

Innovation Brief

Pathology – iFAST - Rapid antimicrobial susceptibility testing

Summary

Disruptive Innovation

This briefing introduces a disruptive innovation newly available via NHS Supply Chain: iFAST.

Reviewed by clinical specialists and supported by key stakeholders, this device offers a novel approach to rapid antimicrobial susceptibility testing directly from positive blood cultures or isolated bacterial colonies.

Introduction

This document is intended to inform clinical stakeholders and procurement teams about innovative products that have undergone a clinical review and are now accessible through NHS Supply Chain.

Products featured in this brief may be classified as:

- Disruptive Innovations
 - A disruptive innovation is novel.
 - It should offer improvements compared to the existing provision of care.
 - The proposed format should not exist elsewhere (either within or beyond the health and care sector)

Note: While robust evidence or validated savings may not yet be available, early data and clinical insights support the potential for patient and system-level improvements.

Departments / stakeholders for engagement

- Microbiology and Pathology teams
- Sepsis teams
- Antimicrobial Stewardship teams
- NHS procurement teams

Opportunity

iFAST presents an opportunity to support optimal patient care through:

- Reduced reliance on broad-spectrum antibiotics for suspected sepsis by enabling earlier transition to targeted antimicrobial therapy following clinical review.
- Rapid and accurate diagnosis, enabling timely initiation and optimisation of antimicrobial therapy, reducing unnecessary antibiotic exposure and supporting shorter hospital stays.
- Earlier detection of antimicrobial resistance, facilitating prompt switching to appropriate antimicrobial therapy.
- Enhanced antimicrobial stewardship through more informed antibiotic selection, helping to reduce the emergence and spread of antimicrobial resistance.
- Reduced delays and inefficiencies within the diagnostic pathway, supporting earlier clinical decision-making and improved patient outcomes.

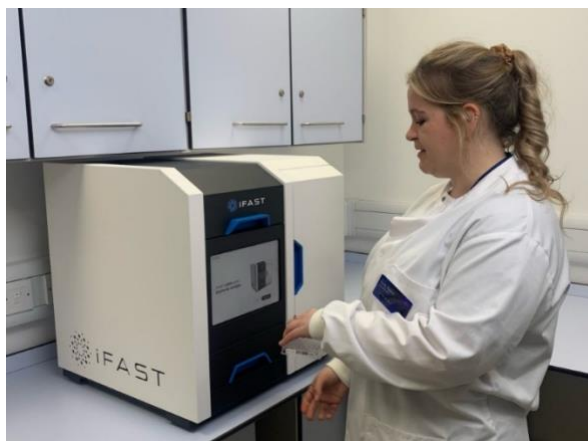
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Product overview

iFAST is an automated, rapid antimicrobial susceptibility test (AST) system that uses microfluidic impedance cytometry to deliver phenotypic antimicrobial susceptibility results in under 3 hours directly from positive blood cultures or isolated bacterial colonies. By comparison, conventional AST methods typically require 24-48 hours to generate results.

iFAST provides qualitative AST results for 16 antibiotics, including the most commonly used first-line agents for Gram-negative bloodstream infections. In addition, minimum inhibitory concentration (MIC) values are reported for meropenem, piperacillin-tazobactam and amikacin. The system automatically applies EUCAST interpretative criteria and expert rules to generate susceptible, intermediate and resistant (SIR) classifications, while also screening for common resistance mechanisms including carbapenamase-producing organisms.

Clinical benefits



- iFAST demonstrated 98.3% specificity, 96.3% sensitivity and 96% reproducibility compared with the gold-standard broth microdilution methodology.
- Optimises laboratory diagnostics for bloodstream infections by enabling parallel rapid antimicrobial susceptibility testing and pathogen identification when used alongside MALDI-TOF methods.
- Enables reporting of blood culture pathogen antimicrobial susceptibility results within the same working shift, supporting earlier clinical review and antibiotic optimisation.
- Facilitates earlier detection of antimicrobial resistance, supporting timely selection of the most appropriate antimicrobial therapy.

Additional benefits

- Automated interpretation of AST results, reducing the need for laboratory staff to manually interpret EUCAST guidelines.
- Compact benchtop footprint (600 x 600 x 600mm).
- Long-shelf-life consumables stored at room temperature, with significantly less single-use plastic used than other conventional AST workflows.
- User-friendly system with minimal hands-on-time and automated maintenance protocols.
- Digital traceability of operators, consumables and results.

Cautions

- Clinical benefits are dependent on timely review and actioning of results by Microbiology teams, clinicians and antimicrobial stewardship teams.
- Current UKCA clearance is limited to Gram-negative organisms direct from positive blood cultures and isolated bacterial colonies.
- Microbiology laboratories will need to undertake local verification to confirm performance, provide staff training and may need to adapt workflows to maximise clinical benefits.

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- Discrepant or unexpected results may require confirmatory testing using established alternative methods.

Pathway impact

- iFAST may support optimisation of blood culture, sepsis and antimicrobial stewardship pathways by enabling earlier availability of antimicrobial susceptibility results.
- Earlier susceptibility results may support more timely antimicrobial stewardship interventions and clinical decision-making.
- Benefits are likely to be greatest where laboratories and clinical teams have established processes for rapid review and communication of results.

Supply details

Complete your expression of interest :- <https://www.supplychain.nhs.uk/dps>

Route – Direct Supplier – iFAST diagnostics

Product	Unit of issue	Manufactures product code
iFAST One AST	1	IFI
Gram negative AST panel	10	IDGNK10
Microfluidic chip	1	IDCCA
Buffer vials with beads	12	IDBUF-32
Muller-Hinton broth	12	IDMHB-15
iFAST One AST instrument – semi automatic in vitro Diagnostic Medical Device for rapid phenotype	1	IFIRR

Supporting evidence / notes

Hornsey M *et al* (2026) Multisite clinical evaluation of the iFAST rapid antimicrobial susceptibility test direct from positive blood cultures containing gram-negative organisms. Journal of Clinical Microbiology. <https://doi.org/10.1128/jcm.00558-26>

Contact Details

Name – Simon Ball, Head of Clinical
Clinical.Diagnostics@supplychain.nhs.uk

Care Pathway Team – first point of contact
cpt.vbhenquiries@supplychain.nhs.uk

Name – Alice Dixon, Category Lead
Alice.dixon@supplychain.nhs.uk