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Community Health Needs Assessments: Filling Data Gaps for Population Health Research and Management

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Introduction: Community health needs assessments (CHNA) are completed to meet varied regulatory and statutory requirements for local public health departments, tax-exempt 501(c)(3) hospitals, and Federally Qualified Health Centers. Although compliance is a motivating factor, these entities are committed to understanding the communities they serve and to developing strategies to address health needs and inequities in health and health care.

Filling Data Gaps: CHNAs have the potential to improve the health of communities and populations by giving crucial qualitative and quantitative context to hospital and patient data, thereby enhancing opportunities for health services and clinical outcomes researchers. Filling in these data gaps can help to improve population health by highlighting communityand social determinant-related dynamics relevant to the improved health of the community.

CHNAs and EHRs for Population Health: Successful models exist that that have used CHNAs and the resulting data to improve population health management and reduce inequities, as do health systems that have used the EHR and community-based performance measurement data to achieve population health goals.

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Local public health departments, tax-exempt 501(c)(3) hospitals, and Federally Qualified Health Centers are required to conduct community health needs assessments (CHNA) in order to meet accreditation standards, maintain tax-exempt status, and establish appropriate, local health service programs, respectively.[1,2,3] These institutions are motivated by more than regulatory or statutory compliance: each is deeply committed to engaging and understanding the communities they serve and to developing effective, evidence-based strategies to address local priority health needs and inequities in health and health care.

For many tax-exempt academic medical centers, the newly required CHNA process often exists separately from the tripartite missions of clinical care, research, and education, and is more closely aligned with longstanding community benefit activities. This makes sense—both the community benefit, as well as the CHNA and its concomitant implementation strategy (IS), exemplify and describe institutional commitment to local populations served by the health system or hospital.

However, given the increasing emphasis on population health management and the intransigence of health and health care inequities in the United States, a CHNA more closely aligned with the three missions of academic medicine could improve the health of communities and populations by giving crucial qualitative and quantitative context to hospital and patient data, thereby enhancing opportunities for health services and clinical outcomes researchers. Filling in these contextual gaps can orient research and clinical efforts toward population health improvement by highlighting community- and social determinant-related dynamics relevant to the goals medical centers seek to achieve.

The Potential for CHNA and Hospital Data to Fill Gaps in Knowledge and Improve Population Health Management

According to a recent study, nearly 60 percent of the variation in hospital readmission rates is explained by county-level factors.[4] The number of Medicare beneficiaries per capita, low-education area status, and urbanicity were among the variables associated

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with higher rates. Individual hospital performance was less influential. As hospitals and health systems grapple with incentives and penalties tied to value-based health care and at-risk reimbursement schemes, understanding the role of community-level factors and their influence on whether population health management strategies succeed or fail is critical to building effective interventions.[5]

Indeed, in a recent report the Institute of Medicine (IOM) noted that knowledge of community resources and environmental factors that influence disease might become as important for managing patients' health as knowledge of clinical factors like Body Mass Index.[6] For this reason, the IOM has called for the inclusion of social and behavioral domains in electronic health records (EHR), including neighborhood- and community-level data like economic information and racial and ethnic composition.

CHNAs provide similar, equally important data about the social determinants of health at play in local communities and can identify strategies that might effectively mitigate the influence of factors that hinder efforts to improve the health of populations. A recent survey by the Association of American Medical Colleges (AAMC) of its not-for-profit teaching hospital members and a related review of these institutions' CHNA reports found that 67 percent of responding hospitals and health systems listed "social determinants of health" as an identified and prioritized community health need.[7] Bundled in the social determinants of health domain were issues of food insecurity, joblessness, lack of transportation, and minimal social support. Each of these factors can result in exacerbated readmissions, missed appointments, and poor health. Capturing this kind of information in EHRs or in a parallel and interoperable system could provide critical information for health care practitioners to tailor interventions to improve health. In addition, this information will make it more likely that patients receive the appropriate social, behavioral, economic, and legal support needed to address issues that interfere with health and well-being. Given the impact of the social determinants of health on population health management efforts, incorporating CHNA or related data into adjustments for hospital incentives and physician reimbursements would make it less likely that safety-net providers are unfairly penalized.[8,9]

One can envision a scenario whereby a patient-centered medical home or an accountable care organization best manages population health by using community data derived from a variety of sources—including the CHNA—stored in a system that also captures data on individual patients and aggregated patient panels. This multilevel approach to a community data system would facilitate the identification of at-risk patients and would permit stratification by demographic, clinical, or community attributes in order to identify inequities in care and subpopulations likely to benefit from targeted interventions. Furthermore, since hospitals are required by the CHNA regulation to consult with public

health experts, coordinating data collection and interventions between the two sectors will enhance efforts to have an impact on identified health and health care needs, including inequities.

