TMLT’s 2015
Texas legislative successes

By Jill McLain, Executive Vice President of Governmental Relations

Part of the mission of TMLT is to advocate for the interests of physicians and patients in the Texas Legislature. We do this to ensure that the delivery of quality health care in Texas is uninterrupted and unimpeded by bills and rulings that are either harmful or ineffective.

TMLT continues to partner with the Texas Alliance for Patient Access (TAPA), TMA, our lobby teams, physician organizations, and others in the industry to protect tort reform and achieve our legislative and regulatory goals.

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The following is a brief review of TMLT’s legislative successes in 2015.

We are pleased to report that no bills were passed this year that would negatively affect tort reform.

TEXAS LEGISLATIVE AGENDA ITEMS

TMLT worked with TAPA to resolve these issues:

- **Definition of Health Care Liability Claim (HCLC):** House Bill 1403, filed by Rep. Kenneth Sheets, R-Dallas, clarifies the definition of a HCLC under Texas medical malpractice statute. The bill excludes from the definition certain claims by injured or deceased workers or their survivors against employers who are nonsubscribers to the Texas Workers Compensation program. It was signed by the governor on June 17 and took effect September 1, 2015.

  We opposed legislative language that would have adversely broadened the definition of HCLC, including eliminating premises liability claims from the definition. The premises liability issue was already before the Texas Supreme Court for a ruling in a number of cases. The court resolved the issue in its May 15 decision on *Ross v. St. Lukes*. In this case, a plaintiff filed a HCLC against a hospital after slipping and falling in the lobby, where the floor had been cleaned and buffed. The court dismissed the case, holding that the suit was not a HCLC because the claim was based on safety standards unrelated to the provision of health care. More recently, the Supreme Court handed down a similar ruling in *Reddic v. East Texas Medical*.

- **Revising the HB 4 Medical Authorization form to be HIPAA compliant and broadly accepted:** Obtaining medical records in medical malpractice cases can be cumbersome and time-consuming for all parties, and the process needs to be revisited. Even though a bill was not passed that would solve the problem, we have identified a number of ways to work on the issue in the interim. During the off-session year, we hope to arrive at some consensus proposals that can be brought to the legislature in 2017.

- **Tax Relief:** TMA led an effort to win passage of House Bill 7 by Rep. Drew Darby, R-San Angelo. The bill repeals a $200 annual occupation tax paid by physicians and other professionals, such as dentists, optometrists, psychologists, and veterinarians. This will save more than 600,000 Texas professionals an estimated $125 million annually. (Neither TMLT nor TAPA participated in that effort.)

  Some of the significant bills that passed and became law during the 2015 Texas legislative session:

  - **SB 304 by Sen. Charles Schwertner, R-Georgetown**—provides for the license revocation of a convalescent or nursing facility if the Department of Aging and Disability Services finds that it has committed three violations that constitute an immediate threat to health and safety related to the abuse or neglect of a resident.

  - **HB 574 by Rep. Greg Bonnen, R-Friendswood**—protects physicians from retaliation by a managed health plan provider if the physician refers a patient to out of network providers.

  - **HB 764 by Rep. Susan Lewis King, R-Abilene**—requires, in part, that the Department of State Health Services (DSHS) or other appropriate entity maintain a database for health care data that does not include identifying information, and establishes requirements relating to patient notification of the collection of health care data.

  - **HB 1779 by Rep. Andrew Murr, R-Junction / SB 1733 by Sen. Carlos I. Uresti, D-San Antonio**—authorizes a physician to release a confidential patient communication or record in response to a subpoena without a patient’s authorization or consent if the release is related to a judicial proceeding in which the patient is a party. However, the bill does not prevent a physician from claiming the privilege of confidentiality on the part of the patient.

  - **SB 18 by Sen. Jane Nelson, R-Flower Mound / HB 1445 by Rep. Ryan Guillen, D-Rio Grande City**—transfers assets from the Joint Underwriting Association...
(JUA) to be used for funding graduate medical education (GME). SB 18 creates a permanent endowment of approximately $300 million to expand GME beginning in fiscal year 2018. This bill supports the TMA’s goal of increasing entry-level residency positions in Texas to retain more physicians in the state. TMA aims to add almost 600 GME positions by 2022.

- **HB 2641 by Rep. John Zerwas, R-Richmond / Sen. Charles Schwertner, R-Georgetown**—is related to the secure exchange of information via a health information exchange (HIE), offering some liability protections to participating physicians.

- **HB 177 by Rep. Bill Zedler, R-Arlington**—mandates the creation of a privately funded Research Coordinating Board related to the research, collection, and use of adult stem cells.

Other bills of note that passed:


- **HB 550 by Rep. Four Price, R-Amarillo / SB 219 by Sen. Charles Schwertner, R-Georgetown**—companion bills designed to update codes and laws under the Texas Sunset Advisory Commission, a legislative commission tasked with identifying waste, duplication, and efficiency of more than 130 Texas state agencies. These bills look closely at the Health and Human Services Commission, and will make recommendations to improve that agency’s effectiveness.

- **SB 425 by Sen. Charles Schwertner, R-Georgetown**—is related to billing transparency of freestanding emergency rooms (ERs). All freestanding emergency rooms are now required to display clear and accurate information regarding their charges and fees. The freestanding ER would also disclose when fees are comparable to a traditional hospital ER. This is designed to remove any confusion or “sticker shock” consumers may face if they mistake a freestanding ER for a hospital ER or urgent care center.

- **SB 481 by Sen. Kelly Hancock, R-North Richland Hills**—as filed, this bill would have eliminated balance billing for out-of-network services from facility-based physicians, for any balance. TMA negotiated better language including a decreased mediation threshold from $1,000 to $500.

For more information about TMLT’s legislative efforts, please contact Jill McLain at jill-mclain@tmlt.org.

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**TMLT and the Texas Medical Board in 2016**

There are a number of issues that the TMA, with support from TMLT, continues to monitor and resolve through legislative efforts in 2016.

**Telemedicine** — The TMB adopted rules that would require an initial face-to-face visit or an in-person evaluation to establish a physician-patient relationship before the physician can diagnose or prescribe drugs to a patient. However, this was blocked when Judge Robert Pitman, U.S. District Court for the Western District of Texas, issued an injunction. Teledoc, who is fighting the TMB rules, claims that these rules are illegal and limit competition. This issue continues to develop and may have far-reaching implications for physicians and patients throughout Texas.

**Notification requirements** — Physicians who retire, leave the state, or die are required to fulfill certain public notification requirements. Technology has made many of the current requirements outdated. We will work with the TMB to update these requirements.

**Network, reimbursement, and red tape issues** — Many of these issues continue to be problematic, and TMLT works closely with TMA and the medical community to find solutions, both legislative and regulatory.
CME: Gaining the best value from your EHR

OBJECTIVES | Upon completion of this course, the physician should be able to:
1. discuss ways to nurture an office culture that continually strives for increased efficiencies, quality improvement, and effective use of an EHR;
2. describe one quality improvement model that can help physician practices successfully foster change;
3. explain how an EHR can most effectively be used to streamline clinician workflow;
4. describe how EHRs have been used to increase operational efficiency and decrease costs; and
5. find and use nationally recognized resources that provide guidance on the safe use of EHRs.

COURSE AUTHOR
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DISCLOSURE
Matt Murray, MD, has no commercial affiliations/interests to disclose related to this activity.

TARGET AUDIENCE
This 2.5-hour activity is intended for physicians of all specialties who are interested in practical ways to reduce the potential for medical liability.

CME CREDIT STATEMENT
Physicians are required to complete and pass a test following a CME activity in order to earn CME credit. A passing score of 70% or better earns the physician 2.5 CME credits.

TMLT is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. TMLT designates this enduring material for a maximum of 2.5 AMA PRA Category 1 Credits.™ Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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- Non-policyholders: $100

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Questions about the CME course? Please call TMLT Risk Management at 800-580-8658.

ESTIMATED TIME TO COMPLETE ACTIVITY
It should take approximately 2.5 hours to read this article and complete the questions and evaluation form.

RELEASE/REVIEW DATE
This activity is released on December 1, 2015, and will expire on December 1, 2018.
INTRODUCTION

Three recent national surveys reveal that physicians generally accept the promising concept of EHRs, but their experience with the difficult transition from paper-based charts to EHRs generates both positive and negative responses.

