

## **Queens-Long Island Medical Center Improves Quality and Physician Satisfaction with EHR Backbone and Patient Centered Medical Home Initiative**

**Background:** Primary medical care in America is in crisis, with far fewer physicians choosing careers in primary care (e.g., general internal medicine; family medicine; pediatrics; and in some formulations, obstetrics and gynecology). Surveys indicate that physicians in primary care are disillusioned and considering early retirement or career change. Yet due to their role in delivering preventive care services and management of chronic conditions that account for a large percentage of health care expenses in the U.S., primary care physicians play a central role in the effort to improve overall healthcare quality and lower costs.

These issues are a key focus of the Institute of Medicine reports, *Crossing the Quality Chasm: A New Health System for the 21st Century* (2001), and *Building a Better Delivery System: A New Engineering/ Health Care Partnership* (2005). The IOM reports encourage a focus on chronic conditions and urge greater investment in information technology infrastructure such as the electronic health record (EHR) to support evidence-based care. Both reports were a source of inspiration for the Physician Practice Connections®-Patient Centered Medical Home™ (PPC®-PCMH™); a program developed by the National Committee on Quality Assurance (NCQA) in partnership with the four largest primary care medical societies. The PPC-PCMH standards are designed to help practices attract and retain primary care physicians and support their ability to coordinate care for patients. The model emphasizes the use of IT systems and systematic, patient-centered, coordinated care management processes with the goal of achieving better health, longer lives, higher patient satisfaction and less expensive care.

**Local problem:** Queens-Long Island Medical Group (QLIMG) is one of the largest physician practices in the New York metropolitan area, with more than 350 physicians in 22 medical offices serving more than 240,000 patients annually. In 2006, QLIMG's Flushing North office in Flushing, NY employed six primary care physicians, all of whom reported feeling overwhelmed by their work schedules and frustrated with their jobs. Virtually all clinical workflows were funneled through the physicians, rather than other members of the care team. Non-physician staff was not being utilized to their licensure and much of the preliminary patient intake work was left to the physician during the visit, as well as patient education and script renewal. Consequently, providers were staying two to three hours beyond office hours each day to keep up with the work load, and yet still reported spending too little time with patients. The group serves a multi-ethnic and diverse complement of patients with a wide range of complex illness. To appropriately treat patients, physicians at QLIMG felt that the time constraints due to the fractured work-flow did not allow them to adequately develop the patient-centered relationship that is at the core, fundamental to quality clinical care and reducing barriers to care. Physicians were frustrated, overwhelmed and unsatisfied, as a consequence the entire practice suffered.

**Intended improvement:** In late 2006, Suneel Parikh, MD, Medical Director of the Flushing North office and the former Chief Operating Officer of PivotHealth, a provider of physician practice management and consulting services nationwide, set out to find a solution to the problems at the practice. Dr. Parikh determined to improve physician and staff satisfaction through the PCMH model of care, which he hoped would also improve patient outcomes.

The PCMH model requires technology that allows for integration of information from multiple, diverse sources into a single system to support the availability of comprehensive medical information. Among many requirements, systems must include up-to-date and accurate problem and medication lists, information about each patient encounter, referral and order tracking and a patient web interface. NCQA PCMH recognition is awarded from Levels 1 to 3.

Dr. Parikh and QLIMG's leadership set a goal for North Flushing to become the first physician's practice in the state of New York to achieve Level 3 recognition, as a first step toward the entire medical group's adoption of the PCMH model.

***Planning the Intervention:*** Dr. Parikh and his team decided, as a first step toward NCQA certification, to implement an electronic health record (EHR). The move coincided with QLIMG's decision to implement an EHR for all 22 of its locations. Electronic records serve as the central nervous system of the PCMH model, and without it, even Level 1 NCQA certification is unattainable.

NCQA certification addresses the following nine standards: access and communication; patient tracking and registry functions; care management; electronic prescribing; patient self-management support; test tracking; advanced electronic communications; performance reporting and improvement; and referral tracking. To achieve certification, QLIMG would have to completely re-engineer its office workflow to enable a care team redesign, and completely integrate EHR technology for registries, clinical decision support, population management, patient engagement, quality reporting and secure, ubiquitous data access and exchange.

A project management team was formed to direct the transition to EHR, including consultants from PivotHealth, a nurse supervisor, an office manager and Dr. Parikh as the physician champion. The project team decided to simultaneously deploy the EHR and PCMH model. This process began with mapping electronic workflows that were designed to mimic the PCMH workflow process.

