Senior Housing

Component 11/Unit 9e
An example of EHR

Tiger Place Senior Housing

- Reasons for EHR
  - When there are episodes of illness there is functional decline of residents
  - Looking at how to find earlier recognition of illness
  - Offering timely intervention designed to improve functional decline

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Emphasis on Increased Quality

- Intent was to enhance nurse care coordination
- Integrate clinical data and using data from new technology
- Advance technology and clinical research

Technology That Replaces "EYES ON"

- Technology could assist with physiologic sensor activities
  - Motion sensors
  - Stove sensor
  - Bed sensor
  - All developed by University of Virginia
  - 26 apartments in the Tiger Place had motion sensors, bed sensors, and stove sensors installed.

Bed Sensor

- How it works
  - Padded pneumatic strip lies on top of mattress (and is covered then by linens). It can detect:
  - presence in bed
  - measure restlessness
  - Measure qualitative breathing
  - Measure pulse

Motion Sensor

- How it works
  - Installed in every room of apartment
  - Can detect presence in room
  - Can infer activities
    - E.g. with stove sensor, and motion sensors in areas of kitchen it can infer cooking

Video

- Video sensors that extract anonymous silhouettes
- Extracts other graphical representations
- Intent is to capture falls and gait information

Behavior Reasoning

- Uses sensor and video data

- Analyzes routine patterns

- Generates alerts of possible problems

Activities Database

- Storage of sensor data
- Development of customized alert systems

There is a strong link built in the architecture between the activity data base since it contains the sensor data and the EHR database

This allows sensor data to be logged in the electronic health record and alerts generated

EHR Database/Secure Interfaces

- Includes standardized assessments of residents
- Customizable access for
  – Researchers
  – Clinicians
  – Family members
  – Residents
  HIPAA rules do apply

What does this all mean for infrastructure?

- EHRs can incorporate more than text based data and sensor data provides more information for clinical decision making
- Infrastructure can provide for greater detail in assessment data
- Finding ways to efficiently and effectively display data that is useful for clinical decisions will be important steps for the future

Resource

Rantz, M, Skubis, M, Popsecu, M, Aud, M, Wakefield, B, Koopman, J, Miller, S

"Developing a Comprehensive Electronic Health Record to Enhance Nursing Care Coordination, Use of Technology, and Research" Resource: Journal of Gerontological Nursing, vol 36, No. 1, 2010