Some physicians describe their satisfaction with improved access to patient information, improved quality of care, and increased efficiencies. Other physicians view the value of EHRs as a future promise, as they are dissatisfied with poor EHR usability, time-consuming data entry, interference with face-to-face patient care, cost, inability to exchange electronic health information between EHRs, and a downgrade of clinical documentation. One in four physician practices are considering replacing their current EHR.

Since 1994, the largest health information technology (IT) organization in the world, the Health Information Management Systems Society (HIMSS), has annually honored one or more physician practices with the Nicholas E. Davies Award of Excellence for outstanding use of ambulatory EHRs to improve quality of care and achieve positive financial returns on investment.

Physician practices that seek the award are required to submit a detailed case study describing their EHR implementation, clinical use, and financial return on investment (ROI). Full case studies submitted by Davies Award winners are posted on the HIMSS website in an effort to openly share best practices on the use of health IT.

For this article, six Davies Award case studies were selected to help illustrate six key factors associated with gaining value from EHR use. The six factors are:

1. culture of change,
2. quality improvement,
3. streamline clinician workflow,
4. streamline operations,
5. improve financials, and
6. EHR risk management.

The methodology used in this article to explain each of the six key factors does not give proper justice to the excellent work done by these award-winning physician practices who used a variety of different EHR products. It is important to note that there is no one “best” EHR product on the market. These physicians and practices were awarded for their work and methodology, not for using the “right” EHR. Readers and EHR users must concentrate on how to gain value from an EHR using these six key factors, regardless of which EHR product is in use.

The case studies are summarized in order to focus on the key factor under discussion. The full case studies are available on the HIMSS Davies Award website and provide many additional insights.

1. “CULTURE OF CHANGE” VILLAGE HEALTH PARTNERS—2007 DAVIES AWARD

Founded in 2001, Village Health Partners is a nationally recognized family medicine practice that provides preventative care, chronic disease management, and other services at multiple locations in Plano, Texas.

In 2003, their evolution began when the founding physicians realized it was becoming increasingly difficult to deliver high-quality care while using paper medical records. They wanted to improve their efficiency, use technology to facilitate quality care, and use reporting tools to measure quality and track improvements. To achieve these goals, they decided to begin using an EHR and redesign their workflow.

The initial objectives for their EHR implementation were to improve business operations, clinical efficiencies, and customer satisfaction ratings. To provide quality care, they wanted to track care more efficiently, use preventive care reminders, and use clinical decision support at the point-of-care for chronic disease management. They wanted to use strong data analytic tools to achieve these objectives.

The physicians also wanted to improve their staff’s job satisfaction and decrease overtime.
As leaders of the practice, the physicians made a conscious effort to model a positive attitude about the EHR to staff.

They wanted to create a working environment where physicians and staff felt they were not only providing better care, but also being more efficient and productive. The physicians hoped to improve their own job satisfaction as well, including being able to spend more time with their families and friends outside the office.

At the time of the EHR implementation, the office staff included two licensed vocational nurses (LVNs) and three front office employees. The EHR vendor supplied a project manager. The practice’s Dr. Christopher Crow served as the lead physician and became integral to the success of the implementation.

Over a six-week period, Dr. Crow spent more than 130 hours outside of regular practice time working on the implementation. One of the LVNs who had prior experience with an EHR assisted other staff members who had no EHR experience.

The physicians knew that a successful EHR implementation depended on every staff member sharing the accountability and a positive, team-oriented attitude. They spent a lot of time managing staff expectations and addressing fears about change. As leaders of the practice, the physicians made a conscious effort to model a positive attitude about the EHR to staff.

The practice began to foster a culture that actively engaged all staff members in efforts to improve the practice. For example, the physicians asked staff to provide input to improve educational information given to patients. Staff members were also involved in the workflow analyses and in determining more efficient ways to use the EHR and other technologies.

Once they gained consensus on a proposed new workflow, they validated it by practicing with test patients. If testing uncovered problems, they would analyze the issue and adjust the workflow until everyone felt comfortable. Once a redesigned workflow was completed, it would be documented and communicated to all physicians and staff.

In their Davies Award case study, the physicians stated that this process essentially turned everyone in the office into “workflow experts.”

**Value gained**

Village Health Partners characterized the value of their EHR implementation as “far exceeding our expectations.” In addition to many tangible benefits listed in their Davies Award submission, they specifically described a profound change in culture that transformed their practice. They observed that their staff made a 180-degree turn from being scared of change to embracing change. Everyone in the office became acutely aware of how workflow redesign and process improvements can make things better.

After the implementation, they continued to meet regularly as a team to discuss ways to improve care or become more efficient. The physicians viewed this cultural change as a key factor that enabled them to successfully use their EHR to improve efficiency and quality of care.

Other values gained from EHR use:

- increased number of patients seen, including more patients identified as being due for preventive services;
- initiated monitoring and improving multiple quality metrics. In the first year alone they demonstrated significant improvements in:
  - blood pressure control;
  - diabetic screening; and
  - colon cancer screening;
- automated appointment reminders that reduced the patient no-show rate to less than 5%;
- staff anecdotally told physicians they felt more efficient and more confident;
- physicians reported improved satisfaction with their job and having more time at home;
- improved access to legible patient information;
- reduced hand written prescriptions through adoption of e-prescribing, which saved time and reduced phone calls;
- saved time and reduced paperwork through use of computerized order entry of labs and imaging studies; and
- reduced phone calls and paperwork through use of secure messaging with patients regarding lab and image results.

**Financial ROI**

The practice estimated that the physicians made $60,000-80,000 more per year due to the
EHR. Their business and clinical efficiency allowed them to maintain a low provider to staff member ratio (7 to 3) as compared to staffing benchmarks. They saved on the cost of paper charts and transcription. Accuracy of coding and improved billing was estimated to have improved revenue by $25,000 per physician annually. Automation of data entry eliminated errors inherent to manually typing data into the computer, which can lead to denials of claims. In addition, the improvement in quality metrics enhanced their ability to market their practice and led to better success in negotiating insurance contracts on at least one occasion.

Expenses (first two years):
- EHR hardware: $30,000
- EHR implementation/training: $50,000
- Software license: $18,000
- EHR annual software support: $10,000
- Network support: $5,000
- Miscellaneous: $2,000
- Initial slowdown (3-4 months): $20,000

**Total EHR expenses (two years)** $138,000

Cost Savings (first two years):
- 3 employees (based on benchmarks): $120,000
- Transcription: $20,000
- Paper charts: $10,000

**Total Cost Savings (two years)** $150,000

New Revenue (first two years):
- Improved coding: $40,000
- Increased patient volume: $30,000

**Total New Revenues (two years)** $70,000

**ROI = 159%**

*(ROI is calculated with the formula of total EHR expenses / (total added revenue + cost savings.)*

**Feedback: Lessons learned**
- “We think that our success was due to several factors. The most important of which was the leadership and involvement of the physicians. They committed the time and money necessary to get it done right... Further, they managed the expectations of the employees in a way that changed the culture of our practice for the better.”
- “There are several preliminary questions that any organization needs to answer before purchasing an EHR.... They also need to have a good understanding of what they want the EHR to do for them. Identifying who and what the obstacles will be is always important to ascertain as well. Having a realistic timeline of when you want to purchase and implement is also good to know from the onset.”
- “Clinical content proved to be the most difficult task of implementation.”
- “All areas of the organization should have input and the EHR team should meet regularly.”
- “The EHR team should become an expert in workflows.”
- “Make sure your EHR team decides in advance how decisions will be made.”
- “Give ample time for training of staff and physicians.”
- “Implementation really never ends. Strive for continuous improvement.”
- “We feel we have significantly addressed what matters most to patients.”
- “The automated services and improved workflows [that] the EHR provides have helped maximize the convenience of our office for patients.”

**Summary: Culture of change**

According to the Village Health Partners case study, the most difficult tasks involved with their EHR implementation were not technical. Instead, they involved redesigning workflow, streamlining processes, and training people to effectively use the EHR system. These efforts often require people to be open and willing to change. It can be challenging to nurture a culture that embraces change and encourages everyone to collaborate in efforts to improve, but Village Health Partner’s experience demonstrates that it is possible, powerful, and a prerequisite for achieving maximum value from EHR use.

