your internal and external collaborators. You decide on the samples that are available for use and publicise these on the portal where authorised collaborators can source and request samples of interest using patient, disease, and sample profile criteria to refine their search.

An application approval process tracks the outcome of requests and provides immediate feedback to the requester. The LIMS' dispatch workflows monitor any shipments including tracking receipt of samples and raising queries for any potentially missing samples.

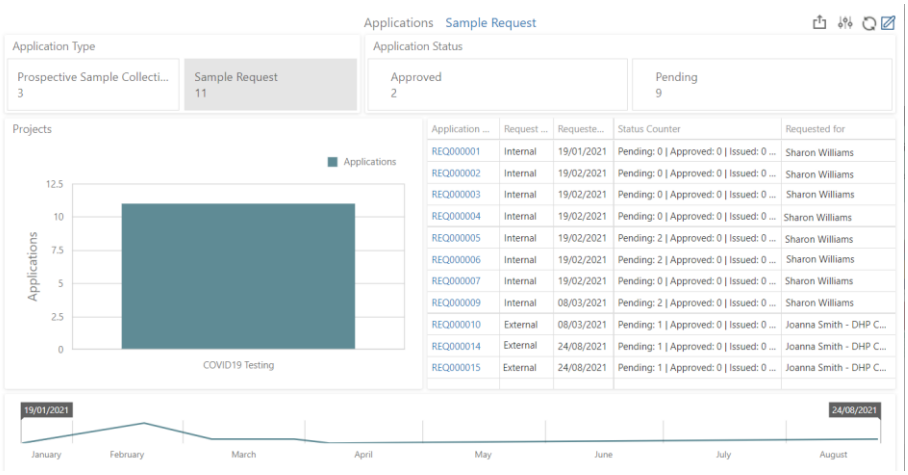


Figure 4: Achiever Medical LIMS Sample Request Dashboard

Prospective Collection requests can also be logged providing you with vital feedback on what samples are of interest to researchers.

In addition, Achiever Medical LIMS integrates with UKCRC Online Tissue Directory to support biobanks to further publicise their sample holdings to researchers.

Auditing and compliance

When sharing samples that underpin research both you and researchers want to be confident that the samples have been collected, stored, and processed appropriately. The slightest inaccuracies or deviation can impact a sample's viability and any resulting findings. In Achiever Medical LIMS you can capture details about how, when and under what conditions the sample was collected, stored, and processed.

As standard the LIMS automatically captures when a record was created and last changed and by whom as well as sample depletion or destroyed chronology and reason details. In addition, the LIMS automatically tracks sample activities and events such as whenever it's checked in or out, split to create aliquots, or linked to an analysis or process.

Further, the LIMS provides a snapshot of sample and patient data at points in time to view changes made to the record from when it was first created in the system to its current state.

You can also conduct your own internal sample and storage location audits. The LIMS randomly assigns samples and locations to check and enables you to record your findings. Corrective and preventative actions can be raised and tracked to ensure any issues and non-compliances are captured and addressed accordingly.

