

# Exploring Career Advancement Opportunities for HTM Professionals

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*Disclaimer: The courses and opportunities mentioned in this article are provided as examples. The authors do not promote or endorse specific vendor training offerings.*

The service delivery model for healthcare technology is rapidly evolving to meet the needs of the 21st century standard of care. Increasingly, integrated medical devices are brought into facilities and devices that were once considered within the purview of information technology (IT) are now becoming the responsibility of clinical engineering. The Bureau of Labor and Statistics estimates a shortage of 50,000 qualified health IT workers during the next 5 years.<sup>1</sup> In addition, from 2014 to 2024, the estimated job growth for several health IT professions is expected to outpace the national average by a wide margin (Table 1).<sup>2</sup> Meanwhile, in January 2015, *Money Magazine* listed the biomedical equipment technician (BMET) career among its "five best jobs you've never heard of."<sup>3</sup>

Recognizing these trends in technology and healthcare can help guide the career development of healthcare technology management (HTM) professionals. In this article, we explore ways in which HTM professionals can advance their careers.

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## International, Regional, and Local Organizations

One of the easiest ways to remain current on emerging technologies and best practices is by tapping into a vast network of societies and organizations available at the international, regional, and local levels. Resources from international organizations are a great source for large-scale knowledge distribution,

education sessions, and networking. In addition, these organizations frequently offer large equipment expos and demonstrations.

International organizations include the Association for the Advancement of Medical Instrumentation (AAMI), American College of Clinical Engineering (ACCE), Healthcare Information and Management Systems Society (HIMSS), and Radiological Society of North America.

Regional organizations may offer opportunities similar to those at the international level but on a smaller scale and in closer proximity to your healthcare facility. Examples of these include MD Expo, the New England Society of Clinical Engineering, and various regional healthcare technology management associations.

Finally, local societies also provide networking and training opportunities, with the

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Occupation	Job Growth (2014–24) % (no. of positions)
Health information technician	15 (~29,000)
Network/computer systems administrator	8 (~30,200)
Computer network architect	9 (~12,700)
Medical equipment repairer	6 (~2,900)
Biomedical engineer	23 (~5,100)

**Table 1.** Estimated job growth for several health information technology positions (from 2014 to 2024). Average projected percent change in national employment from 2014 to 2024: 7%. Source: reference 2.

added convenience of easy access. These societies also are the most numerous of the three levels. Examples of the advantages of local societies include a reduced price for Certified Biomedical Equipment Technician (CBET) training from the Indiana Biomedical Society and vendor service demos through the Michigan Society for Clinical Engineering.

These are just a few of the many organizations that provide support to the HTM field. The membership and community section of the AAMI website provides a number of valuable resources, including links to the websites of several HTM associations.<sup>4</sup> Even if you are unable to attend a national or regional conference, staying involved with these organizations can go a long way in terms of expanding your personal network and stimulating career growth.

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### Certification

Developing program and project management skills is important at any level of career progression. For clinical engineers, attaining the Certified Clinical Engineer (CCE) certification, which is offered through ACCE,<sup>5</sup> is a worthy goal. This certification requires 3 years of experience and looks at testing and developing a clinical engineer's knowledge of running a clinical engineering department. For BMETs/support specialists, the AAMI Credentials Institute (ACI) offers the CBET exam,<sup>6</sup> which challenges the individual's

knowledge of medical equipment and technical application of engineering principles. Additional program and project management certifications include the Certified Healthcare Technology Manager (CHTM), which also is offered by ACI,<sup>6</sup> and the Project Management Professional (PMP), which is available through the Project Management Institute.<sup>7</sup>

### Lean Six Sigma

Systems redesign and continuous improvement are important principles that can improve daily processes and increase cost savings. A better understanding of these concepts can be achieved through Lean Six Sigma yellow, green, and black belt training programs, which are offered both in person and online. Lean Six Sigma focuses on process improvement rather than point-of-failure analysis. The systems engineering principles taught through Lean Six Sigma can be applied to a wide range of strategic and tactical initiatives.

### Mentoring

Mentors can be an invaluable resource in your personal development. If you do not have a mentor, consider reaching out to someone with advanced knowledge and expertise. Alternatively, highly skilled HTM professionals are encouraged to attend a mentorship training—by becoming a mentor, you can give back by helping to coach your less experienced peers. This process can go hand in hand with developing leadership skills. HTM professionals with leadership skills are attractive to employers; therefore, honing your leadership abilities can be instrumental in advancing your career. Speak with your supervisor to determine whether your organization offers free leadership development programs. In addition, AAMI offers a mentorship program that utilizes industry leaders as volunteers.<sup>8</sup> Intersectional mentor-mentee relationships, such as a chief nursing officer mentoring a BMET, also can provide a greater depth of insight or offer a new perspective. Many leaders will be flattered that someone would seek them out as a mentor, and leveraging their insight and advice is a cost-efficient tool.

