Lily Taylor

Please describe the work that you wish to be considered for the Hildi Franke Award

An umbrella review and recommendations for the design and implementation of digital multifactorial risk assessment in primary care

Please explain the relevance to primary care informatics of your submission

Risk prediction tools have benefits for patient-centred practice through greater personalisation of care, as well as supporting the 10-Year Health Plan for England's three key shifts. Numerous clinical risk prediction models have been developed, many attempting to leverage the benefits of artificial intelligence. However, only a small number have been successfully implemented in primary care, suggesting the existence of complex and distinct barriers particular to this setting. These barriers must be understood and overcome in order to achieve digitally enabled healthcare in the community and translate the investment in risk model development into tangible gains in health outcomes. Through a review of published systematic reviews and stakeholder consensus validation exercises, this work identifies published barriers to implementation of predictive algorithms and tools in primary care and synthesises recommendations to optimise regulatory approval and adoption. The recommendations are structured around target product profile core categories and include direct implications for primary care informatics. For example, the need for prediction tools to be designed for intuitive integration with clinical workflows, integration with electronic health records and incumbent technologies, and interoperable through the adoption of a shared standardised taxonomy.

Please explain the originality or innovation of your submission

This work is the first umbrella review to identify obstacles and solutions to implementational barriers for real-time multifactorial risk assessment tools for use in primary care. None of the reviews included in the synthesis reported all the barriers to implementation synthesised in this study, resulting in a novel overview of current evidence. Findings from the umbrella review were also presented and discussed at a stakeholder workshop with 22 individuals from primary care, medical informatics, data innovation and other related fields. Integrating evidence from the review and workshop generated original recommendations which were further refined and validated through online consensus meetings and an online survey. The final output is therefore derived not only from existing literature but has also been enhanced through primary evidence generation and co-design with relevant yet varied stakeholders, increasing the strength and originality of the study overall.

Please explain the impact or benefits of your submission

The resulting recommendations will support the development of digital tools and algorithms compatible with primary care implementation and sustainable adoption. This is directly relevant to developers, researchers, industry representatives, and regulators involved in the development and implementation of predictive tools for use in primary care. The recommendations are also applicable more widely to facilitate the adoption of other digital technologies such as computerised decision support systems and decision aids. This work has also provided the evidence base for a policy briefing outlining the conditions necessary for sustainable adoption of digital risk prediction tools in primary care. It has been presented at the Early Cancer Institute Annual Symposium and published in BMJ Health and Care Informatics: doi: 10.1136/bmjhci-2025-101896