Village Health Partners did not consciously set out to change their culture when implementing an EHR but, instead, described it as “a pleasant surprise.”

The physicians at Village Health Partners had excellent instincts and demonstrated strong leadership and planning skills that helped to nurture a cultural change. The physicians themselves embraced change and purposefully displayed a positive attitude to their staff about the EHR implementation.
They held team meetings and effectively maintained good communication channels. They made sure that everyone understood that they each shared in the responsibility of making the EHR implementation successful, and, in turn improved the quality of care and increased efficiency.

Problems were solved together. Physicians actively engaged staff in discussions about workflow changes and made sure they were comfortable with the changes made. They identified and addressed the fears and concerns of the staff. After the implementation they knew what to measure, and they were able to show the staff positive results stemming from all their efforts. The excitement over seeing positive results permeated through the office and further motivated staff.

Village Health Partner’s staff truly embraced teamwork and shared accountability. They successfully spliced the culture of change into their office DNA, and are now driven by a desire to continually improve. Combined with a willingness to change, this desire to continually improve serves as a foundation to gain maximum value from the EHR.

2. “QUALITY IMPROVEMENT” FREMONT FAMILY CARE—2014 DAVIES AWARD

Fremont Family Care® is a primary care practice located in the small town of Fremont, Nebraska, near Omaha. In addition to their main office, they serve two outlying rural clinics on some days of the week.

In 2010, their patient’s insurance coverage was composed of 40% Medicare, 34% Blue Cross Blue Shield, 8% Medicaid, and 18% other insurances. At the time they began using an EHR, they employed four full-time family practice physicians, one physician assistant (PA), and a nurse practitioner (NP). One physician focused primarily on gerontology while the other three served a more diverse population. Their vision is “to passionately pursue excellence in health care in a collaborative effort from physicians and staff.”

Several factors led to the decision to implement an EHR. They wanted to improve patient outcomes by setting quality goals and tracking progress, and they also found managing paper records difficult. The problems they experienced with paper records included being unable to 1) extract baseline data on the care they were providing, 2) maintain accurate medication lists, and 3) gain physical access to patient charts and records from the outlying clinics.

Fremont Family Care began using an EHR in October 2010. The operational objectives were to alleviate all the burdens inherent to
paper charts and replace manual processes with redesigned automated processes. Their clinical goals were to improve quality health care, track outcomes, and improve the health of the patients.

After allowing time for clinicians to adjust to using an EHR, Fremont Family Care embarked on a journey to use data captured in their EHR to improve quality of care. Their EHR was equipped with a registry feature that allowed them to create patient lists and search for quality data. Early in 2011, they created a registry of patients aged 65 years and older (the denominator) and analyzed how many of these patients had received the pneumococcus vaccine (the numerator). Resulting data showed that only 56% had received the vaccine.

Before taking action on these results, the practice took steps to check that the report generated by the EHR was accurate. After checking that the EHR tool reliably and accurately captured the correct data for analysis, the physicians took immediate steps to improve the vaccination rate.

To do so, each physician was provided with a clinical team who used the registry to send a notification to patients due for a vaccination. They redesigned their clinical workflow and leveraged clinical decision support tools included in the EHR. They worked with their vendor to design and build a feature that fired up an “alert” to prompt clinical staff if a patient who came to the clinic was due for a vaccination. The patient would be offered a vaccination, although his or her visit was for a different reason. In addition, the physicians agreed to allow nursing staff to administer the vaccine in response to such an alert under specified circumstances.

After setting this plan in motion, Fremont Family Care began to monitor their progress. At monthly meetings, each clinical team was provided with a report, filtered by a physician, of the current vaccination rates. This process identified which clinical teams were on target and which teams were lagging behind. Analysis of the reports also revealed that certain teams were either not following the intended workflow or were not using the clinical decision support tool as designed. Education and training were used to address these issues.

The result of this effort was an improvement of pneumococcal vaccination from 58% to 71% over the course of one year. In a subsequent study done in collaboration with their local hospital, they successfully reduced the number of patients hospitalized for pneumonia by 50% during comparative study periods.

Fremont Family Care started with just two quality initiatives, but after early success they expanded quality improvement efforts to other relevant clinical issues, including blood pressure control in diabetics, screening mammograms, and screening colonoscopies.

**Value gained**

In their Davies Award submission, Fremont Family Care highlighted the benefits they experienced from the use of e-prescribing. They described how their EHR’s e-prescribing feature improved their ability to accurately track medication and reduce outpatient medication errors. They also described how using their EHR improved their ability to notify patients who were due for testing or follow up visits. Their overall ability to coordinate care for patients with complex chronic medical problems was also greatly improved.

Clinical metrics that improved over one year (2013-2014) included:

- pneumococcal vaccination rate rose from 58% to 71%;
- hospital admissions for pneumonia dropped by 50%;
- rate of patients aged 50 to 75 years that had a colonoscopy rose from 37% in the first quarter of 2011 to 70% in the second quarter of 2014;
- improved rate of HgbA1c<7.0 in diabetic patients from 36% to 45%; and
- increased mammogram screenings for women aged 50 to 70 from 20% to 56%.

**Financial ROI**

Fremont Family Care’s initial capital and 3-year operating expenses were $137,000. They reduced their overall costs significantly by working with their local hospital, which donated 85% of the total startup costs. The practice generated a hard return on investment—almost doubling their original cost. Immediately following the EHR
implementation, the practice experienced an initial decrease in operating and patient service revenue, but this gradually returned to baseline. By 2014, the practice exceeded pre-EHR annual revenue. They calculated annual cost-savings at $126,740, including an elimination of transcription costs, which were $91,000 annually. In addition to improving operating revenue, the physicians earned $114,000 by achieving Meaningful Use from 2012-2014.

Capital Expenses EHR $53,000  
(15% of total cost—85% subsidized by hospital)
EHR Operating Expense (2010-2013) $84,000
Total Investment (2010-2013) $137,000
Reduced costs (2010-2013) $126,740
Meaningful Use payments $114,000
Total Revenue (2010-2013) $340,740
ROI= 248%

Feedback: Lessons learned
• “Ensure that you are able to accurately extract the data you need to report on the quality goals. In the beginning of our clinical quality reporting we had some providers who did not believe the data, so we were able to print the patient list, hand sort these patients, and prove correct data to the patient.”

• “The data was reported individually as well as at the staff and provider meetings. Reporting the data at this venue was helpful in brainstorming ideas for improved workflows and/or identifying areas for improvement that would drive better care.”

• “Creating clinical teams composed of regular assigned clinical staff and the provider is beneficial as they work as a team, and improvement in performance can be directly related back to this team. This allows the clinical staff and providers to celebrate their successes and take pride in improvements they make.”

• “The implementation of the EMR has been essential... to fulfill our mission to improve the health and wellness of the people in the communities we serve. Our goal to improve quality care for our patients has been realized, and we are able to show this data to our providers and outside organizations.”

• “The implementation of quality goals is extremely important in improving the care of your patient population. Provider/physician buy-in to improving care is also essential.”

• “Collaborating with the providers within the practice to develop mutually agreed upon clinical quality measures is essential.”

Discussion: Quality improvement
In their case study, Fremont Family Care described how garnering the support or “buy-in” from physicians was vitally important before embarking on quality improvement (QI) projects. They took three steps that acquired strong internal support:
1. they gained consensus among their physicians on a few quality goals that were meaningful to their practice;
2. they ensured their EHR was reliably and accurately capturing the data that would be used to measure quality; and
3. they ensured their reporting tool accurately reported the results.

The PDSA cycle

The pneumococcal vaccination project in the case study offers a great example of how Fremont Family Care was able to use their EHR in conjunction with the four-step PDSA cycle—plan, do, study, act—to achieve results. The PDSA cycle, also known as the Deming Cycle, is a circular principle that uses a “trial and learn” process where the “act” at the end of the first cycle launches a new plan to start a second cycle, based on the progress or lessons learned in the previous steps.

Because of the nature of a multi-step process, the PDSA cycle also helps users avoid the tendency of stopping after they have achieved one goal. This cycle has a built-in step that fosters continual improvements.
Effective QI projects include methods for tracking progress. When progress lags, it is important to look for reasons by analyzing the plan, processes, and people involved. Depending on the problems identified, the solutions could include revising the original plan, redesigning processes, and educating or re-training people.

