



# Using qualitative research to support quantitative research in AMR genomics

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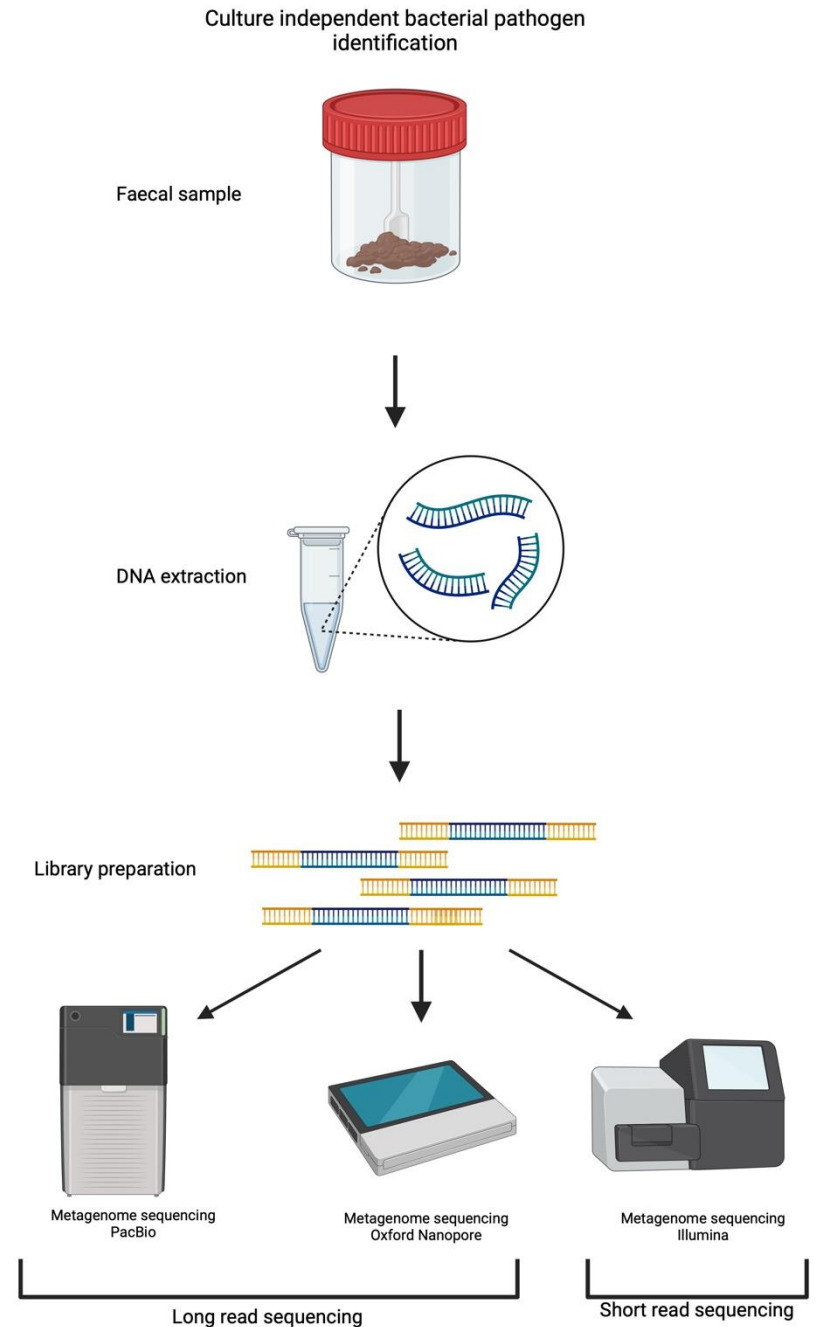


# Background

Pursued a PhD in medical microbiology starting in October 2020 titled “Rapid and precise detection of gastrointestinal infections using metagenome sequencing”

Project aim-

To produce resolved pathogen genomes using culture-independent metagenome sequencing, which provide clinically relevant information that would guide clinical decision-making, comparable to current available methods in clinical laboratories.



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# Academic and clinical perspectives of metagenome sequencing as a diagnostic tool for infectious disease: an interpretive phenomenological study

Research | [Open access](#) | Published: 31 March 2025

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[BMC Infectious Diseases](#)

