Perspective

# The value of community-integrated health information exchanges: three recent examples from El Paso, Texas

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### ABSTRACT

The foundational role of health information exchanges (HIEs) is to facilitate communication between clinical partners in real time. Once this infrastructure for the secure and immediate flow of patient information is built, however, HIEs can benefit community public health and clinical care in myriad other ways that are in line with their mission, goals, patient privacy, and funding structures. We encourage the development of community-integrated HIEs and list specific steps that can be taken toward community integration. We give three examples of those steps in action from a community HIE in El Paso, TX. Each local partnership, in combination with technology innovation, resulted in the development of informatics tools to address community health needs and generated long-term benefits, especially for the most vulnerable patients. Two examples relate to different aspects of the COVID-19 pandemic and a third to the Afghan refugee evacuation.

Key words: community, partnerships, health information exchange, crises, COVID-19, refugee

## INTRODUCTION

Health information exchange (HIE) technology is used to facilitate the flow of medical information between clinicians on behalf of their patients.[1] There exist incentives (often financial) for exchanges to grow in geographic or informational breadth without a corresponding development of the depth of community partnerships. As a result, community members who live below the poverty line, need emergency assistance, or are otherwise vulnerable are often left behind when it comes to HIE benefits.[2] The authors of this perspective, who represent HIE staff and El Paso medical and county leadership, seek to encourage partnerships that remedy such imbalance.

The COVID-19 pandemic laid bare how essential HIE infrastructure is to a region's ability to respond to health needs in timely and data-driven ways.[3] As more regional governments and hospital coalitions seek to develop HIEs in response to COVID-19, examples from existing organizations should prove instructive for how to best create community-integrated systems. Herein, we suggest the following approaches to HIEs looking to become more community-integrated:

1. Incorporate community integration into the HIE mission and vision statements.
2. Seek out and join other organizations that support regional health care.
3. Maintain flexibility in daily operations to allow for prioritizing immediate community needs.
4. Meet with leaders from individual community organizations and listen to their priorities.

5. Identify community organizations and clinical entities that are outside the informatics infrastructure and build methods for them to communicate with the HIE and others.

Community partnerships are not without difficulties. There are, of course, significant technical development and related issues to work through. We provide three examples here in which partnerships were highly successful, demonstrating the value of HIEs becoming truly community-integrated. The examples are focused on crises time periods. However, the value added from becoming community integrated is not only found during public health crises but also in reducing health disparities, understanding the local epidemiology of disease, and using medical informatics to ease communication between clinicians and their patients. We indicate in italics at the beginning of each section, which of the above steps the examples demonstrate.

## PASO DEL NORTE HIE

*(1) Incorporate community integration into the HIE mission and vision statements.*

The Paso del Norte Health Information Exchange (PHIX) is an independent nonprofit community HIE, which serves as a highly secure facility generating confidential community medical records for patients seen at all 11 El Paso, TX, hospitals and participating clinics. Credentialed clinicians can review patient records at the point of care through a clinical viewer. Since it became fully operable in 2016, PHIX prioritized informatics infrastructure along with a centralized directive that all HIE activities benefit the health of the El Paso community while maintaining the strictest level of patient privacy. This directive is taken seriously by all levels of the PHIX organization and necessitates ongoing discussion with community partners.

## EXAMPLE 1: ENABLING COVID-19 HOSPITAL TRANSFERS

*(2) Seek out and join other organizations that support regional health care.*

*(5) Identify community organizations and clinical entities that are outside the informatics infrastructure and build methods for them to communicate with the HIE and others.*

Many areas in the United States experienced a surge of COVID-19 cases in Fall 2020, but El Paso was an outlier. By December 31, 2020, approximately one of every seven El Paso residents (98 540 persons) had tested positive. Between October 15 and December 31, 2020, there were 813 confirmed COVID-19 deaths, overwhelming funeral homes and morgues, and making national headlines. *The New York Times* reported on November 10 that one in every six COVID-19 hospitalizations in the state of Texas was in El Paso, although its residents comprise only 2% of the population.[4] From October 15 to December 15, the intensive care unit (ICU) capacity across all El Paso hospitals ran at a deficit of up to 91 staffed beds (mean = 56.8).

The state and local governments responded by opening an alternative care site at the El Paso convention center with 50–100 staffed beds by the end of October, bringing in emergency medical staff from other areas, and flying patients to ICUs in nearby cities. There were additional staffed ICU beds at the William Beaumont Army

Medical Center (WBAMC), a hospital serving active-duty military and Veteran's Affairs (VA)-affiliated patients.

