

## WebOSCE: an online tool to remotely encounter standardized patients for the practice, assessment, and remediation of clinical skills



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## WebOSCE

WebOSCE was developed by Dennis Novack, MD, and Christof Daetwyler, MD, at the **Drexel University College of Medicine** with generous funding provided by Barbara E. Chick '59, MD. WebOSCE is copyrighted 2007-2010 by Drexel University College of Medicine, Patent Pending.

### What is WebOSCE?

**WebOSCE is an on-line technology for the learning of complex skill-sets** - as they're used when giving bad news, doing smoking cessation counseling, etc.

Skill acquisition is best done in an apprenticeship setting where the learning of facts is combined with practice under the supervision of an experienced mentor. "See one, do one, teach one" - or better: "See many, do some, teach some" - have explored the WebOSCE technology, to allow on-line practice, assessment, mentorin, and assignment of learning tasks in addition to the mere learning of the knowledge:

# Check out <http://webosce.net>



Please click the parts of the picture on the left to get more information..

## How to learn complex skills?

- **Knowledge** component: Study facts, learn what's known
- **Attitude** component: Observe role models, reflect on “how do they make it work”
- **Skills** component: See many, do many, receive feed-back, do again - until a certain level of competency is reached.

The collage features several educational interfaces:

- Top Center:** A 'WebInterview' window from Drexel University College of Medicine showing two video feeds of students in a virtual interview setting.
- Top Right:** Another 'WebInterview' window showing a student's performance metrics and a checklist of skills.
- Left:** A 'doc.com' interface showing a video of a doctor and a list of medical topics for study.
- Bottom Center:** A 'Skills West Done' checklist with items like 'Asked what I know or don't know about the patient's history' and 'Used T statement to convey information'.
- Bottom Right:** A 'WebInterview' window showing a student's performance metrics and a checklist of skills.

Large, bold, yellow text is overlaid on the images, reading 'PRACTICE', 'LEARN', 'ASSESS', and 'ASSIGN'.

# What needs to be learned to understand communication in healthcare?

(IOM Report, and Academic Medicine, Vol. 79, No. 6 / June 2004 pp 495 – 507)

## CORE CONCEPTS

- Overview
- Integrating self-reflection and self-awareness
- Therapeutic Aspects of Medical Encounters
- Balance, Self Care

## ESSENTIAL ELEMENTS

- Structure and content of the interview
- Builds a relationship
- Opens the discussion
- Gathers information
- Understands the patient's perspective
- Shares information
- Reaches agreement
- Provides closure

## ADVANCED ELEMENTS

- Responding to strong emotions
- Non-verbal and Paraverbal Aspects of Communication
- Cultural Issues in the Interview
- Promoting Behavior Change and Adherence
- Informed Decision-Making
- Exploring sexual issues
- Exploring Spirituality & Religious Beliefs

## COMMUNICATING IN SPECIFIC SITUATIONS

- Family Interview
- The Pediatric Interview
- The Adolescent Interview
- The Geriatric Interview
- Smoking Cessation
- Diet/ Exercise
- Anxiety/Panic Disorder
- Depression
- Domestic Violence
- Alcoholism Diagnosis and Counseling
- Drug Abuse Diagnosis and Counseling
- Medically Unexplained Symptoms and Somatization
- Advanced Directives
- Giving Bad News
- Terminal care
- Discussing Medical Error
- Terminating the Doctor/Patient Relationship