**SCAN ME**

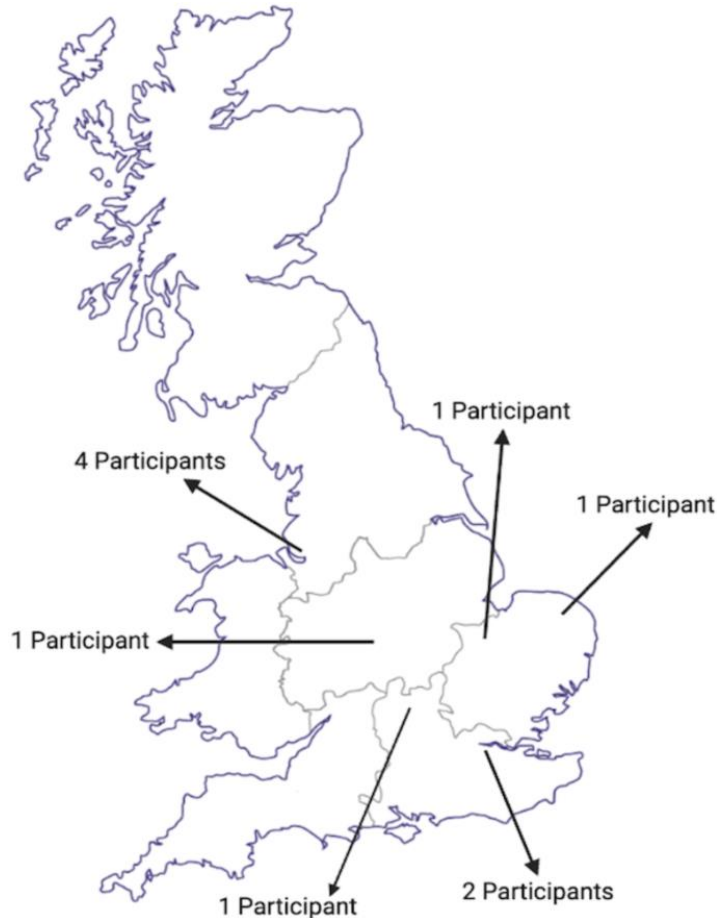


The study explored stakeholders' experiences within infectious disease diagnostic, including those working in clinical settings and those conducting research at the forefront of microbial genomics, identifying barriers and facilitators that drive the development and implementation of metagenome sequencing as a routine diagnostic.



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# Study methodology



Map of participants' UK locations. Two participants are based in London, one Participant is based in the Southeast, and two participants are in the East of England. One participant was in the West Midlands, and four were in the Northwest.

- Interpretive phenomenological approach (IPA) was used, documenting the lived experiences of stakeholders participating in the study.
- Participants were purposively recruited across England to ensure information-rich perspectives.
- 10 interviews were conducted between July 2021 and November 2021.
- Interviews were conducted on Teams due to COVID-19, lasting ~1 hour, using a semi structured interview approach.



# Key Themes

*"I suppose you need to align the funding bodies. We need to bring in all the stakeholders as equal partners...think it needs an insightful, joined up, sort of mutually supporting and engaging partnership framework so that everyone can benefit from it."*

*"Data generated locally can be collected for national surveillance, and that's an amazing opportunity.... If you had a centralised database, you could get some amazing insights into what's happening across the country."*

*"I think it's really important because now we send [a patient sample or isolate] for typing and we get a result, I don't know, three weeks later, by which time you know you've already acted on basis of your clinical suspicion."*

*"The COVID experience, I think, pushed the argument forward for routine use of sequencing, as nothing else has done. There are routine uses of genomics now for TB, Gram-negative foodborne pathogens like salmonella, HIV, hepatitis maybe, but those are the exceptions rather than the rule of thumb."*



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## Availability of diagnostics for infectious diseases



## Clinical laboratory infrastructure



## Ethical Data Sharing: Enhancing metagenomics through Open Access



## Case study in action: COVID-19



## The importance of communication to improve developments of new diagnostics



# My take home thoughts from this project

- Know your stakeholders!
- What you think is a problem is not always shared by other people.
- Context is important in delivering actionable results.
- Gathering different perspectives enriches data.
- Focusing on numbers can lead to tunnel vision.



# Qualitative research in the context of AMR Genomics

## Quantitative research can...

- Detect and quantify AMR genes.
- Used to understand transmission within and between environments.
- Explore the evolution of resistance.
- Inform public health responses.

## Qualitative research can...

- Help us understand human behaviours around AMR.
  - Patients, doctors, vets, industrial partners, farmers etc.
- Investigate economic pressures.
- Explore how culture could impact drug uptake and alternative holistic practices.



# Importance of understanding stakeholders

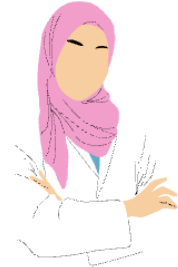


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# Importance of understanding stakeholders



**Nurses**



**Healthcare Scientists**



**Farmers**



Department of Health & Social Care



**Academic/ clinical researcher**



**Clinical Scientists**



**Patient**



**Veterinarian**



**Infectious disease doctors**

illumina®



UK Health Security Agency



**Consultants in microbiology and medical microbiology**



**Biomedical Scientists**



# Acknowledgements

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Link to paper 😊



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