

Power of Automation In Histopathology **Axlab / CUH**

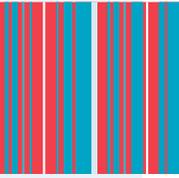
Matt Anderton – Axlab

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Histopathology Clinical Lead – CUH

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Histopathology Laboratory Manager – CUH

YOUR VISION. OUR INSPIRATION

Axlab



WHO WE SERVE



OUR MISSION

'Implementing innovation that matters creating tomorrow's pathology labs' and clinics/ORs.

INNOVATIVE GAME CHANGERS

- 1994 Automatic rotary microtome
- 1996 Faster methods for tissue processing
- 2000 Program for cervical cancer
- 2014 Closed formalin-system for biopsies (BiopSafe)
- 2018 Robotized automated sectioning (AS-410M)
- 2022 Digital scanning & AI
- 2024 Slide Manager

OUR EMPLOYEES

- 12 Back office & Customer Care
- 30 Application, training & sales
- 8 Technicians
- 6 Marketing & Strategic Partnerships
- 5 Axlab Consumables and QA/RA

FOUNDERS

Bodil & Ole Jakobsen (1993)



CEO

Søren Christensen

BOARD

Henrik Krøis (Chairman)
Ragn Gaihede (Owner)
Søren Poulsen
Andreas Hoel

OWNERSHIP

Dena A/S (100%)

HEADQUARTERS



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DIRECT SALES

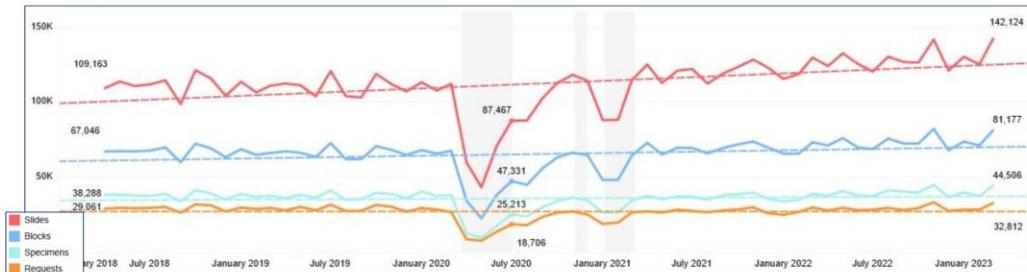
BELGIUM
DENMARK
FINLAND
ICELAND
LUXEMBOURG
NETHERLANDS
NORWAY
SWEDEN
UK
USA



Why Automation?

Requirement to meet NHSE 98% TAT in 10 days

Increased Activity



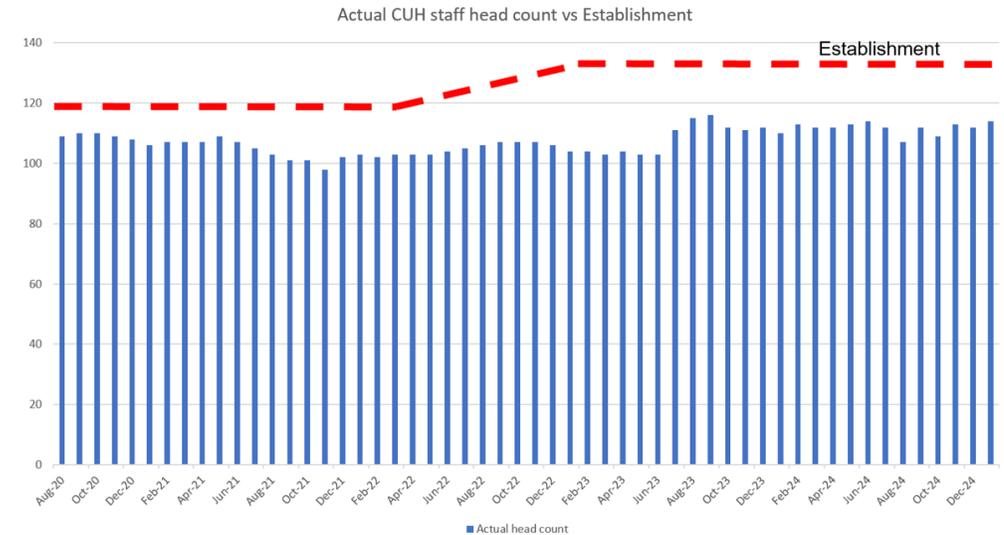
Facts and Figures (change between 2018/19 and 2022/23)

- 20% more slides and 14% more requests.
- 27% more slides produced for each cancer/urgent request.
- Increased activity per 100k population.
- Increase from 1,279 to 30,396 outsourced cases.
- 7% increase in slides between 21/22 and 22/23.

