

Multiplex tests to identify gastrointestinal bacteria, viruses and parasites in people with suspected infectious gastroenteritis: a systematic review and economic analysis

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Plain English summary

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Diarrhoea may be caused by pathogens such as bacteria, viruses and parasites. Diarrhoea can be very infectious and severe diarrhoea may require hospital treatment. Isolation, hygiene and rehydration are used to manage patient symptoms, and tests are used to identify pathogens and guide treatment. Current pathogen testing involves a number of procedures, and findings may take up to 3 days to become available. Gastrointestinal pathogen panels (GPPs) test for all common pathogens using one procedure, with results returning in 1 day or less.

Our review considered evidence for the clinical effectiveness and cost-effectiveness of three GPP tests [xTAG® (Luminex, Toronto, ON, Canada), FilmArray (BioFire Diagnostics) and Faecal Pathogens B assay (AusDiagnostics, Beaconsfield, NSW, Australia)]. We built an economic model, predicting costs and benefits for patients in the community or hospital setting, to help inform how to best manage patients. The findings will help inform the National Institute for Health and Care Excellence when making recommendations about the use of GPP tests in the NHS in England and Wales.

The clinical effectiveness review found 23 relevant studies. These studies agree that GPP tests identify more pathogens than current methods. Because we found no valid method to verify the outcomes from the new tests, we do not know how accurate they are in detecting clinically important disease. We also do not know whether quicker tests result in improved care or in unnecessary treatment.

The economic model found considerable uncertainty about how costs and benefits would change if GPP tests were introduced. Further research is needed to resolve whether or not GPP tests improve patient management and provide value for money.

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This report

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