TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™
School *of* Nursing

TEACHING ADVANCED HEALTH ASSESSMENT TO NURSE PRACTITIONER STUDENTS USING SIMULATION

J. Susan Andersen, PhD, RN, FNP-BC &
LaMicha Hogan, RN, MSN, FNP-BC

susan.andersen@ttuhsc.edu

School of Nursing, Texas Tech University Health Sciences Center, Lubbock, TX

OBJECTIVES

1. Compare learning via simulation with traditional clinical learning.
2. Describe an online computer based learning method.
3. Describe outcomes of a health assessment course using simulation to prepare nurse practitioner students for clinical courses.

DISCLOSURES

No conflicts of interest to disclose by either author

BACKGROUND: THE PROBLEM

- Competition for limited clinical sites
- Barriers to precepting--workload and productivity requirements
- Historical lack of payment to preceptors and/or sites
- Recent trends in paying preceptors/sites
- Trends towards partnerships between clinical agencies/schools

SIMULATION VS. TRADITIONAL LEARNING

Simulation: …replicating clinical practice using scenarios, high-fidelity manikins, medium-fidelity manikins, standardized patients, role playing, skills stations, and computer-based critical thinking simulations. *National Council of State Boards of Nursing*

Traditional clinical learning vs. simulation

- Traditional apprenticeship model may not develop critical thinking
  - *Clinical focus on task based care where measure of learning is getting the work done*
- No literature to support hands-on clinical learning as the best way for nursing students to learn

