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Rapid Adoption of a RIS-PACS Solution

A certification model combines Web-based simulation training, on-site coaching and job aides to achieve long-term sustainability.

By Heather Haugen RD, PhD; Teddi Jo Cordova;
Rich Parker; and George Welton

> THE BREAKAWAY GROUP (TBG) WAS ENGAGED BY HEALTHSouth Diagnostic Division to accelerate the adoption of new software applications by more than 870 end-users at more than 60 locations. HealthSouth Diagnostic Division is one of the nation's largest providers of diagnostic imaging services.

In 2004, the HealthSouth Diagnostic Division purchased an enterprise radiology information system (RIS) and picture archiving and communication system (PACS) from IDX, which was acquired by GE Healthcare in 2006. HealthSouth purchased IDX's Flowcast RIS and Imagecast PACS products. The goals: improve competitiveness in the

marketplace, migrate the entire division to the same software, ensure compliance with Sarbanes-Oxley requirements, standardize workflow and provide industry-leading PACS capability to HealthSouth physicians.

HealthSouth identified seven facilities (previously introduced to the applications) as pilot and reference sites. The rest of the Diagnostic Division's facilities across the United States were expected to fully implement the applications and be operational by the end of December 2006. HealthSouth accomplished that implementation goal by using a phased approach that allowed multiple locations to go live simultaneously.

HealthSouth, GE Healthcare and TBG collaborated on the project plan. The project included multiple phases:

- business case development with metrics;
- discovery related to both existing conditions and workflow at the sites;
- development of simulated application modules;
- implementation of the technologies, workflows and applications;
- adoption;
- sustainability; and
- conversion to a production support environment.

The scope of this article precludes description of all phases of this project. Our focus is on the methodology employed to help HealthSouth professionals adopt the new technology.

Model

Adopting new technology requires a perspective and resources in short supply in today's health care environment. Unique methods are needed to help the end-user quickly adopt new technology and equipment. Classroom training fails due to the significant cost associated with lost time at the workplace and limited retention rates.

Because health care professionals may have various roles, they need to become proficient in the tasks related to their roles. TBG's certification model combines Web-based simulation training, on-site coaching, job aides and long-term sustainability aimed at helping users focus on learning tasks that apply to their daily tasks. The model calls for all professionals to complete customized Web-based modules using actual applications to simulate real scenarios based on tasks they need to perform.

The next step is on-site coaching during the go-live event, supplemented with job aids. Once employees can complete each task five times without error, they earn certification, which is co-signed (i.e., endorsed) by their supervisor. Learning is focused, efficient and takes place in the work setting — ensuring adoption.

Figure 1 describes the process at a high level.

Certification

During the eight-month implementation, 61 HealthSouth Diagnostic Imaging clinics and 874 HealthSouth providers achieved certification in the GE Healthcare ImageCast/FlowCast system using the model depicted in Figure 1. HealthSouth certified an average of 15 employees at each site. The number of employees certified at sites ranged from 3 to 49 employees because the

clinics are so diverse in location, staffing and volume of business.

Of the HealthSouth employees identified for training, on average, 94 percent were certified the week of go-live. The remaining 6 percent missed training for legitimate reasons or due to unforeseen events. Super-users received additional training and attention because they were responsible for certifying absent end-users.

Proficiency (certification) defines the point in time when an employee can perform the job using the new application. Speed to proficiency is a measurement of the time it takes for employees to reach a fluent level of performance. The faster an employee learns a new application, the sooner the organization realizes a return on its investment.

Prior to using the TBG certification model, HealthSouth utilized a train-the-trainer model for its pilot sites in Alabama. Training consisted of 8-12 hours of lecture/demonstration at an offsite location, not including travel time of 2-4 hours. HealthSouth leadership estimated most employees from those pilot sites required 120 days (approximately 24 weeks based on a five-day work week) to learn the application — and some employees never adopted it. Based on retrospective site audits, adoption of the application never occurred because of ineffective training, lack of retention or site-specific workflow issues.

The HealthSouth business office documented the errors resulting from inconsistent practices and workarounds in the clinics. The errors resulted in increased insurance claim denials or delays, incorrect or incomplete patient information and increased days of sales outstanding (DSO), an indicator of outstanding receivables.

In contrast, TBG's certification model allowed each user to achieve a literacy level using online simulations and progress to a fluency level with onsite coaching. Each site received the online modules prior to the go-live week. The average user spent two hours viewing the modules and practicing with the simulations. Onsite coaching occurred the week of go-live; the average user was certified in four days. The time invested by the average employee was about four days (two hours viewing the modules and four days of onsite coaching). Therefore, the average speed to proficiency was four days.

