

COVID-19 Collaboration: Public Health Partnership And Hospital Health Information Sharing

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Abstract:

The necessity of efficient communication and information exchange between public health systems (PHSs) and health care organizations was brought to light by the coronavirus disease (COVID-19) pandemic. In hospital settings, especially in underserved areas, health information exchange (HIE) is essential for enhancing efficiency and quality control.

The purpose of this study was to examine how hospitals' HIE availability varied by community social determinants of health and their cooperation with the PHS and Accountable Care Organizations (ACOs) in 2020.

Methods: The linked data sets from the 2020 American Hospital Association (AHA) Annual Survey and the AHA Information Technology Supplement served as the main source of data for this investigation. Hospital participation in HIE networks, data exchange accessibility, and HIE measures during the COVID-19 pandemic such as whether hospitals successfully received electronically transmitted information from outside providers for COVID-19 treatment were among the metrics used.

Conclusions: Especially during the COVID-19 pandemic, hospital collaboration with the PHS and ACO affiliation is linked to increased availability of electronic health data.

Keywords: Health Information, Public Health, Accountable Care Organization, COVID-19.

Introduction

Hospitals and people in need of basic medical care experienced major disruptions in 2019 due to the coronavirus disease (COVID-19) pandemic. Many hospitals chose to improve their technological capabilities to handle patient surges and prevent vulnerable populations from catching COVID-19 in the hospital setting in order to address an unprecedented threat to our contemporary health

care systems. The need for better information sharing and communication between government agencies and health care organizations was highlighted by COVID-19 (Greene, 2021; Sittig, 2020).

COVID-19 accelerated the use of health information exchange (HIE) in the general hospital system, with a focus on data interoperability. According to Sittig and Singh (2020), 95% of hospitals were using electronic health records (EHRs), allowing the U.S. to improve its infrastructure for gathering data. Furthermore, electronic HIE makes it possible for medical professionals to view and exchange patient records electronically, resulting in more precise and effective real-time disease data. (Blumenthal, 2022).

In order to enable information to follow patients and promote coordinated, effective, and efficient care, HIE uses a common infrastructure to securely connect electronic clinical patient data from hospitals, labs, and other healthcare organizations. HIEs typically occur at the state or local level. The Office of the National Coordinator (ONC) for Health Information Technology (HIT) is in charge of the national eHealth Exchange network, which is connected to half of the 89 operational HIEs that were identified in a 2021 study (Adler, 2021).

For public health systems (PHSs) in the United States, IT structure is essential. Numerous studies have demonstrated that incorporating PHSs into healthcare can improve care quality, lower costs, and lessen racial and ethnic disparities in healthcare. The urgent need to update data systems and enhance HIE in PHSs has been highlighted by recent studies. To effectively address upcoming public health threats, Emanuel et al. stress the significance of creating an all-encompassing, real-time, integrated data infrastructure for public health (Williams, 2012; Patel, 2022).

Current public health infrastructure should make it possible to electronically gather detailed disease information in real time, combine it with sociodemographic information and even nontraditional information like genomic or environmental data, and integrate data from academic and research institutions, public and commercial laboratories, health care systems, and local, state, and federal public health units.

A Whole Person Care program:

PHSs were essential in providing healthcare during the COVID-19 pandemic because they promoted community resilience and cross-sector collaboration. Community Connect, a Whole Person Care program in Contra Costa County, California, for example, is a

component of a broader California initiative that links Medicaid beneficiaries with health risks to social services, mental health care, substance use treatment, and care coordination. The program's foundation is a collaboration between social service, health, and medical organizations (Novak , 2019).

Among other advantages, the program builds a shared electronic health record and data infrastructure that could be used to identify vulnerable patients and fosters cross-sector relationships that facilitate coordinated disaster responses, thereby increasing community resilience. Building resilient population health requires investing in integrated infrastructure, according to the authors (Chen , 2018).

That during public health emergencies like COVID-19, funding health IT infrastructure is essential for bolstering the PHS and facilitating prompt and effective public health interventions. explain the necessity of a shift to "digital public health," which entails developing a PHS that can facilitate extensive coordination and simplifying the coding and transmission of both aggregate and individual clinical data (Ingram , 2012).

Challenges Health information technology in hospitals:

That hospital HIT has received recent federal funding without matching investments in public health agencies' capacity to receive and act upon this data. The inability of public health agencies to obtain electronic data was the biggest obstacle to effective syndromic surveillance during the COVID-19 pandemic, according to hospitals, though the team acknowledges that these difficulties vary by region (Grembowski , 2010).

As stated, the success of value-based payment models and the enhancement of health equity depend heavily on technological capability. Therefore, to enhance public health emergency planning and policymaking, investments in HIT infrastructure are required. Bleser found that the ONC's data standardization guidelines can improve data sharing across sectors. Implementing data standards like application programming interfaces (APIs) and the Fast Healthcare Interoperability Resources is essential for enabling software for communication and facilitating HIE (Emanuel, 2022).

