

**Jackson Community Medical Record: Implementation Strategies
Testimony before the Implementation Workgroup
of the HIT Standards Committee**

**by
Rick Warren, Vice President & CIO
Allegiance Health
Jackson, Michigan
October 29, 2009**

**Questions from the HIT Standards Committee
Implementation Workgroup**

1. a) What business problem (e.g., clinical issue, health outcomes problem, etc.) were you trying to solve with implementing interoperability across organizational boundaries?

- The business problem we are addressing is focused on coordinating care across the continuum of care. We call it "Integrated Care Management" (ICM). The Allegiance Health (AH) mission is: "We lead our community to better health and well-being at every stage of life." To this end, despite the current misaligned reimbursement incentives, AH has been working for several years on reducing the demand side of the healthcare equation. We have initiatives focused on wellness and prevention as well as disease management as part of ICM. Our current prevention focus is on coordinating activities across the community around smoking cessation and colorectal screenings. Coordinating diabetes is our current disease management effort.

b) What standards did you use and why?

- We use HL7 standards available to us from our vendors. Unfortunately, their interpretations and implementations of the standards vary. Frequently vendors do not agree on HL7 segment definitions. We use our limited resources to translate between the vendor interpretations. In an ideal world this would be unnecessary.
- HL7 Version 2.X. is used for real-time PHI messaging between vendor products. For example the admission/discharge transactions generated by legacy Series HIS move in real time into a newer Lab Order system, a Radiology PACS system, etc. Orders and results are likewise exchanged in real-time as HL7 Ver2 between Lab, Pharmacy, Radiology, inpatient EMR, JCMR, and Series billing applications. Better vendor compliance with the evolving HL7 messaging standards will

give us the opportunity to select the best systems for a task based on user needs without worrying about interoperability costs.

- X12 Standard is used for all electronic billing.
- Custom Development Standards: Any new custom application development uses XML and its derivatives as the messaging standards for interoperability among different platforms.

c) What were the outcomes you were looking for?

- We currently measure adoption by the number of providers live on the EMR, number of patients in the database, and number of EMR visits per month. We plan to use HEDIS metrics to measure improvement in the health of our community.

d) Were these outcomes achieved?

- We have certainly grown our adoption with over 40 percent of our community providers now live on JCMR, but have yet to begin tracking HEDIS measures.

2. a) Were there challenges associated with trying to implement standards between large entities with significant IT capabilities and those that were less well provisioned?

- Yes, as the smallest player in the mix, we were driven by the major vendors' "standards" and our value added reseller's (and hosting service provider) willingness and ability to comply with the standards. Each pushed their "better" proprietary solutions. With clear expectations for ARRA certification, I'm sensing a greater willingness to comply with standards going forward.

b) What compromises had to be made?

- We have many nonstandard interfaces, which required additional work and testing to make operational. We anticipate converting to standards as the standards become available for our required functionality and our vendors comply.
- We also have use cases that are not yet supported by standards. To meet these requirements, we have used some fields for other than defined purposes. This is repeated throughout the industry.

3. What special considerations should be taken into account for enabling providers in small practices (where adoption has been lowest and IT capabilities may be lacking) to have the interoperability necessary to achieve the meaningful use goals? What is the best way to overcome their specific challenges?

- JCMR uses an ASP model with remote hosting to minimize the IT burdens on the practices. We have ample local support to help small practices learn to optimize the use for greatest value. For the few one to two provider practices that are fully electronic, they are now beginning to see the value after taking a leap of faith. As our processes and workflows are refined, the quality reporting is automated, and financial incentives become realities, I think the barriers will diminish.
- Requirements for certified EMRs and HIEs to use specific standards with standard implementations that remove the variability and costs,

should help address this issue. EMRs should be required to interoperate simultaneously with multiple HIEs. HIEs should be required to interoperate with multiple other HIEs and EMRs.

- We are awaiting clarity and further definition before making additional investments required to connect to a regional health information organization and/or the statewide HIE and/or the NHIN. We cannot afford to pay for implementing and supporting unnecessary HIE infrastructure.

