Development of a Novel Pain Management Simulator to Enhance Skills of Medical and other Health Professional Students

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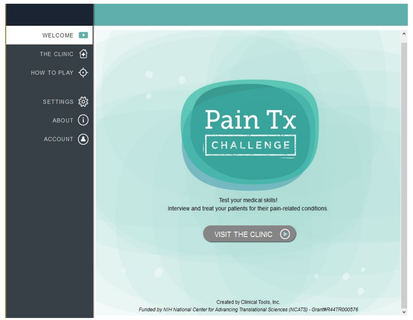
Relevance: Existing pain management training is not adequately preparing health professionals to address the needs of patients with pain.

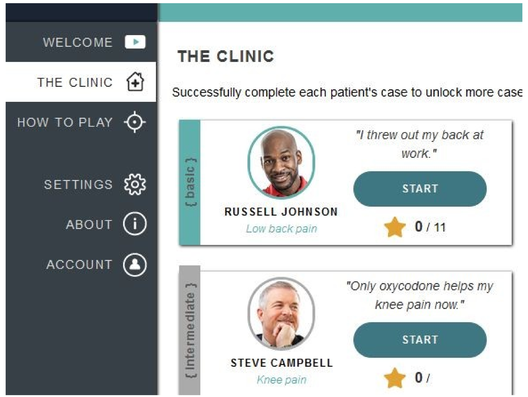


Purpose: With support from NIH/NCATS [Grant #R44TR000576-03] we are creating web and tablet-based environments to challenge health professional students to enhance their skills in diagnosing and treating patients with pain, while decreasing the chance of opioid misuse and diversion.

In each EHR-coordinated simulated pain management case, health professional students collect data, examine the patient, choose the appropriate course of action, outline a treatment plan, and receive feedback.

The online curriculum can also be used to assess students' clinical competence and skills, and guide additional training.

Methods: Students completed one pain management case and fill out a knowledge quiz before and after the experience (N=38).



Results: In a pilot test of one pain management case (n=38), knowledge quiz scores improved significantly pre- to post-training from a mean of 67.8 (SD=17) to a mean of 98.9 (SD=4.7) ($p<0.001$).

Acknowledgments/Disclosure

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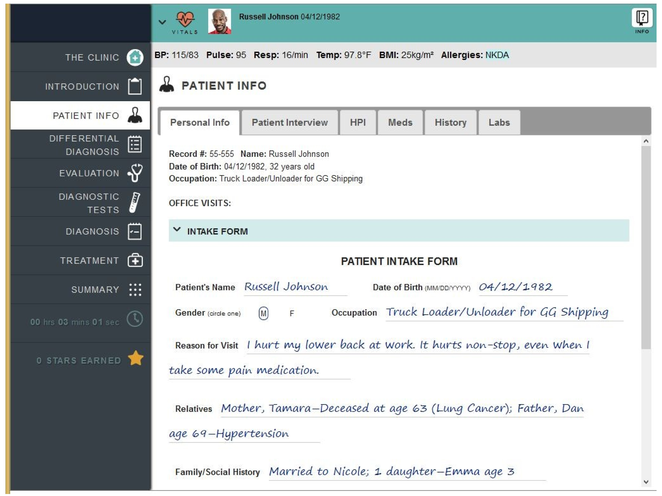

Discussion: The experience was well-received and input is guiding the further enhancement of a complete online training experience, including 6 additional cases. Expanded clinical functionality will include:

1) simulated consultation with and referral to pain treatment experts
2) follow-up visits,
3) urine drug testing and other laboratory tests, and
4) scenarios involving diversion, addiction to opioids, and pseudo addiction.

Suggested Citation and Communication

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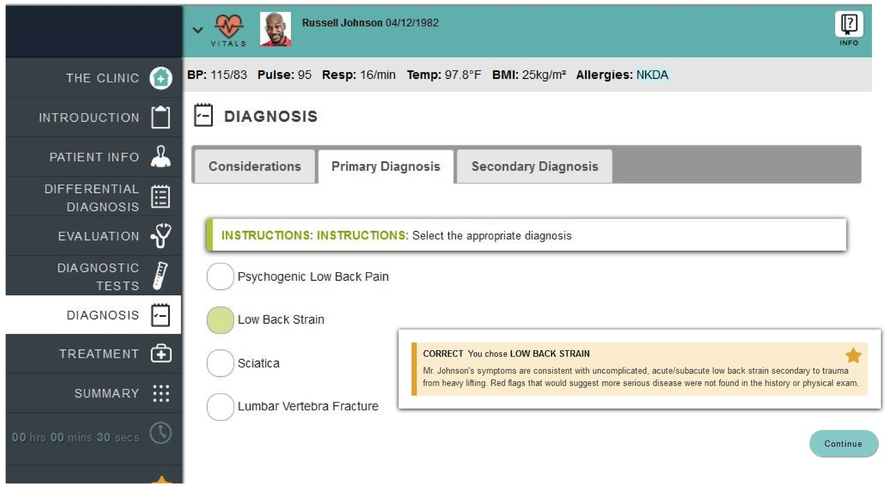

Future Directions: We are currently recruiting sites to complete a longitudinal study to assess the effectiveness of the training program on target professional and clinical skills. The study measures impact on competence and performance via a randomized, cross-over design with at least 60 participants per site and a wait-list control.

References

1) Mezei L, Murinson B, et al. Pain education in North American medical schools. Journal of Pain: Elsevier. 2011 12(12):1199-208 http://www.ncbi.nlm.nih.gov/pubmed/21945594. Accessed on: 8/27/2011.

2) Institute of Medicine. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. The National Academies Press. 2011. http://www.iom.edu/Reports/2011/Relieving-Pain-in-America-A-Blueprint-for-Transforming-Prevention-Care-Education-Research.aspx. Accessed on: 7/25/2011.

3) Murinson BB, Nenortas E, Mayer RS, et al. A new program in pain medicine for medical students: integrating core curriculum knowledge with emotional and reflective development. Pain Medicine: 2011 12(2):186-95. http://onlinelibrary.wiley.com/doi/10.1111/j.1526-4637.2010.01050.x/full. Accessed on: 8/27/2011.

4) ACGME. ACGME Program Requirements for Graduate Medical Education in Pain Medicine. Accreditation Council for Graduate Medical Education. 2007. http://www.acgme.org/acWebsite/downloads/RRC_progReq/sh_multiPainPR707.pdf. Accessed on: 2/26/2011.

5) Gallagher RM. Physician variability in pain management: are the JCAHO standards enough?. Pain Medicine: . 2003.4(1):1-3 http://onlinelibrary.wiley.com/doi/10.1046/j.1526-4637.2003.00012.x/abstract. Accessed on: 7/25/2011.