Automated Urinalysis (UA)

Initiative Type

Service Improvement

Status

Deliver

Added

24 February 2022

Last updated

28 July 2022

URL

https://clinicalexcellence.qld.gov.au/improvement-exchange/automated-urinalysis-ua

Summary

Automated Urinalysis (UA) promotes streamlined testing of urine samples collected in the Emergency Department (ED). By standardising process and reducing unnecessary microscopy, culture and sensitivity (M/C/S) testing of normal samples, it reduces costs and releases clinical time. The initiative incorporates some or all of the following:

- automating upload of urinalysis results to Auslab and ieMR
- robust process to ensure that normal urine samples are not routinely progressed for microscopy, culture and sensitivity
- relocation of Ward Test Urine (WTU) machines to onsite pathology laboratories.

Key dates

Jul 2021

Implementation sites

Offered to all Queensland Health Emergency Departments

Partnerships

Queensland Emergency Department Strategic Advisory Panel; Pathology Queensland

Key Contacts

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Aim

To standardise the urinalysis process and reduce the proportion of samples progressing unnecessarily to culture and sensitivity, thereby reducing costs, and releasing clinical time.

Benefits

- reduced costs due to reduction in urine samples undergoing M/C/S
- faster clinical decision making, positively impacting patient length of stay(LOS) and patient flow
- comprehensive documentation of results
- consistent maintenance of Ward Test Urine (WTU) analysers

Background

Automated UA was introduced to PROV-ED by ED Senior Staff Specialist, Dr Sean Lawrence and Chief Scientist Chemical Pathology, Goce Dimeski from the Princess Alexandra Hospital (PAH). It was implemented at the PA Hospital more than 10 years ago via collaboration between the pathology and emergency departments in response to several issues, including inconsistent maintenance of analysers, and unreliable recording and variable interpretation of results (including further testing of normal samples).
Under PROV-ED, automated UA has been endorsed at state-wide level by Pathology Queensland (Chemical Pathology and Microbiology) and by the Queensland Emergency Department Strategic Advisory Panel (QEDSAP).

Solutions Implemented

- WTU analysers are relocated from EDs to onsite 24/7 pathology laboratories
- samples are analysed by pathology and results automatically upload to Auslab (and ieMR) via middleware (POCcelerator)
- normal samples are not routinely progressed to microbiology for M/C/S but labelled and stored for seven days*
- analysers are correctly and consistently maintained by pathology laboratories
- hybrid option for smaller facilities to manage the automated process from the ED.

*Can be over-ridden by clinical decision and excludes infants younger than 3 months (aligning with Queensland Paediatric Emergency Guidelines)

Evaluation and Results

This initiative will be evaluated by

- number of facilities that implement
- pre- vs post-implementation comparison of M/C/S testing and associated cost analysis.

References

Can urine dipstick testing for urinary tract infection at point of care reduce laboratory workload? H D Patel, S A Livsey, R A Swann, S S Bukhari. J Clin Pathol 2005;58:951–954. doi: 10.1136/jcp.2004.025429

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