To foster an environment of continual improvement, it is important to be as objective as possible about information discovered during QI projects. Being objective helps individuals and organizations make changes in a positive manner instead of assigning blame to others for past mistakes. Assigning blame fails to consider the context and circumstances of previous decisions and is counterproductive to continual improvement.

**PDSA and Fremont Family Care**

Fremont Family Care created a plan that involved the creation of clinical teams, redesigning workflow, developing a clinical decision support tool, and using the patient registry capability of their EHR to notify patients who were due for vaccination. After establishing this plan, the next step was to actually do what the plan laid out. At the end of one month, the practice studied their results. Their study identified that some teams were making good progress while other teams were not. After analyzing the causes behind this finding, the practice determined that their action would be to provide additional education or training to those teams. Their new plan was to reassess the next month. In this manner, they cycled through the PDSA principle on a month-to-month basis.

Fremont Family Care encountered a very common problem when some clinical teams performed very well, while others did not. In this case, certain team members did not “catch on” to the redesigned workflow or did not use the technology correctly. Therefore, they took action by employing additional education and training for the team members who were not “catching on.”

In Fremont Family Care’s experience, QI was achieved by taking one step at a time. Their experience showed that QI does not often come quickly and is a continuous process. By initially choosing only a few quality goals, Fremont Family Care was able to slowly achieve success that then served as a springboard to ongoing QI efforts.

**3. “STREAMLINE CLINICIAN WORKFLOW” WHITE RIVER FAMILY PRACTICE —2013 DAVIES AWARD**

Founded in the late 1970s, White River Family Practice (WRFP) is a primary care practice in northern New England staffed by six family physicians, three nurse practitioners (NPs), and 14 support staff members. They serve approximately 10,000 patients from the surrounding communities in Vermont and New Hampshire.

Their patient population includes many older patients with multiple chronic health problems. Roughly half of their patients have coverage by the major commercial insurers while roughly one third of their patients are covered by Medicare or Medicaid. Their practice is a teaching site for students of the Geisel School of Medicine at Dartmouth, where all six family physicians serve as faculty members. Their philosophy is to provide guideline-recommended care as the “background hum” of their practice, along with maintaining strong physician-patient relationships.

Prior to their EHR implementation, a sample-sized audit of paper records revealed: 1) they could not feasibly identify the population of patients for whom certain preventive care services were indicated, and 2) their patients were not systematically receiving the intended guideline-recommended care. The audit disclosed that many patients were behind on routine immunizations. The physicians also voiced frustration about the inability to access important information at the point-of-care, such as recent imaging or laboratory reports.

WRFP recognized that being able to provide guideline-recommended care requires that physicians have real-time access to up-to-date information on the health of each patient. They decided they needed an EHR to address these issues. When the federal Recovery Act was passed in 2009, which provided funding for the Meaningful Use program, they seized the opportunity to implement an EHR and used Meaningful Use EHR incentive payments to defray some costs.

Prior to their EHR selection, they reviewed guidelines from the National Commission on
The WRFP case study used the management of diabetic patients as an example of how the dashboard and workflow redesign streamlined clinical workflow. Staff and physicians learned how they could more easily update a diabetic patient’s record by using structured data fields and order sets linked to the dashboard. The practice developed a process in which its medical assistants (MAs) reviewed the dashboard for each patient who came to the office lab. Standing orders were established for an MA to draw a HgbA1c, fasting low-density lipoprotein (LDL), creatinine, or urine microalbumin on a specific diabetic patient who came to the lab for any reason if they lacked that patient’s current levels.

To streamline physician documentation, they also established a pre-visit preparation process for diabetic patients. The process involved MAs entering specific care elements into the record for each patient, such as the date and result of most recent diabetic foot and eye examinations.

Initially, a patient’s verbal confirmation that such care had been received was acceptable. However, they soon determined this verbal method to be unreliable and instituted a new process where a staff member obtained copies of outside consultant notes, scanned them into the EHR, and entered a structured value into the patient’s record such as the date of an exam and a “yes” checkmark to indicate that a diabetic retinal examination had been conducted within the past year.

Value gained
WRFP configured their EHR with alerts and clinical decision support that facilitated their ability to provide guideline-based care, specifically for patients with asthma and diabetes. They streamlined physician workflow by leveraging EHR capabilities and redesigning workflow patterns. Other values they gained included:

- increased the proportion of diabetic patients who receive periodic glycosylated hemoglobin (HgbA1c);
- improved HgbA1c control among diabetic patients;
- improved the proportion of asthmatic patients with a current Asthma Action Plan;
- improved the proportion of asthmatic patients with a current Asthma Control Test;
• earned certification as a Level III Patient Care Medical Home (PCMH) and achieved a high score of 93/100 on the 2011 National Committee for Quality Assurance (NCQA) Guidelines; and
• achieved successful attestations to Year 1 and Year 2 for Meaningful Use incentive payments.

WRFP noted several other non-monetary benefits of their EHR. For example, physicians now had real-time access to complete medical records whether in-office or after hours by using a virtual private network, or VPN, to remotely access their EHR. In addition, office space formerly used to store paper medical records was converted and used for other critical office functions and services.

Financial ROI
As White River Family Practice considered the transition to an EHR, the practice qualified for a grant of $140,000 from the Vermont Information Technology Leaders (VITL). They obtained a $70,000 line of credit, which they repaid within the first year of EHR operation.

<table>
<thead>
<tr>
<th>Capital Expenses EMR, 2009-2013</th>
<th>$311,264</th>
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<tbody>
<tr>
<td>EMR Operating Expense, 2009-2013</td>
<td>$88,173</td>
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<tr>
<td><strong>Total Investment</strong></td>
<td><strong>$399,437</strong></td>
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<tr>
<td>Increase in Revenue, 2011-2013</td>
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<tr>
<td>Other EMR-Related Revenue, 2009-2013</td>
<td>$460,268</td>
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<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>$894,185</strong></td>
</tr>
<tr>
<td><strong>ROI= 223.86%</strong></td>
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</table>

Feedback: Lessons learned
• Successful implementation of an EHR is a tremendous organizational challenge – but very achievable. Clearly defined goals and a timeline are essential.

  • “Every source with whom we spoke regarding EHR implementation emphasized the importance of actually mapping out key care processes before imposing an electronic record system on our office.”

  • “Similarly, every advisor recommended emphasizing initial and ongoing training on use of the EHR program.”

  • “Develop clear standing orders empowering staff to order or obtain any tests or care which are lacking (without a new order from the practitioner). This may require periodic reinforcement to members of your clinical microsystem.”

  • “Involve stakeholders and opinion leaders representing every facet of the office from the beginning. Their views of important office processes are essential as workflows are adapted to the EHR. Empower staff to help redesign these workflows.”

  • “When something isn’t working correctly in your EHR, try to fix it on the spot. If that is not possible, make a note of it and return to fix the problem as soon as you can. Tolerating inefficiency or system dysfunction fosters development of bad habits or ‘work-arounds.’ If allowed, these bad habits will become your new standard, decreasing your efficiency of EHR use and delaying realization of maximal return on investment.”

  • “We learned that awareness of any gap between our current performance and our target(s) is essential before steps can be undertaken to close that gap, and that measurement of ongoing performance with regular feedback is necessary to refine processes and continue improvement.”

  • “Our chosen four priority interventions are measures of the process of care; obviously we are most interested in outcomes… recognizing that a change in outcomes will require a longer period of observation, obtaining reliably improved care processes will ultimately contribute to improved health outcomes.”

  • “There will be uncompensated time spent by practice leaders (physicians and management). That is one of the costs of staying current with technology in medicine. Successful EHR implementation is an organizational leap in pursuit of the Triple Aim of better health, better care, and lower cost – and it’s worth it.”

Discussion: Streamline Clinician Workflow
The WRFP case study paints a realistic picture of the work it takes to identify and replace inefficient clinical work habits with more efficient, redesigned workflows that are enabled by technology. WRFP initially mapped
out and analyzed more than two dozen of its office processes. This analysis allowed WRFP to understand the purpose behind each manual and paper-based process and to identify any bottlenecks. While WRFP elected to perform the extensive workflow analysis internally, an alternative strategy for any practice is to hire a consultant to assist with the analysis.

