



EHR Implementation: Role of 'Super Users'



Electronic health records (EHRs) are designed to improve patient safety and quality of care, but the intended benefits of EHRs are not always realised because of implementation-related challenges. Enlisting clinician super users to provide frontline support to employees has been recommended to foster EHR implementation success. However, their enlistment does not always contribute to implementation success.

So why are some super users more effective than others? This study by researchers from Yale School of Public Health has found that four key behaviours were employed by super users to influence their co-workers during the implementation of EHR. These were: proactivity, depth of explanation, framing, and information-sharing.

The researchers observed that when super users were more engaged (ie, proactive, provided more comprehensive explanations for their actions, used positive framing, and shared information more freely), they became more effective in helping to improve their co-workers' proficiency in using the EHR system.

"By identifying the behavioural mechanisms of super users' influence, we add to a growing body of literature that highlights the significant effect of social influence on individuals' acceptance of technology, but that had hitherto failed to elucidate the specific processes by which individuals influence other employees' beliefs and behaviours," say Christina T. Yuan and colleagues. The findings are published in the journal *BMC Medical Informatics and Decision Making*.

Methodology

The research team conducted a longitudinal (October 2012 - June 2013), comparative case study of super users' behaviours on two medical units of a large, academic hospital implementing a new EHR system. The two units were similar with respect to important characteristics including size, employee demographics (eg, age, gender, and years spent in the profession), and organisational context (eg, intergroup relations between professional groups). The two units differed in terms of how super users were chosen; the process by which super users were selected is an important contextual factor that the authors sought to understand because it is likely to shape the ways in which super users may be perceived and hence interact with others on the unit.

On Unit 1, a geriatrics unit, nurse managers asked super users to volunteer for the position. On Unit 2, a cardiology unit, nurse managers selected super users who they considered to be technologically savvy. The study population included nurse super users, nurse managers, nurses, patient care associates, and secretaries who worked full-time on the two medical units. Given the longitudinal nature of the study and physicians' frequent rotation schedule, physicians were not included in the sample.

The authors assessed super users' behaviours by observing 29 clinicians and conducting 24 in-depth interviews. The implementation outcome, clinicians' information systems (IS) proficiency, was assessed using longitudinal survey data collected from 43 clinicians before and after the EHR start date. Multivariable linear regression was used to estimate the relationship between clinicians' IS proficiency and the clinical unit in which they worked.

Results and Discussion

Super users on both units employed behaviours that supported and hindered implementation. Four super user behaviours differed between the two units: proactivity, depth of explanation, framing, and information-sharing. The unit in which super users were more proactive, provided more comprehensive explanations for their actions, used positive framing, and shared information more freely experienced significantly greater improvement in clinicians' IS proficiency ($p=0.03$).

Use of the four behaviours varied as a function of super users' role engagement, which was influenced by how the two units' managers selected super users and shaped the implementation climate.

This study contributes to a more nuanced understanding of super users, whose role had previously only been discussed in a positive light, by highlighting that super users behave in ways that can positively and negatively affect implementation. In light of this finding, training programmes for super users should not only focus on instilling positive behaviours, but train against negative behaviours.

IS proficiency represents a first stage measure that is expected to be salient in the early stages of a new behaviour. As EHRs are continuously updated and optimised, however, it will be important for future work to explore how super users help foster sustained use of technology over time.

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