

Symposium AMEE conference, Sept 9, 2015, Glasgow

## The potential of big data and learning analytics in the clinical workplace

Can it serve feedback, evaluation and entrustment decisions?

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Eric Holmboe MD, ACGME, Chicago Ill, USA

Eric Warm MD, University of Cincinnati, Ohio, USA

Anderson Spickard III, Vanderbilt University, Nashville TN USA

Marieke van der Schaaf PhD, Utrecht University, NL

Suzanne Schut /Jeroen Donkers PhD, Maastricht University, NL

## Outline of the symposium

1	Olle ten Cate	Introduction: Learning analytics for the clinical workplace	5'
2	Eric Warm	Collecting big data for GME entrustment decision-making in the clinical workplace	15'
3	Anderson Spickard III	VSTAR: Capturing medical student activities with technology for feedback and monitoring	15'
4	Marieke van der Schaaf and Suzanne Schut	WATCHME: Learning analytics and e-portfolio for feedback and entrustment across medical, veterinary and teacher education workplaces	15'
5	Eric Holmboe	Big Data and Competency Judgments: The Early US Experience with Milestones	15'
6		General Discussion	10'

## **Learning Analytics / Big Data in the clinical workplace**

The use of learner dependent data and analysis to reveal new intelligence for predicting and advising people's learning\*

Educational Data Mining - Academic Analytics

1. Learner-computer interactions data
2. Classroom - teacher provided data
3. Workplace - multi-source data

\*Remotely adapted from Siemens 2010, <http://www.elearnspace.org/blog/2010/08/25/what-are-learning-analytics/>

## **Purpose of learning analytics in the clinical workplace**

- **For the learner:** To enhanced feedback about performance
- **For clinical staff:** To ground of decisions about progress and entrustment
- **For curricula:** To enhanced program quality

## Sources of information in the clinical workplace

- Short practice observations, captured with smartphones or tablets
- Long practice observation: MSF
- Products - EHR data
- Skills and simulation data

## Devices to is not a problem



## Potential

- A lot of information in the workplace - communications, observations, thoughts - not tapped for optimizing learning and assessment
- Technology can help
- Ubiquitous recording of may been seen as breach of privacy
- But, medical professional work is public, solo-work is not a norm, transparency and accountability are, and, *LBNL*, a culture of accepting imperfection for the sake of learning breeds high quality

## Eric Warm, MD

- Richard W. & Sue P. Vilter Professor of Medicine
- Director, Internal Medicine Residency Training Program

University of Cincinnati, Ohio, USA

Collecting big data for GME  
entrustment decision-making in the  
clinical workplace

## Anderson Spickard III, MD MS

- Assistant Dean of Educational Informatics and Technology
- Associate Professor of Medicine
- Associate Professor of Biomedical Informatics

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**VSTAR: Capturing medical student  
activities with technology for  
feedback and monitoring**

## Marieke van der Schaaf, PhD Suzanne Schut, MSc

- MvdS: Associate Professor of Educational Sciences, Utrecht University, the Netherlands
- SS: Educational advisor, Maastricht University, the Netherlands

WATCHME: Learning analytics and e-portfolio for feedback and entrustment across medical, veterinary and teacher education workplaces



## Eric Holmboe, MD

- Board Certified Internist
- Senior Vice President for Milestones Development and Evaluation
- Accreditation Council for Graduate Medical Education, Chicago, Ill, USA

Big Data and Competency Judgments:  
The Early US Experience with  
Milestones



