Understanding the Return on Your Investment for the EHR:
Making the Case for Going Beyond MDS.

Overview

A number of years ago, in response to a mounting crisis in the U.S. health system, plagued by inefficiency and poor quality, a broad consensus emerged that health information technology (HIT) offered great promise for improving the safety, appropriateness and effectiveness of health care, while simultaneously enhancing efficiency and reducing costs across all touchpoints in the healthcare continuum. It was estimated that the healthcare system could save an estimated $140 billion per year, close to 10 percent of total U.S. health spending, through the widespread adoption of technology.¹

Since then, the effective use of HIT, especially the electronic health record (EHR), has become a focal point for improving healthcare in terms of economic efficiency, quality outcomes and patient safety.
EHR Adoption Lags Behind in Long-Term Care

For some time, it appeared that the national health IT agenda focused almost exclusively on acute and ambulatory care, while issues relating to long-term care (LTC) and an aging population seem to have slipped through the cracks. As a result, the LTC industry lags far behind other healthcare settings in EHR adoption, yet seniors consume substantially more than 50 percent of healthcare services and dollars in the U.S. The rapidly growing number of baby boomers accessing healthcare services will only serve to increase this proportion.

Professional organizations that support LTC – American Association of Homes & Services for the Aging, CAST, American Health Care Association, National Association for the Support of Long-Term Care, and many others – all agree that information technology promises to be a key integrator across the spectrum of aging services and that through solutions such as EHRs, HIT has the potential for:

- Improving quality of care and life for LTC residents;
- Enhancing communications between residents, families and caregivers;
- Improving the coordination of multi-disciplinary care delivery;
- Reducing errors and increasing resident safety;
- Improving working conditions and job satisfaction amongst provider staff;
- Increasing providers' operational efficiency;
- Reducing administrative burden/costs (e.g. claims/reimbursement processing);
- Reducing the nation's healthcare expenditures.

An ROI Framework for EHRs in Long-Term Care

For any national plan to use information technology to make LTC better, cheaper and faster to succeed, the biggest challenge is to get the technology adopted by the frontline provider organizations that deliver the care.

While there is extensive research related to EHRs in acute care and physician practice settings, there is very limited research about the adoption of EHRs in LTC. However, a recent study conducted by the School of Nursing at Texas Tech University that included participants from nursing homes across Texas revealed that the primary barriers to adoption of EHRs were: 1) cost; 2) the need for training; and 3) the culture change required to embrace the technology. To date, there appears to have been little attempt to articulate the potential return that LTC-provider organizations can expect from investing in EHR technology and in overcoming these obstacles, even though there is broad interest in the many potential benefits of EHRs.

The primary objective of this article is to propose a framework that LTC management can use when considering the potential return on investing in EHR technology for their facilities (i.e. the ROI) beyond the now-obligatory MDS. This investment will typically include software applications, the hardware infrastructure on which to run them and training for users.

First, however, let’s agree on what we mean by “EHR” in the context of this article. During a resident’s stay...
at a nursing home, the staff and operator of the home must capture and retain a complete set of records pertaining to the resident, including clinical documentation such as assessments, care plans, progress notes, medication administration, lab results and so on, as well as notes pertaining to interactions the resident has with nurses, CNAs, therapists or any other member of the multi-disciplinary team typically involved in a resident's care. Collectively, this information used to be referred to as the resident’s “medical record” but is now called a “health record” because it typically contains more than just a medical view of the resident. Since billing, claims and revenue cycle management are also core to LTC home operations and tightly integrated with the clinical activity, our definition of EHR also encompasses these financial processes and related data for the purposes of this article.

There are two basic premises underlying the LTC EHR ROI framework depicted by the accompanying diagram:

- While EHR adoption is depicted here as three discrete stages for convenience, adoption is in fact a continuous evolution based on a series of overlapping investments and activities that accumulate over time.
- As more and more aspects of the complete EHR are implemented in an LTC facility, the benefits, and thus the ROI, increase exponentially.

