Accommodations for telemedicine services
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Sources

Practice Guidelines for Videoconferencing-Based Telemental Health

EDIATION AND PRACTICE

Telemedicine room design

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Summary

Recent changes in services for telemedicine have been focused on improving the quality of care and accessibility. The design principles for telemental health must be based on evidence rather than anecdotal or experience. This paper examines the importance of design in telemental health and the design criteria of videoconferencing rooms. The paper discusses the various factors that influence the design of videoconferencing rooms and the importance of creating a user-friendly environment. The paper also highlights the need for design principles that are evidence-based and that consider the specific needs of telemental health.

Introduction

This paper provides design guidelines for the design and development of videoconferencing rooms for telemental health. The design principles apply to both face-to-face and videoconferencing services and require the integration of design principles for videoconferencing rooms. The paper discusses the various factors that influence the design of videoconferencing rooms and the importance of creating a user-friendly environment. The paper also highlights the need for design principles that are evidence-based and that consider the specific needs of telemental health.


Telemedicine Worksite Environments: Designing for Success


The keystone to health care planning, design, and construction
The use of electronic information and communications technologies to provide and support health care when distance separates the patient and medical provider. Clinical applications of telemedicine may encompass diagnostic, therapeutic, and forensic modalities. Common applications include pre-hospitalization assessment and post-hospital follow-up care, scheduled and urgent outpatient visits, medication management, psychotherapy, and consultation.

Patient and provider consultations, medical imaging, remote monitoring, and education are all services that can be provided via telemedicine. A variety of technologies including videoconferencing systems, internet-based web sites, digital phones, and secure email can be used to deliver telemedicine services. Telemedicine facilitates the exchange of health information, services, and education between providers and/or providers and patients through electronic means.
Common elements

Requirements for a bay, cubicle, or room to accommodate clinical telemedicine services provided

- A bay, cubicle, or room where clinical telemedicine services are provided shall meet the requirements of the section of the Guidelines that directly relates to the services provided and the patient population served.

- Where patient volume does not justify provision of a dedicated telemedicine room, a telemedicine room shall be permitted to serve other functions such as physician's office, exam room, or conference room.

- A room where clinical telemedicine services are provided shall meet the requirements of the section of the Guidelines that directly relates to the services provided and the patient population served.
Telemedicine Rooms

Suggested General Design Considerations (Equipment & Details)

- Camera Placement
- Temperature Control
- Outlets
- Doors

Image: CTEC Telemedicine Room Design
Space requirements

Telemedicine rooms used for exams shall be sized to accommodate the following:

- An examination table situated within view of the camera
- Telemedicine equipment (fixed or mobile)
- Peripheral devices
- An on-site caregiver or patient presenter
- A hand-washing station where hands-on patient examinations are provided
- A documentation area
Space requirements
Privacy

• The telemedicine room shall provide speech and visual privacy with adjacent spaces based on the room’s clinical function.
• Space shall permit arrangement of monitors, screens, or other projections of images or data so they are not visible to causal observers outside the telemedicine room.

Images: http://www.daytondailynews.com/business/local-patients-can-get-diagnosis-without-visiting-doctor/17CbXFT7kuOUnnuE87Wj2M/
Acoustic considerations

• Speech intelligibility.
  • Telemedicine rooms shall maintain the minimum sound absorption coefficient for the room’s clinical requirement (in Table) or 0.10 (absolute), whichever is greater.

• Sound isolation
  • Telemedicine rooms shall achieve the minimum STC rating for the room’s clinical requirement (in Table)

• Background noise.
  • Telemedicine rooms shall maintain background noise levels for the room’s clinical requirement (in Table)
Lighting

• The room or area shall provide the ability for direct frontal lighting.
• Means for controlling glare from natural and artificial light sources shall be provided.
Lighting

Harsh directional lighting creates shadows and makes it difficult to see facial features.

Diffused lighting creates even lighting.

