



Integrating Instructional Design and Technology to Support Community Paramedicine



The 21 Century Instructional Design

- KNOW
- DO
- BE

The 21 Century Instructional Design

- A **Common Sense** model or system to ensure quality instruction
 - Process of arranging resources and procedures to make instruction **appealing** without becoming purely entertaining.
 - Uses a problem solving approach to **sustain motivation**
 - **Grabs your attention by surprise or inquiry**
 - The content and goal **offers relevance**
 - Performance requirements and evaluation criteria; **builds confidence** for successful completion
 - The ability to assess, evaluate, give and receive **feedback**
 - The **outcome proves useful, provides satisfaction** through an opportunity to use the acquired knowledge in a real setting

Where do we start?

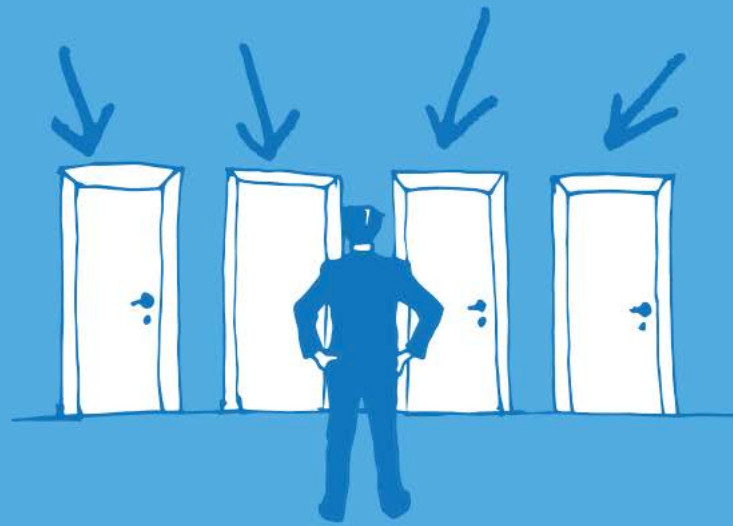
- What motivates today's student to learn?
 - Learning is rewarding and useful in real life?
 - Self Satisfaction and accomplishment?
 - Autonomy?
 - Collaboration?
 - Entertainment?
 - Technology?

Bloom's Taxonomy for iPads

Creating	 Audioboo	 iMovie	 ComicBook!	 ReelDirector	 SonicPics	 Animoto	 Puppet Pals	 Toontastic	 DoInk
Evaluating	 HootSuite	 Skype	 Mobile RSS	 Science 360	 Zite	 FlipBoard	 Instapaper	 Goodreads	 Wunderlist
Analyzing	 iThoughts HD	 Lino	 Popplet	 Today's Documents	 Diigo	 Explain Everything	 3D Cell Simulation	 GoSky Watch	 GoDocs
Applying	 ShowMe	 Poetry Creator	 Keynote	 Visualize	 Posterous	 ZigZag Board	 Presentation Link	 Xperica	 GearHD
Understanding	 ScreenChomp	 Motion Math	 123 Charts	 Idea Sketch	 Corkulous	 Bloggy	 Good Reader	 Touch Draw	 Pages
Remembering	 iBook	 Noteshelf	 Stack the Countries	 Evernote Peek	 NxtApp 4Kids	 Ansel & Clair's Adventure	 Word Seek HD	 eClicker	 Globe

Silvia Rosenthal Tolisano - GloballyConnectedLearning.com - adapted from Kathy Schrock's Blooming iPad

The Community Paramedic Curriculum & Career Pathway



The Power of Choice

How to Implement Choice-Based
Learning in Your Blended Classroom



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Education & Technology

- Educational Technology



- Simply adding technology to education environments does not improve learning. What matters is how it is used to develop knowledge and skills.



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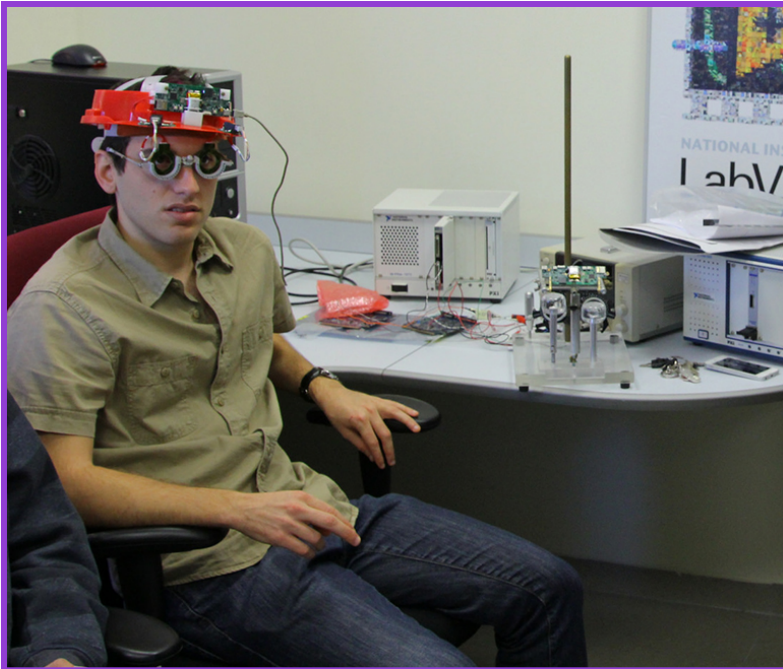