4. a) Did implementing interoperability between organizations help you achieve your goals, or did it inhibit progress toward achieving your goals?

- It played a critical role in meeting our goals. We would not have reached our adoption targets without it. Jackson Community Medical Record (JCMR) is a community wide EMR with many subscribers, including independent physicians, the local Federally Qualified Health Center, the county health department, and AH employed physicians. The exchange of information between providers and with AH, the sole hospital in the county, is vital to gaining workflow efficiency and coordination of care. Further definition of standards and implementation by our vendors would expedite our efforts.
- The level of integration required for ICM is significantly higher than the current level contemplated by the meaningful use definition for 2015. We are currently working to standardize:
 - *How and where data are documented in the EMR.* It needs to be consistent for population based quality reporting across practices. We use the EMR to develop provider actionable reports. We also use the standardized data to notify patients if they are not meeting the recommended criteria and request that they come in for a visit.
 - *How templates and flowsheets display and capture data for efficient workflow across practices.* For example, for diabetes management, all providers need to see the work and results of other providers (eye exams, foot exams, HbA1c, etc) within their workflows. If these data are documented in various ways (data, text...) in various data fields, then usefulness is limited. Driving standardization of workflows will reduce variation and improve overall care. We are also working on a stoplight indicator to let the providers know at a glance if a particular patient meets all criteria, or not.
 - *Payer data interoperability.* Since there are no standards, we are developing separate reports/data files for each major payer per their specifications for reporting quality and pay for performance data. Ideally, two-way exchange with payers would be based on specific standards. JCMR has data that is very detailed on our patients (a mile deep and an inch wide). Payers have data that cover many more patients, but not in as much detail (a mile wide and an inch deep). Interoperability will help fill gaps for both. We are working with a major payer in our area to leverage both to benefit our patients. Our goal is

to use the payer data to identify which patients are best candidates for drill down into JCMR.

- *Future comparative effectiveness.* We are party to a NIH grant application to use JCMR as a pilot for future HIE potential. The hypothesis is to provide a simple user interface for community based providers in their busy offices that allows them to find records of patients with similar signs, symptoms and test results, filter them based on relevance, identify their outcomes, and then use this real-time information to inform this patient's course of treatment based on evidence. For RHIOs, states and our country to get to this level will require significantly better standards. I think a start would be to require (a) all HIE's to interoperate with each other and (b) all EMR's to support multiple HIE's concurrently. The cost of so many layers of HIE's will be very difficult to sustain, so anything the standards committee can do to remove layers will help.

b) What role did the standards play and what was the rate of adoption and the impact on overall costs?

- More stringent standards and vendor compliance would have helped speed implementation and reduce costs.

5. a) What is an example of your greatest success and your most frustrating issue from the implementation?

- Implementing electronic prescribing through SureScripts and RxHub was our greatest interoperability success (with the notable exception of controlled substances, which are still illegal to prescribe electronically).
- Our most frustrating issue is patient identification without a national patient identifier. 99.5 percent accuracy is not good enough. The rework and safeguards required to assure patient safety are onerous.

b) What would you have done differently based on this experience if you knew what you know now?

- Now we would use an interoperability vendor, so we would not have to develop all the interfaces ourselves. They were not available back in 2005 when we started. However, without further standards as described above, we would still be customizing interoperability and workflows to meet our higher goals.

6. What advice would you give to help others mitigate problems or accelerate adoption of interoperable health information technology in order to improve health care quality and cost-effectiveness?

- Changing technology is easy. Changing workflows is hard. Adoption is all about workflow, behavior modification and perceived value.
 - Workflow: For providers to adopt IT, the workflow must be flexible, efficient and seamless. Physicians will not sign on to multiple (payers or providers) portals. They will use their own EMR workflow to gain efficiencies. The workflow that works in the office setting does not work in the hospital setting. Emergency Room physicians need a workflow that supports their efficiency. Likewise for hospitalists, intensivists and

community providers as they round on their patients in the hospital. The data must flow between the various systems to be available in the appropriate workflow when needed. This requires strict interoperability standards and compliance from all vendors.