After analyzing clinician workflow, WRFP’s next step was to fully understand the capabilities of the EHR system. There is usually no better source to learn about an EHR’s capabilities than from the vendor. Before they even signed a contract, WRFP asked their vendor to demonstrate how to incorporate guideline-based care processes into their clinical workflow. In their case study, WFRP said that this early interaction with their EHR vendor helped establish a healthy relationship that, in retrospect, was beneficial going forward.

It is important to know that not all of the potential capabilities of an EHR are “turned on” when it is implemented. Instead, the practice should learn about all potential capabilities and make a conscious decision on which ones will be used and which ones will not be used. As a practice grows and changes, the list of any capabilities not being used should be revisited periodically.

With workflow analysis completed and the EHR capabilities understood, WRFP was prepared to redesign its workflow. The most effective workflow redesigns were those that used the EHR’s capabilities and focused on relieving the identified bottleneck areas.

An EHR implementation provides any practice with a unique opportunity to identify and replace inefficient clinical workflows with more efficient workflow redesigns. A common clinical workflow complaint is that EHRs require too many clicks. A high number of required “clicks” in a clinician’s workflow can sometimes be due to lack of knowledge of the EHR capabilities or designing complex documentation templates. Before burdening physicians with additional documentation “clicks” to capture data for a Meaningful Use report or other quality report, practices should carefully consider alternatives.

WRFP addressed this issue by cleverly redesigning workflow and using their EHR’s technical capabilities. They established a pre-visit procedure for diabetic patients at which time staff could enter certain data into the record. They configured their dashboard to enable simpler data entry. Order sets were linked to preventative care “alerts” which streamlined the expected response, such as an alert that prompts an order for a pneumococcal vaccine. These steps are examples of ways to reduce the number of clicks that can burden physicians.

WRFP “turned on” and configured a dashboard feature of their EHR that provided value by streamlining clinician workflow. It is likely that other practices using the same EHR will not take the time to configure and use the dashboard. Unfortunately, those practices may not fully realize the value of their EHR.

The White River Family Practice case study offered these important takeaways.

1. Not all EHR capabilities and tools are “turned on” when the EHR is implemented. A practice should learn about all of the potential capabilities and make a conscious decision on which ones will be used.
2. Revisit the capabilities periodically to ensure the EHR is being fully utilized as a practice changes and grows.
3. Although an EHR implementation naturally forces workflow redesign to occur, the most efficient workflow must still be determined by each individual practice.
4. The vendor is an important resource for learning about your EHR’s capabilities.

4. “STREAMLINE OPERATIONS”
JAMES F. HOLSINGER, MD, PC—2011 DAVIES AWARD

Dr. James F. Holsinger is a solo family medicine physician in the small rural community of Keokuk, Iowa, located in the southeastern part of the state on the Mississippi River near the Illinois and Missouri borders. In 2003, he opened his practice in an old, abandoned clinic that he renovated and then rented along with two part-time specialists. His staff included a registered nurse, a receptionist (who also did the billing), and a licensed practical nurse (LPN). He incorporated a moderately complex, CLIA-approved laboratory, which his LPN managed. Within 6 years, he had 1,400 patients. Several full-time and part-time
The EHR’s technical capabilities allowed the office to virtually eliminate the need to manually route and file paper faxes and other documents.

Before opening the practice, Dr. Holsinger, who also held a Masters of Business Administration degree, developed a list of clinical and business objectives. One of his business objectives was to become profitable within two years. One of his clinical objectives was to open the practice with an EHR in place, because he felt an EHR would help him provide higher quality of care.

He also saw the marketing value to being the first physician in the community to use electronic records. He anticipated that opening a practice using an EHR would help him attract strong staff applicants who shared an interest in using technology tools for patient care.

When the practice opened, the EHR was used only to document patient encounters and process insurance claims. While Dr. Holsinger was aware of the other available EHR features, he decided to initially only use those basic functions.

From 2003 through 2006, he admitted that he was not practicing the preventive care he had envisioned with an EHR. In retrospect, he said his practice was “really just doing what most physicians did on paper; we just did it on the computer.”

In fact, many paper-based processes continued to be used in the office such as prescription pads and consent forms. Because he was the first local physician using an EHR, all of the consultant reports, lab reports, and imaging reports came to him on paper.

Starting in 2006, Dr. Holsinger’s practice began analyzing current workflow and learning from their vendor about the unused capabilities of the EHR. Based on the analysis, the practice made several small workflow changes that made certain tasks easier for staff to perform. A major redesign of workflow came when they began using the EHR’s flow sheet function which not only streamlined data entry, but also provided Dr. Holsinger with an ability to easily see trends in patient lab results over time.

In 2006, the practice transformed its cumbersome document management process. Previously, all paper documents coming into the office were given to Dr. Holsinger to review. He “signed off” on each piece of paper, and then staff scanned the documents into an electronic file cabinet where they were often hard to find later. By leveraging the EHR technology, they were able to immediately scan all paper documents into the EHR where they could be easily located. They were also able to electronically route documents and messages to Dr. Holsinger who could electronically view, sign, and route them back to the appropriate staff member or to external entities. These technical capabilities allowed the office to virtually eliminate the need to manually route and file paper faxes and other documents.

Dr. Holsinger’s practice attended their EHR vendor’s user conference and learned how to implement an order tracking system. This automated their ability to track the status of every order for every patient and improved the communication of test results with patients. An interface with LabCorp was implemented in 2007. Electronic prescribing was implemented in 2008. Step-by-step, the practice continued to “turn on” EHR capabilities and redesign processes to gain efficiencies and improve patient care.

**Value gained**

In their 2011 Davies Award case study, Dr. Holsinger reported that they were using nearly all of the available components of their EHR. In addition, the following results attributed to EHR implementation were reported:

- exceeded state and national performance in 2010 on the CMS Prevention Program’s rates for breast cancer screening, colon cancer screening, influenza vaccination, and pneumococcal vaccination;
- exceeded compliance with Wellmark Blue Cross Blue Shield’s 2010 Collaboration on Quality for breast, cervical, and colon cancer screening;
- achieved the highest level (Level 3) for all sections of Wellmark’s program except diabetes BP (Level 2), also included process and outcome measures for asthma, diabetes, CAD, HTN, and generic prescribing;
- successfully attested to Stage 1 of Meaningful Use; and
- successfully implemented Physician Quality Reporting System (PQRS) reporting and received the associated incentive
payments. (PQRS was previously known as the Physician Quality Reporting Initiative (PQRI).)

**Financial ROI**

Dr. Holsinger exceeded his goal to be profitable within 24 months and consistently paid down his debt faster than planned. Financial results from 2006-2011 included increases in total annual patient visits; increases in total charges/visit; decreases in overhead costs; and decreases in accounts receivable.

<table>
<thead>
<tr>
<th>Expenses (2003-2010):</th>
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<tbody>
<tr>
<td>EHR software</td>
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<tr>
<td>EHR Hardware</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Total EHR expenses</strong></td>
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<table>
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<th>Cost Savings (2003-2010):</th>
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<tbody>
<tr>
<td>Misc. insurance company credits</td>
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<tr>
<td>*Reduced staff to provider ratio</td>
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<tr>
<td><strong>Total Cost Savings</strong></td>
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<tr>
<th>New Revenue (2003-2010):</th>
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<tr>
<td>Increased level of billing</td>
</tr>
<tr>
<td>PQRS incentive</td>
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<tr>
<td>Other pay-for-performance</td>
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<tr>
<td><strong>Total New Revenues</strong></td>
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ROI = $1,163,208

“A significant reduction in the staff to provider ratio was one way Dr. Holsinger demonstrated to the Davies Award committee how the EHR helped him avoid costs. He employed 6.5 full time employees in 2010, which compared favorably to the benchmark of 10 full time employees (using Gateway LarsonAllen 2008 benchmarks). This calculated a cost savings to the practice of $123,460 in annual salaries and benefits.

**Feedback: Lessons learned**

- “If we could roll back the clock...we would also have contracted with our vendor for additional training at 6 months, 12 months, and 24 months after implementation. This would have helped us use the intermediate and advanced functions of the EHR more quickly.”

- “The fundamental purpose of every function we have put into practice throughout our EHR implementation was driven by improvement in the quality of patient care, improved patient or staff satisfaction, or an improvement in the bottom line of the business.”

- “We believe the excellence of our EHR functionality is that we understand there is never an end to the EHR implementation process.”

