Implementation of a rapid *Candidozyma auris* PCR assay for patient screening during a prolonged outbreak

P3277 06c. Diagnostic mycology (incl traditional, molecular and other methods)

Simon D Goldenberg[1], Desiree Prossomariti[1], Aslan Chohan[2], Morloh Kabbia[1], Steve Smith[2], Paul Randall[1], Jonathan A Otter[1]

[1] Guy's & St Thomas' NHS Foundation Trust, London, UK. [2] Synnovis Analytics, London, UK.

Background:

Candidozyma auris is a multidrug-resistant WHO designated critical priority pathogen since 2022 and can result in colonisation as well as invasive infections. Spread between patients usually occurs indirectly via contaminated equipment and the environment, where it can persist for prolonged periods of time and is relatively resistant to many cleaning agents.

Since late 2023 our hospitals have experienced a protracted and ongoing outbreak, primarily in intensive care, cardiac and vascular wards. This is the largest outbreak of *C. auris* in the UK with around 250 patients affected to date. Hospital outbreaks are costly and difficult to control, often resulting in significant disruption to patient care.

Several international guidelines recommend screening patients with risk factors for colonisation, usually by testing a combination of nose, axilla and groin swabs. This is generally reliant on chromogenic culture which can take up to 48-72 hours. Delays in the recognition of cases can result in transmission of *C. auris* among patients, therefore rapid identification is critical to allow implementation of interventions to limit spread.

We introduced a rapid (1 hour) PCR based screening method (Bosch Vivalytic), comparing results and turnaround time directly with chromogenic culture.

Bosch Vivalytic PCR platform

Methods:

In July 2025 we introduced the Bosch Vivalytic *C. auris* test: a CE- marked, cartridge-based automated PCR test with a turnaround of approximately 1 hour. This assay targets the ITS2 gene and also includes a human control.

All patients admitted to 6 wards and 4 ICUs were screened using a combined nose, axilla and groin swab (liquid Amies). The same swab was cultured on chromogenic agar (BioMerieux ChromID) with suspect colonies confirmed using MALDI-TOF. Both tests were performed at an on-site laboratory. Patients were re-screened at least weekly and on discharge from the hospital, resulting in several patients having multiple sequential swabs.

Results:

A total of 5547 samples were obtained between July and November 2025. 437 (7.9%) gave invalid results on PCR and were excluded (all but 2 of these were culture negative). It is not clear what the cause of this relatively high invalid rate is but could be the result of inadequately taken samples (failure to detect internal human control). It is important that those obtaining the samples are well trained in the correct sampling procedure. Alternatively, the invalids could be a result of PCR inhibition.

Results for the remaining 5110 paired samples are summarised below.

6 samples from 4 patients were PCR-/culture+; 3 of these patients had subsequent samples that were PCR positive, one patient had multiple samples that remained PCR and culture negative.

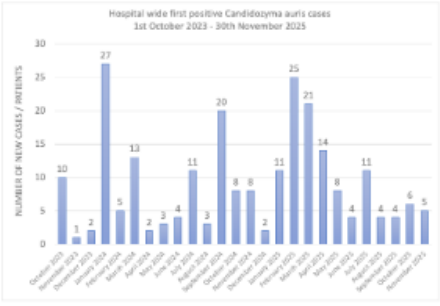
15 samples from 11 patients were PCR+/Culture-; 8 of these patients had other previous or subsequent samples that were culture positive.

The mean and median turnaround times (from obtaining the sample to result being reported) were 76 and 70 hours for culture and 37 and 29 hours for PCR.

Discrepant samples were not available for resolution using an alternative assay, the performance characteristics reported below assumes chromogenic culture as gold standard.

		Culture		
		Positive	Negative	Total
Rapid PCR	Positive	**84**	**15**	99
	Negative	**6**	**5005**	5011
	Total	90	5020	5110

		95% Confidence Interval
Sensitivity	93.33%	86.05-97.51
Specificity	99.7%	99.51-99.83
Positive Predictive Value	84.85%	77.11-90.30
Negative Predictive Value	99.88%	99.74-99.94
Accuracy	99.59%	99.37-99.75



Conclusions:

Rapid PCR had similar performance characteristics to chromogenic culture, however both methods failed to detect some patients, with variable reversion of results (positive to negative and negative to positive) when sampled longitudinally. This highlights the importance of regular repeated screening for as long as there is elevated risk. The PCR provided a result at least twice as fast as culture-based methods, which would facilitate faster implementation of infection prevention interventions.

The rapid test (in combination with a package of other measures) has allowed better control of the current outbreak allowing infection control measures to be implemented without delay. This includes a reduction in the number of patients exposed with less resource spent on contact tracing and is a significant benefit where isolation facilities are scarce.

synnovis A SYNLAB pathology partnership

NHS Guy's and St Thomas' NHS Foundation Trust

Congress of the European Society of Clinical Microbiology and Infectious Diseases

ESCMID Global