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## Clinical, Operational and Financial Solutions for Managing Large-Volume Medical Equipment

The Asset360® program helps health care facilities achieve efficiencies by assuming total responsibility for medical equipment management.

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## Abstract

Hospitals nationwide are facing challenging times. The troubled financial environment binds access to capital. Changes in health care policy and bad debt from uninsured patients affect revenue. Yet the demand for quality patient care remains at increasingly high standards. Efficiency—whether financial, operating or clinical—is critically important as hospitals do more with less. One surprising area ripe for efficiency is the management of a hospital’s fleet of large-volume medical equipment, such as infusion pumps. This difficult management function is often overlooked and, typically, is inefficient which can lead to higher costs and significant clinical risk to patients.

The Asset360® program from Universal Hospital Services (UHS) solves the need for efficient equipment management by assuming total responsibility for large-volume medical equipment including management, maintenance and deployment. Clinical, operational and financial efficiencies for participating hospitals are the result of the Asset360 program. For example:

- 86% improvement in caregivers receiving unsanitary medical equipment for Asset360 program participants over non-Asset360 program hospitals. In addition, Asset360 program participants enjoyed a significant reduction in patient-to-patient transfers of equipment thereby reducing infection control violations.<sup>1</sup>
- 129% improvement in delivery times (under 30 minutes) for Asset360 program participants over non-Asset360 program hospitals.<sup>1</sup>
- 72% improvement in caregivers experiencing medical equipment shortages (daily or weekly) for Asset360 program participants over non-Asset360 program hospitals.<sup>1</sup>

This white paper shows not only the challenges of large-volume medical equipment management, but also shares how hospitals and hospital personnel have benefited from increased focus on patient care without the distraction of equipment management.

A UHS survey was conducted of 52 UHS Asset360 accounts and 80 pre- or non-Asset360 accounts. Data and results from the survey are included in this white paper.

1. Data on file, Universal Hospital Services. Survey of 52 UHS Asset360 accounts and 80 pre- or non-Asset360 accounts.

## Common Challenges for Managing Large-Volume Medical Equipment

Mismanagement of medical equipment in a hospital can lead to delays for patient therapy, patients receiving contaminated equipment or equipment piling up in closets and hallways. Common challenges when managing large-volume medical equipment include:

- **Patient-to-Patient Equipment Transfer Violations:** If current processes are inefficient or broken, many caregivers simply use a device that has just been on another patient, violating an infection control standard—patient-to-patient equipment transfers. Equipment used prior to proper decontamination represents an infection control risk associated with the spread of Hospital Acquired Infections (HAIs) that can result in significant costs for hospitals and serious risk to patient health.
- **Device Recall Management:** Manufacturers or regulatory recalls of medical equipment create disruptions of equipment availability and patient care. In addition, the administrative time to manage recalls is significant to hospital staff.
- **Equipment Upgrades:** Providing access to the latest technology is essential for top quality patient care, but the expense of buying new equipment can strain finances of even the best-run hospital.
- **Low Equipment Use:** Hospitals routinely purchase more equipment than they actually need. Blame this counter-intuitive purchasing behavior on the perception of poor equipment availability, which, in turn, is caused by inefficient management. Typically hospitals use only 40% of their large-volume equipment at any given time.<sup>1</sup>
- **Difficulty Standardizing Equipment:** Non-standard equipment increases staff time with the equipment because of unfamiliarity. Unfamiliar, non-standard equipment ties up resources especially as equipment is managed across multiple departments including Materials Management/Central Supply, Nursing, Biomed and Pharmacy.
- **Maintaining Equipment:** Up to 10% of large-volume equipment is broken or lost over the course of any given year. The cost of resources to maintain the fleet and fix broken equipment significantly increases a hospital's total cost of ownership.
- **Hunting, Gathering and Hoarding Behaviors:** Studies indicate nurses can lose over 36 minutes per shift attending to equipment-related issues such as looking for and retrieving equipment.<sup>2</sup> This loss represents a waste of valuable time from a patient care and nursing productivity perspective, and certainly decreases caregiver satisfaction. Additionally, caregivers sometimes hoard scarce equipment when they find it available, potentially putting patient safety and equipment technical integrity at risk.

