APPENDIX B:

SITE VISIT REPORT-- ERICKSON RETIREMENT COMMUNITIES, CATONSVILLE, MARYLAND JULY 12-14, 2006

Health Settings visited: Erickson Retirement Communities (including the medical center, Renaissance Gardens [skilled nursing facility], home health agency, and administrative center), St. Agnes Hospital, and the Johns Hopkins Home Care Group.

I. OVERVIEW OF THE LOCATION/CITY AND VISITED HEALTH SETTINGS

Erickson Retirement Communities is a non-profit, continuous care retirement community (CCRC), founded and led by an articulate visionary named John Erickson. This Chairman and CEO enthusiastically believes that both health care providers and patients need timely, non-redundant, anytime/anywhere access to patient health data. He is especially focused on removing the remaining impediments to achieving what he regards as seamless care, and he keeps informed about how healthcare and other community services are provided by observing and visiting the various buildings on the campus. His ambitious, forward-thinking approach is shared by other leaders within the organization, including Matt Narrett, MD, the Chief Medical Officer, and our host, Daniel Wilt, Vice President of Information Technology and Security Officer.

Originally, the Erickson model was designed to serve lower to middle income residents who owned their own homes and had a pension. A substantial deposit is required to reserve space or become a resident; this deposit is returned to heirs upon death of the resident. In addition, residents pay a fee based on the level of service (and care) they receive. More recently, the Erickson market has broadened socio-economically because of the quality and competitiveness of their care provision in this market.

The Charlestown campus--former home of a religious order on spacious grounds overlooking suburban Baltimore--is Erickson's flagship location and national headquarters. Currently it has 2,300 residents, five physicians, three nurse practitioners, and 1.4 FTE in mental health. The Erickson community is highly integrated and largely self-contained--the main exception being that residents who need acute care or hospice services are sent to nearby non-Erickson health delivery settings. The average Erickson resident's tenure is 12 years. They implemented Erickson Advantage (a CMS Medicare Advantage demonstration) about three months prior to the site visit, and enjoy a 7% penetration; the other 93% of residents are fee-for-service.

Erickson has an on-campus outpatient pharmacy that serves approximately 80% of the residents and their skilled nursing facility, **Renaissance Gardens**, uses them exclusively.

As observed, the Erickson campus does not provide hospice care nor does it have an acute care hospital. The majority of residents that need acute care go to **St. Agnes Hospital**, a few miles from the Charlestown campus. **The Johns Hopkins Home Care Group** receives a few referrals per month from Erickson.

Erickson's EHR (GE Centricity) serves all sites, currently in 13 states and expanding to 16 states in the near future. A single installation of the GE Centricity EHR, managed from the Charlestown Campus, serves all Erickson sites, nationally. Administrative and billing (reimbursement) functions appear to be paperless. The Centricity "problem list" makes use of the ICD-9-CM codes used for reporting and billing. Incremental deployment of additional Centricity clinical functions is physician satisfaction driven; for the moment, this means that computer-based provider order entry (CPOE) is not deployed, although it is being piloted. At present, the Erickson system does not interoperate with non-Erickson systems when Erickson patients receive care at nearby emergency departments, although Erickson-associated physicians are allowed read/write remote access. At present, this access is supported through dial-up connection; web-based access is being contemplated but is not yet scheduled. Some internal nursing and home care information is kept using HealthMEDX's product CareMEDX, which also produces MDS and OASIS submissions.

St. Agnes is a teaching hospital with the third busiest Emergency Department (ED) in the State of Maryland. They began looking at information technology strategies nearly a decade ago, before electronic health records were widely marketed and deployed by software vendors in the hospital market space. This planning led them to purchase and deploy a Meditech hospital EHR. They have a volunteer medical staff and hospitalists on service. Usually, Erickson doctors take care of Erickson patients while they are at St. Agnes.

St. Agnes information technology staff built their first portal to allow Erickson physicians access to St. Agnes data in the Meditech system in 1999. Erickson and St. Agnes have been discussing building a local, custom peer-to-peer interface to allow for the exchange of data between Meditech and Centricity, but the costs and risks associated with the project are a barrier to completing this effort. Part of the technical challenge facing such an effort is the fact that the Meditech (hospital) EHR is care episode-based and the Centricity (outpatient-centric) system is organized longitudinally.

