Workflow Simulation in Second Life for an Ambulatory Care Clinic: Developing Essential Workflow Modeling Skills

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Workflow modeling is an essential skill for health informatics students entering the workforce to select, implement, and evaluate electronic health records (EHRs).

Workflow modeling
- guides the development of health information systems to more closely fit clinicians workflow
- increases likelihood of successful implementation

Workflow describes
- who
- does what
- when
Introduction

• Challenges to identify the ideal clinical location related to
  – privacy and security of personal health information
  – clinical activity
  – geographic location of online students
  – fast-paced clinical environments
  – variability in clinical environments

• These issues can be overcome using simulations in Second Life.

• Simulation creates a consistent learning experience.
Second Life

- 3D virtual reality of user created content
- Can be used to simulate a clinical environment
- Removes time pressure and variation among healthcare organizations
- Removes cognitive load required to interpret a text description of a clinical environment
- Interactive
Methods

• Performed a task analysis for the admission of a new patient to an ambulatory care clinic not using an electronic health record
  – the current state workflow

• Wrote a script for the various roles
  – patient
  – receptionist
  – medical assistant
  – physician

• Students were invited to observe a real time SL observation

• A reenactment was recorded using Panopto© without students

• Video published on YouTube
Course Project: Step 1

- Directions to students
  - You are invited to observe the workflow for a
    - new patient
    - receptionist
    - medical assistant
    - physician
  - You may ask questions during the observation
  - The workflow simulation will be recorded with and without students
  - The recording will be available on YouTube
Course Project: Step 2

• Directions to students
  – The workflow semester project will be completed as team by using software applications to
    • model workflow by completing and submitting a series of worksheets
  – When completing an activity
    • refer to the workflow simulation video recording
    • the text description of the workflow
    • by visiting the SBMI Ambulatory Care Clinic
    • interacting with the course faculty
  – Review all the forms before beginning the activities
SBMI Ambulatory Care Clinic

http://maps.secondlife.com/secondlife/UTHSC%20Houston%20I/77/135/25
Clinic Areas of Workflow Study
Deliverables: Current State

• Vision and Goals

• Current State:
  – physical analysis of space
  – analysis of the provider visit
  – process flowsheet
  – workflow for a provider visit
  – track chart movement in the SBMI Ambulatory Care Clinic
  – documentation responsibilities and common practices by role
Deliverables: Future State

• Future State
  – process plan
  – workflow for a provider visit
  – physical analysis of space
  – track the EHR movement in the SBMI Ambulatory Care Clinic
  – documentation responsibilities & common practices by role

• Summary of workflow project
Conclusions

• Students received iterative constructive feedback from faculty.

• Improved quality of students depiction and understanding of workflow.

• Students reported the simulation as a positive learning experience.

• The video is publicly available for others to use.
  – TX State University
  – Approximately 600 views
Future Work in Second Life

- Continue to develop authentic simulations
- Refine recording skills using Panopto©
- Continue data collection for an evaluation research study to measure the outcomes of the virtual simulation experience
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References


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Questions