These common challenges can carry a significant financial cost for a hospital while also wasting resources. Yet many of the costs and wastes are avoidable through efficient and effective centralized equipment management programs—like the Asset360 Equipment Management Program.

*When current processes are inefficient, many caregivers simply employ a device just used on another patient, a potentially costly violation of infection control standards.*

*Typically hospitals use only 40% of their large-volume equipment at any given time which results in significant waste of capital funds.*

2. Hendrick A, Chow M, Skierczniski BA, Lu Z. A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time? The Permanente Journal/Summer 2008, 12(3): 31.

“The Asset360 Program is a cost-effective means to help focus hospital expertise toward healing and away from the distractions of equipment management and maintenance. The result is increased patient safety and caregiver satisfaction, along with a decrease of high capital costs and operational inefficiencies.”

— **Gary Blackford**  
UHS President and CEO

## The Asset360® Equipment Management Program

The Asset360 program is a customized, site-based program designed to manage, maintain and deploy medical equipment in a health care facility. The Asset360 program helps health care facilities achieve clinical, operational and financial efficiencies by assuming total management responsibility for large-volume medical equipment, such as infusion devices (Figure 1). Using an Asset360 on-site team and UHS’ proprietary *inCare*™ Equipment Tracking System, the program provides delivery, pickup, decontamination, maintenance, repair and regulatory documentation for each enrolled piece of equipment.

The Asset360 program allows the health care facility to easily upgrade technology without capital outlay, pay for UHS equipment only when in use, control equipment expenses and service delays, and increase caregiver satisfaction and patient safety. Universal Hospital Services, Inc. (UHS) operates more than 70 Asset360 programs across the United States, with over 300 on-site team employees managing all aspects of large-volume medical equipment up to the point of care.

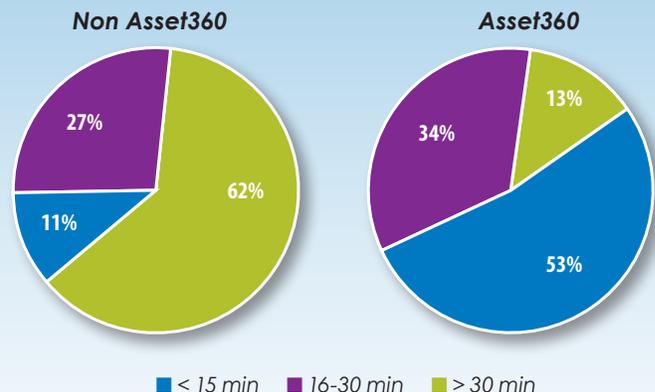


Figure 1. Large-volume equipment utilization.\*



**UHS assumes complete responsibility for managing large-volume medical equipment utilization.**

Figure 2. Average length of time between ordering and delivery of equipment.\*



**129% improvement in receiving equipment in under 30 minutes, compared to non-Asset360 programs.**

\* Data on file, Universal Hospital Services. Survey of 52 UHS Asset360 accounts and 80 pre- or non-Asset360 accounts.

## Asset360 Program Clinical Benefits

### Reduce Hospital Acquired Infections and Patient-to-Patient Equipment Transfer Violations

Quick access to patient-ready equipment with Asset360 on-site teams shifts nurse behavior away from hoarding scarce equipment for later therapeutic use. The Asset360 team is assisted by UHS' proprietary *inCare* Equipment Tracking System which integrates with hospital Admissions, Discharge and Transfer Systems to quickly track and locate devices that have been removed from patients. Providing orderliness and safety, the *inCare* System allows Asset360 teams to efficiently collect equipment for cleaning and decontamination, thus avoiding patient-to-patient transfer violations.

This allows for strict adherence to standard procedures for decontaminating, servicing and equipment management, which in turn provides a basis for decreasing the risks of patient-to-patient transfer violations and hospital acquired infections.<sup>3</sup>

### Focus Nursing Staff on Patient Care

Outsourcing day-to-day equipment management to an Asset360 on-site team helps nursing staff focus on their core competency of providing optimal patient care. The Asset360 program provides caregivers prompt access to patient-ready equipment, reducing therapy delays and allowing more time at the bedside (Figure 2). The Asset360 on-site team's ability to locate and promptly deliver equipment also helps increase caregiver productivity (Figure 3) and decrease perceived equipment shortages (Figure 4).

