

# Home Healthcare: The Next BMET Frontier

Reginald Cyrus

When I was the clinical engineering (CE) manager at Sentara Norfolk General Hospital, the flagship hospital of Sentara Healthcare's nine-hospital system, I attended monthly managers' meetings. I always found the census and bed capacity presentation, followed closely by the financial presentation, the most interesting. Those two presentations always made me wonder, as more and more patients were being discharged to their homes and home care, "Who is taking care of the medical devices that are going out into the community to be used in follow-on therapy, rehabilitation, and patient care?"

I started my career as a military-trained biomedical equipment technician (BMET) and spent 20 years as a military BMET. I've seen first-hand that hospital stay times are now a fraction of what they used to be for many illnesses and conditions.

I've also known that most BMETs work in hospitals, for device manufacturers, third-party service organizations, and research institutions taking care of medical devices. Little did I know that my next career opportunity would take me to Sentara's Home Care Services (SHCS) company.

One of my first tasks in that role was to prepare training materials. As I researched home care devices, I found valuable information on the U.S. Food and Drug Administration (FDA's) website. The FDA's Center for Devices and Radiological Health (CDRH) Home Healthcare Committee was formed in 2001 in response to the CDRH Strategic Plan's goal to look at medical devices through the total product life cycle. The committee aims to assure the devices are being used safely and effectively in this environment.<sup>1</sup> The committee's web page—a copy

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of which is included in my new employee DME orientation package—is particularly helpful for new employees coming from hospital-based patient care backgrounds to understand the differences and challenges of the home care environment. Whether we choose the term biomedical equipment, durable medical equipment (DME), or the contemporary home medical equipment (HME), the FDA classification is medical devices.

Home care devices are getting increased attention today, as evidenced by FDA's new Medical Device Home Use Initiative (see related article in this publication). The goal of this initiative is to ensure that caregivers and patients safely use complex medical devices in the home. Among many provisions, the initiative contains measures for enhanced postmarket surveillance through HomeNet, a subnetwork of the FDA's Medical Device Surveillance Network, an adverse event reporting program that includes more than 350 healthcare facilities nationwide.<sup>2</sup> An argument can be made that the inclusion of nationwide Durable Medical Equipment (DME) suppliers as well into the HomeNet program would enhance postmarket surveillance even more.

Today, we are seeing more—and more complex—medical device technology migrating into the home care environment. Examples include alternating pressure and low-air-loss mattresses (a.k.a., powered support surfaces), apnea monitors, power wheelchairs and other assistive technology devices, continuous positive airway pressure (CPAP) machines, enteral feeding pumps, oxygen concentrators, neonatal phototherapy systems (bilights), pulse oximeters, semi- and full-electric hospital beds, telehealth systems and e-health networks for managing diseases and promoting wellness remotely, and ventilators.



#### ABOUT THE AUTHOR

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Concern about who takes care of the medical devices in the home care environment is widespread.<sup>3</sup> How will these devices be managed and maintained?

### BMETs: Meet DME Technicians

Since joining Sentara's home care division, I have learned a great deal about home care equipment and the professionals who work in that environment. The home care community has equipment technicians that parallel the hospital-based BMET community. These technicians work for DME suppliers or large home care companies that have a DME operation in addition to their skilled nursing and other clinical therapies.

The BMET and the DME technician are distant cousins that have never met in most cases. However, FDA class I through III medical devices are acceptance tested, installed, and maintained by both BMETs and DME Technicians, with the support of device manufacturers and other resources, in hospital-based and community-based healthcare settings respectively. So, it is safe to say that BMETs and DME technicians are family.

### DME Technician Skills and Responsibilities

At Sentara Home Care Services, our DME technicians have the contemporary title of home medical equipment (HME) technician. The HME technicians must master a broad range of skills, including driving large vehicles (Dodge 2500 CRD Sprinters) safely through metropolitan and rural areas to provide products and supplies to its customers.

Once on-site at a patient's home, they deliver and set up equipment, ensure proper equipment operation, instruct the patient or caregiver on proper and safe use of equipment, ensure patient or caregiver understanding of proper and safe use by return demonstration of instruction, and submit appropriately signed and dated documentation. Other home care companies may employ drivers to only make deliveries, and then send out nurses or other clinical staff members to complete equipment setup and use instruction efforts.

There are of course many differences between hospital-based BMETs and DME or HME technicians. For one, HME technicians have greater exposure to patient information and must maintain patient confidentiality.<sup>4</sup> My colleague Stuart Chapman, who is the HME technicians team leader at SHCS in Chesapeake, Virginia, highlights another key difference. He says, "One of the most difficult challenges for the HME technicians is

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the emotional atmosphere they often face in a patient's home where they perform the majority of our services. And, once that patient's home visit is complete, they have to reset their minds and emotions and get themselves ready—in alignment with Sentara Healthcare's commitment to *Improving Health Every Day*—for the next service delivery.”

This first-hand contact with patients and caregivers makes DME technicians excellent sources of information for device manufacturers and others working in the field of human factors engineering (HFE) on how home-based patients and caregivers interact with technology. Sentara's HME technicians, and other like technicians, see HFE challenges of language, hearing, sight, aptitude, dexterity, mobility, and other physical challenges which can be even more complicated by medication (or lack of) every day.

