In Search of Joy in Practice
A Site-visit Analysis of Twenty-three Highly Functional Primary Care Practices

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"Working at Starbucks would be better"
Primary care physician, 2008

"I look forward to going to work each day. I'm loving it!"
Same primary care physician, 2011

Introduction

By all reports primary care physicians are on the edge of burnout [1,2]. Fewer physicians are choosing the specialty, many are leaving it. Only one-third of US physicians practice primary care, compared to one-half in most developed societies [3]. In 2010, only 9% of US medical school graduates picked adult primary care as their residency choice [4]. In one study, 21% of general internists, but only 4% of medical subspecialists, had left their practice only a few years after initial board certification [5]. An estimated 30-40% of physicians experience burnout. Burnout is expected to increase with the added physician workload if demand outpaces supply as anticipated with implementation of the Affordable Care Act [1].

While the waning interest in adult primary care careers is multi-factorial, driven by forces such as the primary care-specialty income gap, medical schools' devaluing of primary care, and the unsustainable primary care work-life, we focus on the work-life issue. One study suggests that avoidance of the difficult work-life of the primary care physician may be the most influential factor discouraging medical students from primary care careers [6]. Those who practice adult primary care are often deeply dissatisfied, spending much of their day performing functions that do not require their professional training. Time pressure, increasing administrative and regulatory issues, an expanding knowledge base, and greater expectations placed on primary care contribute to the strain [7]. The workdays are getting longer and the rewards diminishing. Joy is in short supply.

Why should joy in practice matter? Physician burnout is associated with making mistakes, scoring lower on scales measuring empathy, reduced patient satisfaction and reduced patient

adherence to treatment plans [1,8,9]. The authors of a recent narrative review of 63 studies of physician dissatisfaction and discontent conclude "Given the many reported untoward consequences of physician discontent—that it precipitates early retirement, increases medical errors and law suits…drives physicians into part-time work, fosters disengagement from Medicare and Medicaid patients, is an underlying contributor to manpower shortages in primary care and perhaps adversely affects the quality of medical care—physician discontent now qualifies as a high priority for health services researchers, policymakers, and medical educators [10]."

In the face of this dismal situation, we asked: are there places where physicians and other staff are thriving? Have some practices found innovative solutions to the challenges of office organization? What are the common themes from which others can draw hope and inspiration? What are the specific innovations? These are crucial questions for a US healthcare system in urgent need of effective practice models that can attract the primary care workforce essential for quality and access.

This paper describes innovations from a case series of 23 high functioning practices, defined as practices we believe are improving care for patients and work life for physicians. Our lens is focused on how high-performing practices distribute functions among the team, use technology to their advantage, improve outcomes with data, and make the job of primary care "doable" and enjoyable as a life's vocation.

Methodology

Using snowball sampling techniques and networking, we identified 23 high functioning primary care practices (Appendix 1). We started with the authors' extensive existing network of high-functioning practices, and through interviews with leaders in the field and initial sites, identified other potential participants in turn. Although recognition as a patient centered medical home (PCMH) was not required for inclusion, the majority of our practices had achieved such recognition. A semi-structured site visit questionnaire (Appendix 2) guided observations. Our focus was at the most granular level of workflow, task distribution, physical space and technical tools in the primary care office. The authors, usually one per site, visited each of 20 sites, shadowing physicians and their teams for a day and meeting with administrative and clinical leaders. We made virtual visits to three additional practices with a semi-structured phone interview and follow-up email conference with leaders or practitioners. Key innovations (Appendix 3), operating principles (Appendix 4) and summaries of individual site visits are available. (Appendix 5)

The practices represent different regions of the United States and include small private practices, large integrated delivery systems, academic medical centers, the Veteran's Administration, and federally qualified healthcare centers.

Innovations

Primary care practices have been encouraged to improve access, increase continuity of care, create right-sized patient panels, build cohesive teams, drive improvement through continuous reporting and analysis of data, and actively manage their entire population of patients rather than only the patients coming for appointments today or tomorrow.

Many practices have attempted to make these changes at the expense of their physicians, improving the patient experience but saddling physicians with more work – work that other team members could and would like to do. For example, Group Health in Washington State implemented a series of reforms in the early 2000s to make patient-centered improvements, which had the consequence of increasing physician burnout, reducing quality, and increasing costly utilization. As a result, in 2006, the organization initiated a deeper reform that directly addressed physician burnout; burnout significantly decreased while the patient experience and clinical quality improved and costs went down [11]. The take-home message is that paying attention to physician work life pays off. Harvard-Vanguard Medical Associates in Boston discovered a similar lesson. Thad Shilling, physician clinical site leader, explains "We must decompress the practice first, not just add more. We've only made the job harder over the past 5 years—job doability has now become a priority."

This report is not a general discussion of primary care practice improvement. Other documents offer examples of overall practice change [12,13]. This report focuses on practice innovations that improve care for patients while enhancing the work-life of physicians. The narrower focus is important because, as noted above, the unsustainable work-life of the adult primary care physician may be the most important determinant of medical students' avoidance of adult primary care careers. To address the adult primary care workforce shortage, we must search for joy in work.

We found practices that have developed attractive and effective models of primary care, places where it is enjoyable to work and where we would want to receive our care. Significant challenges remain at every innovative site. No one has entirely solved the problem. Yet, adding up the innovations of these 23 practices the solutions for finding joy in work while improving the patient experience come into view (Appendix 6).

Physicians choose careers in primary care in order to build long-term healing relationships and to help people in need [14]. Factors which increase their satisfaction – their joy – include mastery within their field, realistic expectations, relationships with patients and staff, efficiency of office design, and the ability to influence and improve their practice [15,16].

What then are the barriers to joyful practice? We have organized the innovations according to solutions to a list of problems facing primary care physicians, developed from our site visits (Table 1). These problems include: 1) unplanned visits with overfull agendas; 2) inadequate capacity to meet the patient demand for care; 3) vast amounts of time spent documenting the care provided and complying with administrative and regulatory requirements; 4) computerized technology that pushes even more work to the physician; and 5) teams that function poorly and complicate rather than simplify the work. Other problems exist; we have chosen these because we have seen practices with solutions to all of them.