## COMMUNICATING WITH COLLEAGUES

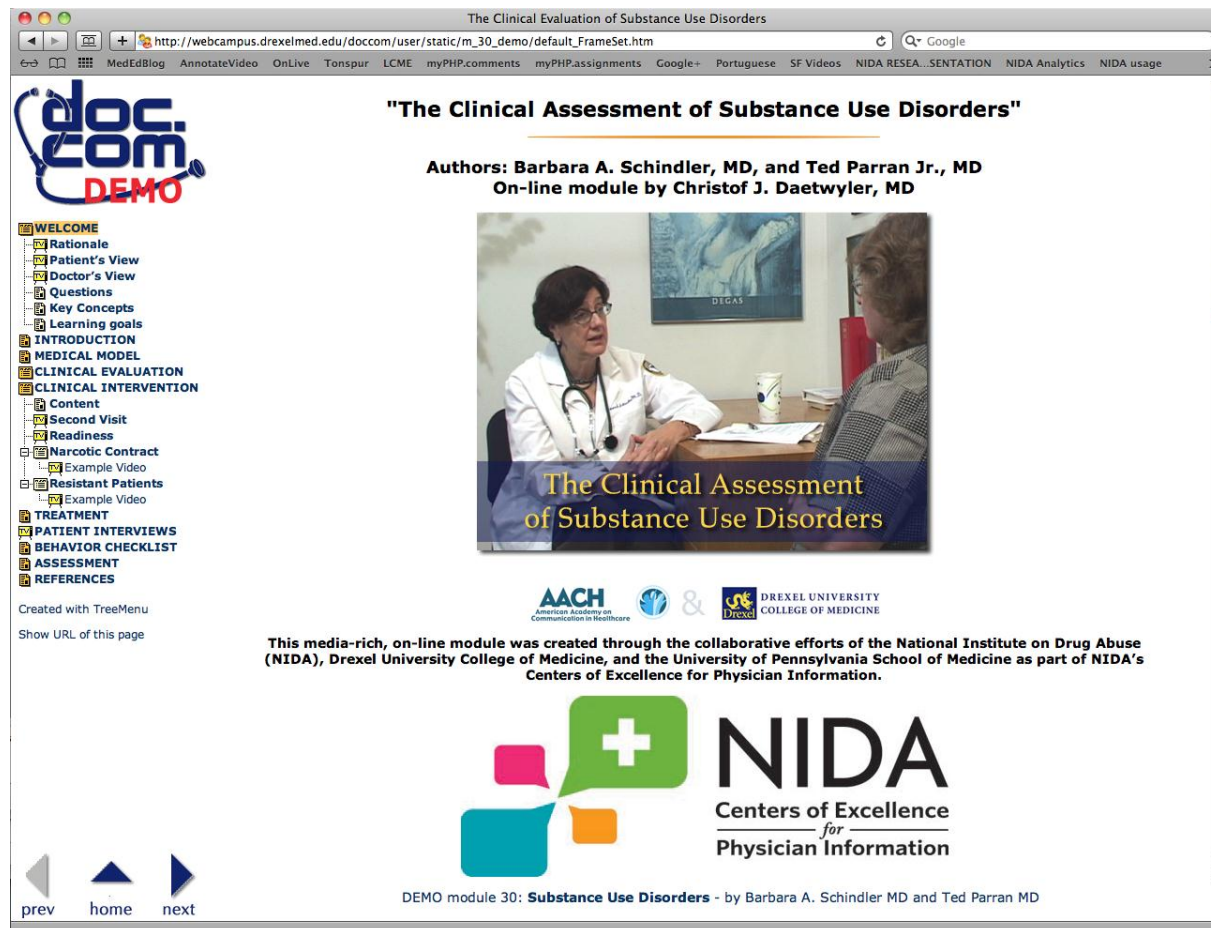
- The oral presentation
- Communication within Health Care Teams
- Talking with Impaired Colleagues
- Principles of Teaching Medical Students and Residents



## **We teach with „DocCom“: 42 online modules for the teaching and learning of healthcare communication skills**

- Comprehensive
- Well structured modules
- Texts by renowned experts
- Our special “annotated videos”
- On-Line learning groups
- Best for use in “blended learning settings”
- Success: 14,000 current active users, Japanese translation, others in the making

## Example: Free Module 30 on „Clinical Assessment of Substance Use Disorders“



The Clinical Evaluation of Substance Use Disorders

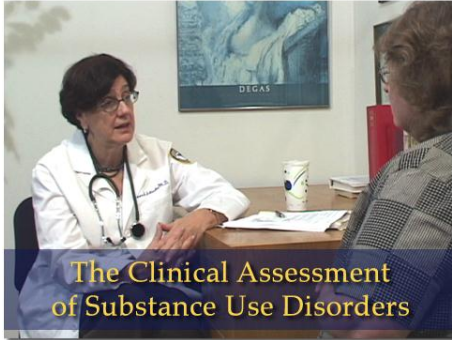
http://webcampus.drexelmed.edu/doccom/user/static/m\_30\_demo/default\_FrameSet.htm

