The Quest for a Single Source of Truth

Provider Management Platform Complements EMR

Automates Acquisition and Maintenance of Provider Data

Enhances Efficiency, Patient Care, Billing Cycles, Provider Relations

June 2013
In health care delivery, timely communications and sharing of information is more than a nice idea—it’s essential. Yet, even today, provider communication and information-sharing failures are one of health care’s dirty little secrets. Fortunately, new technology can solve the problem.

So what’s the problem, you ask. Here’s just one example from the administrator of the radiology department at a large hospital system in the northeast:

“On average over the most current 12 months, about 11 percent of our faxes fail for various reasons related to the fax number we have on file. It’s a symptom of bad data and no cleanup. Numbers are missing or are invalid—voice line instead of fax line. Across 10 facilities, that constitutes over 33,000 events that need to be addressed. Some will be quick to resolve, others not. Figuring five minutes per event (conservative), it would require 1.5 FTEs of effort just to address this one issue.”

A few years ago, administrators at The Ohio State University Medical Center, writing in a professional journal, described the problem there. This will sound familiar to their peers nationwide even today:

- Over 30 silos (disparate data processing systems) contained physician data. Each system was independent, unable to communicate electronically with any other system. No single system contained all the information.
- Errors such as unknown physicians, duplicate records, misspellings, missing billing numbers, and multiple wrong addresses were common.
- Many people maintained these systems, but no single person bore responsibility for verifying and updating complete set of physician information.
- Data updates and changes in one system were not shared with other systems.
- Clinicians or billing staff could not submit new data corrections.
- Quality assurances or checks and balances to ensure that information remained up-to-date did not exist.
- No method existed for permanently correcting inaccurate data.
- Claims were held, due to missing billing numbers or inaccurate data, until someone from the billing office manually corrected them, delaying billings and accounts receivable.

With such fragmentation and disarray, the only surprise is that even more patients aren’t put at risk by communication and information-sharing failures and delays. The adverse consequences already are pretty serious:

- More than two-thirds of accidental deaths and serious injuries in hospitals are linked to communication failures
- More than a third of patient hand-offs were defective and did not allow for effective patient care

And, there are economic consequences for hospitals and physicians:

- About $12 billion is wasted annually in U.S. hospitals as a result of communication inefficiencies
- Providers spend hours daily trying to contact each other for consults, admits, discharges, test results, care coordination and bedside updates.

And, in case hospitals and providers need any more incentive to fix the problem, the Federal Government will do its part: Communication is a big part of the patient satisfaction survey which could affect reimbursement rates starting in 2012.
NEW WORLD AWAITS HIT EXECS

In the run-up to the full blossoming of the Affordable Care Act in 2014, the affordability of health care will receive unprecedented scrutiny, and health care executives will be in the thick of it. Health care IT executives, especially, will be seen as heroes or bumbling. The verdict is still out.

A prime example is the electronic medical record (EMR). Scores of articles and presentations have been published analyzing why EMR implementations fail, with failure estimates generally ranging from 50-70 percent. Many reasons are cited for these failures, but generally it comes down to the technology itself, vendor failures and misrepresentations, inadequate expertise on the part of hospitals and health care organizations, and internal process failures. EMR systems are just one of the areas of concern.

There are high hopes and expectations that investments in health care IT – expected to total about $34 billion in 2013 – can eliminate much administrative paperwork and squeeze much more productivity out of health care workers and managers, hospitals, health care organizations, and physician groups.

With that in mind and aided by generous Federal subsidies, health care providers already have invested hundreds of millions, even billions, of dollars in electronic medical records systems. Some of these EMR systems, perhaps less than half, actually work reasonably well, but even the ones that do work fail to address a fundamental issue: provider management.

The term “provider management” refers to the tedious, time-intensive administrative job of acquiring, maintaining and managing complete and accurate data on all health care providers who have some kind of relationship with a specific health care system.

Many health care IT executives mistakenly think or assume that their costly EMR systems take care of that problem, but, in fact, these systems do not. The EMR system essentially creates an additional data silo – albeit a big one – added to many others within the organization. But even as large as the EMR silo is, the provider information is incomplete and quickly becomes outdated, because it relies on unidirectional, or pull, technology. Provider data is a different animal and requires different technology.

The good news is that the rapid growth of cloud computing and related advances in information technology architecture now make it feasible to have a single source of truth that actually gets better, rather than worse, the more and the longer it is used.

This new, cost-effective technology is the Provider Management Platform (PMP). The PMP automates provider management, while overcoming the inherent problems of data silos, enabling interoperability, and presenting a user-friendly interface. The PMP doesn’t replace the EMR; it complements it. And since the PMP is not part of the EMR system, it remains unaffected by implementation difficulties related to the EMR system or any other IT system.

THE ROOT PROBLEM: NO SINGLE SOURCE OF TRUTH

As highly regulated enterprises, hospitals and health care organizations must know and be able to document and communicate with all the individuals who are authorized to provide medical care to patients. This includes not only physicians – both attending and referring, hospital-based and clinic-based —but also nurses, physician assistants, lab technicians, radiology techs, nutritionists,
physical/occupational therapists, clinical psychologists, and more. Moreover, the ability to share information in a timely manner is essential for effective patient care.

