



## POSITION STATEMENT

# ADDRESSING THE HEALTH AND CARE NEEDS OF PERSONS WITH DISABILITIES WITH ASSISTIVE TECHNOLOGY

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IEEE-USA believes efficient use of technology can help address the health care needs of persons with disabilities. Appropriate adoption of existing and emerging technology can improve the efficiency and quality of health care delivery, restrain cost increases and, perhaps most importantly, improve the quality of life for this population.

The federal government should provide new incentives to encourage physicians and other health care professionals to receive training in utilizing information, communication remote sensing, and assistive technologies to facilitate treatment of persons with disabilities. These incentives should include financial inducements, educational grants and regulatory changes. IEEE-USA recommends that:

- Health information technologies and enhanced communication capabilities should be incorporated into patient care
- Remote sensing and adoption of home-based self-care management and long-term support and services programs should be utilized to promote efficient and effective patient management
- Communication standards should be adopted to facilitate effective communication and information sharing by converging technologies and devices

This will require actions by both the public and the private sector. Specifically, IEEE-USA recommends:

- Revising Medicare reimbursement/payments to promote communication aids that allow those receiving home health, home care and support services to be able to connect via IT communication with health care providers, including support services providers
- Legislation to support patient autonomy and establish National Advanced Medical Directive guidelines
- Research to document specific home-health, home care and assistive technologies and processes that lower health care cost and improve outcomes
- Improving training and certification for caregivers using home-health, home care and assistive technologies

- Establishing medical liability requirements for caregivers and care providers utilizing home-health, home care and assistive technologies
- Utilizing of Electronic Health Records (EHR) by patients and home-health caregivers to enhance health information exchange between the home-health setting and health care professionals. This refers to a specialized use of the EHR in which information may be made available to the home health caregiver; or the EHR may be updated automatically with information from the assistive technology located in the home (e.g., vital signs).
- Extending the development of health information standards to the exchange of health information between health care professionals and home-health and home care caregivers, including authorized informal/ family caregiver.
- Distributing inexpensive home-health and wellness monitoring devices. In turn, this distribution requires establishing clear reimbursement policies for home health care devices for purchasers and insurers.
- Increasing patient, home-health and home care caregiver education, and improving the ease of use of health, wellness and assistive devices in the home and community-based care environment.

Access to and control of personal health information is of vital importance to persons with disabilities. However, their disabilities, functional status and/or state of wellness may hinder them from effectively accessing and managing their personal health information. IEEE-USA recommend the following to improve accessibility and usability of personal health information for persons with disabilities:

- Design of personal health records should consider the use of assistive technologies (e.g., text magnification, text-to-speech/speech-to-text conversion, alternative user interfaces) to improve usability by persons with disabilities
- Hardware devices used for home health telecommunications should allow for using alternative user interfaces, including special-purpose keyboards and voice recognition technology
- Increased doctor and nurse communications to and from patients and caregivers by a modality appropriate to the person's disability, including phone and e-mail
- Provisions to meet the special needs of ethnic, racial and foreign-language minorities through informational services tailored to their specific needs
- Increased use of home-health telecommunications will enable increased collection of health data. Therefore:
  - Deployment of home-health, home care and assistive technologies should include methodologies to collect, interpret and make modifications based on performance outcomes
  - Privacy, security and confidentiality concerns surrounding home-health care delivery should be addressed to help build trust between patients and home-health caregivers
  - Processes should be established to promote the capability of all health researchers, including public health, to procure home-health data for analysis
  - Knowledge gained from this health research should be openly and expeditiously shared with the public

This statement was developed by IEEE-USA's Medical Technology Policy Committee and represents the considered judgment of a group of U.S. IEEE members with expertise in the subject field. IEEE-USA advances the public good and promotes the careers and public policy interests of more than 210,000 engineers, scientists and allied professionals who are U.S. members of IEEE. The positions taken by IEEE-USA do not necessarily reflect the views of IEEE or its other organizational units.

## **BACKGROUND**

The Nationwide Health Information Network (NHIN) should be designed to address the specific medical information needs of persons with disabilities and their care providers, including long-term care providers. These needs include home health care provider access to electronic health records to both obtain and disseminate health information; patient-centric health, safety and functional information; and communication mechanisms with appropriate response capabilities between health care stakeholders, patients and caregivers (including authorized family caregivers) based on distributed health care in a home, and community-based treatments and support environments.

In addition, provisions should be made for periodic assessment and surveillance of these high risk groups, so that leadership of health care providers (including long-term care and support providers), and at state and local health departments, can secure the data they need to determine how well such needs are being met. This, in turn, will require two elements: 1) some data surveillance capacity, based on electronic health records; and 2) periodic completion of health and functional status and risk questionnaires (on a scale larger than just those in these groups) to gather data not usually present in the medical records. Our goals at all three levels (health care system, local community, and state) will be to assure action is taken to identify those at highest risk of becoming disabled, to prevent their deterioration into these high-cost groups; and to assure that those already in these groups are getting the care and services needed to slow further deterioration, avoid institutionalization and assure the highest possible quality of life.

Additionally, such techniques as checklists for medical devices, laminated information cards attached to devices, device website assistance, and improved user interfaces should be evaluated for benefit.

Providing home health care services to persons with disabilities offers the potential for significant savings. Using remote monitoring technology can detect changes in medical condition that, if unaddressed, could lead to hospitalization or nursing home care. The mean cost for inpatient hospitalization in the United States in 2007 was \$8,692 for a mean length of stay of 4.6 days, or approximately \$1890/day (source: U.S. Department of Health and Human Services, Agency for Health Care Research and Quality, Health care Cost and Utilization Project: <http://hcupnet.ahrq.gov/Hcupnet.jsp>)

Nursing home care is also quite expensive; the average daily cost of a private room in a nursing home in the United States is \$70,080 per year, or \$192 a day, according to the 2004 MetLife Market Survey of Nursing Home and Home Care Costs. (Source: ElderLaw Answers, <http://www.elderlawanswers.com/resources/article.asp?id=3417&section=4&state>). By comparison, providing home health care aide visits three times a week costs an average of

\$18,000 per year in the United States, using an average hourly rate of \$29 per hour. (source: Disabled World, <http://www.disabled-world.com/artman/publish/health-care-cost.shtml> )  
Providing home health care for persons with disabilities can also reduce the need for office visits by providing routine monitoring of vital signs and other health indicators. In terms of quality of life, persons with disabilities may encounter many obstacles and difficulties in obtaining transportation to a doctor's office for a routine appointment. Providing assistive technologies can minimize these difficulties.