

Revolutionising Pathology Sample Tracking with Healix Limited





LEADING THE WAY IN REAL-TIME SAMPLE VISIBILITY

INTRODUCTION

BinaryMed's origins trace back to BinaryBeer, our sister company that pioneered IoT tracking for draught beer kegs. Our transition into the pathology space began when Healius approached us to explore whether our technology could be adapted for monitoring the transport of pathology samples across local and regional networks. They were particularly interested in our light sensor technology, which could detect when shipping containers were opened. This pivotal request marked the beginning of BinaryMed, reshaping how pathology labs monitor and safeguard their samples in transit.

ABOUT HEALIUS

Healius is one of Australia's leading pathology providers, operating an extensive network of laboratories and collection centres nationwide under the brands of QML Pathology, Lavery Pathology, Dorevitch Pathology, TML Pathology, Abbott Pathology and Western Diagnostic Pathology. As a provider of critical diagnostic services supporting health professionals and patients across the country, Healius is committed to clinical excellence and innovation. In their pursuit to lead the industry, Healius sought new ways to increase transparency and control across their sample transport network.

THE PILOT PROGRAM: AT A GLANCE



SCOPE AND ROLLOUT

The pilot launched at Lavery Pathology's North Ryde laboratory with 20 Cicada trackers. Following initial success, the program expanded.

EXPANDED TO:

-  Metro sites across New South Wales
-  Regional New South Wales labs
-  QML Pathology (Queensland)
-  Western Diagnostic Pathology (Western Australia)

CHALLENGES

Before partnering with BinaryMed, Healius tracked only ~20% of its transport fleet, relying on a manual iButton system.



20% of transport fleet tracked



No real-time insight



Heavy reliance on manual processes



Goal: Become an industry leader in sample transport visibility

WHERE IT STANDS TODAY

1000+

Cicada trackers in active use

+100K KM

Covering hundreds of thousands of kilometers annually

Nationwide

Visibility across Healius' pathology network.

THE SOLUTION

BinaryMed implemented the Cicada tracking devices inside the bulk sample transport containers, integrating these with the Binary Cloud to form a sophisticated real-time sample tracking and temperature monitoring system. This system allowed continuous monitoring of sample transport containers, significantly enhancing logistical operations.



THE CICADA

The Cicada is a robust, wireless IoT device engineered for accurate location and condition monitoring. Its design is focused on long-term reliability and longevity.

- Industry-leading battery life
- Proprietary cloud-assisted geolocation
- 5G cellular connectivity
- Accurate tracking even in GPS-limited environments
- Fully automated, no manual scans
- Zero extra infrastructure required



THE BINARY CLOUD

The Binary Cloud platform transforms real-time data collected by Cicada devices into actionable insights through an intuitive web-based platform.

- Live geolocation tracking
- Interactive dashboards
- Automatic trip reports
- Customisable alerts for temperature breaches, route deviations, or delays
- Arrival/departure detection
- SMS/email alerts for incidents
- Remote access to data
- Integration with Healius' LIS System

This eliminated the need for manual data loggers and gave Healius staff live oversight of sample movements and conditions.

TRAINING AND SUPPORT



BinaryMed worked closely with Laverty Pathology's North Ryde lab managers to refine the solution to their real-world needs.

Hands-on support, in-person training, and site visits across multiple states helped ensure a smooth rollout and strong user adoption.

Ongoing feedback directly shaped how the solution evolved in practice.



BinaryMed provides a total system covering pre-analytical and post-analytical parts of Pathology. The software is easy to use and flexible to meet business needs. It allowed us to meet regulatory requirements. Eliminating manual processes and the use of automatic alerts has allowed us to be more efficient. It provides peace of mind by tracking precious samples from the client to the testing site.

David Rankin
Chief Scientist – Microbiology

CHALLENGES OVERCOME



As with any pioneering rollout, practical challenges emerged. Installation methods were initially refined, moving from adhesives to velcro attachments based on staff feedback.

BinaryMed also introduced a calibration and servicing program to ensure the long-term performance of the Cicadas.



The BinaryMed trackers are a great improvement from the thermochrons we used before to track esky temperatures. The webpage for each tracker is intuitive and provides all the information that we require. Great job to the BinaryMed team who are putting in new features to cater to our needs.

Don Manalansan
Laboratory Manager – Barrack Heights

RESULTS AND IMPACT

OPERATIONAL METRICS



99%

FLEET TRACKING COVERAGE

Increased from ~20%.



500+

SAMPLES RECOVERED ANNUALLY

Lost in transit by external logistics partners.



<3 minutes

RESPONSE TIME

Reduced from 2 days.



1 month

MANAGEMENT TIME SAVED

Per year in coordination efforts.



50 000+

DAILY SAMPLE VOLUME

Samples now tracked per day.



Confidence

AND PEACE OF MIND

Across logistics and lab teams.

PATHOLOGY WORKFLOW BENEFITS



Improved compliance & audit readiness.



Early intervention to prevent sample loss or compromise.



Better patient care with timely and accurate diagnostics.



Significant time saved in transport management logistics.



Real-time temperature tracking = improved sample integrity.



Easy location & recovery of in-transit samples.



Faster, data-driven responses to transport disruptions.



Seamless LIS integration for total traceability.

SAFEGUARDING PRECIOUS SAMPLES



NON-INVASIVE PRENATAL TESTING (NIPT)

- First real-world use case
- Time-sensitive genetic screening with narrow window after sample collection
- 500+ samples shipped daily (North Ryde → Melbourne)
- Little to no opportunity for re-testing
- Real-time tracking = samples delivered safely and on-time



TISSUE AND CANCER BIOPSY SAMPLES

- One-time, unique collections (e.g. polyps during day surgery)
- Loss = repeat procedures + diagnosis delays
- Full traceability protects patient care and outcomes and avoids costly re-collection procedures.



When we began looking for a new sample tracking solution, we struggled to find anything purpose-built for our needs. Most systems weren't designed for pathology and didn't provide the visibility we required. BinaryMed's platform stood out immediately, even in its early stages, and we partnered closely with their team to shape it into what it is today. Now, we can track our sample containers in near real time, including their temperature, orientation, and whether they've been opened. It's dramatically improved our confidence in sample security, helped reduce recollections, and allowed us to act quickly when shipments are delayed or misplaced. BinaryMed's responsive, solutions-focused approach has been critical to the success of this project.

Matthew James
Operations Transformation Manager

CONCLUSION

This collaboration underscores the power of thinking outside the box. What began with a technology designed for beer kegs became a transformative solution for pathology labs nationwide. By refusing to be constrained by conventional solutions, BinaryMed and Healius co-created a system that enhances compliance, improves efficiency, and safeguards patient outcomes. It's a story of real-world problems, bold thinking, and the shared pursuit of better healthcare through smarter technology.



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