## Additional Areas for Growth

By taking an active role in your career, you can have a positive impact on the success of your department. Annual reviews are an ideal time to speak with your manager about taking on more responsibility and learning additional modalities. A good approach is to seek out modalities in your department that have insufficient in-house support. Then, a strong starting point is to shadow an individual who is fluently trained on the devices in question. Frequently consulting the service manuals for these devices is a great way to expand your skill set.

Another potential area for personal growth is to explore the service contracts at your facility. Training yourself on these modalities and reducing the cost of an annual service contract can benefit your facility greatly. This can be done by attending an original equipment manufacturer or third-party training to ensure that these systems have adequate in-house support. For example, let's say an annual full-service contract for computed tomography costs \$200,000. However, by attending training and switching to a first-look contract, you are able to reduce it to \$188,000. The savings of \$12,000 per year makes it easy to sell the need for training to your supervisor.

## Healthcare IT

One of the fastest growing responsibilities and knowledge gap areas in the HTM field is management of networked medical devices and health information systems. As more equipment enters medical centers with network capabilities, HTM's role in information management and security will continue to increase.

Networking training can provide HTM professionals with a range of skills, including how a device communicates once it's connected to a network, troubleshooting connectivity issues, and building a network from the ground up. Training and certification can be achieved in a variety of ways, including the CompTIA networking training suite of classes and certifications, which provide a foundational knowledge base for addressing a wide array of healthcare IT matters.<sup>9</sup> Once a knowledge base is established, multiple career pathways can be pursued.

As imaging technology becomes more complex and widely used, having the ability to manage a fleet of imaging equipment has grown increasingly valuable. This includes understanding how an image goes through the workflow of capture, transfer, access, and storage in a process that is secure, efficient, and robust. These actions are described via several different international standards, including DICOM (Digital Imaging and Communications in Medicine), HL7 (Health Level Seven International), and those describing PACS (picture archiving and communication systems).

A variety of tools are available to improve productivity, reduce downtime, and enhance overall patient care related to medical networks. Examples include physical and virtual server management programs, Cisco administrative tools, and virtual LAN (VLAN), VLAN access control list, and firewall tools.

An additional path to pursue in healthcare IT is understanding Internet security and privacy and how to manage the risk of potential cyberattacks. For example, the Certified Healthcare Privacy and Security credential, which is offered via the American Health Information Management Association (AHiMA), works to instill competency in designing, implementing, and administering a comprehensive privacy and security protection program.<sup>10</sup>

The experience of the Veterans Health Administration, VISN (Veterans Integrated Service Network) 11, which consists of seven healthcare facilities located in Michigan, Indiana, and Illinois, is one example of addressing the convergence of IT systems and medical devices.<sup>11</sup> VISN 11 began providing a three-part training program, consisting of CompTia A+, CompTia Net+, and CompTia Sec+,<sup>9</sup> to better prepare staff for these IT responsibilities. The program had an immediate positive effect, resulting in a decreased turnaround time for corrective maintenance at the VISN 11 Indianapolis facility (from 11 to 7.5 days, for fiscal years 2015 and 2016; personal communication, J. DeFrancesco, May 2016).

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## Clinical Informatics/Applications

Similar to healthcare IT, clinical informatics is a knowledge gap area in the HTM field that requires adequate training. The Certified Healthcare Technology Specialist exam, which is offered by AHiMA, assesses competency in integral parts of implementing and managing electronic health information, including the ability to access workflow, install and test systems, diagnose IT problems, and train staff.<sup>12</sup> The Certified Imaging Informatics Professional, which is offered through the American Board of Imaging Informatics, is valid for 10 years with continued education required every 2 years.<sup>13</sup> This certification concentrates on improving efficiency, accuracy, usability, and reliability of medical imaging services through the study of how images are retrieved, analyzed, enhanced, and exchanged. In addition, HIMSS offers two certifications that employers and healthcare professionals can use to assess competency in healthcare information and management systems (HIMS): Certified Associate (CAHIMS)<sup>14</sup> and Certified Professional (CPHIMS).<sup>15</sup> Both certifications require continuing education.

## Step Outside Your Comfort Zone

The GROW coaching model (which stands for Goal, Reality, Options, and What's Next) is a tool used by mentors to help a mentee set and achieve goals. In fact, this article was structured so that it brings the reader through an example GROW model.

Ultimately, personal development directly corresponds to self-motivation and a drive to better yourself to effectively serve patients and clinicians. Active personal development planning also can make you more marketable when searching for jobs. Given the boom in healthcare IT jobs that is predicted to continue well into the future, HTM professionals are ideally positioned to take advantage of the career-advancing opportunities described in this article. Although planning goals can be a daunting task, we challenge those in the HTM field to step outside their comfort zone and explore ways to advance their careers. If the HTM field is to meet the demands of the rapidly evolving and increasingly complex healthcare industry, we must shatter the outdated mentality that "this is the way we have always done things, so it is the way we will continue to do them." To be successful, assess your current situation, step outside your comfort zone, set attainable goals, explore options, and set in motion a plan for achieving your highest level. ■

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