

THE IMPACT OF VIRTUAL PATIENTS ON MEDICAL CURRICULUM

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Objectives

- Define virtual patients
- Discuss the use of virtual patients in medical curriculum
- Outline the impact of virtual patients in medical curriculum
- Review the use of virtual patients in Memorial's medical curriculum
- Discuss the process of creating a virtual patient



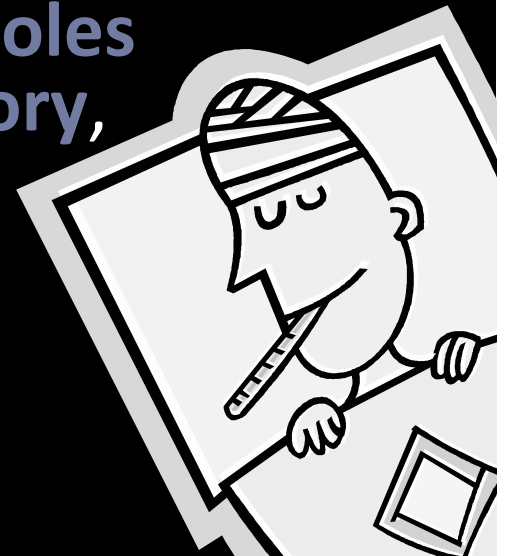
What are Virtual Patients?

“an **interactive** computer **simulation** of real-life clinical scenarios for the purpose of healthcare and medical **training, education** or **assessment**.”

(Ellaway, et al., 2008).

“computer program that **simulates** real-life clinical scenarios; learners emulate the **roles** of health care providers to obtain a **history**, conduct a **physical exam**, and make **diagnostic** and **therapeutic** decisions”

(Cook & Triola, 2009).



What are Virtual Patients?

A Virtual Patient has mechanisms for the learner to **interact** with the case, materials, and information made available to the learner as they complete a range of **learning activities**.

Virtual Patients are now **recognized** by the medical education community as very **effective** tool for developing **clinical reasoning**.



Use of Virtual Patients?

Virtual patients are being utilized as a **novel** way to **augment** traditional methods of teaching and assessing basic medical sciences, clinical skills, diagnosis, and disease management.

Medical educators have begun to replace or supplement the use of **paper cases**, **standardized patients**, as well as **real patient** encounters with these computer-based cases.



Why use Virtual Patients?

- Case-Based
- Problem Solving
- Learner-Centred
- Active/Dynamic Learning
- Critical Skill Focused
- Fill in Experience Gaps
- Exploratory
- Role Playing
- Safe Environment
- Practice
- Skill Refreshment
- Reflection
- Feedback



Components of a Virtual Patient

- Patient History
- Investigations
- Diagnostic Imagery
- Test Results
- Differential Diagnosis
- Final Diagnosis
- Treatment
- Follow-up



Components of a Virtual Patient

- Text / Images / Animations / Video
- Multiple Choice
- Reflections
- Process Flows
- Item Select
- Branching Path
- Journals



Continuous

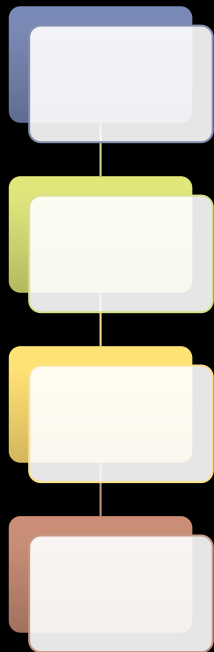


Content

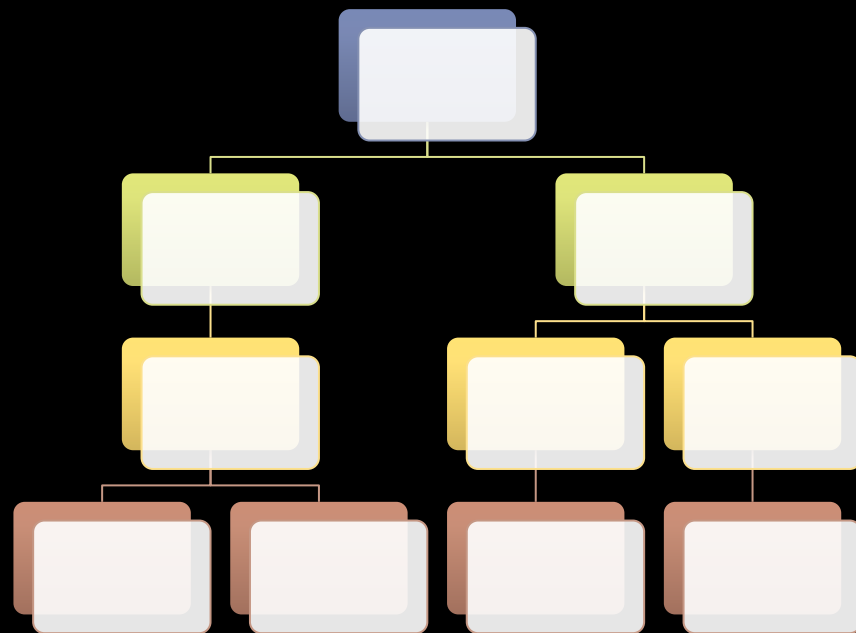
Review

Assessment

Linear



Branch



Patient Safety
Faculty
Students
Feedback
Communications Application
Authentic Presentation
Retention and Transfer
Clinical Reasoning
Special Populations
Other Simulated Patients
Assessment

Impacts

Authentic Cases

- Realism
- Suspend disbelief
- 3D virtual environments

Patient Safety

- Safer and lower risk
- Increased confidence
- Decreased risk of error

Impacts

Other Simulation Patient Programs

- Potential replacement / supplement
- Cost efficient
- Better focused use of resources

Retention, Transfer, and Application

- Reinforces the transition to application
- Develop clinical associations
- Knowledge and skills into practice

Impacts

Special Patient Populations

- Experiences with special populations
- Diversity (gender, age, ethnicity)
- Challenging scenarios

Clinical Reasoning

- Improve decision-making skills
- Repetitive practice with multiple scenarios
- Transfer of skills into practise

Impacts

Feedback

- Immediate feedback
- Individualized
- Access to current literature

Assessment

- Competency-based assessment
- Adaptive testing
- Included with examinations

Virtual Patients in

MEMORIAL'S MEDICAL CURRICULUM



Curriculum Renewal

- Student Engagement
- Case-based Contextualized Learning
- Integrated Learning Activities
- MUN's Teaching and Learning Framework



Creation Process

Design

- Determine learning objectives (where it fits in the curriculum)
- Acquire case/patient details
- Storyboard (flowchart and/or document)

Develop

- Acquire media elements (photos/video)
- Build virtual patient in an Authoring tool

Test

- Design and Development team testing
- Pilot group testing

Creation Process

Implement

- Embed in the curriculum
- Student complete the activity

Evaluate

- Analyze student usage
- Survey students

Revise

- Make any revisions based on evaluation

Creation Process

- Repurpose **current** materials
 - Lecture presentations
 - Tutorials
 - Case presentations
 - Clinical Skills cases
 - Standardize Patient cases



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