Clinical-Community Integration: The Role of Health Information Technology

WHAT IS CLINICAL-COMMUNITY INTEGRATION?

Non-medical factors — such a person's financial situation, access to transportation, education level, and neighborhood — are significant drivers of health and well-being. There is increasing recognition that caring for people requires not just the tools available in clinics or hospitals, but services, skills, and resources that are readily available in the community.[1,2]

Clinical-community integration is an approach that reflects the recognition of the importance of collaboration between clinicians and those working in the community, such as community health workers, public health professionals, spiritual leaders, and others. Clinical-community integration has the potential to make a significant impact by better addressing root causes of problems that can lead to disparities and poor health outcomes.[3]

Making clinical-community integration work seamlessly is a complex endeavor, requiring continuous, accurate, secure, and timely communication among all parties. Ready access to clinical data is critical, as is information about non-clinical factors affecting health (commonly referred as the social determinants of health, or SDOH).* This information can be shared through computer networks that "talk to each other" – directly or through health information exchange hubs that route information to everyone caring for an individual. Empowering people and community organizations with data and the ability to communicate using health information technology (HIT) can be an effective strategy for reducing health disparities.[4,5,6]

This brief focuses on the role of health information technology in clinical-community integration and provides examples of best practices, as well as lessons learned that could be applicable in Connecticut to a range of clinical-community integration efforts.

Integrating the work of clinical care providers and community organizations can improve health outcomes. Sharing data is one of the first steps to making it work.

> **" My mom sees many doctors and she is getting confusing messages. Why don't her doctors talk to each other? "**

> **" I do everything my doctor tells me, I take my medicine, but my asthma is not getting any better. I have been to the ER so many times. My doctor asked me if my house is moldy and if my heating system is working. I said 'yes' and 'no,' so what do I do next? "**

SHARING INFORMATION WITHIN THE HEALTH CARE SYSTEM

Until recently, communicating most health information between providers required faxes, mail, or telephone calls. Reliance on these methods began to change in 2009 when passage of the federal Health Information Technology for Economic and Clinical Health Act (HITECH) launched an HIT revolution.[7,8] The law required physicians and hospitals to adopt electronic health records (EHR) and provided billions of dollars to help them do it.

The HITECH Act's goal of widespread EHR adoption has largely been accomplished. However, the legislation sought something more that has not been achieved: for each provider's HIT system to be able to communicate with others, so physicians, hospitals, labs, pharmacies, nursing homes, and other places providing care could access records for shared patients. This capability – known as interoperability – continues to be a challenge. A recent study of more than 2,600 hospitals found that less than 30 percent fulfill four functions key to interoperability: finding, sending, receiving, and integrating patient information from outside providers.[9] The lack of interoperability means all the providers treating a given patient are less likely to be working with the same information, and patients are more likely to receive confusing and even contradictory messages.

CONNECTING CLINICAL CARE AND COMMUNITIES

While asthma is a clinical issue, it is unlikely that patients will respond optimally to medications without attention to household or community conditions that worsen symptoms. Hospital emergency departments and clinics often have lists of community-based resources to refer patients to for problems such as mold or housing issues. For example, a hospital emergency department could refer the asthmatic patient to the local health department, which could dispatch a home inspector to check for mold or other asthma triggers.[10] In an integrated system, the home inspection and any follow-up activities would be reported to the referring provider and the patient's primary care provider.

Yet, in most cases, there is no dedicated health information technology system that facilitates an immediate referral and sharing of patient information. In other words, even if the patient received a referral to a community resource from the emergency department, it is unlikely the emergency department doctor or the patient's primary care clinician would learn the results – or whether the patient received the services at all.

There are several challenges to linking clinical HIT systems with public health and community organizations. Local health departments are often the backbone of community health-related activities, but their HIT capabilities lack direct connections with the local hospitals' and clinics' EHRs or with community organization computer systems.[11] Similarly, the HIT capabilities among local health departments and community organizations tend to be less advanced than those in the clinical care system, largely because the public health sector did not receive a similar infusion of HIT funding as hospitals and physicians.

There are no broad interoperability standards for linking information in electronic health records directly with public health or community-based organization computer systems. While there is a host of "middleware" technologies that can bridge the gap and serve a vital role connecting community providers with clinics and hospitals, most cannot meet strict federal rules for exchanging information with electronic health records systems.