- Behavior modification: Adoption requires many people to change their behavior. This is difficult for humans and especially difficult in the physician environment with so much at stake (patient safety, medical-legal issues, heavy work loads...). Patients and staff also need to change. Aligning incentives helps. We are leveraging the pay for performance incentives to drive change. For example, we are telling our providers that if they document per our internal standards that we will automatically generate the quality reporting and send it to the payers. If they continue to document as they have (text, dictated...) then we are not able to automate the process for them.
- Perceived value: We are creating reports that show the return on investment from JCMR to provide regular reminders of the value providers receive from their subscription. We also plan to regularly report progress towards our HEDIS metrics to reinforce provider engagement.
- Pay attention to Health Information Exchange data ownership and governance models. A major deterrent to HIE adoption is the current misaligned incentives for participation by competing data sources (hospitals, physicians, payers, public health agencies, labs, pharmacy exchanges, etc). Each party fears their data will be used against them. Some stakeholders will lose revenue by participating. Others will benefit. In most HIE sustainability models I've seen proposed, the providers are asked to pay while the payers are expected to benefit the most. Unfortunately, patients may suffer when not all parties join. HIE vendor models vary widely; centralized, federated and hybrids. Some vendors own the shared data. Some only keep the record locators and metadata. I think HHS/ONCHIT could ease concerns and accelerate HIE adoption by defining guidelines or regulations in this realm.
- In our little JCMR microcosm, we are already seeing the need for additional standards that will allow for automated data convergence to create information useful to the provider at the point of care. Our providers can see multiple medical histories entered by other providers on their shared patients. At some point these disparities will need to be reconciled. This problem will increase as HIEs expose more data.
- We have begun to build use cases for workflows with templates built to evidence based guidelines to improve HEDIS measures. We are doing this by imposing internal standards for our providers to have all the relevant data in a comprehensive view.
- As we consider the role of Personal Health Records in this complex workflow we see payers providing PHRs to their members with a goal of directing them to their preferred providers. We see providers using

PHRs to connect with their patients. Without standards I see physicians needing to sign on to numerous payer solutions to connect with their patients' PHR data. I see patients having to sign on to multiple PHRs, one for their payer and one or more for their provider(s). Ideally, PHR data will be able to interoperate with both payer and provider systems to benefit the patient. Patient-entered data will be validated by a medical professional prior to importing to the EMR.

- As standards evolve, one goal should be to use data to determine the most effective prevention/treatment methods and protocols to drive improvements with evidence-based medicine. Well designed standards should allow for correlation of interventions and outcomes. Such a capability will accelerate the learning to treat diseases as well as to keep people healthy.
- I encourage ONCHIT to continue to pursue and publish standards that will help our country achieve these types of benefits. By setting this expectation and direction early, well ahead of implementation deadlines, vendors will have the time to build software for the use cases in a way that will interoperate better in the future, while requiring less effort for every implementation.

Jackson Community Medical Record: Implementation Strategies

Testimony before the Implementation Workgroup of the HIT Standards Committee

by
Rick Warren, Vice President & CIO
Allegiance Health
Jackson, Michigan

October 29, 2009

Chairman Chopra and Members of the Implementation Workgroup, thank you for this opportunity to testify regarding Allegiance Health's experience in working with other providers and community representatives to leverage HIT to improve health outcomes in the community. I am also testifying on behalf of the over 1350 chief information officers (CIOs) of the College of Healthcare Information Management Executives (CHIME). CHIME members represent close to 70 percent* of the beds in large hospitals (300 or more beds) as well as many small community hospitals.

We believe the HITECH Act is a unique and dramatic opportunity to significantly improve the safety, quality and effectiveness of care using the tools of IT. To that end, we appreciate the efforts of the Implementation Workgroup in holding this hearing to identify real world experiences in solving interoperability challenges across organizations, the rationale for decisions on standards and the strategies to mitigate barriers. Sharing experiences on what works will go a long way toward accelerating adoption across the diversity of care environments in this country--community hospitals, large multi-hospital systems, teaching institutions, rural and urban facilities, and critical access and specialty hospitals, for example. The ultimate goal, of course, is to ensure that as many patients as possible reap the benefits of safer, more effective health IT-enabled care.

