

TECHNOLOGY FOR CARE

The European Silver Paper calls for better treatment and support of older persons¹. According to the survey, most 65+ people prefer to live independently in their homes and neighborhoods for as long as possible rather than move to a nursing home or an institution². Innovative technology products are being developed to make older people stay independent and safe at home.

In health care, a mobile-phone based, wireless system uses electronic sensors and digital technology to monitor the health status of vulnerable older people with chronic diseases and offer them greater independence with support when needed³. This telecare technology monitors vital signals, such as weight, body temperature, blood pressure, blood glucose, oxygen saturation, and pulse. Collected vital data are sent to the central database for storage and analysis and the care system can assess the health status, which the users and their carers can access via the internet. If any abnormality happens, the system will send a simple message or e-mail to inform these carers for suitable action. In addition, the system can remind the older people to take medication on time and provide diet and exercise recommendations⁴.

Robotics technology could change the way health care is delivered. There is some evidence that mobile service robots can relieve health care professionals of some burdens such as washing clothes and dishes, cleaning the floor, and serving a meal^{5,6}. They could also support older people to live better and longer in their own homes. The goal of this new technology is not to replace human care and tenderness, but to provide extra help in situations where more health care workers are not available. Caring for someone at home costs far less than in an assisted living or nursing facility.

In home safety, context-aware computing, activity recognition, and smart home technology can provide service solutions for older people. Sensors can be installed around the home for monitoring potential dangers such as carbon monoxide levels, fire, flood, natural gas leakage, and changes in temperature, as well as personal risks such as falling, intruders, inactivity, and abnormal activities of daily living (ADL). The client has a direct link to a 24-hour service center. In case of emergency or abnormality, the alert system will be triggered and notice the relevant informal carer for suitable action⁷. If the older person gets up in the night, the alarm system will automatically turn on a light to reduce the risk of falls. The cooker will be shut off if the older people forget to turn it off and an alarm will also be given if the cooker temperature rises above normal limits⁸. If older people suffering from dementia get lost, their position can be located by way of Assisted Global Positioning System (AGPS), an integrating cell phone called MiniBond⁹.

Many researchers and ICT enterprises all over the world have been making great efforts to develop health care systems for the elderly. With the assistance of creative technology, the quality of life and well-being of the older people have been promoted effectively and will continue to increase in the future.

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doi:10.4017/gt.2008.07.04.008.00

GERONTECHNOLOGY TO SUSTAIN CAREGIVER WELL-BEING

Most probably, applications of modern technologies in 'support of informal caregivers'¹ will gain increased attention and development among eldercare professionals. If so, growing numbers of families will be served with quality long-term care in the least restrictive environments of their choice.

Longevity is rising globally among older people with single and often multiple needs. Many have dispersed, distant, and busy working families. How to use various technologies to provide usable information and support for millions of 'informal or unpaid caregivers? These are often family, friends and neighbors who provide the bulk of needed caregiving, including learning how to set up and monitor medical equipment, lift patients without damage to their own body, and many other tasks.

This short summary selects a few recent studies that demonstrate the utility and acceptance of technologies that aid in long-term care, and also provide support for the caregiver. Both patient and caregiver (often an older adult also) deserve appro-

appropriate technologies to maintain medical and quality of life goals.

Providing 'support' for informal caregivers involves a combination of informational and emotional understanding, using communication systems and home devices. For example, Internet forums have exploded in popularity, and these are not trivial chatter when it comes to finding support online. Many are used for quality information as well.

One study² provided a detailed analysis of Internet communications within a caregiving group. The results, both qualitative and quantitative, point to the value of the Internet in providing support of many varieties of informal caregiving issues, even among strangers talking together asynchronously and miles apart. The particular value of the 'large group' available online is cited in the study, because it provides multiple points of view suitable for the complexity and ever-changing demands of family and home caregiving situations. Another factor is the human 'connection' that busy individuals sense via Internet communications, not a minor factor when one has no one else to listen and understand closer