Table 1: Problems and Innovations

Problem	Innovations
1) Unplanned visits with overfull agendas	Reducing work through pre-visit planning and pre-appointment labs
2) Inadequate support to meet the patient demand for care	Adding capacity by sharing the care among the team Expanding MA/nurse rooming protocol Establishing standing orders that enable other team members to address care needs Expanding responsibility for health coaching, care coordination and integrated behavioral health to non-physician members of the team. Sharing the care through panel management
3) Vast amounts of time spent documenting care provided and complying with administrative and regulatory requirements	Eliminating time-consuming documentation through in-visit scribing, assistant order entry and information management Saving time by re-engineering prescription renewal work out of the practice
4) Computerized technology that pushes more work to physician	Using technology to save time and improve communication. Reducing unnecessary physician work through in-box management

5) Teams that function poorly and complicate rather than simplify the work	Improving team communication through co-location, huddles, regular team meetings
	Improving team functioning through systems planning and workflow mapping
	Empowering teams to make data-driven improvements

Reducing work through pre-visit planning and pre-appointment labs

Problem: Primary care visits are often disorganized and rushed. Because of incomplete and poorly organized information and the need to address multiple issues, the complex task of managing acute symptoms, chronic illnesses and prevention issues becomes chaotic and stressful.

Solution: Many high functioning sites have learned that a pre-planned visit and a pre-clinic huddle can reduce the total volume of work to be done, save time and improve care.

Examples

Fairview: At Fairview the medical assistant (MA) conducts a pre-visit phone call two days before the appointment to address medication reconciliation, agenda setting, lifestyle issues, advanced directives, depression screening, and updates to social and family histories. MAs place these calls during short breaks between rooming throughout the day. For the most complex patients the pharmacist may make a call to perform pre-visit medication reconciliation.

Mayo Red Cedar: At Mayo Red Cedar one of Dr. David Eitrheim's two nurses performs chart reviews a week before the patients' appointments, and orders condition-specific lab and cancer screening by protocol. Because of this pre-visit planning Dr. Eitrheim routinely has test results at the time of the appointment, allowing him to explain the results face-to-face, engage the patient in shared decision making, and eliminate an hour or more of post-appointment results reporting per day. Eitrheim and his team have worked to optimize each step of their process, ensuring the focus is efficient planned care, not disorganized reactive care. As Dr. Eitrheim notes "efficiency is a safety issue."

Ambulatory Practice of the Future (APF): Each clinic session begins with a team huddle: the nurse practitioner, nurse, MA, health coach, scheduler, greeter and two physicians review the day's list of patients on a large wall-mounted computer monitor, including patients in the hospital and patients scheduled for phone visits. For example, the physician asks the nurse to

make a "hospital to home" call tomorrow on a patient he discharged this morning. For a patient coming for evaluation of abdominal pain the nurse questions the role his recent divorce may be playing. The health coach alerts the team that another patient on the schedule is now homeless and estranged from his family and has postponed his anticipated surgery.

Medical Associates Clinic: At Medical Associates Clinic in Dubuque, IA, the practice site of two of our authors (TS and CS), the next visit is pre-planned at the conclusion of each visit. Lab and other tests are scheduled to be completed a week before the next appointment, which can be scheduled out as far as one year. Advanced pre-visit planning eliminates the need for staff to later review charts and order tests by protocol, allows for customized test ordering in context, and makes it possible for the patient and the physician to discuss the results together at the appointment, thus reducing the time spent on post-appointment results reporting.

At the end of each day the nurses gather all relevant x-ray studies, lab results, hospital discharge, emergency room and consultant notes for the following day's patients. The physician and the nurse briefly review during a 15 minute planning huddle. In some cases the need for additional information is discovered during the huddle. This information can then still be obtained prior to the visit (e.g. discussing the patient's care with a consultant, reviewing an imaging study with a radiologist, or adding additional laboratory testing triggered by the first round of testing.)

Finally, during a mini-huddle before the physician component of the visit, the nurse briefs the physician regarding the patient's agenda and response to medications; she also reports her own impressions and recommendations.

Adding capacity by sharing the care among the team

Problem: For many practices, demand exceeds capacity and patients cannot reliably see their own primary care physician the same day or day after a need arises. In addition most patients are not receiving all recommended prevention and chronic illness care [17].

Solution: Improving access to care requires building additional capacity into the practice. Many practices have accomplished this by transforming the roles of MAs, licensed practical nurses (LPNs), registered nurses (RNs) and health coaches so that they assume partial responsibility for elements of care. This kind of team-building is called "Share the Care." [18]

In addition, some practices have added an extended care team of social workers, behaviorialists, nutritionists and pharmacists, usually working with several clinician-MA teamlets, to provide more comprehensive services to patients [18,19].

Expanding the MA/Nurse rooming protocol

Examples

North Shore Physicians Group (NSPG): At NSPG the MA role has been transformed from a person who answers phones, escorts patients and obtains vitals, to a partner who helps to provide team-based care. "Rooming" a patient has been expanded from a three minute to an eight minute process, which now includes recording current medications and allergies, agenda setting, form completion and closing care gaps. For example, the MA reviews all health monitoring reminders, gives immunizations and proactively books appointments for mammograms and DEXAs. The goal is to meet all of the needs of the patient while in the room, rather than leaving loose ends to be addressed through a more time consuming process at the back end. A one week supplemental MA training curriculum has been developed, and is now available online http://www.qualishealth.org/about-us/our-services.

Clinica Family Health Services: At Clinica medical assistants have taken on care responsibilities for diabetes and immunizations, empowered through standing orders. For example, the medical assistant performs point of care A1c testing, diabetic foot exams, arranges appointments for retinal exams (done with a retinal camera during a group visit) and administers immunizations using EHR decision support.

Medical assistants at Clinica use EHR templates to take a detailed, condition-specific history of present illness for chronic illnesses such as diabetes, asthma and ADHD, and perform substance abuse and mental health screening. These screens generate a note which the provider can quickly review. The MA pre-visit takes 10-15 minutes.

Establishing standing orders that enable other team members to address care needs

Clinica Family Health Services has created standing orders empowering RNs to diagnose and treat simple problems without clinician involvement. These include strep throat infections, uncomplicated conjunctivitis, ear infections, head lice, sexually transmitted diseases, uncomplicated urinary tract and coumadin management. These services can be provided via phone call or face-to-face RN visit.

Fairview: In 2008 Fairview received a grant from a local health insurer to improve its model of care. A series of rapid cycle changes and pilots started the work, beginning with 4 clinic sites and now rolling out across all 47 Fairview clinic sites. "We developed a new mental model: pull doctors out of the infrastructure (typing, EHR, etc.) and get them back to being present to the patient" relays David Moen, then the Director of Care Model Innovation and now President of the Fairview physicians group. As internist Debra Newell states: "The standardized work is done by the team. I don't have to think about immunizations and colonoscopy, for example. The MA takes care of these before I get into the room."

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Extending responsibility for health coaching, care coordination and integrated behavioral health to non-physician members of the team.

Clinica Family Health Services: Behavior change counseling has been delegated to non-professional managers (health coaches) who provide patient education and smoking cessation counseling and help patients with chronic conditions set goals and formulate action plans.

