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Title

How might dynamic artificial intelligence (DynAIRx) be used to support prescribing to ensure efficient medication reviews?

Priority 1 (Research Category)

Healthcare Services, Delivery, and Financing

Presenters

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Abstract

Context: The DynAIRx project aims to develop artificial intelligence (AI) tools to support medication reviews for patients with multimorbidity (people with ≥ 2 chronic conditions), targeting those at greatest risk of medicine-related harm. Challenges faced by healthcare professionals (HCPs) managing multimorbid patients include poor integration of health records across providers and few tools to assist in stratifying patients requiring medication reviews. Objective: To explore how medication reviews are currently being undertaken and how they might be augmented by AI. Study design and analysis: 5 semi-structured interviews and 6 focus groups with HCPs (n=26); 2 focus groups with patients (n=10). These were transcribed verbatim and analysed using inductive thematic analysis. Setting: England. Focus groups were conducted via MicroSoft Teams with pharmacists, general practitioners, secondary care clinicians, and policy makers. Patient focus groups were conducted face-to-face. Population studied: The DynAIRx tool will target potentially problematic polypharmacy in 3 key multimorbidity groups: people with mental and physical health problems; those with ≥ 4 chronic conditions or taking ≥ 10 drugs; and older patients with frailty. Outcome measures: Report on barriers and facilitators to effective medicine reviews and potential implications for the implementation of new decision support tools. Results: Availability of staff, access to patient information, organisational contracts and patient demographics influenced uptake of medication reviews. Time was a major limiting factor due to the overwhelming density of information in electronic health records, especially for complex patients. Building continuity in medication reviews and adopting a team-based approach to dealing with complex multimorbid patients was emphasised. HCPs welcomed user-friendly digital tools with an intuitive interface that could be used to reduce “detective work” and enable shared decision making with patients. A timeline including diagnoses linked to medicines by indications and previous investigations was viewed as an early

potential solution to reduce laborious searching. HCPs were generally positive about using AI tools to aid risk stratification of patients needing medication reviews but emphasised ease of use as important. Conclusions: These findings and those of an observational time-and-motion study will inform development of the DynAIRx prototype. HCPs seem receptive to such a tool.