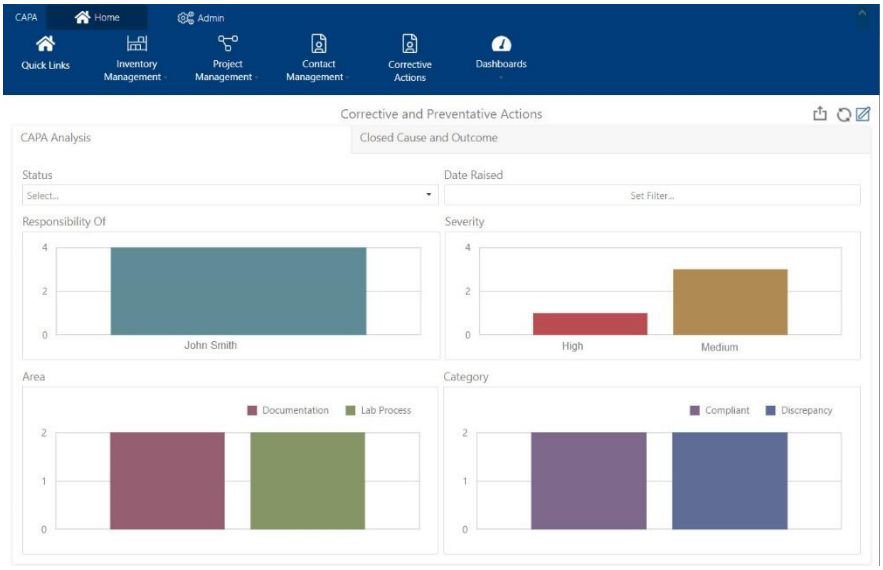


Figure 5: Achiever Medical LIMS CAPA Dashboard

Progress and reporting

Your biobank is continuously adapting to improve its services and products for suppliers, researchers, and collaborators. Achiever Medical LIMS data visualisations and dashboards deliver business intelligence into how your biobank is performing; helping you make more informed decisions and providing early notification of potential issues so you can take action to minimise impact.

The LIMS provides a library of integrated dashboards that have been designed to deliver insight to drive change and bring benefits to your biobank from day one. Each dashboard has been carefully crafted to display information about your team, processes, and samples so you can see at a glance how your biobank is performing and where any adjustments need to be made. You can see the impact of any changes you make in real-time in the latest dashboard figures.

The dashboard editor's simple user interface enables you to create instant analytics to bring your data to life and make it work for you. Achiever Medical LIMS dashboards help you to:

- Drive decision-making by identifying trends and delivering real-time insights.
- Empower users to create instant analytics and reduce pressure on system administrators and IT.
- Deliver both static and interactive business intelligence dashboards across your biobank.
- Create new dashboards without code using the 'point-and-click' query builder and control access to the dashboard editor and dashboards through role permissions.
- Secure data by automatically honouring permissions and security settings.

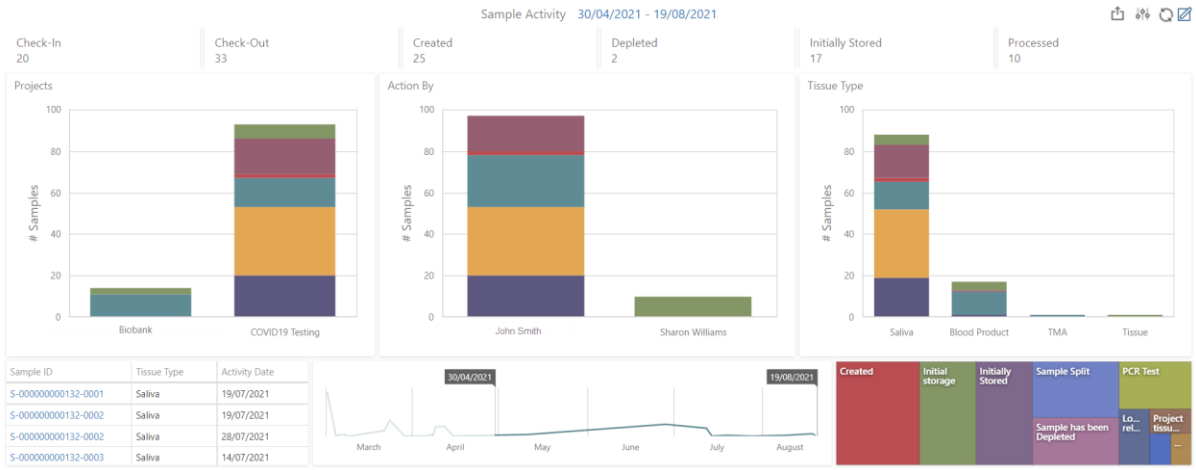


Figure 6: Achiever Medical LIMS Sample Activity Dashboard

Achiever Medical LIMS supporting biobanks and biorepositories to 'Make Every Sample Matter'

For over 20 years Interactive Software Limited has been helping life science organisations implement successful software solutions that transform the way they work and deliver greater insight into their data. Achiever Medical Laboratory Information Management System (LIMS) is a modern, configurable web-based solution that centralises lab data and supports pre-clinical, clinical research, academic research and biorepository processes and compliance needs. Managing all sample life-cycle events, the LIMS gives complete traceability of all sample activities providing evidence for compliance and quality assurance.

Get in touch to learn more about how Achiever Medical LIMS can transform your biobank:

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Or visit www.interactivesoftware.co.uk to learn more.