Implementing EHR Fundamentals

Most North American LTC facilities have already undertaken at least some limited level of adoption of the EHR to support conducting MDS (Minimum Data Set) assessments and submitting MDS data and claims electronically to state health authorities. In the highly regulated and legislated industry that LTC has become, implementing an electronic MDS capability is seen merely as ‘commodity-level’ functionality that every organization simply must do – no choice! You can not submit MDSs in hardcopy paper format and expect to get reimbursed. As a result, there’s not
much point worrying about the ROI for this level of EHR functionality – the ROI is that you get to stay in business! To use what is hopefully not too trivial an analogy, it’s somewhat akin to asking “what’s the ROI for putting a roof on my nursing home?” There isn’t one – it’s simply a fundamental cost of doing business. It is estimated that about 50% of your total HIT investment in LTC is spent providing these fundamental capabilities, which, in addition to the MDS, may also include things that flow out of the MDS process, such as a basic level of automated Care Plans or a nursing-home-specific billing system, both of which will provide some reduction in staff workload by making it easier to complete tasks through the use of automation.

**Moving to an Integrated EHR Application Platform**

At some point in the continuing evolution of technology implementation and EHR adoption (a.k.a. moving up the HIT infrastructure ‘maturity’ curve), an LTC facility would be wise to move from having point solutions (i.e. individual solutions with little or no integration) for processes such as MDS, billing, care planning, progress notes and eMAR (electronic Medication Administration Record), for example, to having a single, integrated application ‘platform’. In this environment, all the applications talk to each other – they are often part of a single, integrated suite – and work with a single, common set of resident data.

The return on investing in an integrated EHR systems environment largely comes from ‘cost displacement’ – the avoidance of costs, both direct (i.e. dollars) and indirect (i.e. staff time and effort, which ultimately translates into dollars), that would otherwise be incurred from both an IT perspective and an end-user productivity perspective to operate and maintain multiple individual systems.

On the IT side, for example, a single, integrated application environment is always easier, less complex and less expensive to support and maintain; and there is no need to build and maintain ‘bridges’ or interfaces between the applications to achieve interoperability and data compatibility.

On the staff side, integration creates efficiencies that are largely based in time savings, such as eliminating the need for duplicate data entry into multiple applications, for example. With that also comes the reduction, or even possibly the elimination, of human errors stemming from repeated manual data entry. This has implications for improving accuracy throughout the care-delivery system. Integration also creates efficiencies in the business office, resulting in less paperwork having to be shuffled around and from department to department. A new admission can be entered into the system, for example, and clinical applications can be automatically notified, the new resident’s EHR set up, and the MDS calendar automatically triggered.

Although these many improvements may not always result in the provider being able to reduce staff, it may be possible to re-allocate staff to other, more-valuable activities, which in turn translates ultimately into greater ROI. In the business office, reduced requirements for duplicate data entry and for analyzing and correcting data integrity errors gives staff more time to screen residents, meet with families or follow up on reimbursement payments, for example. On the resident floors, integrated applications and thus streamlined processes, means less administrative work for registered staff, allowing them to spend more time with residents. It also allows nurses to spend more time working with their inter-disciplinary colleagues to develop holistic and more-effective care plans. This not only yields better quality of care, but also contributes to greater staff job satisfaction.
These ROI opportunities are not just the sole domain of large LTC organizations. They are just as relevant for smaller organizations, which may in fact be more nimble and thus better able to implement these systems quicker and thus realize the benefits sooner.

**Full EHR Adoption Drives Significant Outcomes**

When EHR technology and processes are fully adopted, long-term care organizations can really begin to drive clinical, financial and risk management outcomes in a significant way. But what is different here than at the “integrated” level of adoption just described? The key items here are:

1. Implementing a ‘point of care’ capability … providing complete resident information to caregivers at the point of care (often the bedside), enabling them to electronically capture weights and vitals, etc., and delivering alerts and exception data right at that point;

2. Connecting seamlessly to the outside world … for example, sending physician orders electronically to the pharmacy or lab, and receiving information back that can populate the eMAR or lab results section of the EHR; or receiving admission data from the hospital electronically; or having a portal that physicians can access remotely to get information about the residents for whom they are providing care.

Here are several examples of the outcomes that full EHR adoption can drive:

**Stop ‘Revenue Leakage’**

A major financial outcome to consider is maximizing reimbursement. The two biggest drivers of reimbursement in the MDS model are Therapy and ADLs (Activities of Daily Living). If the management of these two processes is not automated nor fully integrated with other EHR functions such as MDS, there is a strong likelihood of ‘revenue leakage’ – some elements of care that are delivered are not properly recorded and submitted, resulting in the home receiving less reimbursement than it is entitled to receive.

In a well-run LTC facility that is leveraging EHR technology, the implementation of electronic Therapy tracking, point-of-care ADL tracking, and integration with the MDS application has driven up the average Medicare reimbursement rate by $50 per resident per day. On average, 20% of residents are covered by Medicare, and although the increase in reimbursement will be somewhat less for residents covered by Medicaid, the overall ROI on the technology required to achieve these gains can easily be 10 to 20 times the investment.