Mental health professionals (licensed clinical social workers, psychologists, or licensed professional counselors) are also integrated into primary care teams. If an MA uncovers depression symptoms she will administer the PHQ-9 depression screen and then contact the behaviorist. Warm handoffs between the MA and the nurse case manager or mental health professional at the close of the visit ensure optimal communication. The physician may have minimal involvement in this process.

Mercy Clinics Des Moines: At Mercy Clinics RN health coaches, trained in diabetes management, motivational interviewing, registry management and care transitions, improve care and reduce costs for Mercy's sickest patients.

CEO David Swieskowski cites the importance of building systems of support around clinical workers: "Physicians are too busy to provide self-management support; this should be the job of the health coaches." He also understands the volume of non-clinical work facing the nursing staff: "Clerical staff unload work from the nurse health coaches."

At Mercy Clinics East 3 RN health coaches work with 7 physicians and 5 PAs, each RN working with the same 3-4 providers for consistency. Their responsibilities include reviewing patient charts to queue up labs to be ordered by the physician at an upcoming visit. The physicians appreciate the efficiency of having the orders pre-selected and ready for their electronic signature. Later the health coach will report the results to the patients and upload the data in the organization's stand-alone registry.

A health coach will meet with diabetic patients in person and over the phone, working on diet, insulin adjustment and healthy lifestyle. Health coaches manage patients who drop in for blood pressure checks, adjust Coumadin doses by protocol, and work with patients on goal setting.

A network of hospital and clinic-based health coaches work together to ensure a smooth hospital to home transition. Swieskowski reports "When the hospital owned the discharge staff, the focus was on getting the patient out of the hospital quickly; now the focus of our health coaches is on getting the patient what they need to stay out of the hospital down the line."

Brigham and Women's Hospital Advanced Primary Care Associates (BWH): BWH has structured their practice to increase communication between primary and secondary care physicians. For example, both a geriatrician and a substance abuse psychiatrist are periodically

on site, with responsibilities for direct patient care as well as academic detailing to the primary care staff, increasing opportunities for both formal and informal consultation. Service agreements have been developed with other secondary care physicians to clarify working relationships and expectations for communication.

Sharing the Care through Panel Management

Panel management -- empowering members of the care team to close chronic and preventive care gaps -- is another way to share the care with other members of the team, relieving physicians of work that is routine and algorithmic.

Examples

Sebastopol Community Health Center: Panel management responsibilities are built into the job description of every member of the care team. For example, medical assistants have outreach responsibilities to update lab work, conduct depression screening, and refer patients with diabetes for annual eye and foot exams. To ensure that panel management is sustainable, Sebastopol has found that there must be dedicated and protected time, that scope of practice questions must be made explicit, and that staff performing panel management must be trained in health coaching -- how to talk effectively to patients.

Group Health: Group Health couples the efficiency of centralized population management with the personalized approach of team-based panel management. Centrally, Group Health sends letters to patients on their birthdays reminding them of preventive services for which they are overdue and makes automated phone calls to patients due for select procedures (e.g, bone density testing and LDL screening for diabetes and heart disease patients). If patients do not follow through on these centralized reminders, their names appear on a report that goes to the MA of their care team. MAs are responsible for outreach to patients on this report, and also use the report for in-reach, addressing care gaps during the rooming process. Group Health has created standing orders to empower non-clinicians to identify and administer needed immunizations.

La Clínica de la Raza : The clinic has well-developed outreach programs, with registry tracking of patients with diabetes, HIV and those on anticoagulants. For example, an MA panel manager tracks all patients taking anti-coagulants, scheduling MA appointments at least monthly to check their INR. The MA immediately alerts the provider when a value is out of range so that the medication can be titrated while the patient is still in the clinic, and conducts outreach if the patient misses an appointment. She also assesses medication adherence and coaches patients.

Eliminating time-consuming documentation through in-visit scribing,

assistant order entry, and information management

Problem: Physicians across our study sites report spending about two hours per day on visit note documentation and some report spending up to an hour per day on computerized order day.

Solution: Six of our study sites have extended the concept of "sharing the care" by empowering nurses and/or MAs to become an integral part of the visit: scribing the note, entering orders, preparing the after visit summary and reinforcing the plan with the patient.

Examples

Cleveland Clinic: Dr. Kevin Hopkins works with two MAs. After completing an expanded rooming protocol, the MA returns with the physician to record the note while the physician talks with and examines the patient. Although initially there was hesitation about having a third person in the room, Dr. Hopkins discovered that the collaborative nature of the interaction was well accepted by patients. "I encouraged the MAs to interact with the patient and be a part of the conversation. I told them 'if you think of something and I don't, feel free to bring that up.' We are making this into a real team care model."

After one year in the new model Dr. Hopkins is able to offer patients seven more appointment slots per day, increasing his average daily visits from 21 to 28. Revenue is up 20-30% which has exceeded the cost of the additional MA. Quality metrics, as well as patient, staff and physician satisfaction scores are improved. Dr. Hopkins notes "I am far more satisfied. I leave work an hour earlier every day and have a very fulfilling relationship with my team." Hopkins derived his inspiration after visiting another of our study sites, Newport News.

Newport News: Dr. Peter Anderson developed the "Family Team Care Model" in 2003 in response to an increasingly unsustainable workload. "In the old model, the doctor and nurse each went on their separate ways. In the new model the tasks of the nurse and doctor are tightly woven together, like a single cord, moving toward the same goal of excellent patient care."

As part of the rooming process the nurse reviews recent clinic notes, collects consultations, ER visits and labs, clarifies the patient's agenda, documents all the patient's initial relevant and current medical data using structured templates, performs a condition-specific review of systems, and enters the information into the EHR. This component may take 8-12 minutes.

Dr. Anderson and the nurse then enter the room together. Dr. Anderson first greets the patient, and then the nurse verbally relays the reason for the visit, all initial data collected, and review of systems, similar to a resident physician presenting to an attending. He asks clarifying questions of the patient and performs the exam, verbalizing any abnormalities, which the nurse documents in the EHR. Dr. Anderson spends the rest of the visit talking directly with the patient and family. As directed by the physician, the nurse performs order entry, sends electronic prescriptions, enters the diagnosis codes and notes the interval for the next follow-up appointment, which the patient will give to the scheduler.

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While the nurse reviews the after visit summary with the first patient, Dr. Anderson moves on to the next patient with the second nurse. During breaks or at the end of the day, he reviews and signs the final notes.

Dr. Anderson's clinical support (nurses and MAs) per physician is 3:1; collections have increased over 40% with this model, more than covering the cost of the additional staff. He has trained MAs, LPNs, and RNs in this role, and felt each were working within their skill set given his investment in their on-the-job training. After nine years' experience Anderson has begun training US Army primary care practices in this model.