Q\* Google

MedEdBlog AnnotateVideo OnLive Tonspur LCME myPHP.comments myPHP.assignments Google+ Portuguese SF Videos NIDA RESEA...SENTATION NIDA Analytics NIDA usage

### "The Clinical Assessment of Substance Use Disorders"


Authors: Barbara A. Schindler, MD, and Ted Parran Jr., MD  
On-line module by Christof J. Daetwyler, MD



The Clinical Assessment of Substance Use Disorders

AACH American Academy on Communication in Healthcare & DREXEL UNIVERSITY COLLEGE OF MEDICINE

This media-rich, on-line module was created through the collaborative efforts of the National Institute on Drug Abuse (NIDA), Drexel University College of Medicine, and the University of Pennsylvania School of Medicine as part of NIDA's Centers of Excellence for Physician Information.



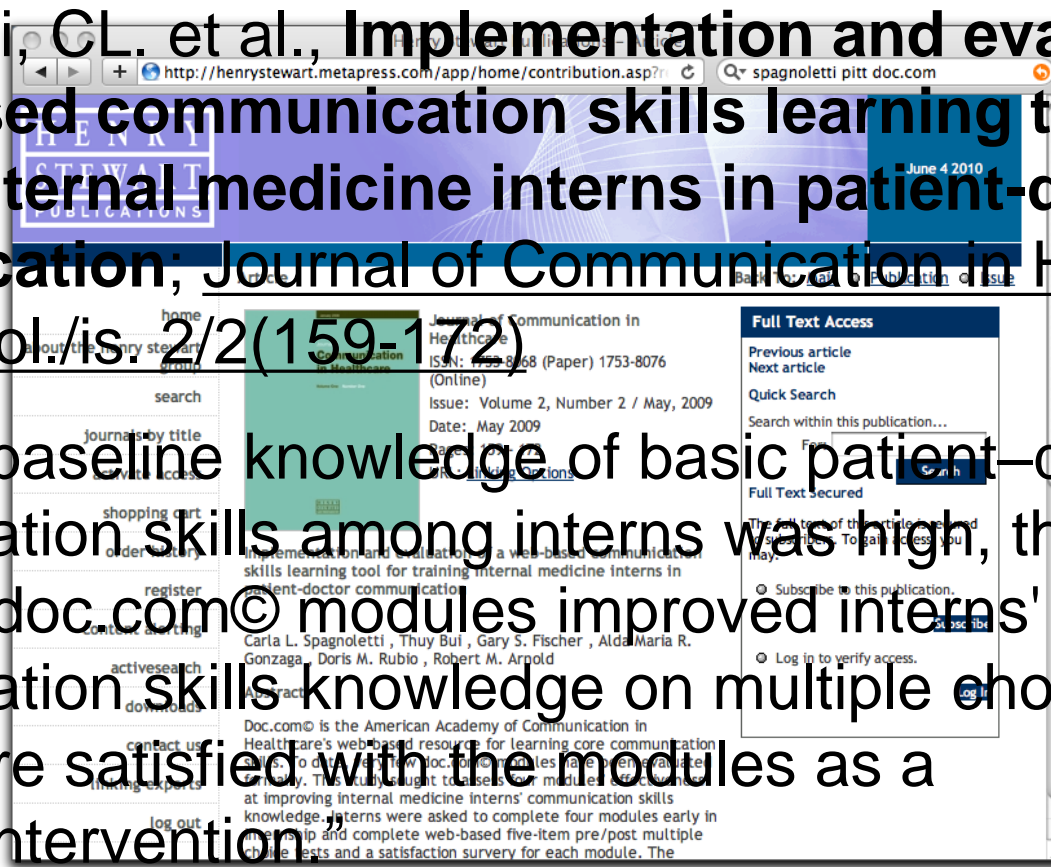
DEMO module 30: **Substance Use Disorders** - by Barbara A. Schindler MD and Ted Parran MD

prev home next

# First results on the efficacy of DocCom:

Spagnoletti, CL. et al., **Implementation and evaluation of a web-based communication skills learning tool for training internal medicine interns in patient-doctor communication**; Journal of Communication in Healthcare, 01 2009, vol./is. 2/2(159-172)

“Although baseline knowledge of basic patient–doctor communication skills among interns was high, the use of four basic doc.com© modules improved interns' communication skills knowledge on multiple choice tests. Interns were satisfied with the modules as a curricular intervention.”





