Social Work and Electronic Health Records: A New Frontier for Health Workforce Research

Lisa de Saxe Zerden, MSW, PhD, Erica L. Richman, MSW, PhD, Brianna M. Lombardi, MSW, PhD, Kim Shoenbill, MD, PhD, Erin Fraher, MPP, PhD.

Research Brief, December 2019

I. Introduction

As one of the largest groups of clinically trained mental health providers in the United States, social workers are increasingly deployed on integrated health teams to address patients' social determinants of health and provide behavioral health interventions (Fraser et al., 2018). However, information about the specific content of social work practice in new models of healthcare is limited (Rowe et al., 2019; Steketee, Ross, & Wachman, 2017), and further exploration is needed to better define social worker roles and functions in integrated settings (Fraher, Richman, Zerden, & Lombardi, 2018; Rowe et al., 2019).

With more medical practices using electronic health records (EHRs), it may now be easier to collect valuable data to help clarify the expanding roles and functions of social workers. Social workers' documentation in EHRs may give researchers the ability to analyze social workers' activities in the healthcare system and their contributions to team-based care and team communication. Natural Language Processing (NLP), a machine learning analytic method, is one way to identify and extract concepts of interest from EHR data (Friedman, 2000). Though NLP has been used in numerous medical fields (Shoenbill et al., 2019), it has not, to our knowledge, been applied to social workers in health settings.

This project was a preliminary step in building a lexicon to be used in NLP extraction and analysis of social work activities found in the EHR. The study aimed to demonstrate how EHR data can be used as a workforce research tool to assess the scope, contributions and value of social work, a profession still in the process of establishing its return on investment in health care.

Policy Implications

- ✓ ***Applicability and Usability of the EHR.*** This study helped identify limitations of EHR structures that impact the way social workers can document their work. Allowing clinical encounters to be created by providers regardless of billing permissions could increase the data abstraction process and general usability of data found within the EHR. Further, social workers consistently referring to themselves in documentation as their profession (i.e. social worker) as opposed to their job title (i.e. care manager) could also help improve the quality of the data available, and the ease of obtaining the data.
- ✓ ***The EHR as a Communication Tool for Team-Based Care.*** Ongoing efforts to improve interoperability and data sharing will be critical to optimize use of EHR data as a communication tool, and as a data source for workforce analysis.
- ✓ ***Social Work Education and Practice.*** As the EHR becomes a key source for helping define the social work workforce in healthcare, social workers should be trained to document in clear and consistent ways that help alleviate common barriers to EHR research.

II. Methods

To create a preliminary lexicon we conducted expert interviews and focus groups with 30 practicing social workers representing more than 20 primary care clinics, medical providers and informatics experts. These interviews, in conjunction with academic literature, formed the basis of the lexicon that was updated iteratively throughout the study. EHR data were obtained from the North Carolina Translational and Clinical Sciences Institute (TraCS), a

broker of the Carolina Data Warehouse for Health (CDW-H), the data repository for the UNC Health Care System. A random sample of 60 patients who had clinical contact with a social worker between September 1, 2016 and August 31, 2017 were selected and 647 notes were reviewed and analyzed to evaluate social workers' documentations.

IV. Results and Discussion

Notes were grouped into two domains: 1) social work communication with patients and 2) communication with the interprofessional team. Of the 647 notes from 60 patients originally drawn from the data warehouse, 66% (n=425) fell into either Domain 1, Domain 2, or both, while the remaining 34% (n=222) were not actual examples of social work documentation. There was an average of 11 notes per patient, ranging from three to 52. Abstracted notes were from patients who varied by racial/ethnic background (53% white, 43% black), were mostly female (76%) and had a mean age of 64 (range from 28 to 97).

About 70% of notes (298 of 425) relating to Domain 1 focused on specific social work interactions which included information on social workers assessment, referral and discrete intervention practices. The most common types of social work roles were behavioral health, care management and community engagement. More than 32% of notes in Domain 1 demonstrated a social worker assessing or screening for patient needs and mostly focused on patient mental health or substance use. Just over 68% of the notes related to specific social work interactions that contained discussions relating to physical health. Social workers provided discrete interventions such as cognitive behavioral therapy, intensive behavioral counseling for obesity management and motivational interviewing in 31% of the notes. Referrals and coordination of services were documented in just over 65% of notes. In these examples, social workers reported connecting patients to various services including housing assistance, transportation resources and specialty health services.