Allina-Cambridge: Dr. Amy Haupert works with 2 LPN's who also serve as scribes. Each nurse typically follows a patient through the entire visit, first rooming the patient, then returning with the physician to scribe the "SOAP" note. During the exam Dr. Haupert calls out any abnormalities, which the LPN records in the standardized visit template. When Dr. Haupert tells the patient, "I think you have bronchitis, we'll begin Ceftin 500 mg BID x 10 d," the LPN flips to the order entry screen and queues up the prescription, which Dr. Haupert will soon sign. With this help, Dr. Haupert feels relaxed and has more time for conversation with the patient.

Before leaving the room, Dr. Haupert asks the patient and the nurse if either have any questions, reviews the orders and ensures that communication was clear. Remaining in the room, the nurse schedules any upcoming appointments and labs, and completes the after visit summary, reviewing instructions with the patient.

Dr. Haupert describes improvement in staff and physician satisfaction as well as patient outcomes with the collaborative model: "I get to look at my patients and talk with them again. We're reconnecting. Our patients get an after visit summary which I didn't have time to do before. My nurses enjoy working more closely with the patients and their families. Our patient satisfaction numbers are up, our quality metrics have improved, our nurses are contributing more, and I am going home an hour earlier to be with my family."

University of Utah-Redstone: "Care by Design" was developed in 2005 to deliver primary care differently, with explicit goals of enhancing the patient experience, supporting team based care, and fully leveraging the training of physicians. MAs do an expanded pre-visit process, including obtaining a detailed history, prompted by condition-specific templates, and conducting medication reconciliation. The MA and physician return to the room together, with the MA scribing additional history and the exam as verbalized by the physician. We observed a ballet-like choreography between the MA and the physician as they used the same computer at different times during the visit. (This fluidity and task sharing would not be possible if the MA and physician were required to sign in and out between each transition.)

Dr. Mary Parsons describes the result: "Care by Design has gotten the MAs more involved with the patient's care during the visit. This allows me more time to connect with the patient, which is the most satisfying part of primary care. The MA scribing function means that more of the chart is completed during each visit, so I no longer do charting in the evening after I go home as was the norm in the past. This has improved my work-life balance."

University of Utah's clinical assistant to physician ratio is 2.5 :1. Quality, efficiency and patient experience have improved.

Quincy Family Practice: In the "Office of the Future," a pilot at one of the Southern Illinois University School of Medicine family practice residency clinics, there are no physician desks in the exam room. Their absence reflects the innovation: the doctor does not sit at a desk and attend to the computer. He sits on a rolling stool and attends to the patient.

The MA reviews the pre-appointment questionnaire in which the patient is asked "What three questions would you like answered today?" She completes medication reconciliation and begins recording the HPI, working through a structured history for each complaint or condition, checking off boxes and adding free text as needed. Depending on the complexity of the visit, this may take 8-15 minutes per patient. The process generates components for billing and frees the physician from keyboarding standard elements of the history. When finished, the MA returns to the nursing station and briefs the doctor.

The MA and physician return to the room together. Unlike the first minutes in most physician office visits, Dr. Joseph Kim does not move directly to the computer, but to the patient and any family members. There is no signing in and orienting the visit around the computer. The physician's full focus is on the patient. The MA listens to the physician and supplements the history she recorded earlier.

The MA is able to move quickly between templates for recording the history and the exam. Once or twice in each visit, when information comes too quickly to keep up, the MA jots a few notes on paper. Because the need for scribing ebbs and flows during the visit, we observed that the MA was always able to catch up within 15-30 seconds.

Finally, Dr. Kim verbalizes his assessments and plan, which the MA also records. She writes the diagnoses and plan, e.g., "High cholesterol, simvastatin 40 mg daily, appointment 1 month with lipids" on the pre-visit questionnaire to give to patient; queues up prescriptions, which the physician signs between patients; and checks off lab and next appointment information for the patient to take up front to the scheduler.

In addition to the two MAs, Dr. Kim works with an LPN, who uploads into the EHR new patient questionnaire data regarding past, family and social histories, fields calls for prescription

renewal, provides phone advice and manages coumadin by protocol. When the MAs need extra help she also rooms and scribes.

The clinic is calm and runs on time. There is no sense of chaos and running behind as in many clinics. At noon all lights are out. No one is eating lunch at the desk while answering phone calls or responding to email. The physician and staff leave the building for lunch and refreshment, ready to return for the afternoon appointments, beginning at 1:30 pm.

The pilot, begun in 2010, has expanded to two faculty physicians. Family medicine residents rotate through the clinic for an experience of how practices can be designed. The "2 + 1" staffing (two MAs plus 1 LPN) results in staffing ratios similar to the 2.5-3.0 clinical assistants per physician at the University of Utah and Newport News. Quality, efficiency and patient experience have improved.

Other clinics in our study have developed similar models that increase the collaborative nature of the visit and decrease the keyboarding work for physicians. At Martin's Point much of the history and exam is recorded by the nurse, who also updates the chronic care plan, and does the computerized order entry. At the APF the MA rejoins the physician toward the end of the appointment, assisting with computerized order entry, prescription processing and scheduling next steps.

Saving time by re-engineering prescription renewal work out of the practice

Problem: Managing calls, emails and faxes regarding prescription renewals consume significant healthcare resources. One practice reported their physicians handled an average of 12 renewal requests per day [21] outside of appointments. Other practices delegate this work to nurses; in our experience many practices devote one nurse for every 6-8 physicians for full time management of prescription renewal requests. Furthermore, many practices utilize an expired prescription as a means to enforce adherence to appointments.

Solution: By separating prescription renewal from chronic illness appointment adherence, and by providing one year prescriptions for stable medications, practices can reduce repeating the same work multiple times through the year.

Example:

Allina: Medications are renewed for a full year at the annual exam to avoid unnecessary interval handling of stable prescriptions. For example, a 3 month supply with 4 refills covers the patient until the next annual exam. Prescriptions initiated at interval appointments will have refills remaining. These prescriptions are "resynchronized" with all other chronic prescriptions at the annual exam so this work does not need to be repeated throughout the year.

Medical Associates Clinic: Patient care is organized around an annual comprehensive care visit (or for Medicare patients, the Annual Wellness Visit.) Prescriptions for all medications except narcotics and benzodiazepines are renewed until the next comprehensive care visit. This process resulted in an 80% reduction in the time team members spend on prescription renewals each week. A pharmacist or patient request for prescription renewal is seen as a breakdown in the process.

Using Technology to Save Time and Improve Communication

Problem: Many practices have not fully leveraged technology to improve care and work life.

Solution: Attention to the efficiency of individual tasks can save valuable human resources, which can then be redeployed to more meaningful work. Use of email and phone visits can increase communication with patients.