## Part 2: Practice



**PRACTICE**

**LEARN**

**ASSESS**

**ASSIGN**

## **WebOSCE is a novel online technology that:**

- Remotely connects learners with Standardized Patients (SPs) at the date and time of their liking.
- Provides the learner with a task that can be performed realistically on the remote SP (e.g.: do a Smoking Cessation Counseling Session with Ms. F.)
- After which the learner is provided by the SP with objective structured, high quality, personalized feed-back, that already entails video recordings of the encounter
- In addition, the learner receives an email with 1) a link to the recording of the complete WebOSCE encounter and 2) a link to a personalized page with learning assignments to remediate deficits that were identified/




Learner




Standardized Patient

## Screen View WebInterview



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**My Camera**



**Patient Information**


You are about to see Mrs. Townsend, whom you've been seeing for about six years for mild hypertension, adequately treated by HCTZ 25mg QD, and elevated cholesterol, controlled by 20 mg Lovastatin QD. You've been bringing up smoking cessation periodically (she is a 35 pack/year smoker), and because of her 15 yo daughter's onset of asthma 4 months ago, she told you she's thinking about giving up smoking. For the last few years she's been down to 10 cigarettes/day (since her work place went smoke free). When you saw her one month ago she agreed to come in today for smoking cessation counseling.

This is what you know about her: She is 55 years old, mostly compliant with her meds. She is happily married with one child, a 15 year old daughter. She and her husband are both architects in separate firms. She has a relatively high stress job, but she seems to like it that way. Finances are ok. Both she and her husband have a glass of wine with dinner, but no more, and they do not use illicit drugs. Her dad died in his mid-60's from an MI (he was a smoker), and mom is 78 with mild diabetes.


**Task:** You have 10 minutes to counsel the patient about smoking cessation.

**Chat**

**Patient**




## Screen View WebInterview



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**Camera**



**Patient Information**

You are about to see Mrs. Townsend, whom you've been seeing for about six years for mild hypertension, adequately treated by HCTZ 25mg QD, and elevated cholesterol, controlled by 20 mg Lovastatin QD. You've been bringing up smoking cessation periodically (she is a 35 pack/year smoker), and because of her 15 yo daughter's onset of asthma 4 months ago, she told you she's thinking about giving up smoking. For the last few years she's been down to 10 cigarettes/day (since her work place went smoke free). When you saw her one month ago she agreed to come in today for smoking cessation counseling.

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**Task:** You have 10 minutes to counsel the patient about smoking cessation.

**Set Interview Timer:**  
15 Minutes

**Set Feedback Timer:**  
15 Minutes

**Chat**

**Standard**



Before Encounter starts: meet & greet, learn about patient and task



## Part 3: Assessment



**PRACTICE**

**LEARN**

**ASSESS**

**ASSESS**



During Encounter: Learner sees just SP, but SP sees learner and scoring matrix with color code for “good”, “iffy”, or “bad”





Learner



Standardized Patient



The feedback section: the SP talks through the scoring items list and provides feedback. The buttons on the right allow..



