

Delivering evidence-based high-quality care for patients with cardiovascular disease (CVD) is a challenging public health issue. We used administrative data from the Electronic Health Record (EHR) system to investigate how patterns of primary care team EHR communication relate to performance outcomes for patients with CVD.

This study used social network analysis (SNA) to quantify communication within primary care teams. EHR messages routed between any 2 care team members were totaled over a 6-month period to create a sociometric matrix, and *betweenness centrality*, a SNA measure of the number of times an individual communicated with two other individuals who themselves did not communicate, was computed. Hierarchical modeling related care team *betweenness centrality* with performance outcomes (control of blood pressure and LDL cholesterol), while adjusting for patient-level covariates, team size, and clinic-level covariates.

The study sample included 155 health professionals in 31 care teams at 6 US primary care clinics and 3009 CVD patients seen by the teams. *Betweenness centrality* averaged 5.82 (sd 1.66) across the study sites. CVD patients were 15% (OR=1.15, 95% CI: 1.04, 1.27) more likely to have both controlled blood pressure and LDL cholesterol with every one standard deviation increase in team *betweenness centrality*. The results suggest that, on an average team size of 18, adding one extra EHR connection per person has the potential to increase patient control for hypertension and hyperlipidemia by 8-9%. *Betweenness centrality* remained statistically significant in the model after adjusting for size of the care team.

Primary care teams which rely on densely connected EHR communication among team members have better performance outcomes for their patients with CVD. EHR messaging may be a valuable tool to evaluate team cohesion on a system-wide level.