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Education & Technology

■ Practical Application | Field Technology



- Bring your own device (BYOD) is a growing trend in healthcare as multiple device usage becomes more popular.
- Magnetic Eyelid Tracker to help diagnose some diseases
- Handheld Devices and the Training Conundrum

Education & Technology

- Practical Application | Field Technology
 - Patient devices! A growing trend in healthcare as multiple device usage becomes more popular.
 - Automatic Blood Sugar Monitoring
 - Handheld Devices and the Training Conundrum

FDA OKs new blood sugar monitoring

LINDA A. JOHNSON
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U.S. regulators have approved the first continuous blood sugar monitor for diabetics that doesn't need backup finger-stick tests.

Current models require users to test a drop of blood twice daily to calibrate, or adjust, the monitor. The pain of finger sticks and the cost of testing supplies discourage many people from keeping close tabs on their blood sugar, which diabetics need to manage insulin use and adjust what they eat.

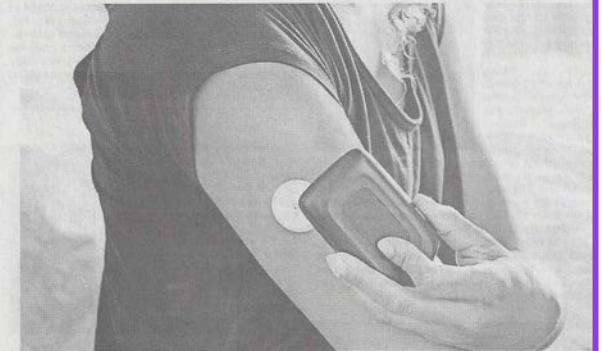
Abbott's new FreeStyle Libre Flash Glucose Monitoring System, approved Wednesday by the Food and Drug Administration, uses a small sensor attached to the upper arm. Patients wave a reader device over it to see the current blood sugar level and changes over the past eight hours.

Most of the 30 million Americans with diabetes use standard glucose meters, which require multiple finger sticks each day and only show current sugar level.

More-accurate continuous glucose monitoring devices are used by about 345,000 Americans.

But most don't do the finger sticks to calibrate them and may get inaccurate readings, said Dr. Timothy Bailey, who helped test FreeStyle Libre.

"We're able to lower blood sugar safely" with this technology, said Bailey, director of the Advanced



Abbott Laboratories' glucose monitoring device can be waved over a sensor worn on the arm to track blood sugar levels over time. Current models require users to test a drop of blood daily. ABBOTT LABORATORIES VIA AP

Metabolic Care and Research Institute in California.

He receives consulting fees from various diabetes device makers.

Too-high blood sugar levels can damage organs and lead to heart attacks, strokes, blindness and amputations.

Very low blood sugar can cause seizures, confusion and loss of consciousness.

Abbott's device was approved for adults with Type 1 or Type 2 diabetes and should be available in pharmacies within months. The company, based near Chicago, did

not disclose the price of the reader or the sensors.

Abbott's system can't be used with an insulin pump, a device worn against the skin that allows users to inject insulin as needed, but the company is planning improvements to eventually enable that.

Rival Medtronic this spring launched a device in which the insulin pump automatically responds to blood sugar changes recorded by the sensor and either withholds or injects insulin as needed.

CP + Technology 1+1=3



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Curt Bashford

general-devices.com

cbashford@general-devices.com



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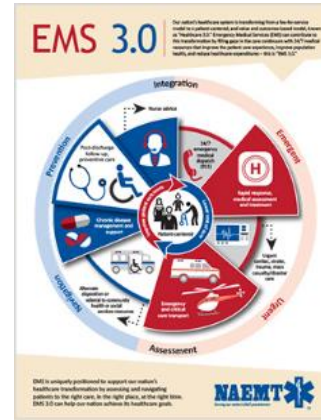
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Version Update:

Healthcare 3.0 <> EMS 3.0

Tech “Empowers” the CP Medic

- Diagnostics
- Data
- Information



Communication Technology

“The single biggest problem in communication is the illusion that it has taken place.”

- George Bernard Shaw



Technology in the Mobile Environment

Technology Considerations:

- Mobile Device
- Privacy / Security
- Wireless Connectivity
- Regulatory



Telemedicine Technology

What Information?