The MDS integration is a key factor in the ROI equation here because it helps the organization pick an MDS Assessment Reference Date (ARD) that yields optimum reimbursement, thus further minimizing revenue leakage. It is possible to do Therapy and ADL tracking manually through flow sheet paper records, but this typically involves care-delivery members trying to remember and record care-delivery events that have taken place throughout the shift. Coding of the MDS then requires review of the paper documentation, figuring out the best ARD and then manually calculating and coding the MDS. This can be difficult and extremely time-consuming when you consider the number of residents for which this has to be done and the number of staff required to meet and process the information accurately for each resident. Depending on how well this process is managed, you may see lower or higher levels of reimbursement; however, it's
pretty much guaranteed that if this process has not been automated, you will have revenue leakage!

**Save 11.5 Nurse Days Per Month**

In an average 120-bed long-term care facility, the adoption of a fully integrated eMAR system can result in a savings of as much as 11.5 days of nurse time per month per building. In addition to the staff efficiencies gained by automating the medication process, including staging the medications and doing the meds pass, an eMAR system eliminates MAR ‘turnover’ and can drastically reduce – possibly to zero – the medication administration error rate, thereby reducing what can otherwise be a huge element of risk in LTC homes.

The question for some, however, is “what do I do with those 11.5 days of freed-up nurse time and how do I gain ROI from this?” Even if they aren’t sending the nurses home, which of course would yield direct ROI in terms of compensation dollars saved, nursing homes always need more nurse time to give back to residents. Freeing up nurses from clerical and administrative tasks such as MARs gives them more time to spend with residents, delivering better care, providing more frequent and timely assessments, which improves outcomes for residents, which in turn makes residents and their families happier. It also results in greater job satisfaction for nurses, which reduces staff turnover – no one ever becomes a nurse to do paperwork.

**Reduce Hospital Re-Admissions, Protect Revenue Stream**

Hospital re-admissions are a problem. Not only are they a problem for hospitals and the residents, they can also have a considerable cost impact on LTC providers. It is no secret that most providers subsidize their Medicaid population with higher-reimbursement Medicare residents. Loosing these patients to a re-admission means losing your highest-margin patients. In addition, a nursing home that is continually sending residents back runs the risk that the hospital may think twice before referring additional patients to that home for fear of having them re-admitted.

The use of EHR and related systems, however, enables nursing homes to provide better care through use of field-proven protocols and better access to information for all members of the care team, including the physician. With better access to the right information, the physician is less likely to order a re-admission to the hospital. The resulting ROI is ‘good outcomes’ for everyone – better care and reduced re-admissions for residents, better results and greater satisfaction for staff, and more reimbursement revenue for the organization.

**Conclusion**

ROI may be a cold way of looking at the value of the EHR, especially given the huge impact it can have on quality of care. However improving care and improving ROI do not have to be mutually exclusive, and with advanced EHR functionality, your organization can achieve both.

The examples above are just the tip of the iceberg, but easily demonstrate the substantial ROI potential of the full adoption of an EHR. Operators of long-term care facilities are struggling to meet the challenges posed by rapidly rising costs, low reimbursement rates, nursing shortages, high staff turnover, operational inefficiencies and a growing elderly population requiring increasingly complex care. Electronic Health Records hold great promise for – and in many cases are already demonstrating the ability to deliver – significant improvements in many of these areas. There may be few, if any, other investments that an LTC
organization could make that could yield the level of
ROI that investing in HIT and EHR adoption can deliver.

1 AHCA/NCAL Issue Brief “Facilitate Adoption of HIT by
Long-Term Care Facilities”, Revised 05-07-09
2 “Factors Affecting EHR Adoption in Long-Term Care
Facilities”, Barbara Cherry et al, Journal for Healthcare
Quality, Volume 30, March/April, 2008

About the Author

Mike Wessinger
Founder & CEO, PointClickCare (Wescom Solutions)
mike.w@pointclickcare.com

Mike has worked in the Long-Term Care Information
Technology industry for 15 years. He created
PointClickCare (Wescom Solutions Inc.) in 1995, which
pioneered Software-as-a-Service in the long-term care
industry. As CEO, he maintains the company’s leading
position and competitive advantage within the
industry. Mike holds a Bachelors degree in Commerce
and Economics from the University of Western Ontario.

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