Examples

University of Utah-Redstone: All staff wear a wireless communication device, allowing individuals to quietly connect with other members of the team, precluding the need to ring a bell, call down the hall, or otherwise waste time searching each other.

The Ambulatory Practice of the Future (APF) uses kiosks, similar to airline kiosks, for patient check-in and co-payment collection. This frees the greeter to introduce the practice's portal, where a patient can review results and consultation notes, and securely email their physician. The APF also uses wireless technology to automatically enter patient vital signs, saving the MA time and improving data entry accuracy.

Exam rooms equipped with two 24" flat screen monitors, and a semicircular table facilitate a three way conversation, with the patient interacting with the physician, and both pointing to the wall-mounted screens, melding human and electronic data interaction during a visit.

Capacity is expanded and the workday decompressed by offering patients the option of virtual visits by phone, video chat or secure messaging. The unique payment environment at the APF (global budgeting for the population) allows the teams to innovate without fear of revenue loss from fewer face-to-face patient visits.

Group Health: With the medical home transformation, Group Health decreased the patient panel size and has made a major change in the physician daily template, moving from an average of 22 face-to-face visits per day to about 14 face-to-face visits plus 4 telephone visits. One-third of patient encounters now take place through the patient portal, MyGroupHealth. Time slots are

available for desk-top medicine, which includes responding to patient e-mails, sending secure messages to patients, coordinating care with specialists and hospitalists, and addressing the many staff messages coming from other members of the team. A typical hour in clinic may involve 2 pre-scheduled 20-minute visits, and one 20-minute slot for desk-top medicine and phone calls. Physician burnout dropped from 25% to 14% in the pilot clinic while burnout increased from 28% to 35% in clinics that had not changed the daily template [20]. Changing from a daily template of one face-to-face visit after another, in favor of a template which allocates time for face-to-face, phone, and e-mail encounters both reduces physician stress and increases the capacity to provide care.

Reducing unnecessary physician work through in-box management

Problem: Tasks previously performed by receptionists, pharmacists, nurses and transcriptionists have been transferred to the physician with many EHR implementations. In addition, new work associated with security, attestation and messaging has often become the sole responsibility of the physician, adding to the length of the work day and detracting from physician satisfaction. As one physician relayed, "The task list is unbearable. I spend 1.5 hours cleaning out my task list every evening before leaving and then I spend another 1.5 hours at home after the kids go to bed."

Solution: In several practices the nurse or MA filters all of the electronic and paper information, passing on to the physician only that information which specifically requires a physician's involvement.

Examples

Fairview: Fairview has decreased the amount of inbox work from 90 minutes to only a few minutes per day for many of their physicians. All messages are first directed to the MA or RN, who filters out normal lab results, prescription renewals or information requests which can be managed by protocol. Electronic messaging is often replaced by more time-efficient verbal messaging between clinical assistant and physician.

Martin's Point: The MAs and nurses are masters of desktop management, authorized to take tasks off the provider's worklist: calling patients back, reviewing messages and passing work off to the scheduler. The goal is for the physician to see only physician level work; the rest is delegated to other members of the team.

Improving team communication through co-location, huddles, and team meetings

Problem: Minute-to-minute communication can be difficult, with valuable time wasted as team members look for each other. If MAs and RNs cannot quickly run a problem by the physician the problem goes round and round the office via time consuming asynchronous e-messaging, creating more work, and delays for patients. In addition the lack of meeting time precludes development of improved workflows.

Solution: Co-location can make minute-to-minute communication more efficient. Furthermore team meetings provide protected time to improve processes and strengthen trust and reliance among the team.

Examples

North Shore Physicians Group: At NSPG the MA and physician sit side-by-side in "flow stations." "This change in geography has resulted in enormous cultural change" reports Lindsay Gainer, Director of Clinical Services and Innovations. As "flow-master," the MA is the gatekeeper and is tasked with sorting and filtering electronic and paper information to reduce the burden on the physician. Part of the MA's role is to ensure that the physician is in flow and on time. One of the early adopters was an established physician with a large panel, 2500 patients with high complexity. Prior to the new model and co-location, he took 2-3 hours of work home each night; now, he routinely leaves the office with all of his work completed.

South Central Foundation: Steve Tierney, Medical Director of Quality Improvement at South Central Foundation (SCF) in Anchorage, Alaska reports that it was not until they remodeled the workspace for co-location that the additional nurse care manager and clerk added value to their model and individuals started functioning as a team. Once team members rubbed shoulders throughout the day better working relationships developed. "Early on we found trust was low between disciplines. We changed this by seating them together and creating an environment where they talk frequently. Providers were initially uncomfortable ceding management of chronic conditions; however, over time, with multiple conversations about the same issues with the same people, trust grew and now most experienced teams can anticipate each other."

Clinica Family Health Services: Clinical activity centers around the pod, which consists of a central open area surrounded by patient exam rooms. Several clinician and MA teamlets sit facing each other in the pod. The pod RN, behavioral health professional, and health coach are also located here, readily available for warm handoffs and communication.

Medical Associates Clinic: Team meetings are held every two weeks and attended by the two physicians and four nurses in a pod, as well as a nurse manager and, as needed, a scheduler. Practice data is reviewed, workflows refined, clinical updates provided and relationships strengthened as team members have protected to time to improve their work.

<u>Martin's Point:</u> A daily huddle kicks off the clinic session, and is attended by all members of the office staff, with one serving as "Huddle Facilitator" on a rotating basis. The huddle begins with WOWs: opportunities for colleagues to call out exemplary behavior by a team member. Positive comments like "Lindsay jumped on the phones when they were busy and Linda (RN) roomed an unexpected patient so they could stay on schedule" start off the day. Next is a review of metrics from the previous day's schedule, such as the number of no shows, unfilled spots or any same day cancels that weren't filled. Were patients roomed on time? How are they doing with "teach back," a method of assessing patients' confidence in self care, the patient engagement initiative for this month. Learning opportunities from the day are posted on an easel and followed up to ensure they become hardwired into the team's processes.

The focus then moves to the day ahead. Team members quickly take work off of each other's lists based on their anticipated workday. Staffing issues for the day—who is out sick, has to leave early, and who is covering which desk are sorted and assigned quickly. Each patient on the schedule is reviewed, and because labs have been obtained ahead of the appointment, medication changes are pre-planned. Finally, a look at the day's capacity of open spots and special needs are identified. The huddle ends with an all hands in, "Go Team! Woo!" cheer.