Key Messages

- Volume of work has increased significantly.
- The growth in volume is higher than growth in population.
- Complexity is increasing, with each request generating more work within the laboratory.

Staff & Skill shortages



Why Automation?

(Continued)

Old Process

1920

2020

Biochemistry



Histopathology



Six-Point histopathology Improvement Plan

1. Workforce

- ✓ Nationally funded workforce initiatives are in place and include apprenticeships and advance training and practice opportunities. In addition, the benefits of automation, diagnostics digital capability and digital histopathology (see below) play a significant role to address the workforce gap.
- ✓ Ensure a comprehensive workforce strategy is established across each pathology network that includes recruitment, retention, growing training placed and skill mix initiatives that will collectively reduce gaps in histopathology workforce.

2. Optimisation

- ✓ ICBs have been asked to conduct a review of histopathology optimisation, considering several areas including: appropriate and timely requesting from providers, maximising functional laboratory capacity, effective use of workforce, maximising reporting capacity, improving data for performance monitoring, addressing unwarranted variation, and ensuring patient access to high quality services.
- ✓ Each ICB is expected to have review recommendations ready by July 2023.

3. Estate and equipment upgrades

- ✓ Encouraging local investment to move histopathology labs away from constrained acute trust estates and to upgrade equipment.

4. Lab consolidation

- ✓ As one of the benefits of consolidating pathology services into 27 networks, there are opportunities to consolidate several of the smaller labs within each network either physically or functionally, so that they are leveraging economies of scale to best effect.
- ✓ NHSE is supporting networks to identify and realise opportunities for consolidation, including through forming partnerships with IS providers.

5. Digital pathology, order comms and LIMS

- ✓ Investments speed up workflow, and enhance collaboration between pathologists, even at physically remote sites, allowing better use of spare capacity across a network.
- ✓ Digital pathology also readies histopathology services for AI as the technology rapidly advances. The benefits of extended and flexible working can be further realised through the implementation of home reporting.

6. Automation

- ✓ Historically, an area of low investment, integrated laboratory automation significantly enhances the efficiency and throughput of pathology services, delivering faster test results and improved patient pathways.
- ✓ The reduction of manual, repetitive, time-consuming processes in favour of progressing scientific and service innovation also helps to attract/retain workforce.

Supported by high-quality data



**SAMPLE EXTRACTION/
CLINICAL DATA**



 Commercial Product Widely Deployed

 Commercial Product Limited Deployments

 Prototype

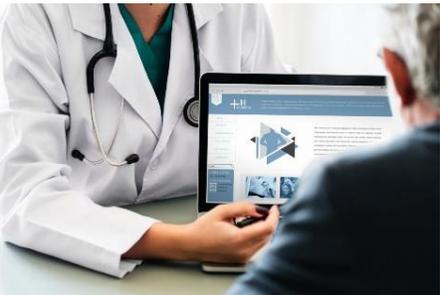
Block Retrieval/
Slide Cutting for NGS/
Cancer Vaccine