Image: CTEC Telemedicine Room Design
Duke Using Telemedicine to reduce ER Times:
http://www.wral.com/lifestyles/healthteam/image/16586597/?ref_id=16586083

The keystone to health care planning, design, and construction
Lighting

Figure D: Impact of Supplemental Lighting

Images taken using only ceiling-mounted fluorescent light fixtures can lack dimension and contrast.

Supplemental lighting enables the subject in the image to stand out against the background.

Image: CTEC Telemedicine Room Design
Consistency and Standardization of Color in Medical Imaging: a Consensus Report

Aldo Badano · Craig Revie · Andrew Casertano · Wei-Chung Cheng · Phil Green · Tom Kimpe · Elizabeth Krupinski · Christye Sisson · Stein Skrøvseth · Darren Treanor · Paul Boynton · David Clinie · Michael J. Flynn · Tatsuo Heki · Stephen Hewitt · Hiroyuki Homma · Andy Masia · Takashi Matsui · Balázs Nagy · Masahiro Nishibori · John Penczek · Thomas Schopf · Yukako Yagi · Hideto Yokoi

Fig. 6 Example image data to be used to diagnose possible skin disease for the same patient and different hardware (image courtesy of Dr. Herbert Kirchesch)

Badano, et al., 2015
Interior surfaces

• Room finishes and colors shall be selected to maintain natural rendition of color and pattern.
• Backdrop wall color: light reflectance value of 30-40%

Image: CTEC Telemedicine Room Design
Background Color
Background

The keystone to health care planning, design, and construction
Site identification

- Facility identification shall be provided at the site so it appears in the transmitted image unless it is embedded in the telemedicine platform.

Images: Major, J, 2005; Telemedicine Facility Design (SW TRC)

The keystone to health care planning, design, and construction
Support areas

Where portable equipment and peripheral devices are used (e.g., digital camera and task lighting, portable EKG devices, smartphones, roaming robots), secure storage shall be provided.
Video Etiquette: Remote Specialists and Patients

- During a teleconsultation, both the provider and the patient locations are considered a patient examination room regardless of the location’s intended use.
- The room should be a sufficient size to accommodate not only the patient and/or family member but also the necessary equipment.
- The room should be safe, adequately lit, have minimal external noise, and provide comfortable seating.
- The room should be designed with audio and visual privacy and be able to accommodate posture and movement visualization.
- Pagers, cell phones, (unless being used as the device for the teleconsultation) and other electronic devices that could cause a disturbance should be turned off if remaining in the room or removed from the room during the length of the consultation.
- For the provider:
  - The room should be in a quiet location, minimizing exposure to home or office noise, busy corridors, stairwells, parking lots, waiting rooms, restrooms, or other sources of the house.
  - Rooms without windows are better for quality image transmission with less camera glare.
  - Rooms with windows should have shared or blinds to reduce the light and glare.
  - The environment needs to be designed to enhance the quality of the video and audio interactions and to accommodate the equipment that might need not normally be in an examination room.
- Providers should never, ever, ever think that they can ever perform a consultation in public places like Starbucks, McDonalds, or even Panera B。
- For more assistance in room design, the CBI Design Program Guide.

Lessons Learned and Best Practices from Rural Telemedicine

Robert Zimmerman: Founder & CEO Health Technology Access Foundation

John J. Kornak: Director, Telehealth University of MD Medical Center
Innovations?

Mercy Virtual Care Center, St. Louis area

The keystone to health care planning
Innovations?

Despite deals with Cleveland Clinic and Rite Aid, telemedicine kiosk company HealthSpot closes shop

By Aditi Pai | January 06, 2016

Dublin, Ohio-based HealthSpot, which offers telemedicine kiosks for workplace and retail locations, has shut down, according to a report over at MedCity News.

MedCity confirmed the news with two of HealthSpot’s customers, Rite Aid and Cleveland Clinic.

"On Monday, Dec. 28, Rite Aid was notified by HealthSpot of its intention to cease operations effective Thursday, Dec. 31," Rite Aid told MedCity and other publications in a statement. "As a result, the 25
A great video
https://www.youtube.com/watch?v=s6M1yc3FTAM