DALLAS INFORMATION EXCHANGE PORTAL, TEXAS

Problem: High use of the emergency department by patients whose problems stem from non-medical issues, costing the hospital millions of dollars

Solution: Develop an information exchange portal that connects the hospital care managers with community organizations including homeless shelters and food pantries

The initiative was spearheaded by Parkland Memorial Hospital physician-computer engineer Ruben Amarasingham, who founded the Parkland Center for Clinical Innovation (PCCI), a joint effort among Parkland Memorial Hospital (a large safety-net hospital) and community partners in Dallas County. The project was funded by an initial $980,000 grant from the W.W. Caruth, Jr. Foundation, followed by a second grant by the same foundation of $12 million.[12]

WHAT THEY DID

The hospital and community organizations partnered to integrate resources to create the Dallas Information Exchange Program. The program consists of:

- A cloud-based information exchange portal (separate from the hospital electronic health records system) connecting hospital care managers with 87 community organizations.

- Computer terminals installed in all participating organizations and linked to the hospital and with each other through an information exchange portal.

- A case management system and standardized patient data to facilitate information exchanges among participants. Patients must consent to participate ("opt-in") upon first encounter with each participating organization. PCCI ensures that shared patient health information meets federal and state privacy laws by training personnel handling referrals in participating community organizations. Protected clinical data is shared only when necessary in a client referral.

- A systematic way for community organizations to handle referrals, including conducting additional assessments, initiating secondary referrals, and sending electronic feedback to the hospital through the Information Exchange Portal.

- An agreement by each participating community organization to ensure that information about their resources is always accurate and current.

RESULTS

As of February 2018, 87 organizations were participating in the Dallas information exchange program. The system included data on 148,751 unique clients. The hospital reports that this system led to a 36 percent reduction in emergency department visits among high utilizers, a 40 percent reduction in hospitalizations, and a $12 million reduction in patient costs over two and a half years.[13] One official involved in the initiative described the portal as "a leapfrog improvement" in clinical-community integration.[14]

LESSONS LEARNED

- Legal and regulatory issues dealing with privacy and confidentiality – not technology challenges – are the most time-consuming to resolve.

- A strong governance structure with balanced representation by community and clinical stakeholders is critical to success.

- Because patients often have stronger relationships with community organizations than with clinical care providers, they were more likely to agree to share personal information when asked by staff at a food pantry, rather than in the emergency department. "At the pantry, you know them, they've fed your family, there's trust," one initiative leader said.[15]

OREGON COMMUNITY HEALTH INFORMATION NETWORK (OCHIN, INC.)

Problem: Primary care providers don't have enough information about the social determinants of health in patients' lives

Solution: Embed social determinants information in the electronic health record

OCHIN, Inc. is a nonprofit community-based organization that manages an electronic health record system (using Epic, a commonly used system) for 440 community health centers. The patients served are predominantly low-income; 33 percent are Hispanic, 28 percent speak a primary language other than English, and 25 percent are non-white. OCHIN piloted a clinical-community integration program in three community health centers. The two-year pilot was funded by a grant from the National Institute of Diabetes and Digestive and Kidney Diseases, with a budget of approximately $703,000.

WHAT THEY DID[16]

A team of researchers from OCHIN and staff members from the three pilot clinics:

- Reached consensus on the most relevant SDOH issues affecting patients' health in the community.
- Designed clinic workflows to collect, review, and use SDOH data.
- Identified community resources and selected those with capacity to help patients.
- Established a follow-up process for tracking referrals.

RESULTS

Providers and staff in the three pilot clinics and OCHIN's other member community health centers can now use the tools to document SDOH needs. SDOH needs are very high, with over 90 percent of screened patients reporting one or more SDOH need.

LESSONS LEARNED

- Apply SDOH screening only to the highest-need patients to avoid overwhelming clinic staff.
- Identify methods – such as tablets, text messaging, portals – for patients to input their own SDOH information.
- Document in the EHR that some patients may not wish to share SDOH data or accept assistance.

COMMUNITYRX, CHICAGO

Problem: When providers identify nonmedical challenges, it is often hard to figure out what to do or how to address the problem

Solution: Develop a system to identify community resources from an extensive catalogue of resources that are already lined up and "prescribe" the resources to patients

CommunityRx is a population health initiative led by The University of Chicago Medicine in collaboration with the Alliance of Chicago Community Health Services and the Chicago Health Information Technology Regional Extension Center. The initiative, funded by a $5.9 million grant from the Centers for Medicare & Medicaid Services, expects to serve 200,000 people on the South Side of Chicago.

