Development of a risk prediction tool for *Clostridium difficile*: A Scottish experience

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Background: Risk prediction tools in clinical practice are aimed to support clinicians during decision making, facilitate patient education on their health conditions, and identify and initiate preventive approaches. The development and implementation of risk prediction tools can vary depending on the setting and the user it is being implemented for. This study aims to highlight the process of developing a risk prediction tool for *Clostridium difficile infection (CDI)* in Scotland.

Methods: Initially three GPs were recruited for interviews, shadowing and co-design of a CDI prototype. The study focused on gathering GP's perception of CDI and the usefulness of a CDI tool in supporting their antibiotic prescribing. Subsequently non-medical prescribers from secondary care were interviewed with the same objective. The study process and analysis were guided by the Consolidated Framework for Implementation Research and the Guideline Implementation with Decision Support (GUIDES) checklist.

Results: As CDI is not common in primary care, GPs deemed a CDI tool unnecessary; however, higher support for the tool could be achieved with its integration into their prescribing system and providing advice on an action(s) rather than a risk score. Differently in secondary care, clinicians were receptive to having a tool for antibiotic decision making. However, due to patient data being stored in different systems, only a website or mobile app of the CDI tool would be feasible.

Conclusion: Despite the initial reticence by GPs for a CDI tool, through the guidance of the implementation frameworks, CDI tools with preferred formats by both cohorts are under development.