Because Erickson Retirement Communities are able to provide most post-acute and long-term care services (with the exception of hospice), they rarely make referrals to outside providers. Johns Hopkins Home Care Group receives only a few referrals annually from Erickson, which is why they were included in this study. Johns Hopkins makes use of the McKesson Horizon health information system. See Table B.1 at the end of this appendix for a comprehensive compilation of the information requested from and supplied by each site, prior to their scheduled site visit.

II. SPECIFICS ON CLINICAL DATA SHARING

1. What data are shared? What data should be shared but aren't?

Access to information regarding medications, laboratory results, and clinical notes has been identified as the highest priority data at Erickson. Additional data discussed

include allergies/intolerances, advance directives, medical problem list, and radiology reports. As part of a falls reduction program, a patient's fall-risk status is being explored, using data currently collected. Interventions are being planned based on conclusions drawn from this analysis.

The one area noted where information should be shared but is not is the transfer of clinical information from the physical therapist in the SNF to the physical therapist in home health care.

2. How are the data shared?

Data sharing is accomplished through a combination of strategies. **Erickson** sends an electronically generated paper transfer summary with all patients who are referred off campus (e.g., acute care hospital, specialist, emergency department [ED]). This summary is printed from the Erickson GE Centricity system and accompanies the patient. **St. Agnes** ED physicians provided input during the development of this summary document. In spite of the fact that information from one computer system was being re-entered in another system, care providers seemed pleased with the paper reports, especially given their relative currency, completeness, and readability. This paper transfer of information may be an advantageous differentiator for Erickson relative to other sources of ED admissions. However, one reason this exchange works as smoothly as it does is the presence of Erickson associated physicians on both ends of the transfer.

The St. Agnes ED and Erickson home care nurses and administrators have read-only access to GE Centricity. Erickson physicians have read-only access to the St. Agnes health information system and also can remotely access it. They also will print out information from St. Agnes when they are on-site and bring it back to Erickson, where the hardcopy is kept.

St. Agnes ED physicians call the Erickson physician prior to sending the patient back to Erickson. For ED and hospital visits that do not result in Part A SNF admission at Erickson, the Erickson physician is responsible for updating the medications and the problem list in GE Centricity.

3. Timeliness and completeness of the data.

Timeliness, non-redundancy, and anytime/anywhere access have been established as a high priority by Erickson CEO John Erickson and have been a primary driver for innovation. It is believed, and internal evidence supports this, that better health information technology will improve customer satisfaction and safety, and ultimately favorably influence the bottom line. Within Erickson, care and the information about care received, appears to be relatively seamless.

4. Specifics about medications, laboratories, and radiology.

Quest Diagnostics, Mobile X radiology, and Omnicare/Neighborhood Pharmacy (located on the Erickson campus) are the three primary vendors. Quest Diagnostics is used by the outpatient clinic, home care, and the **Renaissance Gardens** (their SNF and assisted living facility [ALF]). Eighty percent of the independent residents and 100% of LTC residents use Omnicare/Neighborhood Pharmacy on campus, which creates opportunities for collaboration. For example, a pilot program is under development between the Renaissance Gardens at Erickson and the Omnicare campus pharmacy to initiate an e-prescribing program. Currently, prescribing is done on paper or by fax.

Laboratory, radiology, and medication data are re-entered manually into either or both of CareMEDX or Centricity. One side effect of this re-entry process is a sense of information "trust" and "ownership" for those doing the data entry.

5. Areas under development (e.g., CPOE, decision-making tools).

Meditech's Provider Order Entry function is being piloted at **St. Agnes**. However, because St. Agnes does not employ their physicians and thereby cannot mandate its use, use is voluntary for the time being. CPOE is being explored at Erickson but was not in full operation at the time of the site visit.

St. Agnes and **Erickson** are exploring the bilateral development of a peer-to-peer HL7-based link that would support limited clinical information exchange (primarily discharge summary and medication lists) between these two settings. Both Erickson and St. Agnes would rather have their respective EHR vendors implement appropriate national data exchange standards, so that patient information could be exchanged automatically between the two systems, but they are concerned that this will take too long. Instead, they are contemplating investing in a custom bilateral exchange mechanism. One anticipated impediment to either a standard or custom exchange mechanism is the differences in the Centricity and Meditech data models. Centricity, as would be appropriate for an ambulatory care practice, supports a longitudinal patient-centric data model. Meditech, as is the tradition for inpatient care, supports an encounter-based model--that is, patient information is archived once that patient is discharged after an acute care episode.