According to our research, hospitals with no affiliation to an ACO or public health collaboration were more likely to be found in regions with high SVI scores. Additionally, these hospitals reported being less able to share health data. According to the literature, hospitals in high-vulnerability areas usually have the least capacity but the greatest need to work with community and public health

partners to improve patient health. This finding is in line with that theory (Hearld, 2019).

Effective IT infrastructure may be necessary to support targeted integrated approaches that involve public health partnerships in order to reach patients in areas where SVI is higher than the 75th percentile (Chen, 2022; Brewster, 2020).

Health Care and Medical Services Centers:

By 2030, CMS aims to have all traditional Medicare beneficiaries and the majority of Medicaid beneficiaries enrolled in accountable care relationships. Small community and rural hospitals may benefit from this shift to value-based care and alternative payment models since it will lessen the pressure to compete for patients. According to studies, this development might give hospitals that lack adequate infrastructure more stability and encourage them to make IT investments (Madhavan, 2021; Holmgren, 2020).

Recommendations:

It is important to take into account the various limitations of our study:

- First off, our results might not apply to all hospitals in the United States because we only included hospitals that answered the AHA IT Supplement in our analysis. Second, it's crucial to remember that because our study was cross-sectional, we are unable to prove a link between PHS collaboration and ACO affiliation with HIE.
- Future studies should focus on particular HIE functionalities, investigate causal relationships between these variables, and look for connections related to the exchange capabilities of particular EHR data types. The majority of the variations in hospital electronic data exchange capabilities, including the capacity to receive clinical information from outside providers and information to treat COVID-19, could not be explained, even after adjusting for a number of covariates.
- Potential predictors of hospital HIE adoption, such as the kinds and extent of collaborations and the accessibility of community resources for partnerships, require more investigation. In order to obtain a more thorough understanding of its impact, future research should examine the long-term effects of HIE on health outcomes, taking into account the pandemic as an exogenous shock on health outcomes. However, this is outside the purview of our current study.

Conclusion:

The COVID-19 pandemic revealed serious flaws in the infrastructure, reporting, and interoperability of health data. It underlined the pressing need for health equity and customized initiatives that can successfully reach vulnerable and marginalized groups. The pandemic also exposed weaknesses in the PHS and the medical workforce. Examining integrative and cooperative strategies that promote collaboration between providers and the PHS is crucial, especially when using alternative payment models like ACOs.

Future studies should look at the results of collaborative care models as well as how clinical data availability and HIT contribute to program success.

References:

1. Greene DN, McClintock DS, Durant TJS. Interoperability: COVID-19 as an impetus for change. *Clin Chem* 2021;67(4):592–595.
2. Sittig DF, Singh H. COVID-19 and the need for a national health information technology infrastructure. *JAMA* 2020;323(23):2373–2374.
3. Blumenthal D. A step toward interoperability of health IT. *N Engl J Med* 2022;387(24):2201–2203.
4. Williams C, Mostashari F, Mertz K, et al. From the office of the national coordinator: The strategy for advancing the exchange of health information. *Health Aff* 2012;31(3):527–536.
5. Adler-Milstein J, Garg A, Zhao W, et al. A survey of health information exchange organizations in advance of a nationwide connectivity framework. *Health Aff* 2021;40(5):736–744.
6. Novak P, Bloodworth R, Green K, et al. Local health department activities to reduce emergency department visits for substance use disorders. *J Healthc Qual* 2019;41(3):134–145.
7. chen J, Novak P, Barath D, et al. Local health departments' promotion of mental health care and reductions in 30-day all-cause readmission rates in Maryland. *Med Care* 2018;56(2):153–161.
8. Ingram RC, Scutchfield FD, Charnigo R, et al. Local public health system performance and community health outcomes. *Am J Prev Med* 2012;42(3):214–220.
9. Emanuel EJ, Osterholm M, Gounder CR. A national strategy for the “new normal” of life with COVID. *JAMA* 2022;327(3):211.
10. Hearld LR, Carroll N, Hall A. The adoption and spread of hospital care coordination activities under value-based programs. *Am J Manag Care* 2019;25(8):397–404.

11. Lehnert EA, Wilt G, Flanagan B, et al. Spatial exploration of the CDC's Social Vulnerability Index and heat-related health outcomes in Georgia. *Int J Disaster Risk Reduct* 2020;46:10.1016.
12. Chen J, Spencer MRT, Buchongo P. Strengthening the public health partnership and telehealth infrastructure to reduce health care disparities. *Popul Health Manag* 2022;25(6):814–821.
13. Madhavan S, Bastarache L, Brown JS, et al. Use of electronic health records to support a public health response to the COVID-19 pandemic in the United States: A perspective from 15 academic medical centers. *J Am Med Inform Assoc* 2021;28(2):393–401.
14. Holmgren AJ, Apathy NC, Adler-Milstein J. Barriers to hospital electronic public health reporting and implications for the COVID-19 pandemic. *J Am Med Inform Assoc* 2020;27(8):1306–1309 .