Frozen Section/
WGS



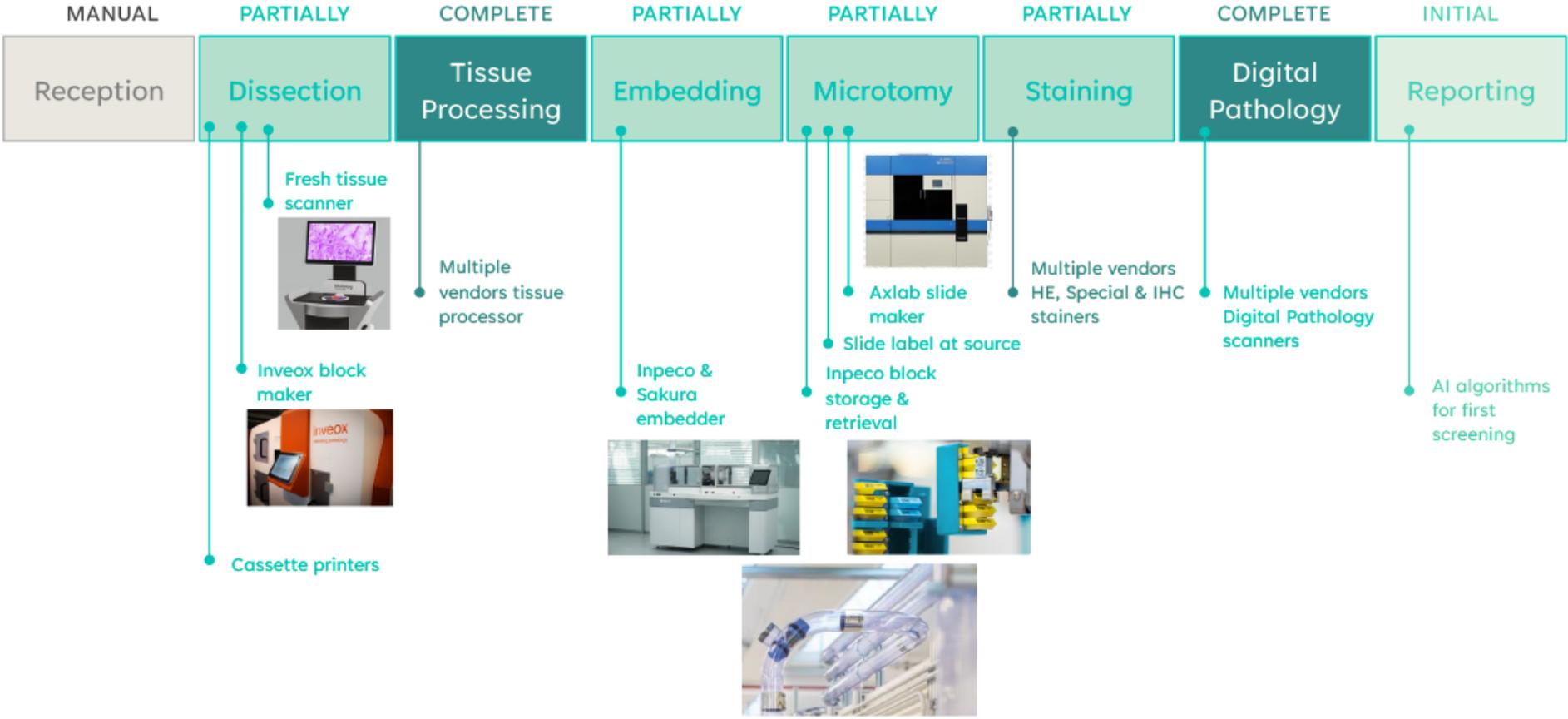
Processing



DIAGNOSIS/TREATMENT



CUH Automation Adoption





AS-410M AutoSectioner

Features

- Ability to section most tissues at set parameters
- Ability to section up to 96 blocks every 4 hours
- Ability to run as a walk-away system
- Increases throughout and standardization of sections

How has **AS-410M** helped at CUH?

1. Elimination of laboratory backlog and reduction on reliance on outsourcing

	May 2024	March 2025
Backlog (More than 7 days in lab)	>10000 blocks	150 blocks
Outsourcing	20% of activity	<5% of activity

About 20% of blocks are currently processed on the **AS-410M** with aim to expand further

– Workload of an average of 800 blocks daily

How has **AS-410M** helped at CUH?

