Abstract:

Vascular access devices (VAD) represent high technology and are used frequently in infant, pediatric, adult, and geriatric populations for vascular infusion of chemotherapy, immunotherapy, blood products, biologic response modifiers, nutrition support, analgesics, ionotropics, antibiotics, and other medications, as well as for extraction of pleural fluid from patients with chronic effusions and for treatment with dialysis. Increasingly, these devices are migrating to the home setting as they are used in chronic care and as insurance requirements reduce access to prolonged hospital stays.

Surveillance of infections in high risk patients such as those with cancer, cardiac conditions, or post-trauma convalescence is essential to avoid adverse events and to offer early treatment. VAD site and blood stream infections are common VAD complications, occurring in up to 50% of home care patients, usually during days 4-25 after hospital discharge. Our literature search for reports of remote home monitoring for support of VAD patients and their caregivers found none.

The use of videoconferencing technology to assess VAD sites in the post-discharge environment would significantly enhance patient safety, facilitate continuity of care, and
meet the Communicable Disease Center’s stated need for the development of surveillance systems to monitor infections in home care settings. Low-cost Internet- or telephone-based videoconferencing technology that could be deployed easily and used during risk periods would be highly beneficial to patients and increase the cost-effective use of homecare nursing personnel.

We report criteria-based protocols for remote assessment of VAD status, for monitoring VAD care procedures employed in the home, and for conducting VAD-care teaching of patients and their caregivers. In addition, we report an initial evaluation of the ability to assess VAD status using low-end videoconferencing technologies.

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