Transferring patients was a burdensome process for the alternative care site, WBAMC, and the rest of the hospitals in the city. For systems not already connected to PHIX, documentation that accompanies hospital transfers is sent using HIPPA-compliant faxes (a very common method in health systems across the country). Physicians needed to communicate leading up to transfers to understand how the patient's condition and treatment were changing. During the surge, transfer orders took hours to be processed because medical staff were rightly focused on providing direct care and did not always know which patients could be moved. As a result, the ICU at WBAMC remained below capacity while patients lined the halls at nearby community hospitals.

PHIX was made aware of transfer issues during a COVID-19 regional hospital surge committee meeting, which was daily at this point in the pandemic. The committee was organized by local hospital leadership and then turned over to the Border Regional Advisory Council (BorderRAC) and its Executive Director, Wanda Helgesen. BorderRAC is one of the 22 area divisions responsible for integrating emergency care in the area and covers El Paso as well as surrounding counties in Texas and New Mexico.[5] They granted access to clinicians at the alternative care site to view the PHIX patient portal. As a result, transfer approvals went from taking hours to minutes, since physicians could look up the patients immediately and view changes in their care and condition in real time (see Figure 1). This was occurring alongside unprecedented collaboration between typically competing hospitals through multiple channels.

Lead staff at WBAMC expressed willingness to accept COVID-19 patients from community hospitals if it could be done in accordance with Federal restrictions. The VA director further coordinated with PHIX, and they concluded that past or current military insurance (TriCare) should be the primary method of identifying transferrable patients. PHIX staff quickly programmed reports of patients potentially eligible for transfer based on this identifier and began sending them to hospital CEOs the next morning (October 24, 2020). It was then up to the attending physician's discretion whether transfer was advisable and to confirm that they were indeed eligible for care at WBAMC. Typically, transfers were used during crisis points when there was not enough staff per patient.

From October 14, 2020, to June 21, 2021, WBAMC transferred in 273 patients from local hospitals. In addition to sending the reports, PHIX gave the El Paso VA and WBAMC access to the clinical viewer to help facilitate the transfers. This led to both eventually committing to long-term local partnerships with PHIX. PHIX's military informatics capabilities were previously only at the national level, which allowed the VA and WBAMC to pull back records from PHIX in Continuity of Care Document format, but patient matching issues often made it difficult to retrieve data. Providing direct access to the local clinical viewer enhanced the value of PHIX to WBAMC and the VA and led to their ongoing local participation.

The active notification of transfer patient eligibility was an additional service provided by PHIX. The data were already present within the system, and the clinical staff who needed to receive alerts were already credentialed to access the clinical viewer. PHIX developed the custom reports to support leveraging the existing data to address the crisis. Similar projects may require some initial out-of-the-box thinking and custom programming but are in line with the purview of most community HIEs.
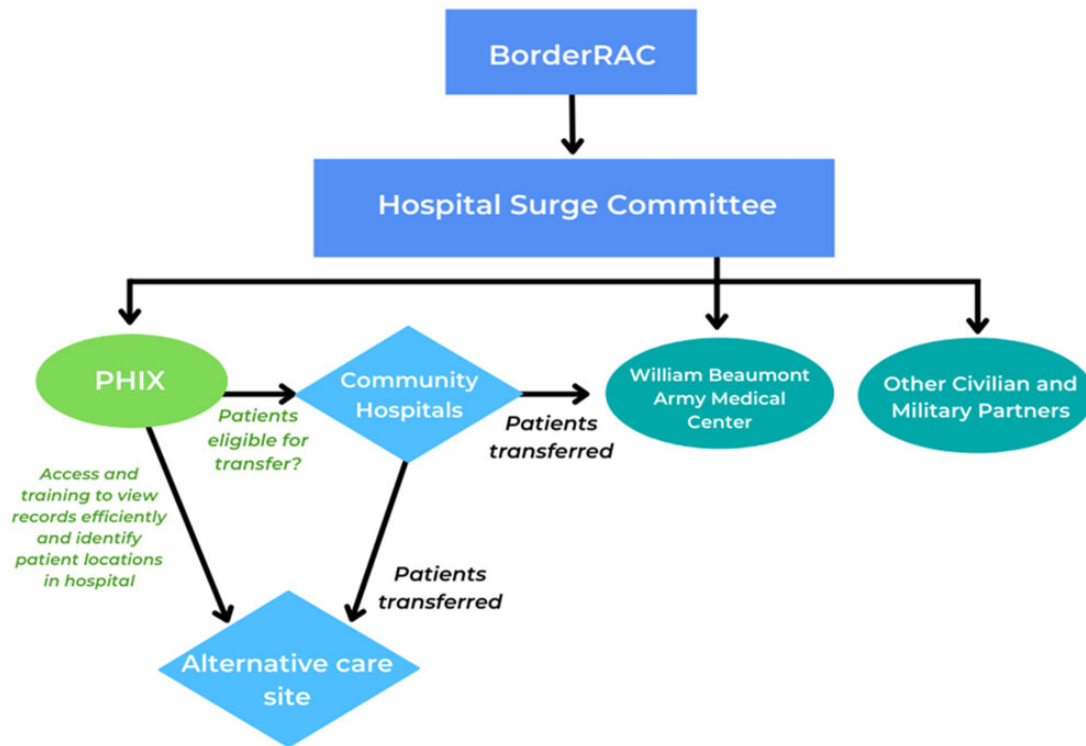
**Figure 1.** Diagram of the flow of information between PHIX, hospitals, and community leaders to assist in transfers of COVID-19-positive patients. Many collaborations not shown here between individual hospitals also supported the flow of supplies and information.