Once a year all of the staff meet together to think about their future in a day-long retreat. They review and revise the Business Plan, Principles of Practice, and Strategic Imperatives. Through this process the entire staff is fluent in the language of management and organizational tools, including LEAN, Covey's Quadrants, True North and the Balanced Scorecard. In addition, each employee meets with the manager annually to review their professional goals. Encouragement is given, for example, to a medical assistant who is considering returning to school for a nursing degree. Paula Eaton, practice administrator explains "I use the annual review process to talk to staff about they want for themselves working here. We create individual development plans that are structured to keep the employee motivated and happy doing their job." A happy staff contributes to happier patients and physicians.

Improving team functioning through systems planning and workflow mapping

<u>Problem</u>: Medical care involves a large number of recurrent tasks: registration, the rooming process, ordering studies, making referrals, refilling prescriptions, informing patients of lab results, forms completion, etc. These workflows can be efficient, rapid, and promote patient safety, or can be overly complex and fraught with hazards.

In addition, without careful planning new workflows developed in response to changing guidelines or technology can push much of the work onto the physician.

Solution: Adopting a systems approach can improve efficiency and reduce waste. Mapping workflows, using computer programs or post-it notes on an office wall, can uncover waste and unsafe practices, inform improvement efforts, and serve as a valuable team-building exercise. Workflow mapping also presents an opportunity to hardwire sharing the care with the team.

Examples

Clinic Ole: The clinic decided to fix dysfunctional workflows and standardize best practices prior to its EHR adoption. They began by creating more than 100 workflow maps using the Microsoft computer program Vizio. Through an iterative process involving front-line staff, duplication and missing steps were identified in order to improve the organization of tasks. Workflow analysis continues to be at the center of operational changes and quality improvement projects at Clinic Ole.

Harvard Vanguard Medical Associates: Harvard Vanguard Medical Associates operates on the simple premise that one must have a process in order to improve a process. To that end, in a series of well-planned projects, each lasting about 2 weeks, every aspect of clinic workflow is dissected, planned and standardized to optimize a process. For example, form completion starts with medical secretaries, moves to LPNs, and then ultimately ends with the clinician for any additional work and signature. Once a workflow is mapped, spot audits take place to ensure both that each staff member understands and can perform the standard work and to evaluate if the standard work needs improvement. This is accomplished through a series of visual displays on white boards around the clinic. If a task is performed correctly, an audit card goes in green; wrong and it goes in orange. The purpose is not to scold team members, but rather to determine if established processes are meeting the team's needs. Through the creation of processes, audits and iteration improvement can occur.

Another example is reordering the automated phone menu. The initial menu option "Press 1 to speak to a nurse" meant most patients chose "1" and were directed to a nurse. Once it was determined that 70% of the calls were requests for prescription refills, option 1 was changed to "Press 1 for a prescription refill" and the call directed to a medical secretary, saving nursing resources.

Sebastopol Community Health Center: The workflow maps that Sebastopol created during the period of EHR implementation and practice transformation are living documents that are frequently referenced and revised. For example, the team recently revamped a "Document Flowmap" that shows who is responsible for completing each part of common documents, such as prior authorization, disability, records release, and durable medical equipment forms. Revisiting these workflow maps allows the organization to streamline their processes.

ThedaCare: ThedaCare-Oshkosh clinic, part of a 150 provider organization in central Wisconsin, saw its performance on clinical and operational metrics move from last place to first place among the organizations' 22 primary care clinics in one year. Kathleen Markofski, clinic manager, attributes this improvement to their systematic workflow planning. A series of improvement events were held in preparation for the "New Delivery Model," a patient-centered initiative focused on providing pre-appointment lab results within 15 minutes of the patient's arrival, ensuring that patients could discuss their results face-to-face with their physicians. The change methodology: analyze the process, collect and review data, problem-solve, and re-measure.

Empowering teams to make data-driven improvements

Problem: It is difficult to analyze and improve work while in the misdst of that work.

Solution: Engage physicians and their teams in designing and driving change by equipping them with data, administrative support, and improvement methodologies.

Examples

South Central Foundation: SCF actively follows 370 clinical, operational and financial metrics, providing regular feedback to clinical care teams. This organization of 115 physicians employs an astounding 26 improvement specialists. Tierney explains: "Before we start something new, we set up our data infrastructure." When a pod or team wants to make a change they are assigned an improvement specialist, who will assemble data relevant to the proposed change, help map out an improvement plan, and then assist in assessing the success of the change.

Multnomah County primary care clinic system measures both operational data (e.g., continuity, access, productivity, no-show rates) and clinical performance data on diabetes, hypertension, depression, and prevention. Each team receives a monthly performance profile. Administrators make monthly rounds of all eight clinic sites, reviewing the site's "data wall," displaying its performance. This information helps leaders as they continually change workflows to improve efficiency and quality.

In addition sites use real-time indicators ("visual management") of key initiatives to help them see if a process is working or not. For example, teams indicate whether their twice-daily huddle took place by placing a green or red dot on the visual management display. Teams place great value on being "green" rather than "red."

ThedaCare: ThedaCare has adopted Lean as its change strategy. The organization uses data and 37 improvement facilitators to advance quality, eliminate waste, and energize staff. Clinical, operational and financial metrics are regularly measured and prominently displayed along clinic

hallways. The leadership team makes weekly "walking rounds" of the metrics, strategizing on how to improve everything from phone call wait times, to provider satisfaction scores, to the percent of anti-coagulation tests that are within the therapeutic range. Individual practice teams meet monthly with the practice administrator, a change facilitator, and an EHR optimization specialist. They review data, such as health maintenance metrics, plan of care audits, satisfaction scores, and wait times, and then problem solve in a non-punitive manner. Even patients are part of the measurement focus: the percentage of no-shows and patients who arrive on time are tracked and reported on graphs in the waiting area for the patients to view.

Brigham and Women's Hospital (BWH): A population manager serves as the data and schedule master for the clinic. Statistics, including 3rd next available appointment, ambulatory sensitive daytime ER visits and clinical indicators are collected. This information is then used in designing a new visit schedule, modifying clinic hours, and altering services and outreach to patients. This position was still young at the time of our observation but is designed to provide the data necessary to make core operating decisions within the clinic.

Harvard Vanguard: In the "Mission Control" room ongoing projects are planned and evaluated using fish bone diagrams, Pareto boards, and other LEAN-based techniques. The clinic is always in improvement mode, tackling 2 problems at a time every few weeks on a structured improvement cycle. Every project is tracked so that, at a glance, it becomes obvious which projects are meeting their objectives and which objectives contribute to improvements. White boards for each team display metrics, such as generic fill rates, post-discharge follow ups and immunization rates. Teams know where they stand relative to their own goals, and work together at a daily huddle to move toward success in each metric.