6. Barriers to clinical data exchange.

At present, the **Erickson** (Centricity+CareMEDX) and **St. Agnes** (Meditech) systems do not interoperate and the amount of effort invested to re-enter information already represented in one system into the other is enough to warrant the exploration of a bilateral solution. However, perhaps because each system is relatively high function, neither Erickson nor St. Agnes staff view the lack of interoperation as something to complain about. Instead, the fact that each system has current, accurate, and relatively complete information is seen as a positive feature of the care environment.

The clinical documentation and notes for the SNF are electronic, but the majority of ancillary information such as laboratory and radiology reports are paper. The medications and nurse practitioner notes are in GE Centricity but are not available outside of the SNF/LTC. In general, all of the Renaissance Gardens information is electronically available to Erickson business lines, but is not electronically available to unaffiliated providers such as acute care hospitals.

Erickson utilizes relatively highly trained clinical professionals to transfer information manually across electronic systems as well as between paper and electronic systems. The time devoted to the clerical rather than clinical portion of this task was not perceived as onerous, nor was the possibility of transcription errors a concern.

7. Facilitators to clinical data exchange.

Erickson is unusual in that the primary care provider (PCP) or an associate physician from the same practice follows each Erickson patient when he or she is hospitalized. This creates opportunities for the attending physician to gather more complete information, sometimes using remote access while managing the patient across the various levels of care. Put differently, continuity of care is supported primarily by physicians and less so by the technology in place.

In addition, Erickson has a full-time “care coordinator” who follows Erickson patients at St. Agnes and arranges their discharge back to Erickson as well as all services including Part A SNF and home health care. This coordinator collects pertinent information, including the hospital course of treatment and the discharge summary, and faxes it back to the Erickson PCP, HHA, or SNF. Just as having physician continuity across care sites improves continuity of care, the care coordinator provides a channel and safety net for critical information as it moves across levels of care. One practical result of the care coordinator position is more timely coordination of information and resources, so that “everything is ready” when a patient is transferred, an example of integrated management of workflow and information transfer.

When specialists see Erickson residents (including when on campus), the dictated notes are not entered into GE Centricity but rather are faxed back to Erickson. An outpatient nurse has been hired to read the referral letters and use her clinical judgment to ascertain action items and new diagnoses and then transcribes this information into GE Centricity.

Erickson has developed an electronic chart summary, which is generated out of their electronic medical record and can be remotely accessed via the web or at any of their facilities' workstations. The chart summary includes relevant current and historical information such as advanced directives, medication lists, laboratory results, problem lists, contact information for patient and care providers, etc. This chart enables health information exchange between the physician and other providers in all of the health

settings available to Erickson residents. Care coordination is facilitated as physicians can access this information on or off-campus and can then coordinate in a timely manner with the emergency department physician if a patient requires acute care.

In November 2005, Erickson launched a website, http://myhealth.erickson.com, which is provided to their residents free of charge. Patients can have read-only access to their own medical record including the chart summary discussed above. Patients can download it to a personal USB device (that Erickson provides free of charge) and take it with them (should they travel or be away for extended periods of time). Alternatively, patients can access this information via the web. Ideally, an ED physician or specialist could access this information via the portal upon obtaining the resident's permission.

III. TECHNOLOGY

1. Hardware and software.

Erickson deploys a single copy of GE Centricity managed centrally from their Baltimore site. They also make use of a single copy of CareMEDX system for documenting home care, rehabilitation, and SNF care. St. Agnes Hospital, which provides acute care services for Erickson Charlestown patients, deploys a Meditech inpatient EHR.

2. Description of EHR system at Erickson, Johns Hopkins HHA, and St. Agnes.

Use of CHI standards is incidental only, if their use is required for other means such as reimbursement. No integration of different systems was observed. Inter-system information transfer is done manually, usually from paper generated by the originating system, or through "mind-ware" supported by remote access.

The EHR system at **Johns Hopkins Home Care Group** currently does not interoperate with any outside entities, including Johns Hopkins Hospital. Except for the aforementioned plans for a potential link between Erickson and St. Agnes, there are no immediate plans at Erickson, Johns Hopkins, or St. Agnes to modify or expand upon their existing EHR systems to promote the exchange of health information with either affiliated or unaffiliated health care settings.