Core principles of the PCMH approach developed by QLIMG were to: 1) Move all possible interventions away from the physician visit to improve overall efficiency and increase physician capacity. 2) Use every member of the team to the highest level of licensure and ability enabling the physician to spend more time on patient visits appropriate to their expertise. 3) Facilitate daily care team "huddles" to create a cohesive environment that encourages teamwork and accountability for tasks of the day. 4) Make EHR use mandatory to deter inefficient practices and encourage complete integration and seamless care coordination between all healthcare providers including nurses, PCPs, specialists and hospitalists.

The rollout of the PCMH was achieved in two phases. Phase One was to bring the practice to NCQA's Level 2 status. Phase Two was to bring the practice to NCQA's Level 3 status. Level 3 involves more proactive outreach to patients. Thankfully, the EHR provides QLIMG staff with a dashboard view of patient health status based on test results and other clinical data, enabling individual physicians and nurses to easily identify and reach out to at-risk patients.

***HIT Utilized:*** In April, 2007 QLIMG began utilizing Allscripts Enterprise EHR to automate and connect its caregivers to the broader healthcare community. Today, QLIMG's Flushing North office is completely paperless and utilizes all modules of the EHR including e-Prescribing, clinical decision support, documentation tools, flowsheets, care guides, and compliance reporting.

The EHR at QLIMG helps to greatly reduce liability risk through documentation, the quality of patient care is better and there is evidence that patient outcomes have improved. The seamless coordination patient care with the EHR, in real time allows the physician and the entire care team to be more efficient. Sustaining that collaborative environment through technology is essential to the medical home model of care.

As a complete data repository, the EHR connects primary care physicians, hospitalists and nurse care managers and enables them to collaborate on initiatives leading to improved patient care, such as the identification of diabetic patients who qualify for outpatient pro-active care programs, which enable staff to monitor their health and act quickly to avoid hospitalization.

QLIMG measures the performance of their practice and staff by reporting on ePrescribing usage and referral tracking - two metrics that indicate the degree of their utilization of the EHR, and their ability to resolve health problems prior to a referral. They also analyze reports from outside laboratories, specialists, and hospitals to identify trends in quality, risk management, and utilization, leading to heightened efficiency. The EHR also interfaces with ancillary services – where QLIMG can instantly send and receive lab orders and results. They have also implemented PACS for internal radiology orders and results to be delivered the same way. In the practice the EHR became the tool used to interconnect all of the staff, so that there can be a collective approach to care. With EHR, the clinical team independently handles each portion of their workflow with real-time data, thereby allowing nursing, MA and administrative staff to work in lock-step with the physician. This has ensured the accuracy and efficiency of the care delivered along the entire continuum of care. Additionally, because of the expansive geography of the group and wide range of specialty services the EHR has allowed physicians to collaborate more effectively without any laps of time or inconvenience to the patient.

**Outcomes:** After rigorous evaluation by the NCQA on many aspects of QLIMG's medical office practices and performance, in September of 2008 QLIMG's Flushing North facility became the first practice in the state of New York to achieve NCQA recognition as a level 3 PPC-PCMH - the highest level of recognition achievable.

"We were able to use our EHR to essentially transform the Flushing North office into a PCMH model that fundamentally changed how our physicians practice medicine," said Dr. Parikh.

QLIMG estimates that the implementation and certification of its PCMH, with the help of the EHR, has resulted in substantial quality improvements. At the Flushing North facility, the average glycated hemoglobin (A1c) result for high risk diabetic patients (those with an A1c >9) declined by 13% after implementation of the EHR and PCMH procedures, dropping from 10.7 in June 2007 to 9.3 in June 2008. That compares to a 9% improvement in A1c levels across all 22 QLIMG locations during the same time period, which implies that the PCMH model (isolated from EHR-related care improvements) resulted in a 4% improvement in the quality of diabetic care at North Flushing.

Because each 1 point reduction in A1c levels equates to a 21% decline in diabetes-related mortality (according to the results of the United Kingdom Prospective Diabetes Study), QLIMG Flushing North's results translate to an expected decline in diabetes-related deaths of nearly 30%. The improvements in diabetic care also translate into cost savings – an estimated \$18,000 reduction in per-patient healthcare costs over a three-year period for every 1 point reduction in the population-wide A1c rate (Gilmer TP et al 1997).

Internal feedback on the EHR/PCMH program has been very positive. Physicians and staff report a significant increase in job satisfaction. Staff commented on a less chaotic work environment and lower noise levels in the office. The team today works more manageable hours and many tasks that had been performed by providers are now executed by the care team using a certified workflow and protocol.