In order to comply with Federal and state regulations, hospitals and health care organizations must have accurate, up-to-date information on professional credentials and licensure; government identification numbers (NPI, DEA, Social Security, etc); primary office address; emergency and non-emergency phone, e-mail, fax; contact preferences; affiliations.

In addition, marketing departments often want to know which physicians and which specialties are most active and engaged with the hospital system. Human Resources departments need information for tax, insurance, and personnel administration purposes. The Business Office needs information for billing purposes. IT departments need to maintain records of all persons authorized to access the patient and clinical information systems. And, so on. In a large academic medical center, the groups of providers and facilities can be quite large as Table 1 illustrates:

<table>
<thead>
<tr>
<th>All on-staff providers</th>
<th>Referring providers</th>
<th>Facilities</th>
<th>Generic providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendings</td>
<td>External MDs/DOs</td>
<td>Urgent care clinics</td>
<td>MRI centers</td>
</tr>
<tr>
<td>Residents/ Fellows</td>
<td>External mid-levels</td>
<td>Community clinics</td>
<td>Generic MDs/DOs</td>
</tr>
<tr>
<td>Mid-levels</td>
<td>Chiropractors</td>
<td>Hospital transfers</td>
<td></td>
</tr>
<tr>
<td>Scheduling providers (PT/OT/SP, Pharm, Dietitians, etc.)</td>
<td>Optometrists, dentists, clinical psychologists</td>
<td>Refer-to sites (AA, support services, surgical sites)</td>
<td></td>
</tr>
</tbody>
</table>

Provider information typically exists in multiple buckets or data silos, each with its own fields, requirements, and authorized users. EMR systems, for example, allow providers to have only one fax number listed, although providers often have more than one.

In a typical large hospital or health care organization, provider data likely exist in these data silos:

- Credentialing
- Clinical Information Systems (CIS)
- EMR/Health Information Systems (HIS)
- Ancillary Systems
- Radiology Information Systems (RIS)
- Lab Information Systems (LIS)
- Intensive Care Systems
- Inpatient Clinical Systems

Some of the physician information, such as National Provider Identification numbers, is available online through the Centers for Medicare and Medicaid Services (CMS). A number of online services also provide additional physician information for a fee.

Sometimes the physician information is complete and up-to-date, but more often it is not. CMS urges health care organizations to ensure (and warns providers to check) that their provider information is correct. The Federal agency also advises the institutions to check that SSNs, Individual Tax Payer Identification Numbers (ITIN), state license numbers, and other sensitive information which may have been required during the application process were not placed in incorrect or optional fields by the providers, making it potentially accessible to unscrupulous users.
Physician information also exists in other locations: Human Resources, Professional Relations, Patient Care Centers, nursing stations, labs, radiology, the Executive offices, other administrative offices, Communications, Marketing/Corporate Communications/Public Affairs, Business Office, Information Systems, and even on mobile phone directories. Information on providers other than attending and referring physicians is even more decentralized and disorganized.

Now, when an institution invests millions or even hundreds of millions in a robust EMR system, it might seem reasonable to assume that the EMR system manages provider data as part of the package. In fact, many health care MIS executives hold that assumption. Unfortunately, they are very much mistaken. It’s somewhat like buying an office productivity suite and assuming incorrectly that it includes a contact manager application.

EMR systems fail to solve the problem for various reasons:

- Some EMRs don’t integrate well with other systems
- Some EMRs can’t read hospital directories
- Some EMR directories are unable to be used on the inter/intranet
- Provider information typically is embedded deeply in the EMR
- Adding provider information to or deleting information from an EMR system is a major process

Missing from the EMR package is a central data warehouse where all provider data are collected, managed, and accessed. This is a critical omission.

If a hospital or health care organization wants to download and merge online provider information with its internal database, it must hire a data analyst at a cost of $80,000/year. That, however, still does not address the problems of data quantity and quality. Since each department manages its own provider database, or information silo, each department must employ half a FTE to maintain and update the information on a daily basis, at a cost of roughly $22,500/year. That can quickly add up to hundreds of thousands of dollars annually.

Here’s the situation (Table 2) at a large health care organization in the Northeast. The system includes a large main hospital, a mid-size hospital, and two small hospitals. Across the system, about 10 FTEs are dedicated to collecting, validating, and managing provider information. This adds up to an annual cost of about $800,000, not including the costs for MSO processes and software (sub-totals rounded):

<table>
<thead>
<tr>
<th>Departments</th>
<th>Large Hospital FTEs</th>
<th>Medium Hospital FTEs</th>
<th>Smaller Hospital FTEs</th>
<th>Total FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beds</td>
<td>1500</td>
<td>400</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Radiology</td>
<td>1</td>
<td>.5</td>
<td>.5</td>
<td>2</td>
</tr>
<tr>
<td>Lab</td>
<td>0.5</td>
<td>0.25</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td>Billing</td>
<td>0.5</td>
<td>0.25</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td>Cardiology</td>
<td>0.5</td>
<td>0.25</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td>ED</td>
<td>0.5</td>
<td>0.25</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td>Referral Call Number</td>
<td>2</td>
<td>.5</td>
<td>.5</td>
<td>3</td>
</tr>
<tr>
<td>Provider Group</td>
<td>0.5</td>
<td>0.25</td>
<td>0.25</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>
In addition to the cost in direct expense and lost productivity, patient care suffers, too. When a nurse urgently needs to contact an attending or referring physician, the nurse often reaches first for his/her mobile phone, which might or might not have the correct contact information for the specific physician.