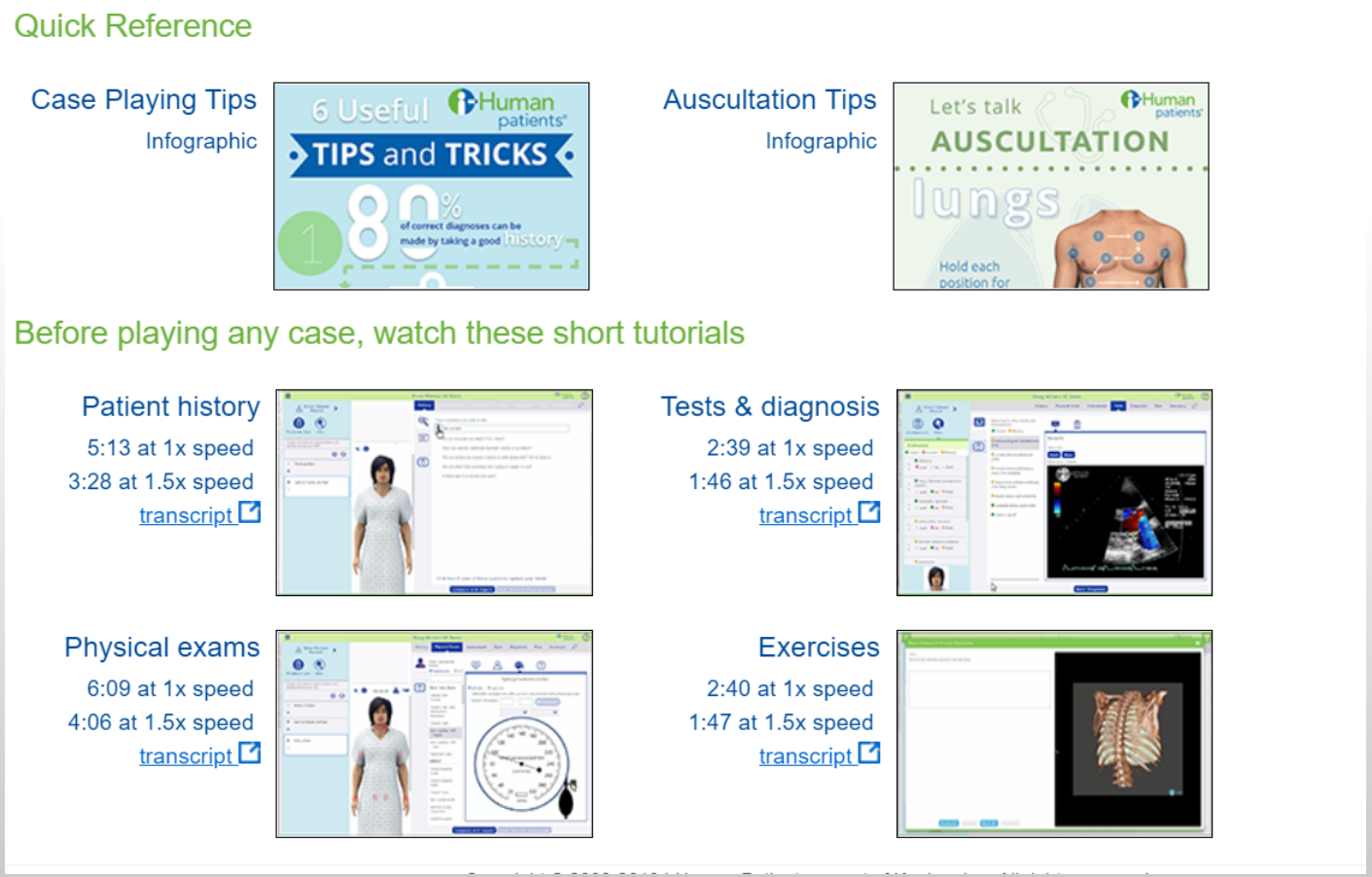
FOUNDATIONS OF SIMULATION

- Simulation is theory based
  - *Learning theory—Experiential Learning, Kolb, 1984; Bloom, 1971; Adult Learning, Knowles, 1988 Integrates theory with practice while making real-time clinical decisions in an environment that poses no risk to patients.*
- Students apply didactic and receive feedback from "expert" and faculty
  - *Reflection during debriefing is crucial for learning*
- Improve diagnostic reasoning
  - *70,000 diseases in ICD-10-CM, but < 200 presenting symptoms (Wu, 2017)*

ONLINE SIMULATION

I-Human.com--subscription website; hundreds of cases, multiple populations, all levels of student learning.

Students reported interactive cases were more engaging than paper cases, helpful in developing clinical reasoning. Pretest and posttest scores indicated knowledge gain ($P < 0.01$) (Gupta, et. al, 2018).



HEALTH ASSESSMENT

- Goals of course: Good H&P, Good SOAP note, start DDx process
- Piloted i-Human in existing course requiring 52 hours of clinical with preceptors
- Goals of pilot:
  - *Learn how students used the program.*
  - *Evaluate whether learning occured equivalent to clinic based learning?*
  - *Gather student feedback.*
  - *Identify how best to use it as a learning tool.*
- 100 students and 10 faculty every semester .
- Analyzed individual student work on each case, as well as the results from the class as a whole.