Discussion

The current practice model in primary care is unsustainable. We question why young people would devote 11 years preparing for a career during which they will spend the majority of their work days (and much of their personal time at nights) on form-filling, box-ticking and other clerical tasks that do not utilize their training. Likewise we question whether patients benefit when their physicians spend the majority of their work effort on such tasks [22]. Primary care physician burnout threatens quality of patient care, access, and cost-containment within the US healthcare system.

The good news is that this dysfunctional practice model is not the only way. We have found 23 innovative sites that are pointing to a better future.

What is the unifying theme underlying the wealth of innovations described here? Without question, it is the paradigm shift from doctor-do-it-yourself or doctor-with-helpers (I) to a team that truly shares the care (We) [22]. The practices described here have moved far along the

spectrum from I to We. Creating teams that truly share the care and share the work is not easy. It requires a series of building blocks, fundamentals that the 23 practices featured here have adopted. Different practices would create different lists of these team building blocks. One such list, derived from the innovations described above, might be:

- A shared vision, principles, and concrete goals
- Stable teamlets that always work together (MD/MA, MD/RN or MD/LPN)
- Co-location to enhance team cohesion and communication
- Defined work flows
- Training, skills checks, and cross training
- Communication (team meetings, daily huddles, and minute-to-minute discussion)
- Ground rules that establish how teams interact with one another
- Standing orders that empower non-physician team members to share the care

Highly functional practices attend to the most granular details of workflow and task distribution. Standardized workflows can reduce variation in quality, make practices less chaotic, save time, and meet patients' needs more quickly.

The best practices build stable well trained teams that work together every day and meet regularly to improve how they do their work. Teamwork is facilitated by proximity of workstations, and frequent forums for communication to build trust and relationship. Thoughtful physical layout with co-location of staff and line of sight greatly enhances communication. Face-to-face verbal communication is often more effective, efficient, and enjoyable than circulating asynchronous electronic communications.

Studies of physician well-being have found that autonomy (control over work environment), mastery (confidence in the ability of yourself and your team to provide good care), and purpose (relationships with patients and co-workers) are central to joy in practice.[15, 23] The innovations we have described attempt to plan visits, use the resources of a team to meet patient demand for care, offload charting and sorting of results to other members of the team, and improve team functioning. Each of these innovations aim to increase clinician engagement in change (autonomy), to provide excellent care (mastery), and to build relationships with patients and the team (purpose).

Despite the unifying theme of moving from "I" to "we" we found distinct, and sometimes, contrasting approaches to several common issues in primary care among our study sites, including the details of delegating responsibility to team members, scheduling, and documentation.

Delegating responsibility among team members

Physicians can share the care with a team in two distinct ways. One way is for the physician to be involved with every patient visit and to delegate responsibility for many of the visit-based tasks (medication reconciliation, order entry, after visit summary, visit note documentation, self-management support) to other team members, usually MAs or nurses, as was done at practices such as Quincy Family Practice, Newport News and Allina. These practices put a priority on access and continuity with the same provider, and on maximally leveraging the skills of the physician.

Another way to share the care is for physicians to be involved with only subset of a patient's visits, directing the patient to other team members for discreet episodes of care. Examples are: pharmacists taking responsibility for hypertension and warfarin management, RNs operating through physician-created standing orders for such acute needs such as uncomplicated urinary tract infections, or directing patients to another provider who has openings in their schedule when the patient's personal physician's schedule is full. These practices put a priority on continuity with the care team.

While policy makers and healthcare leaders, when referring to "team-based care" often refer to nurse practitioner-physician teams (24) we found that nurse practitioners and physician assistants at most of our sites functioned as independent providers, operating in parallel with physicians, managing their own panel of patients. The fundamental building block of team-based care in our study sites was the physician-nurse (or MA) teamlet.

It is a cliché that physicians "are not team players". We found the situation is more complex. While some physicians have difficulty relinquishing responsibility for elements of care, other physicians push for more active involvement by the clinical staff, but encounter resistance as team members remain reluctant to take on new responsibilities. In order for "share-the-care" teamwork to be successful, team members must have appropriate training, understand their role in the various workflows they participate in, and have time to succeed when given new responsibilities.

We were surprised to find a significant anti-team culture in policy and professional organizations despite the emphasis on team-based care. Institutional policies ("only the doctor can perform order entry"), regulatory constraints (each user must have a unique log in and password; only the physician can sign paperwork for hearing aid batteries, meals delivery, or durable medical equipment), technology limitations (workflows within the EHR are designed as if the physician would be performing all of the tasks on her own) and payment policies that reimburse only physician activity constrain many teams in their efforts to share the care, match the task to the training and deliver more robust primary care to patients.

In many clinics financial constraints and prevailing wages necessitate the clinical assistant be an MA, although we have found practices which were able to develop a team-based model of care with LPNs or RNs and remain financially viable.

We observed that the payment model may influence the team composition. For example, practices working under a fee for service model were not able to afford an extended care team of social worker, nutritionist and pharmacist. We found these services only in practices with external funding or global budgeting. On the other hand, practices working under a fee for service model were more likely to empower nursing or MA staff in collaborative visits and scribing.

How can a practice afford to hire an additional staff person without fundamental payment reform? Six of our sites: Mayo Red Cedar, Newport News, Allina, Medical Associates Clinic, Martins Point and the Cleveland Cliinc pilot, work exclusively in a fee-for-service environment, without organizational subsidy. Most determined that an additional two patients per day covers the cost of the additional MA/nurse.

Scheduling

We observed two distinct approaches to scheduling and de-stressing the physician's workday. One approach, exemplified by GHC, emphasizes decreasing visits to two per hour and also decreasing the population of patients cared for by each physician. Another approach, exemplified by Newport News, Allina, Cleveland Clinic and others emphasizes increasing access to existing and new patients by reducing the amount of non-physician level work the physician performs for each visit. Both approaches can result in improved work-life satisfaction and joy in work.

Record keeping, billing and waste

The volume of work associated with record keeping has increased over the past decade, with the introduction of electronic health records, the emergence of quality monitoring initiatives and the increasing complexity of billing regulations. The burden on primary care practices cannot be overstated. Tasks that took a few seconds in the pre-EHR world can take several minutes in the electronic world. Visit notes that previously were a few paragraphs of text, are now lengthy disjointed documents, formatted on a billing template, extending over many pages, and complicating, rather than facilitating, the cognitive work of finding key information. A nurse care coordinator at one site reported that many aspects of their work, such as goal setting, motivational interviewing and independent visits were put to the side after their EHR implementation: "We have very little time for this now—perhaps 1-2 patients per week. And we are way behind on the registry, but there just isn't time."

Scribing is the most powerful tool to reduce the burden of record keeping, and may be the single most impressive innovation we have observed.

Finding Joy in Practice: a concluding vignette

In 2007, one of us (CS) visited Dr. Ben Crocker in his previous practice. He was close to burnout, frustrated with relationships with patients and with colleagues, and overwhelmed by operational inefficiencies and an undoable amount of work.

