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Point-of-care testing in psychiatry: A real-life case study of successful implementation at the Maudsley Hospital with Professor David Taylor

Innovation in pathology can aid mental health care.

Published: 17 July 2025 **Author:** Wiaam Al-Hasani **Read time:** 8 Mins

Trials into point-of-care testing at the Maudsley Hospital have found significant benefits for mental health patients. College Trainee Advisory Committee representative, Wiaam Al-Hasani, explains more.

If you read the Medicines and Healthcare products Regulatory Agency (MHRA) guidance on locations suitable for implementing point-of-care testing (POCT), psychiatric wards or clinics are notably absent from the long list of examples. In these settings, POCT is typically limited to basic tools like glucometers or ketone meters, used primarily for managing psychiatric patients with comorbid diabetes.

So how did David Taylor, psychiatrist and professor in psychopharmacology, persuade stakeholders to fund POCT devices – not for metabolic crises, but to improve mental health outcomes for psychiatric patients at the Maudsley? And as a psychiatrist, how did he navigate the often complex and time-consuming processes of clinical governance, analytical validation and method comparison that POCT implementation requires?

As an academic, Professor Taylor, together with his team, meticulously documented their journey in peer-reviewed publications, which now serve as a valuable reference for this article. This journey was strictly adherent to MHRA regulations for POCT.

A clear clinical need for POCT

Clozapine is the most effective antipsychotic for treating schizophrenia, but its use is limited by the risk of serious side effects, such as life-threatening agranulocytosis. Because of this, patients on clozapine must undergo regular full blood count (FBC) monitoring, typically using venous blood analysed on-site or in central laboratories. This is especially frequent during the early phase of treatment, when weekly blood tests are required.

The burden of regular venous sampling is often cited as a barrier to starting or continuing clozapine, with clinicians often assuming patients may refuse treatment due to the monitoring demands. However, POCT technologies now allow FBCs to be performed using capillary blood from a simple finger prick – an approach shown to be both effective and preferred by patients. Professor Taylor argued that this innovation might significantly improve both clozapine uptake and adherence among his patients, eventually leading to better management of schizophrenia.

Business case cost analysis

POCT is inherently more expensive than traditional laboratory testing. The costs include the capital investment for the POCT device itself, fixed costs for consumables and quality control materials, and professional costs such as staff training and indemnity cover.

For context, a single POCT FBC test costs over £40, compared to less than £1 for a laboratory-based FBC. Therefore, for any POCT business case to be successful, the justification for cost-effectiveness must be robust and clearly demonstrated. Professor Taylor's team was given a budget to allow for FBC monitoring in 10 patients on clozapine.

POCT device selection

The accuracy and precision of results, the robustness of the device and the comparability of POCT capillary samples to both POCT venous samples and standard laboratory results were evaluated. To do this, over 200 paired capillary and venous samples were collected from patients on clozapine, and analysed on both POCT devices and laboratory analysers. The sample set included a broad range of white blood cell (WBC) and neutrophil counts, with particular focus on values near the clinical thresholds of concern: WBC $< 3.5 \times 10^9$/L and neutrophils $< 1.5 \times 10^9$/L.

Evaluating method comparison results

The team found negligible differences between POCT venous and capillary results, which gave them confidence that finger prick sampling could feasibly replace venous blood draws for patients on clozapine. When comparing POCT results to standard laboratory values, WBC and neutrophil counts measured by the POCT device were, on average, 1.1×10^9/L and 0.25×10^9/L lower, respectively. Despite this, the difference was considered clinically acceptable based on the monitoring thresholds.

Most importantly, the POCT device demonstrated high sensitivity and a 100% negative predictive value for agranulocytosis, making it a safe option for routine monitoring. The false positive rate was around 4%, indicating a specificity above 89% – meaning the majority of patients could be confidently reassured about their blood results using a simple finger prick test. The team also has a clear pathway about what to do when results are below the critical limit, and staff have a clear plan for retesting/analysing samples in the laboratory.

IT design and device connectivity

The results are transferred instantaneously from the POCT device to the pharmacy system, where the pharmacist will only dispense clozapine if the results are reassuring. The transfer process does not include manual entry, minimising human transcription errors.

An effective multidisciplinary POCT committee

Professor Taylor's team included laboratory scientists, nurses, phlebotomists, IT support staff and pharmacists. Each member brought their own expertise, and they all worked closely together to oversee service delivery and troubleshoot issues as they arose. This collaborative approach ensured that both clinical and technical challenges were addressed promptly, helping the service run smoothly and safely.

The real impact on patient care and clinical practice

Although the original business case was designed for just 10 patients, the service now supports over 40 patients with point-of-care monitoring. As one of the doctors currently involved in the community clozapine titration service at the Maudsley, I've seen first-hand how POCT has enabled patients who might otherwise have declined clozapine due to blood monitoring requirements to access this life-changing treatment.

Clinicians no longer need to wait for laboratory results. Instead, they can make timely dosing decisions, streamlining care and reducing patient waiting times. Building on this success, the team has also expanded POCT to include therapeutic drug monitoring for clozapine and aripiprazole, further improving personalised treatment and safety.

However, in the current financial climate – where many hospitals are facing severe resource constraints – not everyone who might benefit from POCT can access it. Professor Taylor and the team now find themselves once again making the case to stakeholders for additional support and funding to expand this valuable service.

Finally, in a healthcare landscape where mental health treatments often face practical challenges, the Maudsley's experience with POCT demonstrates a practical way forward.

This change isn't just about faster test results or simpler blood draws; it's about making important treatments more accessible and easier to take. The Maudsley's approach highlights that progress in medicine also comes from improving how care is delivered – bringing it closer to patients and integrating it smoothly into everyday practice. As this service continues to grow, it offers a valuable example of how pathology innovation can support better mental health care.

Meet the author

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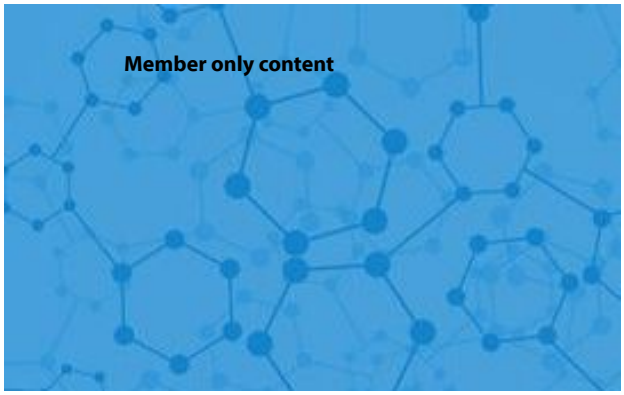

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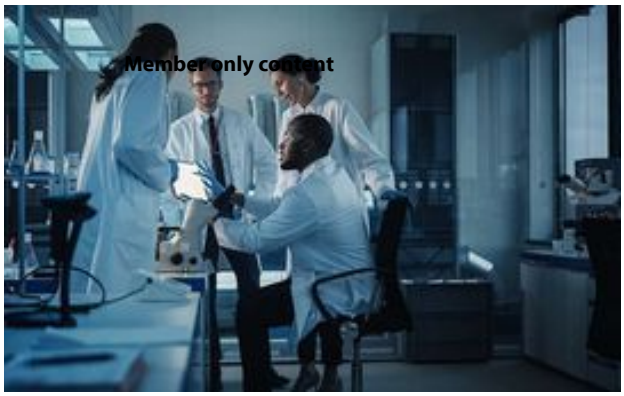

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