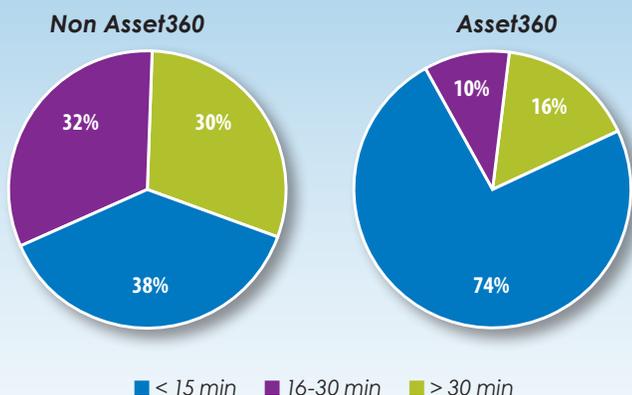
“When nurses are not spending time looking for equipment, they can spend more time focused on patient care.”

— **Patricia Artley**  
 Director of Nursing,  
 Penn State Hershey  
 Medical Center,  
 Hershey, PA

3. Guidelines for Environmental Infection Control in Health-Care Facilities, Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC), [http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/enviro\\_guide\\_03.pdf](http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/enviro_guide_03.pdf)

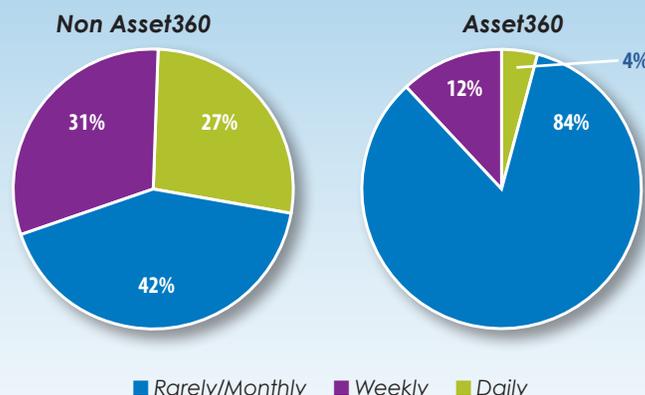


Figure 3. Time spent by caregivers per shift locating clean, functional equipment.\*



47% decrease in time spent locating equipment over 30 minutes.

Figure 4. How often do caregivers experience shortages?\*



72% improvement in equipment availability (daily or weekly).

“UHS employees integrate so well into our materials management team that most people here think they’re North Memorial employees. It’s a credit to the high quality customer service offered by UHS.”

— **Rich Mencil**  
 Director of Materials Management,  
 North Memorial Medical Center,  
 Robbinsdale, MN

**Asset360 programs minimize the impact of recalls by quickly accessing patient-ready equipment available from UHS’ large equipment fleet.**

## Asset360® Program Clinical Benefits

### Improve In-Service Support

The Asset360 program provides support to hospital staff to standardize safe equipment operation. The Asset360 on-site teams also take an active role in analyzing operator error data which helps identify specific in-servicing and educational needs.

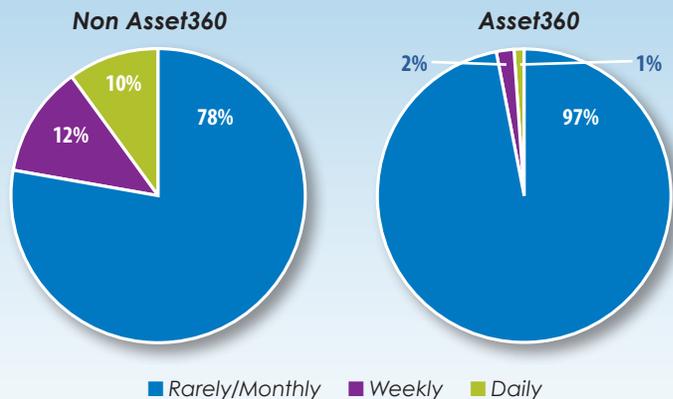
These services represent a sizable benefit to the hospital in improving patient safety and decreasing improper equipment use. Challenges by hospital staff regarding proper device operation are immediately addressed by UHS personnel, reducing the need for additional equipment training.

