



Beyond the EMR: Technological Tools and Skills Needed in Patient-Centered Medical Homes

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Ask what technology is needed to transform primary care practices and often suggested is the Electronic Medical Record (EMR).¹ However, technology skills and technological tools needed in the outpatient environment often exceed the EMR alone.

Leveraging technology can improve care quality and facilitate delivery of proactive care. In order to deliver proactive care, skilled professionals need allocated time and they need data. Yet having access to data does not necessarily equate with using data in an informed manner. In some cases, additional technological solutions are needed. In other cases, the people working in a practice need training and coaching.

Beyond clinical changes, which are universally recognized as constant, the technology and software in use in health care continues to change and evolve. Many people who have expertise in using their EMR are not comfortable using software which is often associated only with the business environment. People in all practices could benefit from recognizing and admitting their skill gaps. Leaders should consider that technical skills are not only pertinent to funding and training on EMR systems; but additional skill maintenance, training, and support are also required.

When practices decide to apply to NCQA for Patient-Centered Medical Home recognition, there is a heightened need to use other software, including spreadsheet and word processing.² Even using the tools to complete the NCQA application and their Interactive Survey System (ISS) requires a level of technical savvy.

Three examples of using technology successfully to advance proactive care are seen at Lehigh Valley Health Network (LVHN) and are provided below. One speaks to improving care transitions for high-risk patients; the others speak to building technical skills in several Patient-Centered Medical Home practices that have applied or are applying for NCQA recognition.

Care Transitions. LVHN implemented a multifactorial model for inpatient to outpatient care transitions. First, a technology-based solution was needed. A user-friendly web-based program, Graphical User Interface (GUI), was built by our clinical informatics team and combined data from multiple electronic patient documentation systems. Through use of the GUI, data became available to notify practices of their patients in the hospital. This single source of consistent information was the foundation for a standardized discharge reconciliation process.

An algorithm (described elsewhere)³ based upon chronic disease states, poly-pharmacy, abnormal clinical indicators, and resource utilization to identify patients at high-risk for resource utilization was created. This registry is presented to clinicians who use their clinical judgment to add or remove patients from the high-risk registry.

Critical to the success of the work was the creation of Community Care Teams (CCT). The CCTs were designed and implemented to work with the high risk-population. The mission of the CCT is to promote health behavior change by providing comprehensive integrated care to support the primary care practice and address the physical, socioeconomic and psychosocial needs of the high-risk population.

Patients can receive one on one support from any one of four specialists, including but not limited to a nurse care manager, a social services care coordinator, a behavioral health specialist, and a clinical pharmacist. The CCT works to help keep patients out of the inpatient hospital setting by supporting and promoting health behavior change and transitioning care support within the outpatient primary care setting. All contacts with patients are documented within the EMR to enhance communication, and are tracked using the custom-built GUI.

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Each day primary care practices log onto our intranet and securely receive their list of admissions and discharges that include information such as select inpatient labs, utilization, high-risk status, disposition, and the names of inpatient providers. Each practice follows a standard process in reconciling our patients' discharges in an efficient, predictable and measurable manner within the EMR. The goal is to reconcile each of our patient's discharge within two business days of the patient's discharge. LVHN tracks each practice's performance and presents it on an electronic dashboard, which is available to all on our network's intranet.

Identification of high-risk patients upon discharge was implemented, supported by the CCT care manager, performance measurement, transparency and research on interventions, and the inclusion of care transition metrics within the practice. As a result, we have experienced impressive outcomes on admissions, readmissions, and emergency department utilization as well as reports of improved patient and employee satisfaction. Previously published data show that when the CCTs were first initiated in July 2012, the network's practices reconciled 25% of hospital discharges within two business days. By July 2013 we were able to nearly double our performance to 47%³. Coincident with this increased performance rate, the work of the CCTs on all high-risk patients has seen impressive outcomes whereby high-risk patients in CCT practices are 34-45% less likely to have an unplanned admission/readmission than high-risk patients in practices without CCT.

Building Technical Skills in PCMH Practices. Literature shows PCMH has gained momentum as a means of transforming primary care and that Practice Facilitation (PF) can be a vital resource to support transformation efforts.⁴ A cross-disciplinary Practice Facilitation team consists of three coaches from three different departments. Each is allocated on a part-time basis to work with practices on the NCQA applications process. The application is a goal, but the focus is on PCMH capacity building. The Primary Care Practice development goes across Pediatrics, Internal Medicine, and Family Medicine and includes residency practices.

While working with in practices, the facilitators observed that practice members were frequently unsure and even unaware of some technology tools at their disposal. For example, prior to the creation of the CCTs and prior to developing the GUI system, there was a Business Information System with registries useful for clinical initiatives. The access to data existed, but the data needed to be exported to Excel, analyzed, and prioritized so that action (proactive patient care) could be taken. Part of practice facilitation was to insure comfort with use of registries and manipulation of data. Improved technical skills allowed practices to further their existing outreach and document evidence of preventive and chronic conditions selected for the NCQA application. In all practices seeking NCQA recognition, clinical quality improvement initiatives were based on registry data which was tracked over time.

Another opportunity for skills development was presented with the use of SharePoint, which is a Microsoft team collaboration software tool. A SharePoint site was developed to collect documentation and evidence useful for NCQA applications. Practice members were trained on using the software to access and share that evidence. Saving resources and team building is part of PCMH development. This proves true not only for the clinical team members. Technology skills building and team collaboration was enhanced through use of both SharePoint and registries. These are just two examples of how improving software skills in practices helped with transformation, enhancing efficiency, and with applying for NCQA recognition.

The PF team has assisted 15 practices that received either Level 2 or Level 3 NCQA recognition. This includes four Internal Medicine, two Pediatric, and nine Family Medicine practices

Practice Staff Communication with Technology. LVHN has begun to employ an instant messenger program for communication among all practice staff. Historically, if there was a question about a patient, it could require a phone call to the back office or someone leaving their station and interrupting a patient encounter to get an answer. Now a practice member can ask a question without leaving their computer. If it is a simple question, the response is quick, and most times any patient present is unaware of the interruption. O'Malley et al (2015)⁵ showed that although in-person communication is important, the use of the EMR and instant messaging enhanced communication in some practices.

This was observed within one family medicine practice. The nurses would send messages to the clinician about their next patient, or ask clarifying questions about vaccines for a patient. This would occur without knocking on the door to interrupt the clinician interaction with a patient. The clinicians noted that this saved them time and was preferred, because the patient usually did not notice the communication, as the clinician was already using their computer to enter information in the EMR.

Discussion. We have demonstrated, with three case examples, how technology has been employed at one health network to facilitate the development of patient-centered medical homes. The use of CCTs and the technology associated with it reduces hospital related utilizations, increases access, has a population health focus, and allows for comprehensive, patient-centered, high quality care. Utilizing instant messaging tools in a practice setting increases the pace of staff communication and prevents interruption of clinician visits with patients. Practice facilitators enhance practice use of registries and introduce SharePoint for data-sharing. Promoting ongoing quality improvement efforts and building staff efficiency are the result of building technical tools and skill sets. There is significant opportunity present and a need for technology beyond the EMR in the PCMH.

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