## EXAMPLE 2: SUPPORTING ELECTRONIC HEALTH RECORDS FOR AFGHAN REFUGEES

*(2) Seek out and join other organizations that support regional health care.*

*(3) Maintain flexibility in daily operations to allow for prioritizing immediate community needs.*

The overthrow of the government in Afghanistan by the Taliban in August 2021 led to the rapid evacuation of over 65 000 refugees, of whom approximately 10 000 were housed in Doña Ana Village, a camp on Fort Bliss. The hastiness of the evacuation is widely understood, due to extensive coverage by local and international media. Upon arrival, many Afghans needed urgent health care for issues ranging from the management of chronic conditions, prenatal and delivery care, acute infections, mental health, and dental services. Basic medical services such as vaccinations and first aid were provided at Doña Ana by WBAMC clinicians. However, any further necessary medical care was disseminated throughout the broader El Paso health system.

The urgency of setting up the camp and refugee services created challenges for both military and community clinicians. Translator-mediated self-reporting and any physical paper records were the primary means of communicating past or current medications, conditions, and care already received since arriving in the United States. Refugees spoke many dialects and had different cultural backgrounds depending on their region of origin. Even with translators present, communication was imperfect. There was no standard method for records to follow patients, putting additional stress on refugees, translators, and clinicians (see Figure 2).

As with the hospital transfer issue, PHIX staff were made aware of these difficulties through the Hospital Surge Committee. PHIX

leadership offered no-cost access to physicians treating refugees, including the physicians at Doña Ana, to smooth the sharing of refugee electronic health records. The technical and legal infrastructure for accessing secure records was already in place, so the issue was essentially resolved within a day of PHIX becoming aware. By the time the last Afghan refugee left Doña Ana in January 2022, 1855 electronic medical records facilitated the effective treatment of refugees seen in two El Paso hospital systems, as well as various independent primary care and specialty clinics.

The support of Afghan refugees did not require a large-scale shift in PHIX's operations. It merely required becoming aware of the problem through community connections, and a willingness to find informatics-based solutions to support clinicians and patients.

## EXAMPLE 3: ENSURING SAFE HOUSING FOR INCARCERATED AND HOMELESS PERSONS

*(4) Meet with leaders from individual community organizations and listen to their priorities.*