> *I am faced with the ever-expanding everyday task of putting out fires. Whether it's ensuring that all the health maintenance issues are checked annually, or taking in another walk-in patient (sometimes sent from the specialist's office), or following up and enacting the recommendations of specialists who didn't seem to have time to follow up themselves, there is a never ending list of "to do's" and not much real time to listen to patients…. I joke with my office staff that when I retire I'm going to simply serve Starbucks coffee at a corner shop. It seems so much more attractive!*

> *I find that I'm missing out on the relationships -- not only with my patients, but also with my colleagues and with the residents and students I teach -- simply because of the enormity of the task of what it means in this day to provide "standard of care" primary care. The little things have become the big things. P4P measures, which don't necessarily reflect the profundity of our role in a patient's life, suddenly become the focus of our visit -- be it ensuring q6 month A1C measurements, annual cholesterol screenings, or documenting Advance Medical Directives in the EHR. While I am in full support of quality measures to keep medical care improving across the board, I fear that we may "janitoring" our perceived responsibilities at the expense of diluting our roles as healers, comforters, and listeners.*

> *I'm hopeful for something different.*

Check back 2011: Dr. Crocker now practices at The Ambulatory Practice of the Future, which opened in the summer 2010 after 6 years of planning. Patient engagement and support for the providers and staff are its central tenets. Physicians, nurses, patients, architects and IT specialists all contributed to the physical and functional design. The APF is supported by a grant from the Massachusetts General Hospital, where it is located, to provide care to hospital employees and their families.

Crocker says this about his new practice:

> *The biggest difference, besides space and technology -- is team, culture and time. No matter what the day looks like, I look forward to coming to work. The onus is no longer just on me to simply survive the day. We share accountability with and build responsibility in each other. I am appreciated by my colleagues and my practice for who*

I am, not for my ability to see lots of patients or to fill a room or to not make any waves in the office. I wouldn't trade that for anything. Time with patients to better understand who they are, their story, and begin to explore wellness goals has been eye opening. I'm loving it.

Recommendations

1. **To truly "Share the Care," health care organizations require stable teamlets with a ratio of 2 to 3 clinical assistants (medical assistants or nurses) for each physician FTE.**

From our observations, organizations that team 2-3 clinical assistants with each physician are able to more fully leverage the skills of the physician and create meaningful roles for the MAs or nurses. The most effective staffing model we observed is "2 plus 1". Two MAs or nurses handle patient flow, the extended rooming process and EHR information management, including visit note documentation, while one clinical assistant staffs the phones, works the registry, and provides care coordination and care management.

2. **Health care organizations and training programs need to train to the competencies required for team-based primary care.**

Clinical assistants require new competencies for effective primary care, including skills in EHR information management, workflow mapping, motivational interviewing, and chronic care management. Few MAs, and not all LPNs or RNs, are fully trained for the complex teamwork needed in primary care. We believe training programs for MAs, LPNs, and RNs should teach more of these primary care skills to their trainees, or alternatively a new clinical assistant role and training pathway could be developed.

Training of physicians may also need to change, from training designed to meet the workforce requirements of a hospital to training designed to match a population's need for primary care services.

3. **Electronic medical records need to advance in order to support efficient clinical care and team work.**

We are acutely aware of the need for better user interfaces to reduce the clicks, scrolls and time involved in data entry and data retrieval, and for better display of health information to reduce the cognitive workload. We believe technology should be redesigned to support efficiency and teamwork, rather than remaining a cumbersome repository for visit note documentation, the primary function of which has become support for coding and billing.

4. Scope of work for various licensures needs to be standardized.

Scope of work laws and regulations for RNs, LPNs and MAs are confusing and inconsistently interpreted. We believe the scope of work for these team members needs to be standardized, clarified, and (in many cases) extended.

5. Research is needed to inform primary care transformation.

For our research colleagues, we have developed a series of unanswered questions, from the straightforward ("What is the optimal exam room layout") to the complex ("Quantify the waste in primary care associated with electronic messaging, visit note documentation, physician order entry.") (Appendix 7)

6. Third party insurers and policymakers can facilitate improvement in primary care by modifying reimbursement.

Primary care is unlikely to thrive at current reimbursement levels. Higher levels of practice revenue are needed to support the additional services, non-visit based care and multi-disciplinary team approaches which are anticipated to improve quality and reduce global costs of care.

Limitations

This project attempts to generalize from case studies, suggesting changes in primary care practice based on innovations we have observed in high-performing practices. Case study research centers on the tension between two questions: "What is going on here?" (The study of the particular for its own sake) and "What is this a case of?" (The search for generalizability). [25]. We have attempted to extract generalizations from the particulars of the practices studied. We cannot be certain whether such generalization is valid. In addition there are most certainly innovations that we did not encounter.

While we observed that in most practices NPs or PAs functioned as independent providers with their own unique panel of patients in a role very similar to the physicians their optimal role of in primary care is beyond the scope of this paper. None-the-less we did observe that these health professionals experienced similar threats to joy in practice, and are migrating to specialties outside of primary care, just as their physician colleagues [26].

Similarly we observed that MAs and especially nurses in primary care are also under stress. Although the factors contributing to their job dissatisfaction are beyond the scope of this paper,

we found nurses more satisfied in roles that went beyond just phone triage and prescription renewals, and included direct patient contact.

While data supports the link between staff and physician satisfaction, and patient outcomes, this project was not specifically focused on the patient experience of care.

Conclusions

The core work of primary care remains meaningful and rewarding, but this work has been crowded out by increasingly complex regulatory, technological and administrative requirements. Primary care physicians across the country may now be spending the majority of their time on large volumes of clerical work, including visit note documentation, order entry, prescription processing and other EHR generated tasks; lower level clinical work, including work-list sign off of normal labs, and algorithmic chronic and preventive care functions; and the administrative work necessary to comply with reporting and billing requirements. Because of this, we believe primary care physicians are under-utilizing the training society has invested in them.

Good clinical workflow is the sum of a multitude of small processes, which individually may seem insignificant or even trivial, but together make the difference between a highly functional practice model and one that is chaotic and stress-inducing. We believe that clinical excellence depends on operational efficiency, and that both drive physician work-life satisfaction.

We have analyzed 23 high functioning practices at the most granular level of team composition, task distribution and team member competencies. Our findings suggest that a shift from a physician-centric model of work distribution and responsibility to a shared-care model, with a higher level of clinical support staff per physician, will result in high functioning teams, and thus, we believe, to higher quality care for patients, lower healthcare costs for payers, and improved professional satisfaction for medical assistants, nurses and physicians—that is, greater joy in work.

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