E-Health and Telehealth for Consumer Empowerment: Issues and Trends

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Objectives

- Identify categories of emerging personal telehealth technologies
- Identify nursing practice implications of emerging telehealth and consumer technologies
- Identify principles for safe patient care and data management using emerging telehealth and consumer technologies
Definitions

- **Telehealth** encompasses the use of telephonic, telehealth, Internet, sensors, video, remote diagnostics and/or other interactive technologies which allow interchange between patients and nurses or between nurses and other healthcare providers.

- **Telenursing** is the use of telemedicine (and all other telehealth) technology to deliver nursing care and conduct nursing practice (International Council of Nurses, 2008).
Consumer Informatics
Definitions

- Computers, technology, and telecommunications as enablers focused on consumers’ needs
- “…is a blend of health, clinical, and bioinformatics”
- Consumer empowerment & active interaction between consumers & technology

Consumer Informatics Applications & Strategies in Cyber Health Care
Consumers Expect High Tech:

- **Publish**: disease information; provider outcome report cards; drug outcomes, prices, and alternatives; lab tests results and interpretation; consumer-generated satisfaction ratings
- **Interact**: email with doctors & health plans, reminder messaging, risk assessment tools
- **Transact**: scheduling, decision support tools, prescription renewal, e-commerce, account management
- **Integrate**: computerized patient record, disease management, account management, in real time 24/7
Consumers Want High Touch Too

“The new generation of patient also wants access. They do not want to wait two months for an appointment; in fact they do not want to wait at all…Patients who have questions they would like answered and requests for prescription renewals, referrals and appointments do not see why these issues cannot be raised on a weekend. Sometimes, patients would like to talk to a human being, not a computer masquerading as a receptionist, and they do not want to wait 30 minutes for a harried nurse, nurse practitioner, or doctor to return their call.”

T. Lee, NEJM, 344, 26: 2001
A New Delivery System

- Telehealth/Telenursing are tools for healthcare reengineering
- Enables new and improved ways to deliver health care and decrease the cost of care
- One solution to the growing nursing shortage
Focus on Consumer using Telehealth

Telehealth enables the export of healthcare expertise virtually to patients who need it.
Capabilities of Telehealth Technologies

- Viewing Wounds
- Reading O2 Saturation on a Pulse Oximeter
- Helping Diabetic with Insulin Dosage
- Telephonic Stethoscope Heart & Lung Sounds
- Checking Stance, Swelling
- Medication Monitoring for Side Effects & Compliance
- Patient Education
- Family Education and Support
- Multidisciplinary Care (Nutrition, PT, etc.)
- Collect data and assess trends in chronic illness management
BENEFITS of Telehealth

- Enhanced access to care
- Improved quality of Healthcare
- Timeliness of Healthcare delivery
- Readily adaptable to patient needs
- Reduced cost of Healthcare
How Much of a Decrease?

Preliminary data shows a 30% decrease in healthcare utilization costs using home telehealth primarily as a result of decreased:

- Inpatient admissions
- Emergency Room visits
- Outpatient visits
How Does it Work?

- Live or asynchronous interaction
- Transmission of Data/Images
- Patient and Provider in Disparate Geographic Areas
- Gizmo approach vs. Business Practice/Clinical Reason
- Lots of Technology Available to Use - FDA approval for devices
Bandwidth - “pipes”

- POTS - Plain Old Telephone Service - jerky motion but ubiquitous
- ISDN - Integrated Services Digital Network - almost TV quality motion
- T1 or fractional T1 - TV-quality motion
- Cable - large bandwidth, but two-way requires significant infrastructure not yet in place
- Internet - telehealth’s future!!!! wide bandwidth via internet for moving data and images
- Satellite, Wireless – great bandwidth but delays/security issues
Segmentation of Equipment

- “Hub and Spoke Network” - Telemedicine Suite in Hospital-based Medical Center, connected with Rural Site(s) Suites
- Desktop Systems
- Personal Telemedicine Systems
Warrior Guard™ Program of Care