3. Data storage, sharing, and access.

At each of the visited health settings, the data entry observed was manual, typically from paper copies of the information. Usually the paper copies were computer-generated. Within these limitations, health information technology usage seemed high-function, widely accepted, and relied upon. In-house access seemed readily available; remote access was available to select personnel, usually through dial-up connections.

Gaps in this information umbrella were filled by transferring paper copies of records from one location to another.

4. Interoperability using standards-based EHR systems or other HIT solutions for HIE.

Ad hoc interoperation is being contemplated, though such custom interoperation may take advantage of a local version of HL7v2 messages. Other standards are not part of the planning process except as they are required for other reasons.

There is no electronic exchange of data between unaffiliated providers. At Erickson, because care provision on campus includes the medical clinic, skilled nursing, rehab, and home health, and the same physician follows the patient through all modalities of care, the data collected at each health setting are accessible to the physician. However, specialists submit reports in writing, and communication with pharmacies is via paper prescriptions or faxes. Physicians may use remote access to gain information about a patient that resides in a non-local system.

5. Health Information Exchange with outside entities.

Both **Erickson** Charlestown and **St. Agnes** would like to make use of standards-based data exchange between their two systems if appropriate standards existed and if those standards were implemented by their respective vendors. Because both sites are contemplating custom interoperation, presumably they would be willing to expend some funds to achieve standard interoperation in its place. However, a representative from St. Agnes noted that they did not want to take the financial hit of being an early adopter, but rather, were willing to wait until the dust settles and standards were more widely adopted before committing future resources into any type of HIE mechanisms. Erickson believes interoperation with St. Agnes, whether standard or bilateral, is a current priority, although no decision has been made regarding development of a link between the two systems.

IV. ORGANIZATIONAL ISSUES

1. Business case for PAC/LTC.

No formal business case was described; however, there is sufficient business interest to consider developing a custom exchange with St. Agnes. Erickson has the long-range vision of what adopting technology can do for their care provision as well as their bottom line, and although they have sought partners in the community to discuss interoperability, they have faced apathy or indifference from potential collaborators. No future plans to include other settings in an electronic HIE network were described.

2. Adoption of EHR systems.

Erickson, St. Agnes, and **Johns Hopkins Home Care Group** did not consider CHI-endorsed standards when selecting their EHR system(s) largely because they made these decisions years ago before standards had been put into place. Johns Hopkins Home Care Group uses McKesson's Horizon, St. Agnes hospital uses Meditech, and Erickson uses GE Centricity (Medical Offices) and HealthMEDX (home health and SNF/NH).

Interoperability with outside entities was not a driving force in the selection of software vendors. In addition to functions supported, price of initial roll out and ongoing maintenance were the most frequently noted high priority criteria. Other criteria mentioned included access to technical support, ease of use for end user, meeting regulatory requirements (e.g., OASIS, MDS reporting or billing). The tradeoffs implicit in the incremental rollout of the next EHR function (e.g., CPOE), are being weighed carefully.

Unlike other regional care contexts, there is not a push from St. Agnes hospital's ED physicians (main referral source) to have electronic data readily available. Relatively speaking, it is working the way it is now.

3. Staffing.

Unlike many other long-term and post-acute care settings, **Erickson** has a very stable workforce, with an 82% retention rate. This consistency has benefited Erickson as a whole because the training and re-training of staff is kept to a minimum. Existing electronic patient information systems at Erickson seem to be well regarded by Erickson Staff. **Johns Hopkins Home Care Group** and **St. Agnes** experience a relatively high turnover rate, typical in the home health and hospital sectors, respectively.

With regard to training, representatives from the Erickson and St. Agnes information technology departments indicated that compared to the nurses, aides were more receptive to using technology (e.g., PDAs, laptops). The ability to have a mouse and click option and/or touch screen kiosks made the aides' workflow much easier. With the nurses, there had to be some computer competency training (e.g., how to enter notes into the record). At Johns Hopkins Home Care Group, the nurses and therapists are computer-literate and receptive to using technology to streamline their workflow; anytime/anywhere access is seen as a major productivity enhancer.

No one from St. Agnes or Johns Hopkins Home Care Group currently is or has been involved in standards development organizations (SDOs). Erickson information technology personnel participate in professional and standards organizations, but not as a central priority.