## Asset360 Program Operational Benefits

### Eliminate Disruptions due to Manufacturer Recalls and Equipment Modifications

Manufacturer recalls impact equipment availability, administrative support and many departments in a health care facility. As hospitals upgrade to new technology and standardize on specific equipment, the risk of service disruption due to recall notices increases. The Asset360 program allows hospitals to greatly reduce risk in recall situations because the equipment is owned by UHS. UHS actively monitors manufacturer recall and modification notices and then coordinates any necessary actions. Asset360 programs minimize the impact of recalls by accessing equipment available from UHS’ large equipment fleet.

Figure 5. How often do caregivers receive unsanitary equipment?\*



**86% improvement of delivery of unsanitary equipment (daily or weekly).**



\* Data on file, Universal Hospital Services. Survey of 52 UHS Asset360 accounts and 80 pre- or non-Asset360 accounts.

## Asset360 Program Operational Benefits

### Improve Patient Safety and Regulatory Compliance/Reporting

The Asset360 program decreases the delivery of contaminated equipment (Figure 5) and nonfunctional equipment (Figure 6), which in turn boosts patient safety.

With the Asset360 program in place, hospitals are committed to the use of patient-ready, properly maintained equipment, which improves reporting and documentation for The Joint Commission and other accreditation programs. In 2010 alone, UHS conducted over 72,000 inspections of Asset360 program equipment. Backed by the support of the UHS Quality Assurance Department, the Asset360 on-site teams are trained to follow strict quality assurance and equipment inspection procedures. When unannounced Joint Commission inspections take place, UHS documentation and support means the hospital will pass inspections relating to the equipment covered under the Asset360 program.

### Upgrade and/or Standardize Technology to Optimize Patient Care

As part of the Asset360 program, UHS helps upgrade and standardize technology across partner facilities. This approach enables the hospital to use the latest technology without the capital outlay, meaning that they can offer a higher standard of care.

Standardizing technology allows for safer operation of equipment, with staff able to become familiar with operational specifics for each piece. Along with more consistent and safer patient care, standardized equipment also means less resources wasted on training for unfamiliar equipment.

“Before Asset360, nurses reported receiving unsanitary equipment on a daily (28%) and weekly (14%) basis. As of June 2009, 99% of nurses reported that they never received unsanitary equipment.”

— **Terri Crofts**

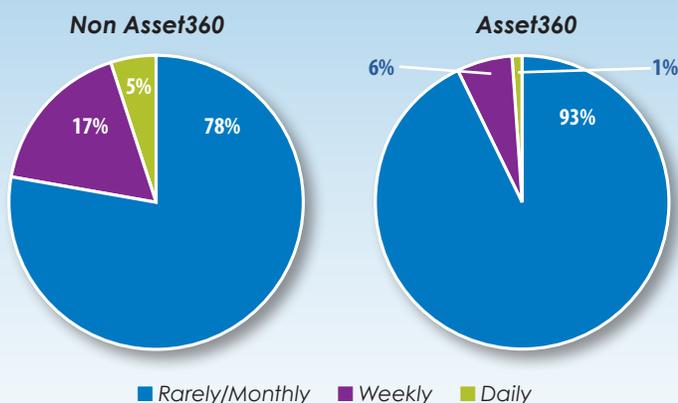
Director of Biomedical and Clinical Engineering,  
UMass Memorial  
Health Care,  
Worcester, MA

“Since the Asset360 program in March 2009, 100% of equipment inspections have been completed on time.”

— **Bob Cuthbertson**

Director, Material Service,  
City of Hope Hospital,  
Duarte, CA

Figure 6. How often do caregivers receive non-functional equipment?\*



68% improvement in delivery of non-functional equipment (daily or weekly).

## Asset360® Program Financial Benefits

### Reduce or Avoid Large Capital Expenses

Owning and maintaining medical equipment is both costly and time-intensive for hospitals. Purchasing equipment requires a large, upfront capital outlay, with ongoing costs for servicing, maintaining and upgrading equipment. Since patient census continually changes, it can also be very costly to purchase the amount of equipment needed to cover spikes in census (Figure 7a).