Learner



Standardized Patient



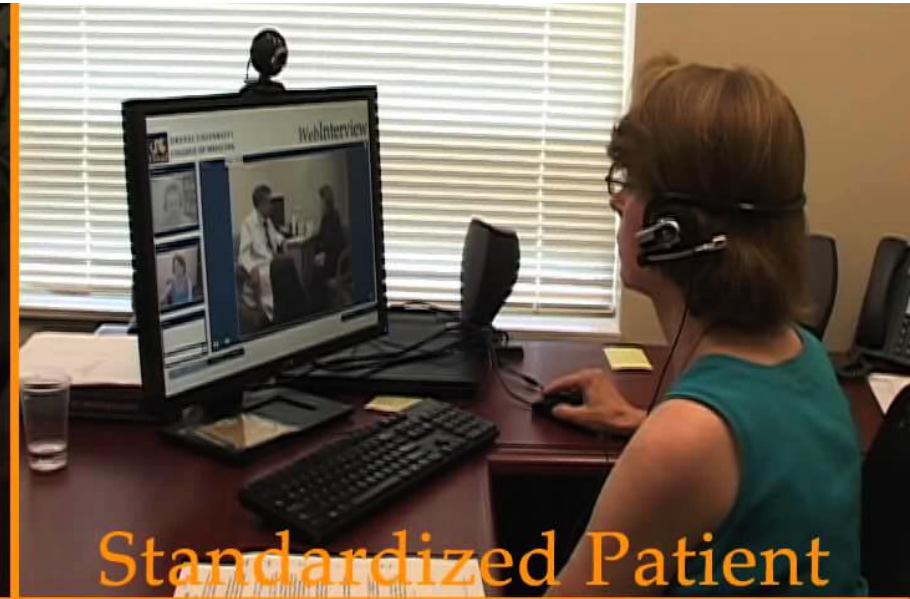
Screen View



Screen View

To play-back sequences from the previous encounter..





or example-videos in which effective skills are demonstrated.

## A pilot test of WebOSCE: a system for assessing trainees' clinical skills via teleconference

DENNIS H. NOVACK<sup>1</sup>, DIANE COHEN<sup>1</sup>, STEVEN J. PEITZMAN<sup>1</sup>,  
SCOTT BEADENKOPF<sup>1</sup>, ED GRACELY<sup>1</sup> & JOHN MORRIS<sup>2</sup>

<sup>1</sup>Drexel University College of Medicine, <sup>2</sup>Drexel University, Philadelphia, USA

**SUMMARY** WebOSCE is a computer-based system that allows a student at an affiliate site to participate in a 10-station standardized patient-based exam using a videoconference interface, while nine other students take the exam on-site. We pilot-tested this system during a required year-end objective structured clinical exam. We compared performance data between the 26 distance students taking the exam via WebOSCE with 221 on-site students. We also compared both student groups' responses on a post-exam questionnaire, and conducted a post-exam structured interview to elicit the Pittsburgh students' perspectives on the WebOSCE experience. Students taking the exam via WebOSCE scored significantly lower in most categories except for physical exam and

information-giving skills, in which the groups did not differ. There were no differences in student satisfaction or perceptions of the exam experiences. In general, Pittsburgh students rated WebOSCE highly and offered several helpful comments.

### Methods

#### Subjects

Students who were on rotation at our Pittsburgh affiliate, where our CSA was administered, were offered the option of taking the CSA via WebOSCE or coming into Philadelphia to take the exam. Twenty-six of 27 students signed up for the

History: WebOSCE started as video conferencing system for the remote assessment of skills.

## First results on the efficacy of WebOSCE combined with DocCom:



Daetwyler CJ, Cohen DG, Gracely E, Novack DH.

eLearning to enhance physician patient

communication: A pilot test of “doc.com” and

“WebEncounter” in teaching bad news delivery.

Medical Teacher 2010; 32: e381-e390

”We found significant improvement in skills as components were added, and the training program was well received”

**BACKGROUND:** Physician-patient communication skills help determine the nature and quality of diagnostic information elicited from patients, the quality of the physician's counseling, and the patient's adherence to treatment. In spite of their importance, surveys have demonstrated a wide variability and deficiencies in the teaching of these skills.

**AIM:** Describe two specific methodologies for teaching physician-patient communication skills developed at our institution and pilot test them for effectiveness.

**METHODS:** Between 2004 and 2009 we developed “doc.com,” a series of 41 media-rich online modules on all aspects of healthcare communication, jointly with the American Academy on Communication in Healthcare. Starting in 2006, we expanded our pre-existing experience with the videoconferencing system “WebOSCE” into the online application “WebEncounter.” The new methodology combined practice of communication skills on standardized patients with structured assessment and constructive feedback. We had three randomized groups: controls who did only the assessment parts of a WebOSCE on two occasions, a doc.com group who had doc.com in between the assessment occasions, and a combined group that had both doc.com and a WebEncounter between assessments.