2. Mitigated staff shortages

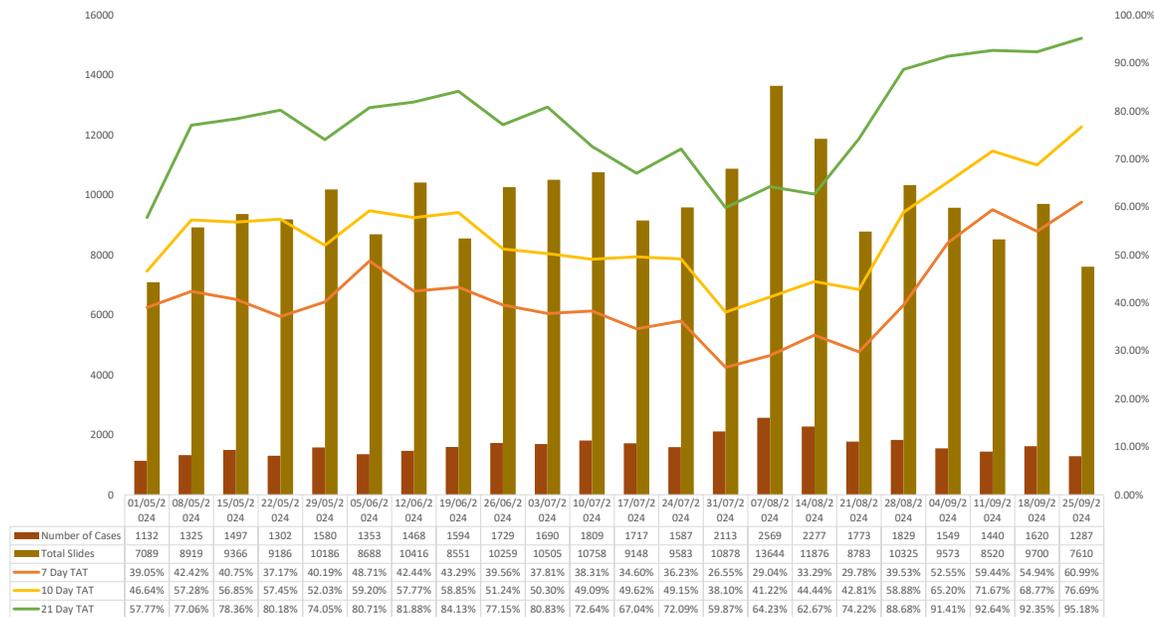
	May 2024	March 2025
Vacancy rate	19%	13%

- Despite staff shortages, additional staffing has not been required to maintain throughput
- Ability to run overnight and weekend, removing bottlenecks
- Savings of 2 FTE made within budget

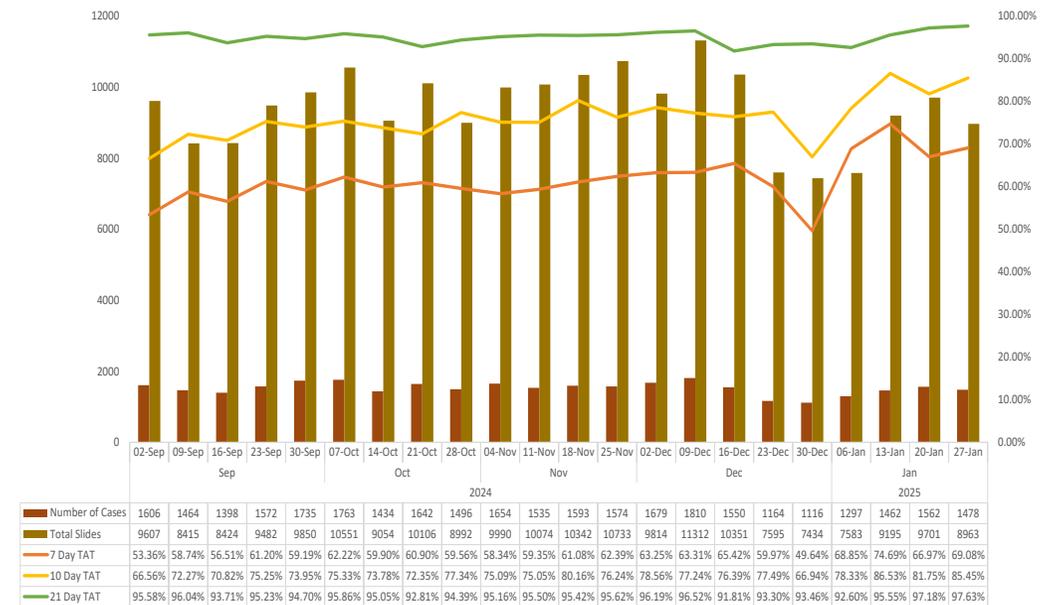
How has AS-410M helped at CUH?

3. Contributed to improved TAT

Histopathology Weekly TAT (May 2024 – September 2025)



Histopathology Weekly TAT (October 2024 – January 2025)

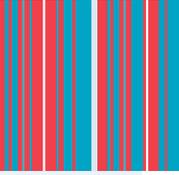


10day TAT improved from an average of 54% in May 2024 to an average of 83% in January 2025

THANK YOU

Use the App
to reach our
PRODUCT PAGE
for more
information!

Axlab



- We will be here rest of the day
– do not hesitate to reach out
- **Axlab** has embarked on a journey to transform histology by implementing the latest innovations – with current installs and projects at multiple sites.