- “The vision and objectives were our guides through each step of the process, from EHR
product selection to each interface and the EHR functions we implemented.”

- “Focus on business objectives and the quality of care of your patients.”

- “The key performance indicators we established were very useful in assuring we were on the correct path to achieving our objectives. Additionally, these benchmarks gave us a tool for communicating our progress with the staff. They could see how their individual contributions impacted our overall performance.”

- “We will continue our journey of continuous process improvement and implement step growth improvements as opportunities exist.”

Discussion: Streamline operations

The initial implementation of Dr. Holsinger’s EHR was technically exemplary. However, in his first 3 years he did not see the clinical value he expected from EHR use, and his practice remained bogged down by paper-based processes. As he observed in the Davies Award case study, his practice initially implemented an EHR on top of inefficient paper-based processes. He basically replaced writing notes on paper with entering notes into a computer.

To Dr. Holsinger’s credit, he recognized this problem and took action. First, his practice learned about the EHR capabilities that they had not initially “turned on.” Dr. Holsinger’s staff attended their vendor’s user conference where they learned how to implement an order-tracking feature of their EHR.

Vendor user conferences are one of the best ways to learn about the EHR, as it is an opportunity to not only learn from the vendor, but also from other physician practices who use the same EHR.

Dr. Holsinger wisely started out implementing small internal workflow changes that made certain tasks easier for his staff. Success with small changes garnered the “buy-in” he needed from staff to tackle bigger changes, such as redesigning the documentation management workflow. That larger change required staff to learn the capabilities of the EHR system and revise day-to-day operations to take advantage of that capability.

Workflow analyses and redesign lead to more efficient processes. If staff members or physicians in your practice are reticent in transitioning away from manual or paper processes, ask them the following questions.

1. What does that paper process achieve?
2. Is there a more efficient way to achieve that purpose?
3. Does EHR or another office technology have the capabilities to allow a more efficient workflow?

5. “IMPROVED FINANCIALS”
GROVE MEDICAL ASSOCIATES—2015 DAVIES AWARD

Grove Medical Associates (GMA)* is an internal medicine practice located in an urban setting that serves Worcester County in Massachusetts. GMA has four internal medicine physicians, one PA, one certified nutritionist, and a staff consisting of RNs, MAs, and administrative support. The practice serves a diverse patient population of more than 6,500 people.

Before implementing an EHR in 2005, the practice struggled with the typical challenges of paper charts, including improper filing (or “lost” charts), illegible handwriting, and written notes that did not capture the full extent of a patient’s history and physical exams. A major concern was raised in 2002 when they hired a consultant to assist them with a proper coding technique for office visits.

The consultant observed that the physicians routinely and appropriately performed histories and physical exams that justified a 99214 evaluation and management (E&M) code, but they more frequently entered a 99213 code with a lower assigned payment. The physicians told the consultant they were often unsure whether they captured enough information in their notes, so they tended to use the lower 99213 code. But even after learning they were often under coding, they were uncomfortable with the time they felt it would take to write down or dictate all the information required to justify the correct code.

They decided to implement an EHR that not only improved their ability to document...
what they actually did, but also provided guidance on the proper code to enter based on the documentation.

For the EHR implementation, the practice developed plans to minimize disruption in patient care.

- Seven weeks prior to the “go-live” date, staff began scanning paper charts, manually abstracting certain patient data from the paper records, and entering it into the EHR. Patient data included notes from the last two office visits and the most recent EKG/echo/mammogram/CXR/colonoscopy/pap screen/recent labs, medication lists, and allergies.

- Each physician schedule was adjusted to include an extra 15-minute block per hour for the first four weeks. (They originally planned to do this for the first two to three months, but physicians became proficient by the end of the first month).

- During the first week of EHR use, patients were notified that physicians and staff were training on a new system. Staff members took the time to demonstrate a few aspects of the EHR to patients during office visits, which was well received.

In their Davies Award submission, GMA stated that training was an essential element to their success. Training included:

- distributing tutorial CDs to staff before the actual training sessions to allow them to become familiar with EHR clinical screens and practice management screens;
- visiting other practices using the same EHR to see it being used in a live setting; and
- contracting with on-site trainers before and on the EHR “go-live” date.

GMA used several EHR capabilities to address their documentation and coding issues. They developed documentation templates and learned to use voice recognition software to help enter full documentation within the time constraints of their busy practice.

They “turned on” and used their EHR’s E&M coding functionality to guide clinicians to the accurate code based on what was documented in the record. Several years later they implemented an EHR capability that allowed them to easily search for the proper ICD9 code based on their documentation. All of these actions allowed them to significantly improve the accuracy of coding and achieve higher risk adjustment factor (RAF) scores.

To reduce patient “no-shows,” GMA’s EHR was set up to send voice and text messages to each patient’s phone as appointment reminders. The patient portal was also set up to automatically send appointment reminders to patient’s e-mail. In addition, the EHR was set to automatically check all patient insurance eligibility the night before scheduled appointments.

Two electronic clearinghouses—one for electronic referral and bill submission and another for electronic claims submission—were also set up. They used their EHR’s capability to mail a paper bill to patients without involving staff time. Another functionality was “turned on” that electronically uploads patient information to a collection agency when necessary.

**Value gained**

GMA reported the following gains to their practice:

- achieved Patient Centered Medical Home Level III certification with a score of 85.25/100;
- achieved Meaningful Use Stage 1 attestation;
- increased incentive money from the insurance companies;
- improved rates for multiple preventive measures including diabetic eye exams, breast cancer screening, cervical cancer screening, and colon cancer screening; and
- received high marks from patients, including a post card from a patient who wrote: “I so appreciate your pushing for preventative testing.” This patient was initially reluctant to have her annual mammogram, but an EHR-prompted appointment and image study detected early stage breast cancer.

**Financial ROI**

GMA estimated their ROI at 315% from 2005-2013. After the EHR implementation in 2005, they were able to properly code 80% of
the office visits as a 99214. The difference in revenue between a 99214 and a 99213 at that time was approximately $35 per office visit. As shown below, this improvement in coding accuracy increased their collections by an estimated $1,310,661 from 2005-2013.

They saw an increase in insurance collections. The average number of office visits per day increased from 17 in 2004 to around 21. This amounted to approximately 3,000 additional office visits annually. Average insurance collections have doubled since 2004.

GMA increased revenue earned through several pay-for-performance incentive programs including Bridges to Excellence and PQRS. After adoption of the Patient Centered Medical Home Initiative, they realized they were not accurately capturing transition of care for patients coming from different settings. They subsequently used their EHR system to more effectively track these patients.

Expenses (2005-2013):
- EHR software expenses: $199,725
- EHR hardware/tech support expenses: $151,302
- Ancillary expenses for DXA, Ultrasound, Echo, Training and other ancillary expenses: $970,940
- Total expenses: $1,332,417

Returns (2005-2013):
- Increased collections: $1,310,661
- Increased procedure charges: $1,215,200
- PQRS and other P4P monies: $1,555,472
- Reduced cost of paper chart space/storage: $118,800
- Total Returns: $4,200,133

ROI=315%

Feedback: Lessons learned
- “Learning is never over when implementing an EHR.”
- “To continuously recognize and utilize any and all training is very important.”
- “The practice’s philosophy is ‘you cannot improve on something you do not know’ (referring to increasing the proportion of patients receiving recommended preventive care).”
- “GMA learned early on [that] conducting weekly meetings with the entire staff was crucial in the learning curve. During these meetings, staff taught each other the simplest way to perform a task within the EHR. These weekly meetings were an open collaboration for all staff to have input and to feel heard. By discussing in an open forum many errors were eliminated.”
- “In all of the reporting projects, the biggest lesion was staff needed to know where data was being pulled from in the electronic record. Educating staff members to see where the data is pulled from and helping them understand the concept was instrumental in obtaining the proper reports. This has forced GMA to change some workflow, but has greatly improved reporting capabilities.”
- “One of the major challenges to increasing the quality improvement measures was determining the correct way to input the data into the EHR in order to extract it properly.”
- “GMA realized not to underestimate the volume of incoming and outgoing faxes. The amount of faxes changed dramatically within days of ‘Go Live,’ This did initially create a problem which was resolved quickly by applying separate servers for incoming and outgoing faxes. GMA should have accomplished the setup of separate [fax] servers prior to ‘Go-Live’ date.”
- “We learned when introducing the Patient Portal, to inform the patients it is the easiest method of communication. Being able to say that your specific physician has asked you to sign up for Patient Portal carries a lot more weight than just asking ‘Do you want to sign up for the Patient Portal?’”