When compared to the traditional train-the-trainer model, the improved time to proficiency returned 116 days (120 days compared to 4 days) of productivity per employee. Extrapolated across all certified employees, the savings would be 101,384 days. (See Figure 2.)

Confidence and knowledge

Post-certification, 102 HealthSouth employees completed a survey. They were asked to rate their confidence in their ability to use the GE Healthcare application to perform their job pre-certification and post-certification. The average rating pre-certification was 2.5 ± 0.84 on a scale of 1 (poor) to 4 (excellent). Prior to certification, 49 percent of the individuals rated their confidence as fair or poor.

The average post-certification rating was 3.4 ± 0.67 . After certification, 91 percent rated their confidence as good or excellent and only 1 percent still rated their confidence as poor.

More important, the change in scores from pre-certification to post-certification was statistically significant ($p < 0.0001$), indicating employees were more confident in their ability to use the application. (See Figure 3.)

The HealthSouth employees also rated their knowledge of how to use the GE Healthcare application before certification and after certification. The average rating pre-certification was 2.3 ± 0.84 on a scale of 1 (poor) to 4 (excellent). Before certification, 36 percent of the employees rated their knowledge as fair, and 13 percent as poor.

The average post-certification rating improved to 3.3 ± 0.67 . After certification, 92 percent of employees rated their knowledge of how to use the system to perform their job as good or excellent. Again, the change in scores from pre-certification to post-certification was statis-

tically significant ($p < 0.0001$). Employees believed they were more knowledgeable about how to use the system to perform their job. (See Figure 4.)

Satisfaction

HealthSouth employees also rated the following aspects of The Breakaway Group certification model:

- *Web-based simulation modules.* Ninety-eight percent of the employees felt the modules were easy to use and 89 percent felt the modules helped them learn the tasks they needed to know to perform their job.
- *One-on-one coaching.* The TBG training staff received excellent ratings for their ability to coach the staff. Eighty-nine percent of employees strongly agreed that the TBG staff excelled in communication skills. All employees (100 percent) agreed the TBG staff was highly knowledgeable and had the skills necessary to teach effectively.
- *Continued support.* The job aides distributed for future reference were assessed by the HealthSouth employees. Employees felt the information was easy to find (91 percent) and believed the information would be helpful in training new employees (95 percent).

Sustainability

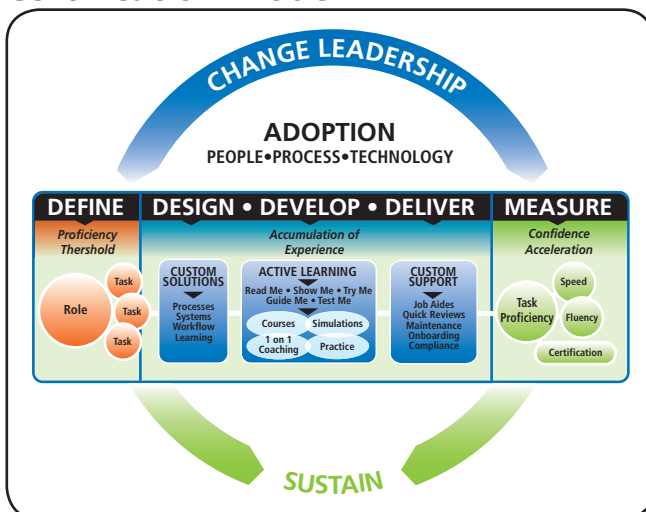
TBG provided multiple layers of sustainability as part of this project. The Web-based modules provided one layer of sustainability. The modules were originally designed to introduce users to the application and provide an opportunity to practice job-specific tasks. By having the modules available online, users could access them well in advance of the on-site coaching. Data show employees accessed the modules during the go-live week for reminders on how to use the system and accessed the modules again after certification as refreshers.

Job aides provided another layer of sustainability. Job aides included hard-copy flip charts and manuals located at each workstation. These “self-help” materials allowed users to refresh their memory and quickly complete a task without interrupting their workflow. Job aides also served as an alternative learning approach for people who preferred reading printed materials rather than electronic media.