During the COVID-19 pandemic, concerns about safe housing for the most vulnerable persons in the community for protection and quarantine became a top priority. This included persons who were incarcerated in local jails and persons who were homeless, or unsheltered. Nationwide reports of COVID-19 outbreaks in jails and prisons demonstrated that even with efforts to reduce spread, lack of social distancing and a high population of persons with chronic conditions meant hundreds of prisoners could be infected in a single facility in a matter of weeks.[6] Among homeless communities, high proportions of persons with chronic conditions, poor nutrition, and dense populations within shelters meant that outbreaks were espe-
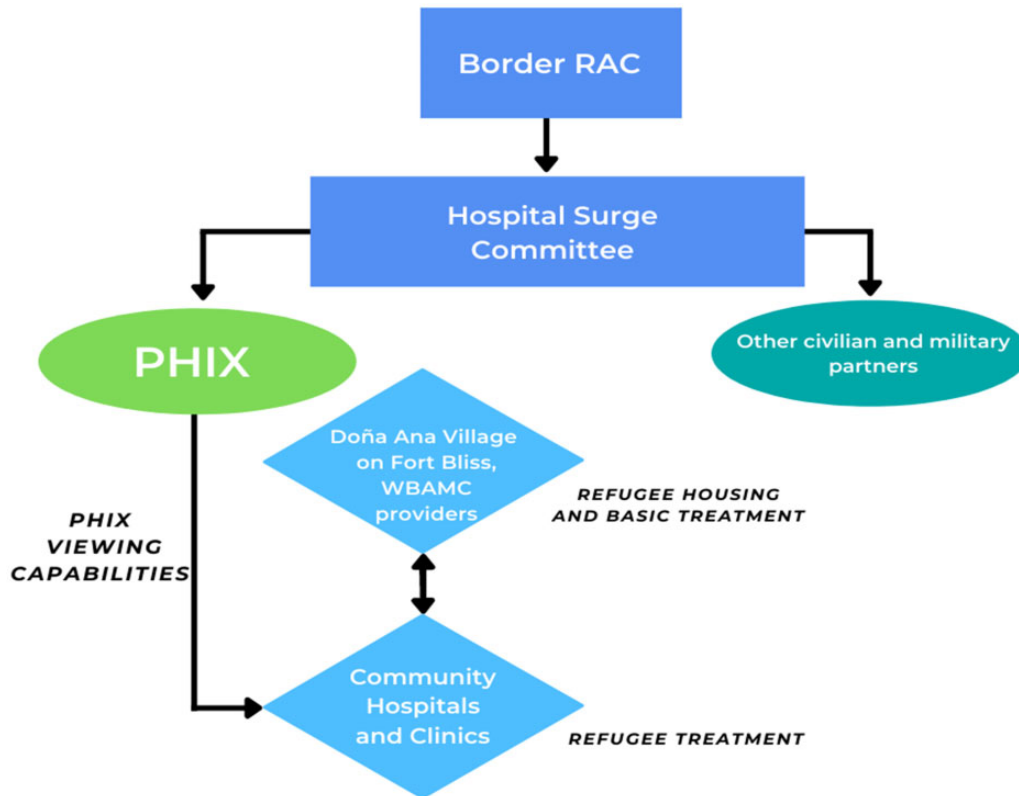
**Figure 2.** Diagram of the flow of information between PHIX, military clinicians, and community leaders to assist in supporting electronic health record usage for Afghan refugee patients.

cially dire. In Boston, it was found that 36% of persons in a single shelter tested positive over a 2-day period.[7]

County leadership in El Paso noted what was happening in jails and homeless shelters in areas with early COVID-19 surges. They resolved to identify methods for ensuring persons with COVID-19 were quarantined in safe and effective ways and were willing to invest substantial funding into these initiatives. They contacted PHIX for support, needing a way to identify persons who had recently tested positive. PHIX, who was already housing the COVID-19 testing results database as a service to the city, agreed to allow viewing access to approved staff. (The results database is a central repository of COVID-19 tests and results from all city-sponsored testing sites, mobile testing sites, schools, hospitals, EDs, private practices, and laboratories in PHIX's network of partners.)

Persons who were newly incarcerated were first taken to a central intake site, where their records were checked against the COVID-19 testing database and were screened for symptoms. They also conducted universal testing once tests became available through OEM later in the pandemic. If there was evidence of COVID-19 positivity, then they were sent to a quarantine area, while others went through normal processing. As a result, there were no major outbreaks associated with jails in El Paso, a major success given how quickly it spread in the larger community (see Figure 3).

A second county and city partnership resulted in the creation of a central housing site where persons seeking accommodation in a homeless shelter arrived first at a centralized "Welcome Center" to be screened for COVID-19 and housing needs. This happened very early in the pandemic and before any major shelter outbreaks. During the intake process, County staff looked up homeless persons in

the COVID-19 testing database and screened for symptoms. Persons who were COVID-19 negative were placed at a shelter somewhere in the city, while COVID-19-positive persons were housed in a special quarantine facility. Just under 3000 individuals went through this unique intake program and were screened by County staff utilizing PHIX. Dozens of positive cases were identified during the screening process and were successfully quarantined and housed. Remarkably, this unique process resulted in zero cases originating within the welcome center.