Discussion: Improved financials
All of the case studies in this article include impressive financial ROI information. In Grove Medical Associates’ story, they had a specific goal to address a known tendency to under code office visits. They likely found it difficult to take the necessary time to write a
Incorrect coding can lead to questions of fraud and abuse, even when mistakes are completely unintentional. 

Many of the following benefits described in these case studies were non-monetary or difficult to quantify, but still highly valued. Here is a list of those benefits:

- improved access to patient data;
- improved documentation;
- improved ability to measure quality (accessible data on patient population);
- improved patient satisfaction and loyalty;
- improved quality of care;
- improved patient communications;
- more efficient use of staff;
- improved patient engagement;
- more efficient operations/automation of tasks;
- more efficient clinical workflow;
- improved remote access to patient medical records;
- improved data reporting capabilities;
- improved quality of life for physicians;
- improved employee satisfaction; and
- improved business continuity (disaster recovery preparedness).

6. “EHR RISK MANAGEMENT”
JEREMY L. BRADLEY, MD—2012 DAVIES AWARD

Dr. Jeremy Bradley operates a primary care clinic in Owensboro, Kentucky, a rural town with a population of 50,000 and a service area of 250,000 people. Opened in 2000, the clinic employs one physician, one nurse practitioner, and a physician assistant. Dr. Bradley provides annual wellness exams to children and adults along with chronic disease management, acute care, radiology services, in-house laboratory services, EKGs, stress testing, and minor surgical procedures.

Approximately 50% of his 9,000 patients are covered by private insurance, 40% by Medicare, 2% by Medicaid, and 8% are uninsured or pay privately.

In 2008, the local county was federally designated as a health professional shortage area (HPSA). Primary care access had worsened due to retirements and relocations of several primary care physicians.

Dr. Bradley sought ways to increase his patient base from 7,000 to 9,000. But he was frustrated with inefficiencies and delays caused by leveraging the capabilities of an EHR, GMA found opportunities to increase revenues and reduce costs—something all physician practices can do.

It is important to understand some risks that may occur with EHRs and coding patient visits. Some critics of EHR systems have reported that physicians and groups are “up coding” patient visits for greater reimbursements. Sometimes, up coding can be unintentional if the user is unfamiliar with the EHR system. Up coding can also occur if users improperly “copy and paste” inaccurate information from one record to the next.

The physician practices in these case studies used some of the following methods to improve revenue via an EHR:

- more accurate coding;
- incentive payments/awards (Meaningful Use program, PQRS, Bridges to Excellence, and other quality initiatives);
- increased patient visits;
- improved billing, claims management, and collections;
- improved payor contracts; and
- improved charge capture for long-term care patients.

Other examples of cost savings achieved in these case studies include:

- reduced cost of paper/office supplies;
- reduced transcription costs;
- improved use of space (i.e. chart rack space);
- lower staff to provider ratios; and
- avoided penalties.

During an audit, billing practices are reviewed, and patient records will be reconciled with billing. Incorrect coding can lead to questions of fraud and abuse, even when mistakes are completely unintentional. Heavy fines and penalties can result from fraudulent coding.

The following methods were used to improve revenue via an EHR:

1. More accurate coding;
2. Incentive payments/awards (Meaningful Use program, PQRS, Bridges to Excellence, and other quality initiatives);
3. Increased patient visits;
4. Improved billing, claims management, and collections;
5. Improved payor contracts; and
6. Improved charge capture for long-term care patients.

Other examples of cost savings achieved in these case studies include:

1. Reduced cost of paper/office supplies;
2. Reduced transcription costs;
3. Improved use of space (i.e. chart rack space);
4. Lower staff to provider ratios; and
5. Avoided penalties.
by paper documentation. He knew he would not be able to serve more patients and maintain a high quality of care without using an EHR.

His office established three goals by which to measure the success of an EHR selection and implementation:

1. gain positive feedback from patients and staff (satisfaction surveys performed pre- and post-EHR);
2. meet quality care measures from outside entities; and
3. improve financial outcomes.

In less than six months, he transformed a completely paper-based office to virtually paper-free through a successful EHR implementation and effective workflow redesign. Dr. Bradley now completes all of his charting while in the patient room and feels he has more time to engage directly with his patients.

Protecting the integrity, privacy, and confidentiality of each patient’s electronic health information was a top priority for Dr. Bradley’s practice. In his Davies Award submission, Dr. Bradley stated that an EHR “is nothing without an effective and fail-safe way to protect patient information.”

Dr. Bradley’s vendor informed him that the EHR came with a system that backed up all clinical data, both internally and externally, and that the EHR could be fully restored if a disaster wiped out their main system. He hired local IT professionals to help install and properly maintain his EHR and IT systems. He asked these professionals to evaluate the disaster recovery capabilities of his EHR.

His IT team was impressed with the internal backup capabilities of the EHR. It included automatic backups being conducted throughout the day, not just a single overnight backup. It also provided several different ways to quickly restore the EHR if it went “down,” assuming all of the physical hardware was working properly.

However, they were concerned about the EHR data being backed up and stored offsite. In the event of a disaster, where the internal recovery of data was not possible, they determined that restoring the EHR from the offsite data involved long and complex processes. In that scenario, they estimated that the EHR would likely be down for a minimum of 2 to 3 days, assuming that the complex processes were properly executed and worked as designed. They advised the practice about other technologies available on the market to externally backup data and, if necessary, restore their EHR more efficiently and effectively.
Dr. Bradley was not comfortable with the potential of a 2 to 3 day downtime, even if the possibility of such an event was low. With the assistance of his IT team, they selected and installed a new backup system that was able to fully restore the EHR system in just 2 to 3 hours. They ensured that the backup vendor and product were HIPAA-compliant. This backup system was set to run every night with minimal upkeep. The staff was trained on how to check that the nightly backups were conducted.

The practice concurrently developed a written “disaster plan” that described actions everyone would take in the event of any EHR downtime. For example, duplicate carbon paper would be used to write down phone messages, including prescription refill requests. These messages and other information recorded on paper would then be entered into the system at a later time when the EHR became available. Also, they developed an alternative way to retrieve or access patient health summaries stored on an individual flash drive or computer, even if the whole EHR system crashed.

Value gained
Dr. Bradley reported the following gains to his practice:

• achieved certification as a Patient Centered Medical Home (the first ambulatory clinic in Kentucky to do so);
• honored by Bridges to Excellence with three national awards, including the Physician Office Systems Award, which recognizes innovative use of information systems in a clinical setting;
• rated a 5-star Physician of Excellence by Health Grades in 2011 and 2012;
• surpassed peer benchmarks in BP and cholesterol control metrics;
• achieved medication list accuracy of 92% in the paper charts vs. 100% in electronic charts;
• awarded Reader’s Choice award from local newspaper for Best General Practitioner;
• achieved Meaningful Use stage 1;
• increased patient intake by 28%;
• increased overall revenue by 45%; and
• developed health maintenance protocols around each of the following population management metrics and their EHR facilitated adherence (including 100% adherence to over half of these metrics):
  • HgbA1c control;
  • BP control;
  • LDL control;
  • eye exams;
  • nephropathy assessments;
  • podiatry exams;
  • smoking status and cessation advice;
  • lipid profile;
  • aspirin use;
  • urine protein test;
  • diabetes screening;
  • counseling for diet and exercise.

Financial ROI
Dr. Bradley reported that the 2008 purchase and implementation of his EHR was self funded. The clinic had a $100,000 line of credit with a local bank and was able to repay the line of credit within two years. Elimination of transcription and a reduction in office supplies saved $1,300 per month. Accounts receivable was reduced to 10 days. The practice was able to reduce staff by 0.5 full time employees. They retrained employees who previously managed the paper medical records to perform phlebotomy.

