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The Evolving Cancer Center

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See how an oncology management and services company continuously plans how and when to implement the most appropriate technologies in each new center.

By Wes Scruggs

OVER THE LAST DECADE, REQUIREMENTS FOR INFORMATION technology functionality in the ambulatory cancer center have evolved from relatively straightforward back-office and administrative support functions to include a vast array of clinical, decision support and reporting capabilities. Los Angeles-based Aptium Oncology, where I am CIO, has first-hand experience with this evolution. The company implemented customized oncology systems throughout its network of cancer centers in the early 1990s and was an early adopter of an electronic medical record (EMR) in 1999.

Aptium Oncology is an oncology consulting and management services company that has been in business for almost 25 years and currently manages nine outpatient cancer centers at leading academic and community hospitals around the United States.

This article details Aptium Oncology's information technology (IT) experience in the outpatient hospital-based setting through three progressive phases of IT development over 10 years.

Phase 1: Get the money

In the late1990s, IT solutions were focused on business processes, accurate charge capture and stable network infrastructure. At that time, standardized administrative systems such as e-mail, electronic calendar and database tools allowed clinicians to stay connected more easily. Charge capture software streamlined back-office processes and ensured efficient management of revenue generation and capture. Network security, system access controls and virus protections also competed for funding and implementation. Throw in a minor diversion for the Y2K rollover and you had a full plate for IT during this period.

Phase 2: HIPAA and physicians

Now that the basic infrastructure was in place, the focus shifted to rapid expansion. This didn't eliminate the need for all of the Phase 1 capabilities, but administrative users began to require additional, more sophisticated online services such as automated eligibility checking for registration and electronic remittance advices.

In addition, during this period, the deadline for HIPAA compliance was rapidly approaching, forcing the creation of standardized transaction sets and privacy and security requirements. (Much work behind the scenes for little glory!) Organizations moved servers to secure locations, implemented rivacy banners and online compliance training and performed audits to demonstrate adherence to HIPAA.

And of course, physicians became enamored with their new PDAs. Wireless networks for PDAs and laptops kept physicians content, even though they didn't necessarily add significant benefits to clinical processes. Real improvements in clinical processes would come later as hospitals created clinical repositories for clinicians, allowing real-time access to electronic data at the point of care.

Phase 3: The second amendment of health care

The field of outpatient oncology IT is now in the midst of a profound transformation as EMR projects have risen to the top of the priority list and the majority of provider organizations are embracing, budgeting for and implementing systems that will eventually eliminate (all, most, some) paper from the clinical process.

For years now, providers have waited on the sidelines for systems to mature in order to control their investments and limit their risks. Aptium Oncology, too, avoided touching the "third rail" of clinical IT (changing the way physicians practice medicine). Nonetheless, the company is moving forward proactively with migration from paper to electronic charts.

The industry as a whole is finally reaching consensus: If it's on paper, we can't effectively report, monitor or manage it. The result is

that data and reporting requirements have begun to soar as more clinical processes move from paper to electronic systems. This is driving the migration of decision support reporting from retrospective to operational. Users want access to data on a daily basis, utilizing new online functionality. Flash reports reflecting cash collections, treatment volumes, drugs dispensed, billing backlogs, uncoded charts, etc., are expected from a previously docile decision support team.

Initiating a process change in an EMR implementation is significant. Some physicians will expect automation and a paperless environment and some will challenge you to pull the paper chart out of their dying hands before they join up. Your CIO must have enough political capital to deliver a process change via clinical leadership, sales skills, the bully pulpit and, yes, even donuts for the midnight nurses.

Phase 3B: The final frontier of techies

Vendors of radiation therapy services continue to roll out products faster than most organizations can implement, train and develop expertise. IMRT, IGRT, photons, remote planning and treatment planning upgrades create challenges for the IT and physicist communities as they work to determine how quickly to upgrade and modify their infrastructure and processes.