V. CONCLUSION/FINAL THOUGHTS

Erickson is a very high functioning retirement enterprise. They would readily make use of interoperation with pharmacies, laboratories, and other levels of care if standards and Commercial-Off-The-Shelf (COTS) products supported it. Their workforce seems very happy with the completeness of information in the Erickson EHR and with its anytime/anywhere accessibility. Erickson is an example of an enterprise that is ahead of the National Health Information Network (NHIN) exchange standard development. Further, if such standards are not created and deployed soon, Erickson (at Charlestown) may expend resources on the development of a custom exchange capability with its acute care provider.

TABLE B.1: General Information Supplied by Visited Sites*

Name of Health System	Erickson Retirement Communities	St. Agnes Hospital	Johns Hopkins Home Care Group
Location	Catonsville, MD	Baltimore, MD	Baltimore, MD
Relationship to Host Site	Host site	Main referral for acute care	Referral recipient
Year established	1983	1876	>10
Area served (urban, rural, both)	Urban	Urban and Rural	Both, mostly urban
Ownership	Non-profit, privately held, CCRC	Non-profit, hospital-based	Non-profit, freestanding
No. full-time employees	11,000	2,200	450 for all lines of business; specifically for home health ~100.
No. of Nursing Homes (owned, affiliated)	8 owned	0 owned	0 owned
No. of Home Health Agencies (owned, affiliated)	13 owned	1 owned	1 owned
No. of Physician Practices (owned, affiliated)	13 owned	12 owned	0 owned
Are physicians affiliated with health delivery system or are they independent?	Affiliated	Both	n/a
Inpatient pharmacy?	We have a pharmacy in the communities that is not affiliated.	Yes	No
Does SNF use dedicated pharmacy or contract with large/retail, or multiple pharmacies?	We use an institutional pharmacy, OmniCare.	n/a	n/a
No. of Pharmacies--outpatient	2 outpatient pharmacies on campus.	1	4
In-house laboratory?	No	Yes	No
How many outside laboratories?	1, Quest	2	Many, based on pt's insurance.
In-house radiology department?	No	Yes	No
How many outside radiology centers/MR centers do you work with?	Refer to local centers.	1	n/a

TABLE B.1 (*continued*)			
Name of Health System	**Erickson Retirement Communities**	**St. Agnes Hospital**	**Johns Hopkins Home Care Group**
Electronic Health Record (EHR) system--scheduling, billing, or claims?	Yes. Medical Manager for the Medical Center and Keane for all other care.	Yes	Limited
Clinical Electronic Health Record (EHR) system?	Yes. GE Centricity POE EMR 2005 for the Medical Center and HealthMEDX CareMEDX for our SNF, ALF, Home Health, and Rehab.	Yes	Yes
Primary software vendor for electronic health information system (*if applicable*)	GE Centricity POE EMR 2005 and HealthMEDX CareMEDX.	Meditech	Horizon/McKesson
Short-term (6 months?) HIE* future plans	We are focused on getting a few local hospitals and specialists integrated with our electronic medical records through HIEs.	RHIO development with Erickson	Electronic referral
Long-term HIE* future plans	We are focused on getting all local hospitals and specialists integrated with our electronic medical records through HIEs.	RHIO development with Erickson.	On-line physician order/ referral process with signature of forms.
Miscellaneous notes			JHHCG include home care, infusion, home medical equipment, respiratory services, and outpatient pharmacies.
* Information in this table was collected from a "General Information About Health Care Setting" form sent to all sites prior to the scheduled site visit.			

HEALTH INFORMATION EXCHANGE IN POST-ACUTE AND LONG-TERM CARE CASE STUDY FINDINGS

Files Available for This Report

Final Report

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase.htm
PDF: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase.pdf

Appendices

All Appendices

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.htm

Appendix A: Draft Case Study Plan

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.htm#appendA
PDF: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.pdf

Appendix B: Site Visit Report--Erickson Retirement Communities, Catonsville, Maryland

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.htm#appendB
PDF: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-B.pdf

Appendix C: Site Visit Report--Montefiore Medical Center, Bronx, New York

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.htm#appendC
PDF: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-C.pdf

Appendix D: Site Visit Report--Intermountain Health Care, Salt Lake City, Utah

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.htm#appendD
PDF: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-D.pdf

Appendix E: Site Visit Report--Indiana Health Information Exchange, Indianapolis, Indiana

HTML: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-A.htm#appendE
PDF: http://aspe.hhs.gov/daltcp/reports/2007/HIEcase-E.pdf