

## Highlights

# Clinical informatics applications of medication reconciliation, decision support systems, and online portal patient-provider communications

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This issue of JAMIA focuses on the use of patient- and provider-facing applications for medication reconciliation and related topics. It also presents original research on intended and non-intended consequences of clinical decision support systems, algorithms and tools for “phenotyping” from electronic health records (EHRs), as well as tools and approaches to promote clinical research involving EHRs, the biomedical literature, and patient-provider communications.

Yin (p. 1444) describes how online portal communications between breast cancer patients and physicians were used to determine medication discontinuation, Cronin (p. 1470) describes patient and clinician views on a patient-reported outcomes portal, and Yang (p. 1516) focuses on discontinuation of new electronic prescriptions. Maryen (p. 1488) and Prey (p. 1460) report on patient-facing applications that use tablets and a web site, respectively, for medication reconciliation.

Clinical decision support systems’ impact on clinical documentation and outcomes is also reported in this issue of the journal. Powers (p. 1556) systematically reviews the literature on the efficacy and unintended consequences of hard-stop alerts in EHRs, Wright (p. 1552) describes three cases of decision support system malfunction, Zhang (p. 1547) discusses how to develop and maintain decision support systems using clinical knowledge and machine learning, while Singh (p. 1481) uses machine learning for psychiatric patient triaging. Lacson (p. 1507) studies human factors leading to

diagnostic errors in radiology, and Orestein (p. 1501) describes the influence of simulation on EHR use patterns among pediatric residents.

The detail in documenting care via EHRs is highly variable across clinicians and institutions. Adelman (p. 1534) describes the use of EHRs to report inpatient stroke quality of care, while Rutkowski (p. 1524) shows that the number of diagnoses codes in inpatient discharge notes is associated with counts and rates of birth defects.

Identification and validation of case definitions for medical conditions is systematically reviewed by McBrien (p. 1567), and reports on the portability of a phenotyping algorithm across institutions and EHR systems by Pacheco (p. 1540). While phenotypes are critical for research, two other modalities of data serve as fundamental companions: environmental exposures, illustrated in a framework for development and validation of prenatal exposures by Boland (p. 1432) and genetics, illustrated by Zhou’s (p. 1452) research on identifying symptom candidate genes via network embedding.

Finally, AMIA’s 2018 code of professional conduct and ethics (p. 1579) is published in this issue. Never before has our specialty been so involved in complex privacy protections for clinical and research data. The code contains critical information on various aspects of our profession.