While radiation therapy used to be owned by the physicist and radiation therapy manager, IT experts are being drawn into the process to help avoid issues with network isolation, bandwidth, virus protections and vendor management, and to ensure that organizations are taking full advantage of best practices. The tension that sometimes arises between these functional groups requires patience, communication and close oversight to avoid stressing the systems, resources and technology.

How we stay current

Aptium Oncology is committed to continuously evaluating new technology, best practices and process change to determine when and how to budget and upgrade new technology. As indicated below, each IT functional group maintains a "map" of the latest configuration for its area of support:

- SAP GL, Procurement, A/P – Hardware and software configuration map.
- Infrastructure/ Administrative systems – Circuits, protocols, WAN, LAN, hardware and software maps.
- Clinical team – Application architecture.
- Patient management team – Application architecture.
- Patient accounting team – Application architecture.
- Decision support team – Application architecture.

From this baseline, Aptium uses its annual IT Project Prioritization process to establish priorities and timelines to "refresh" existing systems and invest in new technology. This an annual cross-functional meeting creates a successful forum for interaction between the IT team and our customers, the clinical and administrative users. Each August, cancer center executives, clinical service line leaders, corporate executives and the IT management team submit their project requests for the following year. A cross-functional team then uses a methodology to rate and rank these projects against each other.

IT infrastructure -- including virus protections, network capacity and security controls -- usually sail through this process with high ratings. Without proper infrastructure components, we cannot guarantee protection from hacking, viruses, slowdowns or system failures. The techies get their tools and each year we avoid virus intrusions and infrastructure failure.

We debate automation of manual processes. This is a bit more difficult to quantify. What are the true savings in migrating from a manual to an automated process? The rating and ranking uses criteria including:

- regulatory requirements;
- patient safety/ satisfaction;
- clinical efficiency; and
- cost savings/ revenue enhancement (committed to via the budget).

Generally, in cases with no current automation, cost savings can be achieved with a supportable level of confidence. For example: "We currently have five clerks who manage the manual process. With automation, we will spend $X and can reduce staff costs by $Y."

Upgrading and replacing currently automated functions poses a more challenging issue. The results are harder to quantify. The CIO often attempts to explain the full cost of replacing an automated system contrasted with an incremental improvement in functionality. This is a difficult case to make as a full-cost/ full-risk project must be undertaken to gain a percent increase in functionality. For example, "The new system will cost $X and it will provide a safer environment for patients due to better process flow and improvement of alerts. We estimate this improvement is worth $Y." The level of confidence in $Y is open to debate while the hard cost of a system replacement project is clearly defined.

At the end of the day, in theory, this cross-functional team can review the forced rankings of all the projects under discussion and agree on the order of priority. This information then goes via draft budget to the COO for consideration. The budget costs of these projects are then factored in to the annual budgeting process so that a final determination can be reached.

The bottom line: Communication

Application architectures, technical architectures, WAN diagrams and budget-ranking formulas are all helpful tools. But, bottom line, face-to-face discussions must take place between executive directors who manage large complex hospital-based cancer centers, hospital administrators, COOs, department heads, clinicians and CIOs.

The successful CIO must maintain an open dialogue at all times with his/her constituents regarding trends and initiatives. The four phases described above are the result of exactly this form of communication with clinical leaders, administrators, partners, vendors and CIO peer organizations.

CIOs should make time for the following activities:

- Attend clinical leadership meetings such as physician forums and research meetings.
- Visit service-line leaders and joining their annual meetings when possible.
- Visit administration forums where plans and strategies are determined.
- Participate in a local CIO peer group as well as national IT organizations (e.g., CHIME/HIMSS).
- Get out of the office and show support for the front-line clinical staff. Ask the line staff if they can enlighten you with examples of the most basic technology, system issues or process challenges.

If you follow through on your plans and commitments, you will be amazed what you can learn. HIE

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