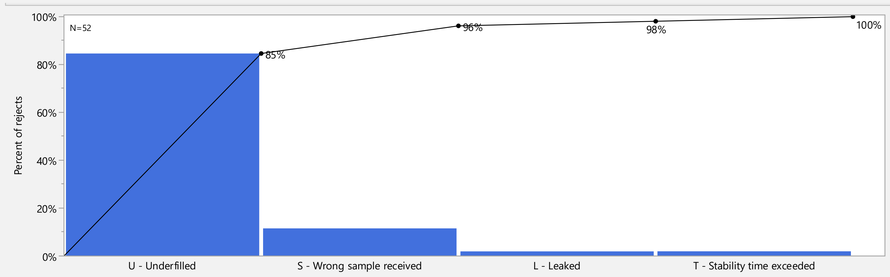


Urine culture & Microscopy rejections in ED department: A Quality Improvement project

1 Background

The first urine sample collected in the Emergency Department (ED) is highly valuable, as repeat sampling decreases the probability of organism isolation after commencing empirical antibiotics.

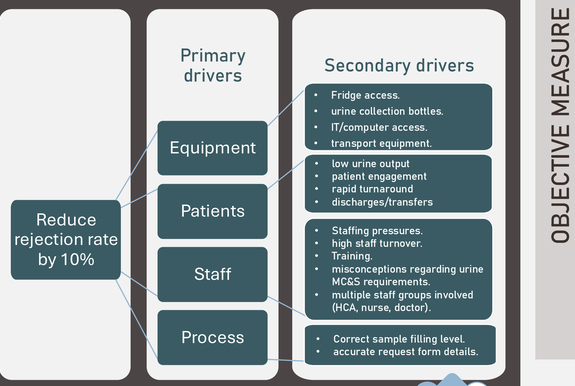
Urine culture and microscopy (UCM) samples comprised 50% of total rejections in Altnagelvin hospital in November 2025, with the ED ward being the most significant source for sample rejection (27% UCM rejection rate). Analysis of ED UCM rejection causes reveals that underfilling is the highest offender, comprising 85% of rejections.



Rejection reasons for urine culture and microscopy in ED Ward

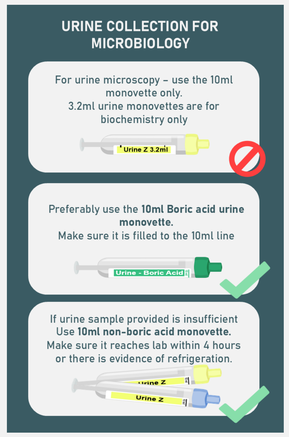
2 Aim

- **S** Reducing rejections in urine samples sent for microscopy in ED
- **M** Achieve a **10% reduction** in rejection rates
- **A** Through staff education, posters, labels and proper sampling technique demonstration
- **R** Improves diagnostic accuracy, reduces delays and workload on staff, cuts on cost/time and enhances patient care. Reduces environmental impact
- **T** Reducing rejections in February 2026 and March 2026 and sustaining change



3 Methods

- Data from microbiology lab was collected retrospectively over January 2026 and November 2025.
- Discussion was held with the project lead (Dr. Ismail Fawaz, infectious disease consultant) and the biomedical lead (Mr. Martin Robinson) around correct collection technique, common errors and laboratory expectations.
- Intervention centred on providing a teaching session targeting all rejection categories in early February 2026, holding conversations with ED HCAs, the creation of a poster with visual instructions, and the clear labelling of monovette containers aided by ED Practice Educators Mrs. Rachel watterson and Mrs Sharon Fox who facilitated all teaching sessions.
- A second cycle was commenced in late April, with a teaching session provided by the biomedical lead directly continuing communication and education.





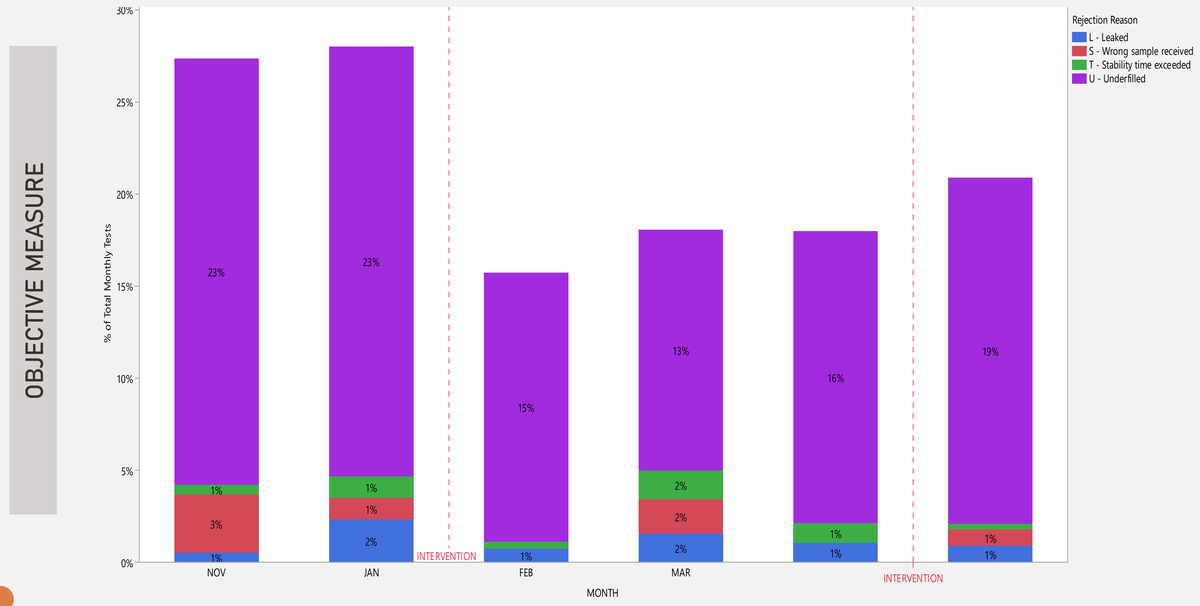


4 Outcome

Overall results summarized below:

- Large reduction of overall rejection rate from **28.0%** in Jan (72 rejections out of 257 samples requested) to **15.7%** in Feb (42 rejections out of 267 samples requested).
- Reduction from Jan to Feb observed across the board for all rejection categories, with “Wrong Sample Type” category disappearing completely in January.
- Overall rejection rate in March (18.07%) slightly higher than February (15.73% - immediately after intervention)
- However, rejection rate remains well below that before intervention (28.02% in January)
- Meanwhile, underfilling rate continues to sharply decline between February and March, indicating intervention was most effective at addressing this category.

Percentage of rejections of UCM by reasons in ED Ward by months



5 Conclusion

The project emphasized the importance of cross-departmental communication between the doctors, laboratory lead, nurses and practice educators to ensure team synergy. Moreover, the utility of concise visual guidelines for the nursing team was highlighted, whose feedback indicated they either were not aware of the microbiology manual available on the hospital intranet, or found it too verbose. The authors are currently scoping the expansion of this approach to other wards and other microbiology sample types, as well as incorporating the created teaching materials into the regular training of the nursing team and into other QI projects targeting ED.

Project Lead: Dr. Ismail Fawaz, Infectious disease consultant
Team members: Nour Omera (Fy1) , Emily Ong(SHO), Mekha Ann Saji(Fy1), Claire whiteside(Fy1), Ellen Mcauley(Fy1), Ciara McCormack (fy1)
Special thanks to Mrs Rachael Watterson and Mrs Sharon Fox (Practice educators in ED)

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