Background

Allegiance Health (Allegiance), located in Jackson, Michigan, is a non-profit organization and the sole health system serving the needs of 250,000 residents in the greater Jackson area. As with all hospitals and health systems Allegiance is experiencing a business environment that is unprecedented. The collapse of the investment market has impacted many facets of our business, including liquidity, cost of capital and access to capital. Jackson as a community has been historically tied to the automotive market. As such, Jackson is experiencing pronounced effects of the global economy downturn. Jackson's unemployment was reported at 14.1 percent and was recently identified by *Forbes Magazine* as the worst small city for finding a job.

Provider of Last Resort

Allegiance is the provider of last resort and provides a safety net for the community. Medicare represents the largest payer. The percentage of Medicaid business and the amount of bad debt has increased significantly over the last three years. Currently Medicaid represents 16 percent of our business, bad debt has increased 16.1 percent

*Bed size is based on 2007 American Hospital Association data. It excludes VA facilities, mental hospitals, rehabilitation centers, long-term care facilities and hospitals in Puerto Rico.

and charity care has increased by 12.7 percent this year alone. Broad health care trends including an aging population, employee and physician shortages, and cost of care among others impact our ability to serve the needs of the community in the future. Allegiance along with other community stakeholders, conducted a community health assessment in 2008. The health of our community is statistically worse than State or national averages. As an example, 14 percent of residents in Jackson County have diabetes, a rate about 1 and a half times higher than that of the state. In addition to the poor economy and local area health statistics, health care reform is likely to occur in some fashion in the near future.

In response to these challenges, as far back as 2000, Allegiance recognized that the status quo was not a long-term viable model for health care delivery. The Jackson based Health Improvement Organization (HIO) was formed and has worked with partners across the community to begin to address health issues facing the community. These efforts have been aimed at prevention, and compliment other health system efforts to fundamentally change healthcare delivery by leveraging state of the art health information technology.

Shared Community Electronic Medical Record

Allegiance and the local physician organization, Jackson Physician Alliance, created the Jackson Community Medical Record (JCMR) organization in 2005. This Health Information Exchange (HIE) is working to implement a common shared community electronic medical record. Over 80,000 individuals have records on this high functioning HIE system where providers enter 20,000 new visits each month. The Center for Family Health (local federally qualified health center), the County Health department, local clinics and independent and employed providers all currently utilize the common record. Of the 150 JCMR subscribers, over 100 are already using the EMR, representing about 40 percent of the providers in the community. In addition, hospital electronic health records including computerized provider order entry (CPOE) and barcode electronic medication administration records are being integrated to share inpatient and outpatient laboratory, radiology and other pertinent documents and information. Future plans include integrating other community support providers, personal health records, health risk information, telemedicine results, and other personal health information.

Long ago Allegiance recognized the need to shift the healthcare paradigm from a focus on "sick care" to "well care". Allegiance working with our partners and utilizing the community medical record as the core, initiated the integrated care management work group. This group is identifying best-practice treatment and processes for coordinating patient care throughout the continuum of the healthcare delivery system. Medical information is being used to improve care through real-time and population-based interventions.

What We Have Learned

Allegiance has made significant investments in health information technology as a catalyst to improving quality and efficiency while reducing cost. The insights learned through our pioneering efforts provide just a glimpse of the huge potential ahead for HIT. Based on the experience of the electronic medical record roll-out, Allegiance has learned that the system implementation process is as important as the overall application. Providers will only modify their workflow to achieve significant perceived value. This means there are no quick fixes. Portals implemented in 2001 are used only marginally. Interfaces to the EMR database were of limited use until they were routed through the EMR's workflow for electronic review and signature. We are proud

of our progress to-date, summarized in the attached table that displays the transformational benefits of a community EHR. Healthcare transformation begins when islands of patient data can be safely and securely shared by community providers on a need to know basis. Allegiance has learned many lessons, but realizes that the journey has just begun.