The partnerships developed with housing organizations during the pandemic continue to grow. The city of El Paso is seeking to create a permanent centralized Welcome Center for homeless persons. PHIX staff are involved in discussions around how to best support the clinical care needs of homeless persons and facilitate HIPPA-compliant communication between the Welcome Center and hospitals over the long term. This is a step toward true community integration with a focus on the most vulnerable populations.

## CONCLUSION

We provided examples of how PHIX's established presence as a proactively participating community organization proved essential to its ability to respond to local clinical and public health needs. Many projects requiring their rapid response lead to long-term partnerships and growth for PHIX, supporting their mission and funding structure. We do not intend to suggest that these are the only ways in which the integration of HIEs can be used for the benefit of communities. Examples from HIEs across the country demonstrate the benefits of community integrations in domains outside of public
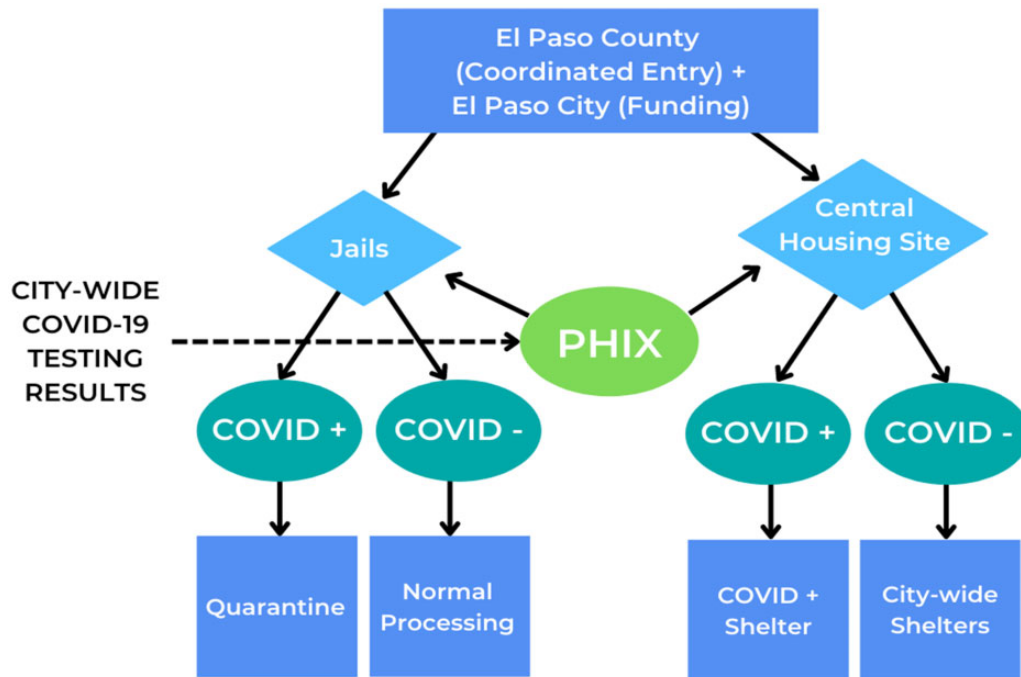
**Figure 3.** Diagram of the flow of information between PHIX, city, and county administrators and staff to assist in supporting the identification of COVID-19-positive persons in the incarcerated and homeless community.

health and clinical care, including policy development, needs assessment, and cost management. We do intend to show that there is real and direct potential value to the community, clinicians, and HIEs that undertake such partnerships. We further showed how the most value may be experienced by vulnerable populations, such as homeless or incarcerated persons.

The authors encourage other HIEs to use their wealth of expertise and rich data sources to identify and support community needs. This may require changes in personnel structures and up-front commitment of resources. However, the value of community integration is far greater to the HIE, clinical partners, and local public health.

## AUTHOR CONTRIBUTIONS

CS-A led the writing of the article; EH, JN, and JCC helped in the design of the article, providing data, and editing; WH, JM, JL, and JB contributed interviews and commentary regarding the overall article and projects in which they were centrally involved.

## CONFLICT OF INTEREST

CS-A is a paid research contractor working with PHIX, EH and JN are PHIX employees, and JCC is a PHIX volunteer. Other authors have no competing interests to disclose.

## DATA AVAILABILITY

The only data used in support of this perspective were overall tallies of persons influenced. No other new data were generated or analyzed in support of this research.

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