**RESULTS/CONCLUSION:** We found significant improvement in skills as components were added, and the training program was well received.

PMID: 20795797 [PubMed - indexed for MEDLINE]



## Study Design

- **Phase 1:** Baseline assessment (6 weeks after the start of internship) with *WebINTERVIEW* (n = 62)
- **Phase 2:** Two interventions (3 weeks after the baseline assessment) one with “doc.com” module 33 (n = 22), the second one with an additional *WebINTERVIEW* with feed-back (n = 19)
- **Phase 3:** Final assessment (7 - 8 weeks after the baseline assessment) with *WebINTERVIEW* with feed-back (n = 57)

# Results

	Phase I (Baseline)	Phase III (final)	Mean change
Control group:	56% $\pm$ 20%	63% $\pm$ 14%	8 $\pm$ 27
DocCom only:	53% $\pm$ 17%	68% $\pm$ 9%	14 $\pm$ 17
DocCom + WebOSCE	46% $\pm$ 20%	71% $\pm$ 12%	27 $\pm$ 23

The results show a great effect size, but due to small sample group size, they lost power and are not significant.

A trend analysis produced significant results: the more, the better

## Part 4: “Remediation”



The collage features three main screenshots:

- Top Screenshot:** A 'WebInterview' window showing a video call between a student and a standardized patient. The word 'PRACTICE' is overlaid in large yellow letters.
- Bottom Left Screenshot:** A 'doc.com' interface showing a video player with a doctor's video. The word 'LEARN' is overlaid in large yellow letters. The interface includes a sidebar with navigation links like 'Language Barrier', 'About prognosis', and 'Behavior checklist'. Below the video, there is a list of 'KEYWORDS: You have learned' and 'ASSESSMENT QUESTIONS'.
- Bottom Right Screenshot:** A 'WebInterview' window showing a video call with a standardized patient. The word 'ASSESS' is overlaid in large yellow letters. The interface includes a 'Feedback' section with a list of items to be assessed, such as 'Asked about history or information about the disease and for', 'Gave a warning shot', and 'Asked how much information he was to get'.

## WebOSCE is a novel online technology that:

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## The learner receives a link to a complete recording



The clickable timeline shows the Encounter (grey) section as well as the feed-back section – and the itemized score (colors)



Plus a page with learning assignments to remediate deficits that were identified



The screenshot shows a web browser window displaying the 'WebInterview - Feedback Report' page. The page header includes the Drexel University College of Medicine logo and the title 'WebInterview'. Below the header, it states 'WebINTERVIEW Feedback Report: Recommendations For Review'. A paragraph explains that the report is a summary of Amanda Roof's WebINTERVIEW on 4/10/2009, featuring a standardized patient case on 'Smoking Cessation Counseling'. The report is organized into three colored sections: a green box for 'Skills Well Done', a yellow box for 'Skills That Can Be Improved', and a red box for 'Skills That Need Remediation'. Each section lists specific skills and includes a small thumbnail image of a video player labeled 'doc.com module #24'.

**Skills Well Done:**

- 1st smoke OR cravings OR withdrawal sx
- Asked about last attempts to quit smoking
- Used my past history as incentive to quit
- Propose options to quit
- Asked me what method I might try to use
- Suggests strategies to cope with cravings
- Gave praise and encouragement

**Skills That Can Be Improved:**

- Used conviction scale
- Used confidence scale
- Suggests how to initiate quitting
- Suggests strategies to cope with cravings

**Skills That Need Remediation:**

- Gauged knowledge of hazards
- Asked about concerns

Clicking on the learning assignments brings the learner exactly to the section in DocCom where this is being explained.

## The Learning Circle is looping!



The collage illustrates the WebOSCE platform's components:

- PRACTICE:** Two screenshots of the 'WebInterview' interface showing video feeds of participants in a simulated clinical setting.
- LEARN:** A screenshot of the 'doc.com' interface showing a video player with a medical case study titled 'Timothy Quill is the Physician in this movie who's breaking bad news'.
- ASSESS:** A screenshot of the 'WebInterview' interface showing a 'Feedback' section with a checklist of skills and a 'Back Report' section with a summary of performance.



# THANK YOU!

Please check  
out <http://webosce.net>  
for more information