3rd Edition DIAC
Dubai International Ambulance Conference

Dubai International Ambulance Conference
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Augmented or Virtual Reality in EMS…

Nadine Levick, MD MPH
Research Director, EMS Safety Foundation
CEO, Objective Safety, New York, USA
Chair, TRB, EMS Subcommittee, National Academies

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What is VR and AR?
The lay clinicians perspective

- Whats with those googles??? And
- What is Pokemon GO??

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Who here has…?

- Used Virtual reality systems in the past 12 months?
- Owns VR Goggles?
- Used AR technologies in the past 12 months?

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So.. Real World Simulation drills as we know it

What is Virtual Reality - VR

- Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with simulated 3D worlds and not the actual physical world that they are in.

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Without VR

- Expensive
- Difficult to implement
- Requires a large number of personnel to deploy
- Logistic challenges
- Variable non-uniform learning experience
- Difficult to evaluate
- Sporadic

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VR Benefits

- Immersive
- Uniform training and evaluation
- Efficient high frequency of deployment and utilization
- Easily scalable
- Modifiable to meet local and cultural needs

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Current VR Applications

- Public CPR skills
- EMS Clinical Care training and evaluation
- MCI training and evaluation
- EMS Violence response training
- Ambulance design interaction

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Virtual Reality First Aid/EMS

- Real First Aid, First Aid and MCI VR both physical simulation scenarios Jan 2018
  - https://www.realfirstaid.com.au/
- Haseeb Iqbal, Published on Jan 27, 2018
  - Virtual Reality CPR created for the Oculus Rift using Unreal Engine 4. Integrated with Leap Motion technology
  - https://www.youtube.com/watch?v=Vq7k-Kg7ulo
- IRC ircouncil, Published on Oct 10, 2017
  - Project by Italian Resuscitation Council
  - Scientific Supervision: Federico Semeraro, Andrea Scapigliati & Giuseppe Ristagno
  - VR development: Studio Evil s.r.l.
  - https://www.youtube.com/watch?v=reSpd1hrVXQ
- ResusCouncilUK, Published on Sep 8, 2017
  - A virtual reality game-in-a-film that teaches you to save a life. Step inside, save a life.
  - Play now - http://lifesavervr.org.uk/ https://www.trustedtraining4u.co.uk/vr-training
  - http://dualgoodhealth.com/info/
  - https://www.youtube.com/watch?v=QuUavS3WSAI
- Virtual Education Systems, Published on May 16, 2017
  - This video is showcasing the abilities of VRPatients.
  - https://www.youtube.com/watch?v=K_hFS7Cocfg
  - https://virtualeducationsystems.com/
- Marco Vettorello, Published on Sep 3, 2017
  - First test of teaching defibrillation (AED) with the HTC Vive in a homemade Unity scenario
  - https://www.youtube.com/watch?v=pMPtIzzd9xw

https://www.medicalrealities.com/?gclid=Cj0KCQiAq6_UBRCEARIsAHyrgUxQWtoHdavHtUd3MsRC
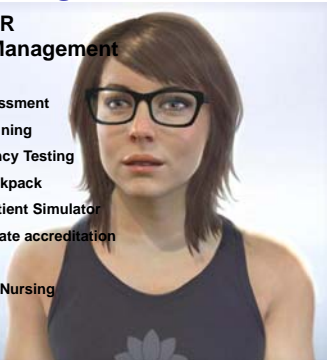
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VR – CPR training
http://dualgoodhealth.com/info/

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Virtual Education Systems - VES

VRpatients - Web / VR / AR
- **Game Based Patient Management**
  - **EMS, Nursing and Medicine**
    - **Pre - Employment Assessment**
    - **Post – Employment Training**
    - **Standardized Competency Testing**
    - **Simulation Lab In a Backpack**
    - **Re - Constitute Your Patient Simulator**
    - **Seeking national and state accreditation**
      - **CAPCE**
      - **National League of Nursing**

VES
VIRTUAL EDUCATION SYSTEMS

- **Highly Customizable**

Web / VR / AR
- **Add Questions and Answers**
- **Add 12 Lead ECG, X-Ray, Ultrasound, MRI, Blood Work**
- **Physiological Model**
- **Pediatric, Adult and Geriatric Patients**
- **Content Areas**
  - **OBGYN**
  - **ACLS**
  - **BLS**
  - **Trauma (coming soon)**

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VES

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VES

VR MCI
RealResponse.com.au

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REAL RESPONSE

Real Response
MCI VR

POLICE

Performance score card

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VR EMS violence training

- AmbulanceVic, Feb 2017
  - All Ambulance Victoria paramedics will take part in virtual reality training to better protect them from violence as they respond to medical emergencies.
  - Ambulance Victoria is using Virtual Reality to help paramedics manage violence and aggression in the workplace. For more details visit www.globalfrontline.com.au
  - https://www.youtube.com/watch?v=lQhxrF5tvFA

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INTL NEWS
Ambulance Victoria Offers Virtual Reality Training on Violence Prevention

Video Mar 01, 2017
Print Version

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VR Ambulance Design
Exploring the inside of a virtual ambulance

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Augmented reality- AR?
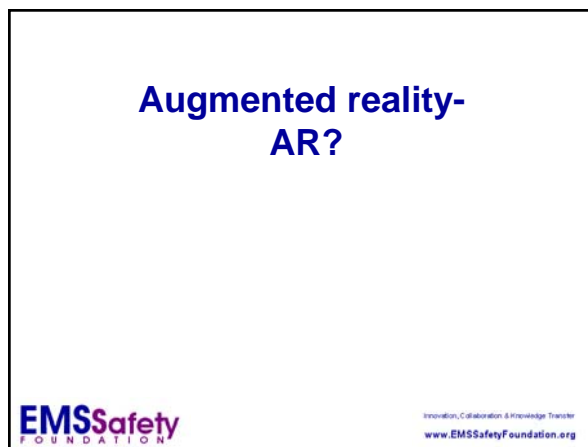
What is Augmented reality- AR?

- a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view.
- a direct or indirect live view of a physical, real-world environment whose elements are "*augmented*" by computer-generated perceptual information, ideally across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory.

What is Pokemon GO

- Pokémon Go is a free-to-play, location-based augmented reality game developed by Niantic for iOS and Android devices.
- The game utilizes the player's mobile device's GPS ability to locate, capture, battle, and train virtual creatures, called Pokémon, which appear on the screen as if they were at the same real-world location as the player.

Pokemon GO

- it quickly became a global phenomenon and was one of the most used and profitable mobile apps in 2016, having been downloaded more than 500 million times worldwide by the end of the year. It also attracted controversy for contributing to various accidents, as well as becoming a public nuisance at some locations. Its overall download numbers had increased to over 750 million a year after release.

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Current AR applications

- CPR performance
- Clinical information screens
- AED location assistance

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http://www.resuscitationjournal.com/article/S0300-9572(17)30635-4/pdf Sept 2017

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CPR Augmented Reality

- https://sciencenode.org/feature/virtual-reality-can-save-your-life.php

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www.iRescU.info

choose your preferred AED location upload tool

- app
or
- web form
or
twitter bot
tweet or DM to
@AEDfound

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Community Engagement - Crowdsourcing

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iRescU
AR assisting to guide your smart phone to a validated crowdsourced AED

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Conclusion

- Virtual reality is here to augment EMS
- It is a major training and evaluation amplifier
- Augmented reality has numerous EMS training applications
- Seek out these new tools!!!

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