HEALTH ASSESSMENT

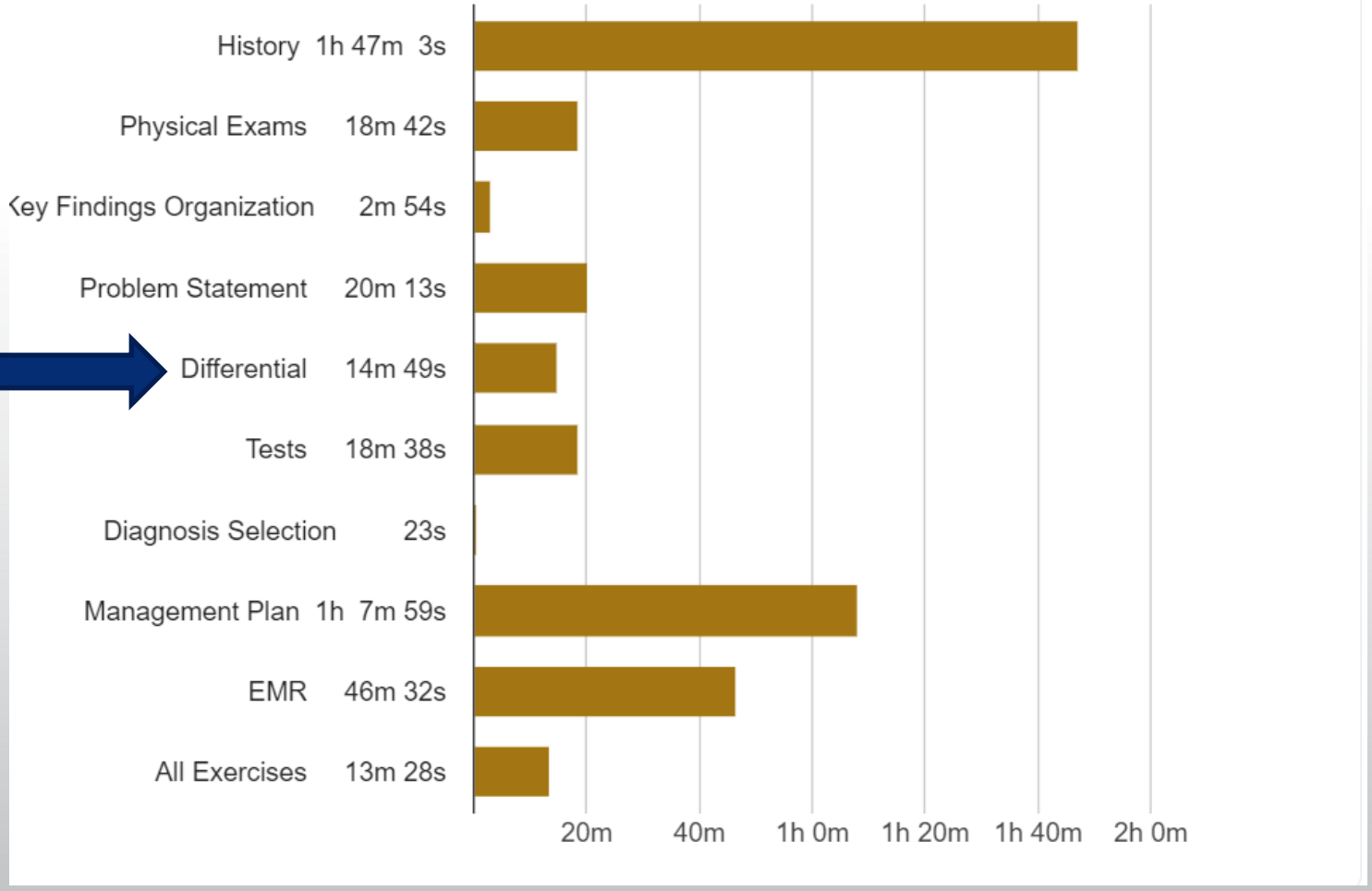
Overview	History & Physical Exam	Key Findings / Prob Statement	Differential Summary	Tests Summary	Management Plan	EMR

History	Done	73%	103 questions asked, 31 correct, 12 missed relative to the expert's list
Physical exams	Done	92%	42 exams performed, 12 correct, 1 missed relative to the expert's list
Key findings organization	Done		10 findings listed; 11 listed by expert
Problem statement	Done		65 words long; expert's was 85 words
Body system classification	Done	100%	4 of 4 correctly picked plus 0 extras
Differentials	Done	38%	4 items in the DDx, 3 correct, 5 missed relative to the expert's list
Differentials ranking	Done	100% (lead/alt score) 63% (must not miss score)	
Tests	Done	100%	12 tests ordered, 9 correct, 0 missed relative to the expert's list
Diagnosis	Done	100%	"depressive disorder" selected; "depressive disorder" selected by expert
Management plan	Done		280 words long; expert's was 196 words

HEALTH ASSESSMENT

Individual feedback: Breakdown of time spent on each section of case.

Note limited time spent on diagnosis selection compared with differentials.



FEEDBACK FROM FACULTY

- Learning curve
- Faculty took on clinical learning and perceived a higher work load
- Overall, student goals have been achieved
- They do not want to go back to using preceptors

FEEDBACK FROM STUDENTS

- Learning curve
- Students prepared for entry to population based courses
- Relieved they do not need to find preceptors

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