### Standards and Certification

On August 14, 2006, the U.S. Centers for Medicare & Medicaid Services' (CMS) Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) Quality Standards<sup>5</sup> issued quality standards for suppliers of DMEPOS. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 required CMS to issue such quality standards, and suppliers must comply in order to receive CMS reimbursement.<sup>6</sup>

It is well known in the home care industry, where reimbursement is paramount to financial survival, that among all commercial and government insurance carriers, CMS (i.e., Medicare and Medicaid) pays approximately 55% of all insurance claims.<sup>7</sup> The final standards set forth the requirements DMEPOS suppliers must now meet with regard to business services and product-specific services. On August 16, 2006, CMS also published a notice inviting accreditation organizations to apply for deeming authority in order to apply the standards to DMEPOS suppliers and grant accreditation.<sup>6</sup> DME suppliers must align themselves with CMS' standards to acquire accreditation from such organizations as the Community Health Accreditation Program (CHAP) and the Joint Commission.

DME suppliers utilize DME technicians, manufacturer and third-party service contracts, and service purchase orders to meet device maintenance and home care accreditation requirements.

Many HME technicians pursue Delivery Technician Certification (DTC) as a source of personal pride and professionalism in their vocation. The Delivery Technician Certification™ Program (DTCP) is a national certification program for personnel responsible for medical equipment delivery, set up, and patient education.

The program tests the delivery technicians' understanding and comprehension of the federal rules and regulations governing the delivery of medical equipment and potentially hazardous materials such as oxygen and nitrous oxide gases. The DTCP addresses the U.S. Department of Transportation's (DOT) rules and regulations regarding commercial motor vehicles, HAZMAT training, and drug and alcohol testing. It also covers Occupational Safety and Health Administration universal precaution training as well as Health Insurance Portability and Accountability Act privacy requirements and the federal security regulations. In addition the program reviews all national delivery practices, documentation requirements, and industry standards of practice.

Upon completion of the DTCP and receiving a passing grade on the certification test, a delivery technician is considered to be a certified delivery technician. This certification is valid for two years, with recertification occurring within the third year.<sup>8</sup>

### Toward a Common Future

As more medical device technology migrates to home care, the jobs of DME technicians and BMETs are becoming similar. Home care companies need the technology-oriented skill set of today's BMETs for current and future business models. Every aspect of medical device technology in home care, from acquisition to removal from service, can benefit from the skill set forged in hospital-based applications by BMETs.

BMETs now have new career paths and opportunities not limited to today's current inventory of customary BMET jobs and the lean manning models of third-party service organizations. New positions and career paths to meet regulatory and accreditation requirements will be established. Accreditation and compliance survey organizations won't be truly effective unless they have members who understand the medical device total life cycle

and the utilities necessary to properly and safely operate these devices.

I can imagine the day when commercial insurance companies, Medicare, and state Medicaid programs will employ BMETs and DME technicians to review and approve patient-owned DME repairs. Currently, patient-owned DME repair authorization requests are reviewed and approved (authorized) by insurance company medical directors and case managers. Medical directors are physicians and case managers are usually registered nurses or social workers who make repair judgments mostly based on insurance policy "DME benefit" limits and not necessarily the technical merit or cost-effectiveness of a repair.

BMETs can help many organizations make prudent use of their device resources. While attendance at the Medtrade DME industry conference continues to decline due to economic forces, I predict that we will soon see DME suppliers and DME technicians at future AAMI Annual Conferences and Expos. Distant cousins, together—BMETs and DME technicians—in a growing frontier, will come to know each other and bring exponential value to home care as one family of technicians. I ventured into the home care frontier, and discovered it's an exciting time to be a BMET in home care. ■

### References

1. U.S. Food and Drug Administration. Center for Devices and Radiological Health Home Health Care Committee. Available at: <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ucm070198.htm>. Accessed on May 20, 2010.
2. U.S. Food and Drug Administration. "FDA to address Challenges of Using Complex Medical Devices in the Home." Available at: <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm209138.htm>. Accessed on May 20, 2010.
3. Association for the Advancement of Medical Instrumentation. "Focus on Homecare. Growing Market Creates New Challenges for Industry." *AAMI News*. 2008(43:4)1,4.
4. Taylor, C. Home Care Devices: A New Challenge for the Profession. *Biomed Inst & Tech* 2008(42:5)351-356.
5. Centers for Medicare & Medicaid Services. Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) Quality Standards. October, 2008.
6. Foley & Lardner, LLP. CMS Issues Final Standards for Suppliers of Durable Medical Equipment, Prosthetics, Orthotics, and Supplies. *Law Watch*. 2006(06:13).
7. State of the Industry 2009. The HME Market By The Numbers. 2009 HME News/SRA Financial Survey. Revenue By Payer Type Historic Percentage Comparison. *Home Medical Equipment News*. 2009 (Dec) p. 9.
8. RenTrain, Inc. The Delivery Technician Certification Program. Available at: <http://www.rentrain.com/dtcp/>. Accessed December 31, 2009.