Expenses (2012):
EHR software $19,090
EHR hardware $21,050
Other $6,600
Total EHR expenses $46,740

Cost Savings (2012):
Misc. insurance company credits $6,000
Transcription $14,400
Office supplies/storage $9,200
Staff/overtime $40,872
Total Cost Savings $70,472

Return (2012):
Increased revenue $20,000
e-prescribing CMS incentive $4,456
Increased level of billing $10,000
Meaningful Use stage 1 incentive $18,000
Other $6,864
Total New Revenues $59,320

ROI = 277%
Feedback: Lessons Learned:

- “It is unfortunate to think of how many doctors do the bare minimum with their EHR because they don’t think it is worth investing time in it.”

- “When selecting areas of care in which to improve, make sure to focus first on the areas that most powerfully impact your unique patient population.”

- “We chose to work with the Bridges to Excellence [pay-for-performance] program because the population management metrics they measured were areas in which we truly wanted to improve and excel in our practice.”

- “Do not implement an EHR merely to achieve Meaningful Use...or other financial incentives or to avoid penalties.”

- “Choose an EHR that will: 1) improve your medical quality, 2) improve your medical documentation, 3) speed up your charting, 4) increase your productivity, and 5) reduce your professional stress.”

- “We recommend all doctors take a serious look at their backup procedures. While your system may be doing the job and complying with HIPAA requirements...make sure to have a real understanding of the consequences of a full system restore and how long it will take.”

- “An experienced IT team...performs monthly maintenance procedures to ensure our backup and restoration systems are functioning properly.”

- “We knew if we moved too quickly, the transition to electronic health records could be a traumatic process. We made sure to set goals that our office could achieve, both daily, weekly, and monthly. Scanning patient records as they came in for appointments allowed us to gradually move all records to the EHR.”

- “Through open communication, our patients became part of the process, offering observations and encouragement. Overall, our transparency increased patient satisfaction.”

Discussion: EHR risk management

Safe use of an EHR requires effective management of many inherent risks. Although these risks are becoming well known, they differ from those inherent to paper records and physician practices are not as familiar with them. Like paper records, many of the risks associated with EHR use are avoidable or can be reduced. The Office of the National Coordinator for Health IT (ONC) is striving to increase awareness of safe EHR use and coordinate efforts to develop a national framework to better manage health IT-related patient safety risks.12

Dr. Bradley was aware that EHR downtime posed a risk to quality of care and to business operations. He engaged his local IT professionals to assist with identifying the level of risk posed by his particular EHR’s backup system. Based on the information provided, he was comfortable with his EHR’s internal ability to back up patient data throughout each day and the ability to quickly restore the EHR in the event of a minor problem.

However, he was uncomfortable that it would take at least 2 to 3 days to restore his EHR from offsite backup data in the event of a disaster. He felt that this delay posed such a high risk to patient care and continuity of practice operations that he decided to take action to reduce the risk.

He purchased a new backup system that would restore his entire EHR within 2 to 3 hours. He also established detailed policies and procedures for his practice to follow in the event of any EHR downtime. These procedures would help maintain continuity of quality patient care and business operations during and after any downtime.

There are a variety of ways physicians can become more familiar with the risks inherent to EHRs and ways to manage those risks. In the Journal of the American Medical Association article, “Eight Rights of Safe Electronic Health Record Use” by Dean Sittig, PhD, a medical informaticist from UT-Houston Memorial Hermann, EHR risks are categorized into “social” risks and “technical” risks.13

Social risks include those associated with training, teamwork, goal setting, communication, workflow redesign, EHR...
**OBJECTIVES**

- Foster an office culture that embraces change and strives for continual improvement
- Continually improve quality of care for key aspects of your practice
- Know your EHR and use available capabilities to improve clinical workflow
- Use technology to replace manual processes with more efficient, redesigned operational processes
- Leverage streamlined efficiencies to increase revenues and save costs
- Optimize safe use of EHRs by avoiding or reducing known risks associated with EHR systems

**TASK LIST**

- Continually set and communicate goals to improve
- Know how to measure success
- Work as a team
- Establish expectation of shared accountability
- Proactively solve problems
- Celebrate milestones and successes
- Select quality goals important to the practice
- Accurately capture/report on right data
- Apply PDSA principles:
  - Plan (ensure you can extract the data)
  - Do (make your effort to improve)
  - Study (compare pre/post-effort quality metrics)
  - Act (modify effort-do again- study again- act again)
- Start with 1 or 2 goals; continually expand/improve
- Analyze workflow for key clinical activities
- Identify bottlenecks
- Learn/understand EHR’s capabilities
- Redesign workflow based on EHR capabilities
- Nurture a healthy EHR vendor relationship
- Ensure adequate training on best use of EHR
- Analyze operational workflow
- Learn/understand EHR and other office technology capabilities
- Redesign workflow based on EHR capabilities
- Replace inefficient manual processes with redesigned processes that leverage IT tools
- Ensure adequate training to leverage full capabilities of technology
- Reduce overhead and staff overtime
- Improve E&M coding, charge capture and other aspects of revenue cycle
- Earn pay-for-performance, other quality awards and incentives; avoid penalties
- Increase patient volume
- Improve staff productivity
- Improve payor contracts
- Use SAFER guides to continually monitor and address both “social” and “technical” risks
- Social risks involve people, policies, and choices including processes, clinical and operational workflows, training, downtimes, and optimal EHR use
- Technical risks involve hardware, software, networks, interfaces, configurations, upgrades, disaster recovery, and maintenance

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downtime, leadership, and policies and procedures. Technical risks include those associated with EHR hardware, software, networks, interfaces, configurations, upgrades, disaster recovery, and maintenance.

In 2014, Sittig and Joan Ash, PhD, completed development of the Safety Assurance Factors for EHR Resilience (SAFER) guides that gained national recognition. These nine guides, which cover nine categories of EHR safety, can be accessed on the ONC website at http://www.healthit.gov/safer/. Each guide begins with a checklist of recommended practices for safe EHR use. The guides also provide advice and resources to help physician practices implement best practices.

It is recommended that physician practices start with the first guide, “High Priority Practices,” which delves into a checklist of best practices on items that are applicable to most physician offices such as EHR downtime, clinical decision support, patient identification, and physician order entry.

The other guides are “Contingency Planning,” “System Interfaces,” “Computerized Provider Order Entry with Decision Support,” “Clinician Communication,” “Organizational Responsibilities,” “System Configuration,” “Patient Identification,” and “Test Results Reporting and Follow-Up.” Physicians can select the other guides in any priority based on their particular concerns or interests.

EHR risk management sets a foundation upon which physician practices can safely use their EHR for patient care. Using an EHR safely is an antecedent to gaining value from an EHR.

CONCLUSION
The six key factors associated with gaining value from any EHR product are summarized in Table 1, “Key Factors to Gain Value from EHR” (see page 24). The objectives listed in the table provide a succinct description of the goals associated with each key factor. The task list provides a concise, high-level overview of important actions associated with each objective.

As stated in the introduction, there is no one “best” EHR product on the market. The Davies Award winners derived value from a variety of different EHRs. Although it is important to select an EHR product that aligns with the needs of a physician practice, the key factors associated with gaining value are the same for any product. Even the “best” EHR will fail to produce value without application of the principles associated with these six key factors.

The first and last key factors listed in the table establish a foundation that is essential to gaining value from an EHR. The other four factors basically categorize the various ways physician practices can derive value. The objectives of the two foundational factors are perhaps the most challenging ones for physician practices to achieve.

The first foundational objective is to establish an office culture that embraces change. The Village Health Partners story illustrates how gaining value from an EHR required the practice to embrace change and cultivate a desire to continually improve. A willingness among the physicians and staff to change, when combined with a desire to improve, establishes a foundation that can sustain efforts that derive value from EHR use.

The second (and last) foundational objective is to use EHRs safely by managing EHR risks. To offer value, an EHR must adequately protect the integrity, privacy, and confidentiality of patient health information. The risks of EHR use are known, but are less familiar to physicians and hospitals as compared to the risks of paper records.

Dr. Bradley’s story and the subsequent discussion on EHR risk management hopefully provide insight on some of these risks. Several resources are suggested to help physicians learn how to avoid or reduce those risks, including the SAFER guides that have earned national recognition and are available on the ONC website at healthIT.gov/safer.

The full stories for each of the Davies Award winners described in this article provide many more insights into the successful use of EHRs to improve quality, streamline clinician workflow and operations, and improve financials. Those full stories can be found on the HIMSS Davies Award website or at the specific web addresses listed in the references.
Sources

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