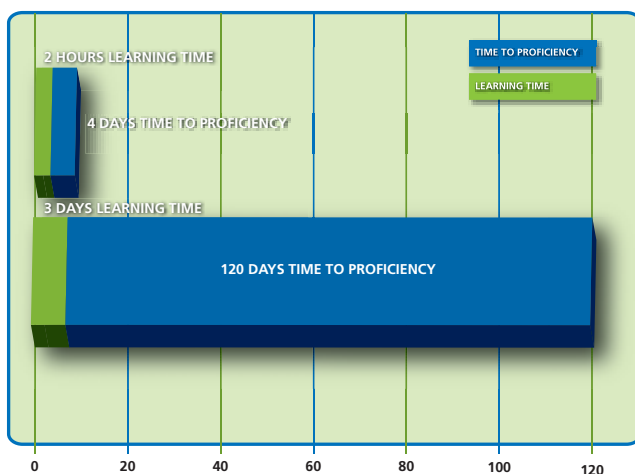
The relationships established during the onsite activities likewise created an important connection for sustainability. When end-users called TBG or sent e-mail messages for support, they felt confident that they would connect to a familiar person.

TBG’s key objective was to ensure existing training and leadership staff participated in — and learned — the certification process. Achievement of this objective will allow the organization to sustain changes long-term. At the appropriate time, TBG staff transitioned out of the process and turned certification over to the client. HealthSouth super-users were identified for the training team and trained to a mastery level by TBG early on in the project timeline. TBG also worked closely

**Figure 1:
Certification Model**



**Figure 2:
Speed to Proficiency: Days
Required to Achieve Certification**



with the application support team to ensure consistent training throughout the project and after implementation.

Finally, TBG provided the option of hosting the modules throughout the 2007 calendar year for new hire and promoted personnel. HealthSouth and TBG recognized that new staff would more rapidly adopt the application by following the established certification model.

What drives project success?

In a project of this scope, thousands of details can potentially derail the program. However, a few overriding themes had significant positive impact on the project's overall success:

- Education of worksite administrators on the implementation and certification process, including criteria for certification.
- Allowance of time for thorough discovery process at each site to uncover documented, as well as "hidden" workflows, identifying best practices and training challenges early. All pay huge dividends in overall speed to proficiency and adoption of best practices.
- Clear communication of sponsorship from the top executives. A strategy for getting and distributing information to site administrators and to the site employees.
- A strict schedule of appropriate daily and weekly calls/meetings with implementation teams and administrators to openly discuss and resolve all issues.

- Role-based training, enabling employees to learn 100 percent of what they needed to learn to efficiently do their jobs. Employees should not be trained on everything and be expected to discern what they really need to do their job.
- Identification of a champion at each site to help drive and reinforce best practices once they had been defined and implemented. This is critical to long-term sustainability.

Focusing on care

The Breakaway Group certification model enabled HealthSouth providers to adopt the new enterprise application 116 days faster than with a previous training model. Time savings allowed them to focus on the delivery of care to their patients instead of being consumed by learning the technology.

The survey analysis confirmed that certified users were more satisfied and confident users. Properly trained and informed users make fewer calls to the help desk. They adopt change more readily and help the organization achieve metrics and return on investment faster. **HIE**

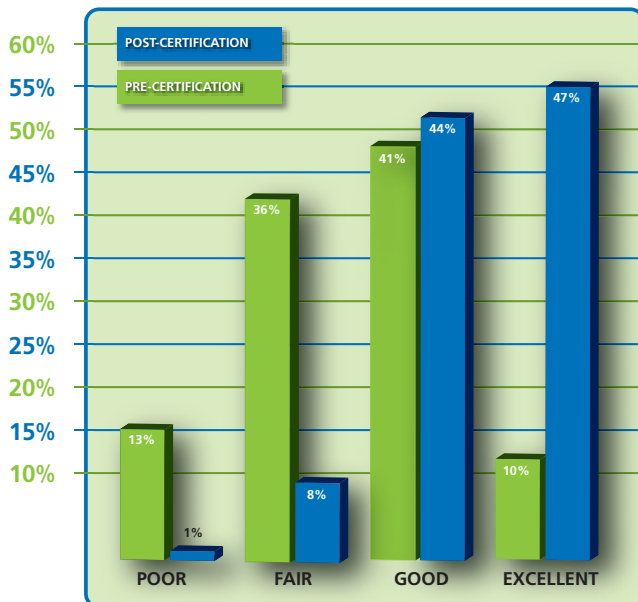
Dr. Haugen is the associate HIT track director at University of Colorado Health Sciences Center and vice president of professional services and research at The Breakaway Group (TBG), based in Denver.

Ms. Cordova is a vice president of client services at TBG.

Mr. Parker is a vice president of client services at TBG.

Mr. Welton is a senior vice president and CIO at TBG.

**Figure 3:
Confidence Ratings
Pre-Certification and
Post-Certification**



**Figure 4:
Knowledge Ratings:
Pre-Certification and
Post-Certification**

