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Generating actionable evidence from free-text feedback to improve maternity and acute hospital experiences: A computational text analytics & predictive modelling approach

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Background:

Patient experience surveys are a key source of evidence for supporting decision-making and quality improvement in healthcare services. These surveys contain two main types of questions: closed and open-ended, asking about patients' care experiences. Apart from the knowledge obtained from analysing closed-ended questions, invaluable insights can be gleaned from free-text data. Advanced analytics techniques are increasingly used to harness free-text data, yet existing approaches do not offer the rigour required to support formal decision-making through free-text.

Methods:

This study addresses the challenge of effectively and rigorously analysing patients' free-text feedback to improve maternity and acute hospital services in Ireland. Aspects of healthcare services (i.e. themes) that could be improved were determined using computational text analytics and predictive modelling. Themes extracted from comments were prioritised based on volume, the intensity of negative affect expressed in the texts, and the estimated influence of the themes on overall patient satisfaction.

Results:

Results demonstrate the viability of producing rigorous evidence for prioritising interventions to improve healthcare services based on free-text feedback. Specifically, consistency in advice and support in breastfeeding were among the most important issues for maternity services. For acute hospital services, meals quality and access, A&E waiting time, ward hygiene and communication at discharge were among the most important issues. Women also wanted more emphasis on prior birth experience and complications in future maternity care surveys.

Conclusions:

Advances in computational text modelling enable the extraction of concrete and actionable insights from the analysis of free-text data. This approach also allows decision-makers to prioritise emergent themes and inform actions that will positively impact overall patient satisfaction.