Directed Alerts for Caregivers & Medically Approved, Protocol-based Care

Care Triad Providers: NCM, PCM

Unit Leaders/Buddies

Family Members/Volunteers

Securely uses available communication methods

Monitor Warriors in Outpatient, Medical Hold, Barracks, Home

- Monitors Heart Rate
- Detects Falls/Impact of Force & Activity Level
- Provides Location
- Event/Mood Buttons for Feedback & Response
- Measures Ambient & Skin Temp
- Galvanic Skin Resistance (new)

Warrior Guard Watch Wearable Sensors

Server
- Data acquisition
- Trend Analysis
- Exception reporting
- Caregiver alerting
- HIPAA compliant
- Location determination
- Learning models
- Risk mitigation
- Timely Interventions

GPS

Internet

Cellular

Company Confidential August 2007
tTelehealth INc.
“When a wave of change crashes into society, traditional management, values, cultures, organizational procedures and organizational forms become obsolete” (Sankar, 1988, p.10)
Preventing Suicide Network

- Suicide 8th leading cause of death in US & epidemic proportions in teens, elderly
- Development Funded by National Institute of Mental Health
- Currently Customizing PSN for Military Consideration
- Goal: using web-based behavioral Telehealth service component for customized, tailored suicide prevention resources and counseling/care delivery
Welcome to the Preventing Suicide Network, a resource center aimed at providing authoritative and problem specific information about suicide prevention. Death by suicide has reached epidemic proportions. Each year 30,000 Americans take their lives by suicide. Even greater numbers of people attempt suicide. It can be difficult to know how to help someone who is at risk for suicide. Getting the best information available can help.

Purpose

This site is intended to help those who help others locate and access tailored resources about suicide prevention...

>>MORE

Searching for authoritative resources is an essential part of knowing how to prevent suicide. Accessing How to Search is highly recommended as a starting point for using this Web site.
Welcome to the DOD Suicide Prevention and Risk Reduction Committee’s (SPARRC) Preventing Suicide Network, a resource center aimed at providing authoritative and problem-specific information about suicide prevention. Death by suicide has reached epidemic proportions. Each year 30,000 Americans take their lives by suicide. While the military suicide rate is substantially lower than that of age- and gender-matched civilians, it is still a significant cause of death in the US Military. It can be difficult to know how to help someone who is at risk for suicide, or more commonly, a suicide attempt. Getting the best information available may lower the threshold of distress detectable by others, and inform how best to be of assistance when suicidality is suspected or discovered.

Col Bob Ireland, USAF, Chairman, DOD Suicide Prevention and Risk Reduction Committee
Walter Reed Army Medical Center: Post Open Heart Surgery Home Telenursing

- Research Protocol at WRAMC.
- Benefits: Continuity of care, decrease length of hospital stay, and prevent complications readmission
- Customization technology for DoD use to extend surgical provider reach to home
- Goal: Promotion of a new post-open heart care model (1147 Open Heart Surgery Hospital Sites in US)
Consumers Utilize interactive video, HR, BP, 02 sat, high resolution photo of incision, 3 lead ECG and transmit data to Nurse station for monitoring
Telenursing in Action

- LTC Joy Walker, AN initiates telenursing visit per WRAMC IRB approved research protocol & per Physician-approved Telenursing Clinical protocols to standardize visits.
Where Telenurses worked in 2005

- In 36 countries around the world
- In 49 of 50 states in the U.S. (Delaware not represented)

USA (68%) Canada (10%) Australia (5%) UK (4%) Norway (3.5%) New Zealand (1.1%) Sweden (1%) Iran (0.6%) Finland (0.6%) 3 with 3; 7 with 2; 17 with 1
## Where Telenurses Work

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<tbody>
<tr>
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<tr>
<td>Vendor</td>
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Nursing Shortage

- 75% of telenurses believe that telehealth is useful in the nursing shortage

- **Telehealth as Nurse Extender: Easier to take care of more patients in Less Time but the technology is not quite there yet**