As part of the initiative, clinicians, business leaders, and community leaders work together in a designated geographic area. One aspect of the initiative is the Food Rx program for people with diabetes, a collaboration among 19 Walgreens stores, clinics, and local farmers markets. The program includes a Food Rx "prescription" that contains:[16]

- A doctor's prescription for healthful eating that looks like a drug prescription.
- A coupon for either Walgreens or the farmers market.
- Educational tips about good food choices.
- A map showing where the coupons can be redeemed.

WHAT THEY DID

- Employed community health information specialists to help participants navigate the resources.
- Engaged hundreds of high school students using smartphones and an app, working alongside science-oriented college students, to conduct a comprehensive census of community service providers and compile an accurate list of resources for patients.[17]

RESULTS

Over 36 months, 1,600 clinicians and 6,000 community service providers generated 253,479 personalized prescriptions for more than 113,000 people to support disease self-management and wellness.

LESSON LEARNED

- The inventory of community resources compiled by students – a "feet-on-the-streets" approach – is far more accurate than using secondary sources such as websites or published lists.[18]

Linking clinical care with community organizations is key to improving health and well-being. While the field is still developing, early models provide insights that can inform future efforts. Among the key findings:

- **Strong governance is important**, with clarity of roles, responsibilities, and accountability.

- **Clinical-community integration** programs must consider the social factors that influence patients' health and well-being – and must have methods for collecting, sharing, and using this information both inside and outside traditional health care settings. Similarly, involved organizations must have internal processes for handling referrals and follow-up.

- **Programs must have a method** for maintaining a comprehensive and accurate inventory of community-based resources. A "feet on the street" approach is more effective than relying on secondary sources such as websites or directories to build this inventory.

- **Trust is important**. Some patients are more likely to open up about challenges in their lives when talking to individuals from trusted local organizations rather than providers in a clinical setting. The health care system can benefit from building links to organizations that already have strong relationships with people in their communities.

- **Not all patients** require the same level of services or assistance with social factors. To ensure effective resource use, match intensity of efforts to intensity of need.

- **Early investments** from grant funders or venture capital can jump-start clinical-community intervention models and provide the opportunity to document the benefits in health outcomes and cost-effectiveness.
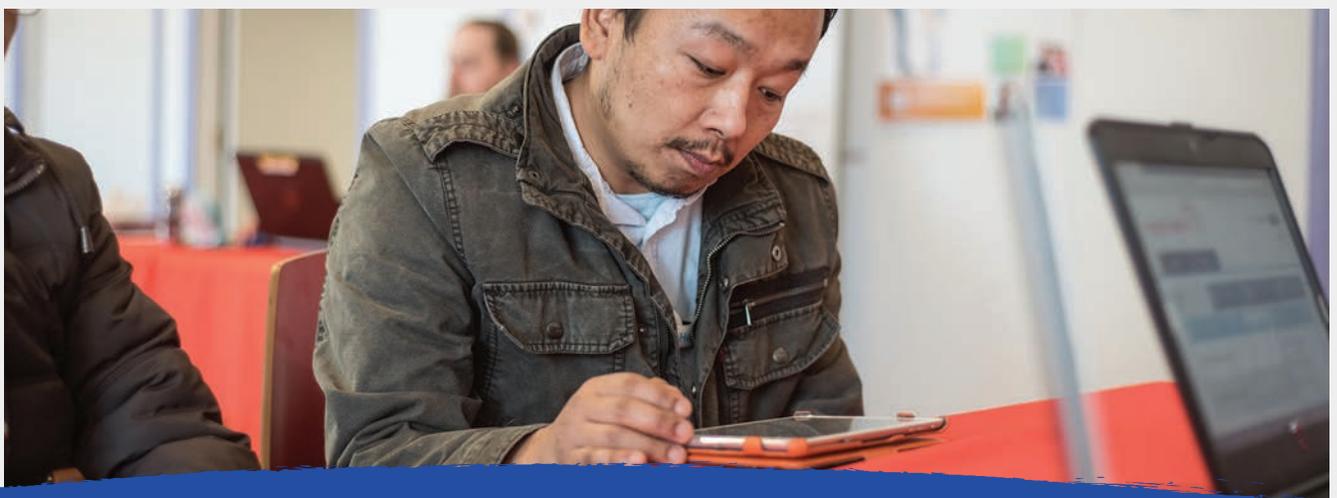
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* "Social determinants of health" is used in this brief because it is a widely used expression, but "social drivers of wellbeing" is a more suitable term that implies the ability to change and captures more fully peoples' quest for the fullness of life.

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