About 56% of notes (235 of 425) included content fell into Domain 2, which described interprofessional communication between the social worker and the team. Social workers most often communicated directly with physicians (56% of the time), compared to nurses (12%), medical assistants (6%) and the entire team (9%). Communication occurred in both directions regularly. Typically, when a social worker was communicating with other team members, it was related to an immediate need of a patient.

There were sizeable challenges to using EHR documentation to help clarify the role of social workers in integrated primary care settings. Because social workers do not bill for their services, they do not create their own clinical encounters and often append documentation to already existing provider notes. Furthermore, social workers were not consistently referred to as social workers but as case managers, care manager or other titles. However, in analyzing notes, we found social workers played broad roles in integrated primary care settings, both in direct patient care and management, and as part of a dynamic health care team.

The preliminary lexicon, based on domain expert interviews and academic literature review, was iteratively extended using terms and phrases abstracted from the EHR documentation dataset. Sometimes building the lexicon was difficult as many social work notes did not always include the activity of the social worker, but instead recorded the details presented by the client and outcome of the contact. For example, instead of stating that the social worker "screened for depression" the note would indicate the patient reported depression. A similar result was found with referrals; a referral might be time-intensive or complex, but the note's wording might not reflect these details.

VII. Implications for Policy

As this study helps demonstrate, EHR documentation shows social workers are regularly contributing to patient care and working as members of health care teams. Yet, if EHRs are to become a robust resource for workforce and health care researchers, informed and purposeful changes to the interface and usability of EHR systems are required in order to more fully understand the scope of practice and contributions of the social work health workforce.

Applicability and Usability of the EHR. This study helped identify limitations of EHR structures that impact the way social workers can document their work. Allowing clinical encounters to be created by providers regardless of billing permissions could increase the data abstraction process and general usability of data found within the EHR. Further, social workers consistently referring to themselves in documentation as their profession (i.e. social worker) as opposed to their job title (i.e. care manager) could also help improve the quality and ease of obtaining data.

The EHR as a Communication Tool for Team-Based Care. Team communication was clearly documented in the abstracted EHRs. Future work could explore EHRs as a method to assess team functioning and processes on integrated care teams. Ongoing efforts to improve interoperability and data sharing will be critical to optimize use of EHR data as a communication tool, and as a data source for workforce analysis.

Valuing Contributions of Social Work Interventions. One way to offset the challenge of understanding the complexity of social work interventions as documented in the EHR is to develop and expand how value is calculated. Metrics for social work services could be created for a new application of Relative Value Units (RVUs). In the current fee-for-service system, RVUs have been used as a formula to account for the complexity of physicians' time, liability and procedure complexity (Stecker & Schroeder, 2013). The creation RVUs specific to social workers could serve as a new metric to determine the value of social works contributions in health settings.

Social Work Education Needs to Include EHR Documentation Strategies. As the EHR becomes a key source for helping define the social work workforce in healthcare, social workers should be trained to document in clear and consistent ways that help alleviate common barriers to EHR research. Social work students will require training in EHR use and succinct documentation.

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Authors

Lisa de Saxe Zerden, MSW, PHD | *Senior Associate Dean for MSW Education, Associate Professor, UNC-Chapel Hill School of Social Work*

Erica L. Richman, MSW, PhD | *Research Associate, Cecil G. Sheps Center for Health Services Research, UNC-Chapel Hill*

Brianna M. Lombardi, MSW, PhD | *Assistant Professor, University of Pittsburgh School of Social Work*

Kim Shoenbill, MD, PhD | *Assistant Professor, Department of Family Medicine, UNC-Chapel Hill School of Medicine*

Erin Fraher, MPP, PhD | *Associate Professor, Department of Family Medicine, UNC-Chapel Hill School of Medicine, Director, Carolina Health Workforce Research Center, Cecil G. Sheps Center for Health Services Research*

Acknowledgments

We would like to acknowledge the editorial assistance of ***Heather Wilson*** *at the Program on Health Workforce Research and Policy, Cecil G. Sheps Center for Health Services Research.*

Social Work and Electronic Health Records: A New Frontier for Health Workforce Research. This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under Cooperative Agreement U81HP26495-04-00, Health Workforce Research Centers Program. The information, content and conclusions are those of the authors and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.