Equipment ownership may not be the best or most financially viable solution for hospitals. Many times it makes more financial sense to work with a partner in managing technologies, processes and people, which is a combination of core competencies only the Asset360 program provides. The advantages to partnership include the availability of well-maintained, upgraded equipment while still conserving capital. This partnership approach provides the latest technology to hospitals on a pay-per-use basis, which means the hospital is charged only when a piece of equipment is in use on a patient during a 24-hour interval (Figure 7b). Pay-per-use helps maintain a continual high standard of care without the traditional capital outlay. In the last five years, UHS has helped Asset360 program customers avoid over \$100 million in capital equipment purchases.

**In the last five years, UHS has helped Asset360 program customers avoid over \$100 million in capital equipment purchases.**

**Figure 7. Align Equipment Costs with Hospital Revenue and Patient Census**

Figure 7a. Fixed Asset Model (Without Asset360)

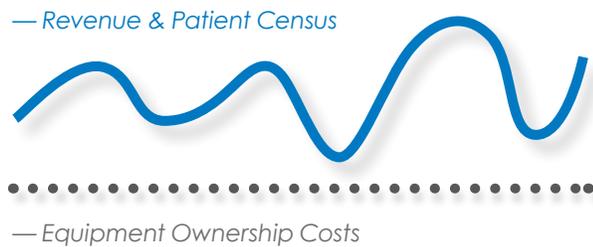
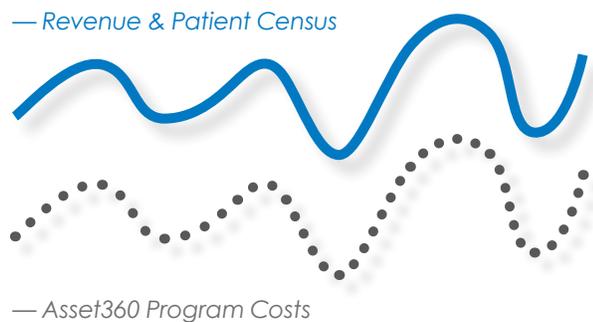


Figure 7b. Variable Asset Model (With Asset360)



**A pay-per-use approach maintains a high standard of care based on a hospital's exact medical equipment needs without a large capital expense.**

## Asset360 Program Financial Benefits

### *Reduce Equipment Related Costs*

By deferring equipment management and maintenance to UHS, hospitals eliminate the high cost of owning large-volume medical equipment. With the Asset360 program, the cost of maintaining equipment, including preventive maintenance, repairs and replacement of lost equipment are incurred by UHS.

In 2010, UHS performed over 32,000 equipment repairs with over 35,000 labor hours avoided by hospital staff. Also, in 2010, UHS helped Asset360 program customers avoid over \$3.9 million in repair costs.

### *Convert Underutilized Equipment into Cash*

By standardizing equipment, introducing UHS-owned equipment, and increasing equipment productivity, Asset360 program customers typically experience equipment surpluses. UHS purchases underutilized and unneeded equipment to provide a material capital infusion for the partner hospital. UHS then is able to redeploy their equipment to other hospitals across the country.

From 2003-2010, UHS purchased over 36,000 pieces of previously-owned medical equipment at a cost of over \$17.5 million.

“The Asset360 program allows my Biomed staff to focus on greater cost saving opportunities in our facility while the Asset360 team manages the maintenance of our infusion pumps.”

— **Bill Herbert**  
 Director of Pharmacy  
 and Material Services,  
 Meriter Hospital,  
 Madison, WI

***In 2010, UHS performed over 32,000 equipment repairs with over 35,000 labor hours avoided by hospital staff.***

“Asset360 has created a positive impact on our equipment management. We launched Asset360 at nine of our facilities to centralize our infusion technology. Since then, we’ve added therapy surfaces to our program. UHS has been a tremendous partner throughout.”