- **Telehealth Aiding Nurse Shortage: telehealth helps the nurse deliver, manage, provide better education, keep patients out of the hospital, provide better outcomes, decrease hospitalizations, save nursing time, recruit and maintain nurses**
Future of Telenursing

- Participants predicted a sharply increasing need for telenurses in the next 3 years due to
  - budget cuts
  - plans to expand telehealth programs
  - growth of telehealth
  - populations in need such as aging, rural, chronically ill
ISSUES

- Malpractice
- Licensure
- Credentialing
- Resistance to Change: Point of Care
- Patient Satisfaction
Competencies, Guidelines, Certification and Safe Practice Principles for Telenursing
Telehealth Technologies in Nursing Practice

- Do not fundamentally change practice
- Are tools to provide nursing services
- Support assessment, diagnosis, planning, implementation of plan, evaluation, referrals
- International Competencies for Telenursing
12 Core Principles on Telehealth

- Basic standards of professional conduct unaltered by use of telehealth technologies
- System or practitioner can’t use telehealth to provide services not otherwise legally or professionally authorized
- Additional licensure not required to use telehealth technologies
- Telehealth services adhere to professional clinical standards and basic assurance of quality
- Each profession responsible for processes ensuring competencies in telehealth services delivery
- Telehealth practice and clinical guidelines based on empirical evidence and professional consensus of all involved healthcare disciplines
Core Principles – Continued

- Integrity and therapeutic value of client-healthcare practitioner relationship maintained and not diminished
- Maintain confidentiality of client visits and health records and integrity of information
- Requirements for documentation of each encounter, communication, protection for client confidentiality
- Informed consent about right and responsibilities, process, attendant risks and benefits
- Client and practitioner safety ensured
- Systematic and comprehensive research agenda for ongoing assessment of telehealth services
11 RN Competencies Including:

- Establishes therapeutic relationship creating sense of nursing presence
- Assesses and adjusts communication techniques to maximize nurse-client relationship
- Assesses appropriateness of specific technologies for individual or populations
- Ensures clients informed of their choices regarding use of telehealth
Client Perspective

- Confidentiality and privacy
- Education
- Selection for telehealth
- Informed consent
- Preparation
- Technology teaching
Practitioner Perspective

- Support mechanisms and structures
- Education and training to use technologies
- Consultation and supervision responsibilities
- Documentation
- Qualifications
- Legal scope of practice and cross-state practice
What is the NLC?

- The Nurse Licensure Compact (NLC) is based on the mutual recognition concept of licensure.
- Nurses who legally reside in and are licensed in a U.S. jurisdiction that belongs to the NLC may practice in other NLC jurisdictions on the ‘privilege to practice’.
More on the NLC

- Similar to a U.S. drivers license, each nurse can practice in other NLC jurisdictions but must observe that jurisdiction’s Nurse Practice Act (like a driver’s rules of the road).
- NLC helps best protect the public because participating jurisdictions share information on significant investigative actions.
How is the NLC currently operating?

- Currently 22 U.S. jurisdictions (states) belong to the NLC.
- Boards of Nursing designate a NLC Administrator to work with other NLC states to make operational and administer the NLC among the participating jurisdictions.
- Currently, more than 7 U.S. jurisdictions explored bringing the NLC to their areas.
Nursing Licensure Compact Status as of January 2008 Regarding Practice Across State Lines

What should nurses know about licensure portability?

- Within a NLC-type model, licensure of nurses remains state-based (jurisdiction specific) but widely recognized.
- Portable licensure means that nurses practicing telenursing may only need one license to practice in multiple jurisdictions.
- Regulators can simplify governmental processes and remove regulatory barriers to increase access to safe nursing care.
Tools for Nursing’s Future

- Internet
- Peripheral Monitoring Devices & Biosensors
- Home Based Telemedicine Technology
- Patient Empowerment
- Patient Access to Electronic Information
- Caring & Therapeutic Relationships
Questions????