CHNA and Health Services Research: A Reciprocal Relationship

CHNAs can provide similarly useful contextual data for hospital-based outcomes research. A recent systematic review of more than 180 clinical trials found that most interventions that aim to improve medication adherence are ineffective.[10] Given the economic costs and health implications of nonadherence, the authors advocate for designing long-term, unbiased trials so that solutions can be identified and spread.

CHNA data on community assets and needs could strengthen both the design and analysis of such a trial. Neighborhood-level data on transportation options, poverty, and pharmacy saturation could complement analogous data collected at the individual level (e.g., car ownership, household income, and having a regular pharmacist) to better understand barriers and facilitators to adherence and the interactions between them. Community-level data on salient health needs could also identify prevalent comorbidities that might reflect competing health needs and offer insight into social norms regarding treatment hierarchies—e.g., "First diabetes, then asthma (if I can afford it)."

Comparative-effectiveness and patient-centered-outcomes researchers—both of which are concerned with figuring out "what works best for whom and why"—could add "in what context" as a result of adding CHNA-derived data into their models. Data from the aforementioned AAMC survey revealed that 77 percent of respondent hospitals deployed multiple methods including surveys, focus groups, and interviews to capture community members' opinions about their neighborhood's health needs and assets. These rich quantitative and qualitative data sets could be a boon to researchers, adding voice to statistics and suggesting underlying mechanisms behind observed point estimates.

Conversely, health services and quality improvement researchers could use patterns, prevalence, and inequities revealed by EHR and clinical data to help their institutions focus limited CHNA resources on areas of inquiry that those data suggest are crucial. If analysis of clinical data reveals significant differences in blood pressure control or hemoglobin A1C levels between groups of patients, for example, such information could inform CHNA survey and focus group development as well as community asset mapping targets and strategies.

The value of CHNA and IS data to researchers will only increase if investigators themselves begin to play a role in developing CHNA surveys, protocols, and analysis plans to assure the representativeness of samples, the clarity of the questions, and the validity of the

results. The AAMC survey found that only a third of hospitals and health systems currently give researchers significant responsibility in the CHNA process.

Education Can Help Us Get There

The untapped potential of CHNA data to help hospitals meet population health management goals and to help researchers to construct models and interventions that take into account multilevel drivers of health can be developed, in part, by leveraging opportunities related to the third mission of academic medicine: education.

Beginning in 2015, medical school aspirants taking the Medical College Admission Test (MCAT) will be tested on the psychological, social, and biological foundations of behavior in recognition of the sociocultural and behavioral determinants of health. CHNA data could be deployed in medical school curricula to give learners an understanding of the health needs of the community in which they study. Existing examples of faculty- and student-led efforts to weave community and population heath data and theory into undergraduate medical school curricula demonstrate how this information can complement current coursework.[11,12] Research practicums and extant service learning opportunities could be structured to provide medical students (and nursing students, public health students, etc.) with opportunities to participate in community-engaged research experiences tied to the CHNA.

Residency programs might be motivated to build upon this undergraduate foundation given the Accreditation Council for Graduate Medical Education (ACGME) expectations during their Clinical Learning Environmental Review (CLER) visits. According to the ACGME, residents and fellows are now expected to develop competency in addressing and reducing health care inequities through quality improvement activities.[13] CHNA data will be instructive in terms of how forces outside of the hospital's walls inform inequities in care and outcomes discovered inside the hospital's walls. Resident trainees and fellows could participate in the CHNA as data collectors or data analyzers to gain firsthand research and community-based experience with issues that will have an impact on their own competency to manage population health as their careers progress.

Respondents to the AAMC survey indicated that limited resources including dollars, staff, expertise, and administrative support sometimes erect barriers to developing and deploying CHNAs that are deeply grounded in community experience and supported by the clinical, research, and education mission of academic medicine. The coordination suggested above might present one opportunity to find efficiencies and leverage cross-mission assets so that all aspects of an academic medical center benefit from the process of partnering with communities to identify and intervene on health and health care needs.

Successful models that have used the CHNA process and its resulting data to improve population health management and reduce inequities exist, as do examples of health systems that have leveraged EHR and community-based performance measurement data to achieve population health goals.[14,15] As many hospitals and health systems prepare for their 2015 CHNA and IS cycle, documentation of CHNA and implementation processes and evaluations will be important to spread and scale successes. Data about communities, provided by members of those communities, are essential to filling data gaps and to understanding—in a multisystemic way—the connections between patients, health care, and the lived experience of community residents. Identifying and leveraging these connections proffer the surest way to manage our populations' health.

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