Feature	Status	Impact
EMR	All Live	<ul style="list-style-type: none"> • Full electronic documentation with electronic signatures reduces the need for paper and increases information access by all authorized providers. • Full ePrescribing thru SureScripts and RxHub improves efficiency and accuracy for prescriptions. The medication history is shared across authorized providers, so possible interactions are known.
Shared Database - brings isolated islands of patient data together giving access to community providers	All Live	<ul style="list-style-type: none"> • Increase safety at transition points • Access to history, medications, and allergies at the point of care by all providers caring for the patient. • Share patient data/results between primary care providers and specialists • Secure communication and tasking across practices eliminates the need to send/fax paper documents and speeds information flow. • Current subscribers: <ul style="list-style-type: none"> ○ 150+ providers (employed and independent) ○ Allegiance Health (Hospitalists, ER physicians) ○ Center for Family Health, an FQHC. ○ Jackson County Health Department. ○ Medication Therapy Management Clinic (Coumadin, etc) ○ Diabetes Center
Interfaces – shares orders/results between Allegiance Health laboratory and radiology systems and JCMR providers	All Live	<ul style="list-style-type: none"> • Manage/reconcile EHR patient identifiers within our community: This includes Allegiance Health Master Patient Index identifiers, EHR, and laboratory/radiology identifiers to assure proper patient identification. • Reduce the need for paper orders/results to be faxed, scanned, indexed into the providers EHR, and later discarded. • More timely availability of results, both inpatient and out-patient within the optimal workflow of the providers. • Tracking of outstanding orders and compliance

Feature	Status	Impact
Remote Hosting with Local Support – assists in planning, preparation, training, implementation, and on-going support	All Live	<ul style="list-style-type: none"> • The system is remotely hosted in South Carolina, but the support and training is all provided locally by JCMR staff. • Reduce cost and hassles of supporting hardware and data center operations. • Increase probability of successful EHR adoption • Reduce clinician/ staff need to support the IT • Provide local user groups to share experiences, resolve issues, and identify future enhancements
Quality Reporting	All Live	<ul style="list-style-type: none"> • PQRI registry pilot • Quality information sent electronically to payers: Blue Care Network & Priority Health
Health Improvement	<ul style="list-style-type: none"> • Pilot • Design 	<ul style="list-style-type: none"> • Proactive outreach to remind patients its time for preventive care based on HEDIS measures, e.g., annual physical, colonoscopy, mammogram, etc. • Coordinated care across practices using evidence based medicine, e.g., smoking cessation, colorectal screenings.
Chronic Care Management	<ul style="list-style-type: none"> • Pilot • Design 	<ul style="list-style-type: none"> • Proactive outreach to remind patients its time for chronic care appointment, e.g., diabetes HgA1C lab test or foot or eye exam. • Coordinated care across practices using evidence based medicine for diabetes management
Further Integration – identifying opportunities to leverage the power of the community EHR	<ul style="list-style-type: none"> • Future • Design • Future • Design • Live • Design • Design • Future 	<ul style="list-style-type: none"> • Expand to other organizations involved in patient treatment such as Lifeways Community Mental Health, Allegiance Health Behavioral Health, etc. • Use the EHR to <ul style="list-style-type: none"> ◦ Share medication reconciliation discharge reports and ◦ Eventually full medication reconciliation from ambulatory to inpatient and back to ambulatory settings. • Develop a rules-based care management system that triggers reminders for intervention across care settings when follow-up is required, closing the loop on healthcare. Examples: <ul style="list-style-type: none"> ◦ Care coordination across settings ◦ Follow-up calls after hospital discharge if patient failed to make physician office visit within x days. ◦ Automated referral to the FQHC for primary care if criteria met. • Metrics to demonstrate effectiveness • Possibly use JCMR database for comparative effectiveness grant.