With conventional information technology architecture, both the quantity and quality of provider data are inadequate and unsatisfactory. There is no efficient system for continuously updating the provider information, and there is no single source of truth, because the data exist in silos. The solution requires a different IT architecture.

THE SOLUTION: PROVIDER MANAGEMENT PLATFORM

A Provider Management Platform (PMP) enables real-time access to a source of truth database of detailed provider-validate information for all IT systems within a hospital. Ideally, the PMP, most likely a cloud-based platform (Platform as a Service), automates, distributes and updates provider content across a hospital’s EMR, clinical subsystems, marketing and messaging platforms and directly to their end-users through the web and mobile apps.

The PMP does not replace EMR – it complements it. The PMP is the central data warehouse – source of truth – that is missing from all EMR systems.

Unlike existing EMR systems and cloud-based directories, the PMP model uses both push and pull technology – a critical distinction. Providers receive electronic notifications that remind and enable them to update and validate their profiles and contact information – with minimal effort on their part.

By having provider-validated information, the PMP ultimately ensures both quantity and quality of the information and eliminates the need for additional FTEs. The push/pull technology enables the system to get better over time as it collects more and more provider-validated information. The cloud-based model also enables low cost of ownership for hospitals and avoids additional capital spending.

In order to be useful, effective, and trustworthy within the increasingly technology-based health care environment, a PMP must provide a number of specific features and capabilities:

• Multiple integration points, including mobile devices
• Seamless interoperability
• Horizontal data distribution beyond the EMR – no more silos
  – EMR, Messaging/Communication, Special Purpose, Billing, Call Center, Transcription, Transplant, Marketing, Education, Emergency Response, Research
• Consistent provider validation
• Value-back model for end-users
• Builds competency in data among the end-users and the institution
• Merges internal and external data
• Unlimited data fields
• Controlled and secure access
• Easy data management
• User friendly interface designed for non-technical workers
• Bi-directionally updated
• Universally extensible
Since the push/pull technology generates provider-validated data, the PMP can tell the IT administrators how well or poorly the institution is doing in acquiring and maintaining up-to-date and complete information on its providers – a data scorecard. The data scorecard provides a high-level view of data quality. A provider’s score is based on acceptance of the electronic invitations and confirmation of the provider information, mobile phone number, and e-mail address.

PMP users can measure their success by their data score which measures the depth and quality of provider content. The PMP automatically provides a data score for each provider profile and across the institution’s system. The PMP tracks improvement over time and provides reports and tools to improve provider engagement. Almost by definition the score gets better with use.

The PMP is a cost-effective solution for a specific health care delivery problem not addressed by any other health care IT module or enterprise software. Even with the set-up charge and ongoing monthly maintenance/access fees, institutions should expect that the PMP will reduce the cost of maintaining existing processes significantly – down to the equivalent of approximately 1.5 FTEs across the health system. That’s a savings of hundreds of thousands of dollars annually in direct costs, and excluding productivity gains.

Perhaps more importantly, the PMP model dramatically enhances information sharing, which affects both the quality of patient care and billing/revenue cycles. Physicians appreciate it, because it frees them up to provide more care and they feel more confident that the patient care team is functioning smoothly.

THE FUTURE IS NOW
Various studies estimate that administrative costs account for 14 to 18 percent of total health care spending in the USA. With the full blossoming of the Affordable Care Act in 2014, the affordability of health care will come under intense scrutiny from legislators, regulators, insurance companies, consumer advocates, and others. Administrative costs will be one of the prime targets.

Improvements in information technology are the key to achieving administrative efficiency. The Provider Management Platform will be an important part of the efforts by health care providers to do more with less, while at the same time improving both the quality and safety of patient care.

Hospital and health system administrators already feel they are under intense pressure to cut costs and yet not jeopardize quality of care or patient safety. They feel they have eliminated the fat and now must cut into muscle and bone. Meanwhile, health care costs continue to outpace overall inflation, and health care consumes an increasing share of the nation’s total annual output of goods and services.

Unfortunately, the painful reality is that despite investing vast sums on information technology to eliminate manual, paper-based systems and become more efficient, some key processes have remained immune from the automation push. These processes are weak links that continue to sap productivity.

Moreover, wasteful and inefficient processes are more than just a financial issue. Waste and inefficiencies lower the quality of patient care – and even patient safety – by delaying clinical communications and diverting human and material resources away from direct patient care. PMP technology will help health care providers stay focused on their core mission: delivering high-quality medical and hospital care.