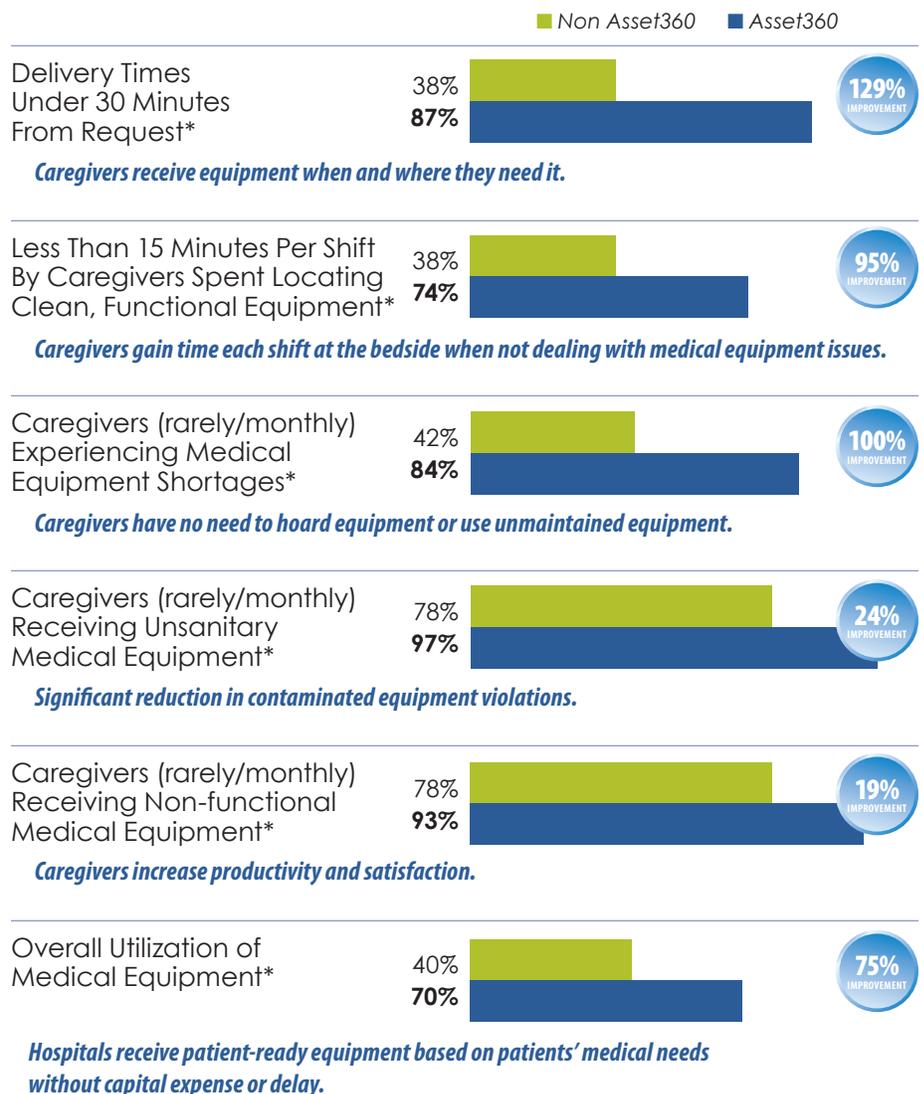
— **Dan Humphrey**  
System Executive,  
Supply Chain Services,  
Memorial Hermann  
Healthcare System,  
Houston, TX

## The Asset360® Program is a Proven Partnership

The Asset360 Equipment Management Program allows hospitals to focus on their core competency of providing patient care rather than being distracted by equipment-related issues and logistics. As UHS customers have experienced, partnering with a firm that specializes in maintaining and managing medical equipment can result in significant clinical, operational and financial benefits. Furthermore, partnership with a robust firm like UHS means gaining entry into an efficient endeavor, with resources poised for strategic growth, and a culture that allows UHS personnel to fit seamlessly in existing hospital structures.

### METRIC ANALYSES

Significant, measurable medical equipment efficiencies are gained post-Asset360 implementation.



\* Data on file, Universal Hospital Services. Survey of 52 UHS Asset360 accounts and 80 pre- or non-Asset360 accounts.



## About UHS

Universal Hospital Services, Inc. is a leading provider of medical equipment management and service solutions to the health care industry. UHS manages more than 580,000 pieces of medical equipment for over 8,600 clients in all 50 states. For more than 70 years, UHS has delivered management and service solutions that help clients reduce costs, increase operating efficiencies, improve caregiver satisfaction and support optimal patient outcomes.

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