Additional benefits in the office include fewer incoming patient calls, faster patient flow and more care provided per visit, improved adherence and compliance, increased scheduling capacity through division of labor and electronic pathways, and a significant increase in access to behavioral health and MNT services. Patients have multiple access points in the medical office to answer questions and have requests addressed. Thereby, expediting care and creating a functional environment that revolves around the patient.

**Barriers Encountered/Challenges Faced:** While the implementation of the EHR was well received at the Flushing North facility, adoption among specialists and non-primary care physicians was initially challenging for other QLIMG facilities. It was difficult to convince some of their physicians who were comfortable in their old processes to utilize the new system. Eventually, QLIMG was able to teach its specialists how to use the new workflows and templates and took their needs into consideration to increase adoption. Ultimately, when the physicians saw the benefits in productivity and efficiency, they became more comfortable transitioning to the new system.

**Summary:** "EHR has been central to our reengineering," said Lenny Brunson, Chief Information Officer for QLIMG. "Our EHR has been and continues to be the backbone of the transformation. It has been one of our primary vehicles for quality of care and coordination of care."

The EHR, combined with the PCMH model, encourages efficiency in the way QLIMG utilizes MA, nurses and all other staff. It allows everyone to contribute to the success of the practice and takes a tremendous amount of pressure off the physicians, thereby increasing their satisfaction. At QLIMG Flushing North, improved physician satisfaction has also led to patient satisfaction.

QLIMG is truly a pioneer – both in New York and in the industry. And they are not stopping here. Currently, QLIMG is in the process of preparing to submit all medical offices for PCMH certification and is dedicated to certifying all of its 17 eligible office locations by the end of 2011. New York's HEAL10 grant, awarded to QLIMG in 2009 (grant cycle 2010-2011) will assist with these plans. The purpose of grant is to improve care coordination and management through a Patient-Centered Medical Home (PCMH) model supported by an interoperable health information infrastructure.

**Interpretation:** Physician buy-in is foremost to both PCMH and EHR adoption – and those who have adopted are more satisfied than those who have not. Helping physicians work in a team environment and encouraging them to delegate responsibilities to staff was an uphill process, but the resulting improvements in patient care prove to be a strong argument in favor of the PCMH model.

The culture change in patients is also a significant factor in the medical home model's success. Patients want and need to understand processes at their physicians' office. By letting go of traditional methods of care, patients can embrace other types of communications that are not face-to-face.

**Conclusion:** The plan to implement EHR and convert to the PCMH model of care at Flushing North was achieved with great success. QLIMG's successful strategy could translate to many other settings and most areas of the United States regardless of geography or patient demographics. Most obviously the model works in groups of primary care physicians. Physicians who enjoy a team environment thrive in this model. The PCMH model can also translate to groups of specialists who share a practice.

**Financial Considerations:** Emblem Health (the Health Insurance Plan of New York at the time) funded the EHR software costs which contributed to the QLIMG infrastructure that helped make the PCMH model possible. QLIMG funded the hardware and implementation costs. Emblem Health funded the initial EHR costs because the EHR was an important step toward enhancing patient care and as 85% of the QLIMG patient base is HIP members the prospect for developing quality initiatives including collaborative disease and population management programs and the ability to harness the data for future research merited the investment.

Return-on-investment benefits enjoyed by QLIMG as a result of implementing the PCMH model include savings of time and resources. Physician productivity as measured by Work Relative Value Units (RVUs) increased by over 20% between January 2007 and January 2008. Patient “no-show” rates during the same period dropped from 15% to 3%; while the number of new patient appointments increased by 10%. From January 2007 to January 2008, Flushing North saw a 70% increase in non-capitated patients yet the practice was able to handle the additional patient load without hiring additional staff thanks to their improved workflow. In fact, while serving this larger patient base, the improvements in physician and staff productivity enabled the Flushing North practice to reduce the number of onsite physicians required from six to four, resulting in a 14% drop in staff expenses. In a recent study Flushing North reported the following finding, as of spring 2009, a population of 500 patients surveyed on 10 measures showed an overall increase in patient satisfaction from 4.2 to 4.33. Total kept non-capitated appointments in 2009 increased approximately 18% over 2008. Total new patient visits (capitated and FFS) in 2009 increased approximately 7% over 2008. Total Physician WRVUs in 2009 increased approximately 45% over 2008. Admits/1000 in 2009 decreased approximately 10% compared to 2008. Additionally, physician productivity was up in 2009 vs. 2008 even though physicians spent less hours in the office.