- Telehealth
- Telemedicine



Telemedicine Technology

POC Testing & Data

- Digital Stethoscope
- Otoscope
- Ultrasound
- i-Stat
- ECG
- Spirometry
- ...Next-ometry IoT



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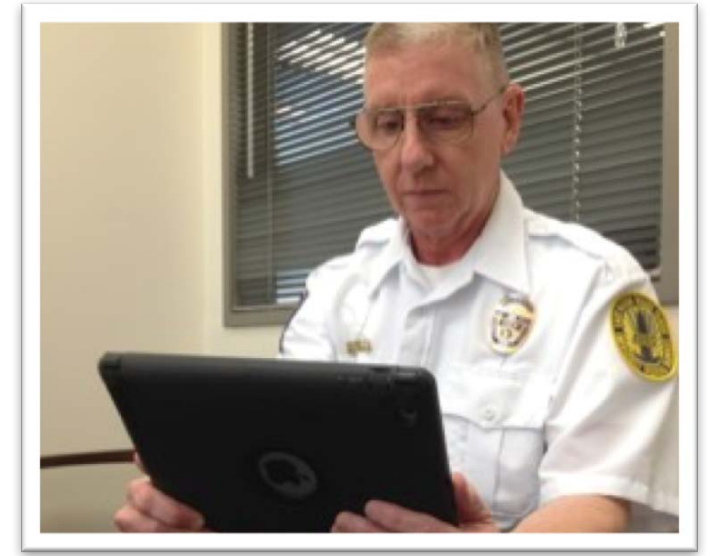
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Telemedicine Technology

Telemedicine for Community Paramedicine

- Real-time video consultation
- Improved decision support
- Documentation / QA / CQI
- Access to specialists
- Access to records
- Training / Education



"I can do a more thorough evaluation, make a better diagnosis, provide better care, and better answer the question, 'What do we need to do for this patient?'" - Dr Dan Godbee,
Medical Dir. E-BR EMS

CP + Technology

**Tech is Disruptive. Change is hard.
Start With “Why”**

- What's the need?
- What's the pain point?
- What's the Value Prop?
 - \$\$\$
 - Outcomes



Disruptive Thinking

- Bring care to the patient or patient to care



Opting for a Private Ride Service Over an Ambulance

Some people are choosing Uber or Lyft instead of an ambulance to get to the hospital.

A growing number of people are calling Uber or Lyft, on-demand ride apps, because they're less expensive and more predictable than ambulances.

Another advantage is that people can choose the hospital they prefer, but using private ride services for emergencies can be risky for both driver and rider, notes "Patients Opting for Uber, Lyft, Over Ambulance to the ER," in *Becker's Hospital Review*.

One major risk is that people can be turned down for a ride. A few reasons include drivers not being trained to handle the situation, having someone die on the way or just not wanting blood on their car seats. It's also a legal and insurance liability for drivers, who may feel compelled to rush to the hospital. Uber officially recommends that people call 911 in the case of a medical emergency.

"For a Trip to the ER, Some Are Opting for Uber Over an Ambulance," in *STAT*, notes that a spokesman for the District of Columbia Fire and Emergency Medical Services Department says using Uber or Lyft is preferable in some cases. According to the results of a study in the city of Washington, nearly half of 911 calls made within the city in 2015 were low acuity and many did not require an ambulance.

A related article in *Modern Healthcare*, adds that Blue Cross/Blue Shield is partnering with Lyft "to help commercially insured patients get to medical appointments at no extra charge for the patients." The partnership, available in certain areas that have limited transportation, is the first of its kind for Lyft. 



Taking the Pharmacy to the Patient

■ Current Delivery Methods

- Snail Mail
- UPS/FedEx



■ Future Delivery Method

- Amazon and Amazon Prime
- Uber/Lyft - Driver and Driverless



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Taking the Library to the Provider

- Reference Materials available on tablets
 - Interpreter Services
 - Physician Desk Reference (PDR)
 - Medical Protocols
 - Policies and Procedures
 - “Talk to Watson”



Be Bold



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Unmanned Aerial Vehicles – UAVs (Drones)



Dudley Smith

camts.org

dudley.smith@camts.org



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Unmanned Aerial Vehicles – UAVs (Drones)

■ Potential Purposes

- Mapping
- Increase radio/phone range
- Aerial photographs
- Environmental Assessments
- Delivery of Stuff



■ Current Limitations

- Size - Under 55 lbs
- Line of Sight - away from restricted areas/airports
- Size of Cargo
- Power – batteries run time

Drones – Blood and Medication Delivery



Drones – Life Saver



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DRONE - AEDs



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Drones – Here Now!

Oct 13, 2017 RENO, Nev.—Flirtey, the leading drone delivery service, and REMSA, a community-integrated emergency medical services provider, today announced a partnership to launch the first automated external defibrillator (AED) drone delivery service in the United States.



Drone Demo



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Eric Bunzow

Mobilece.org

education@mobilece.org



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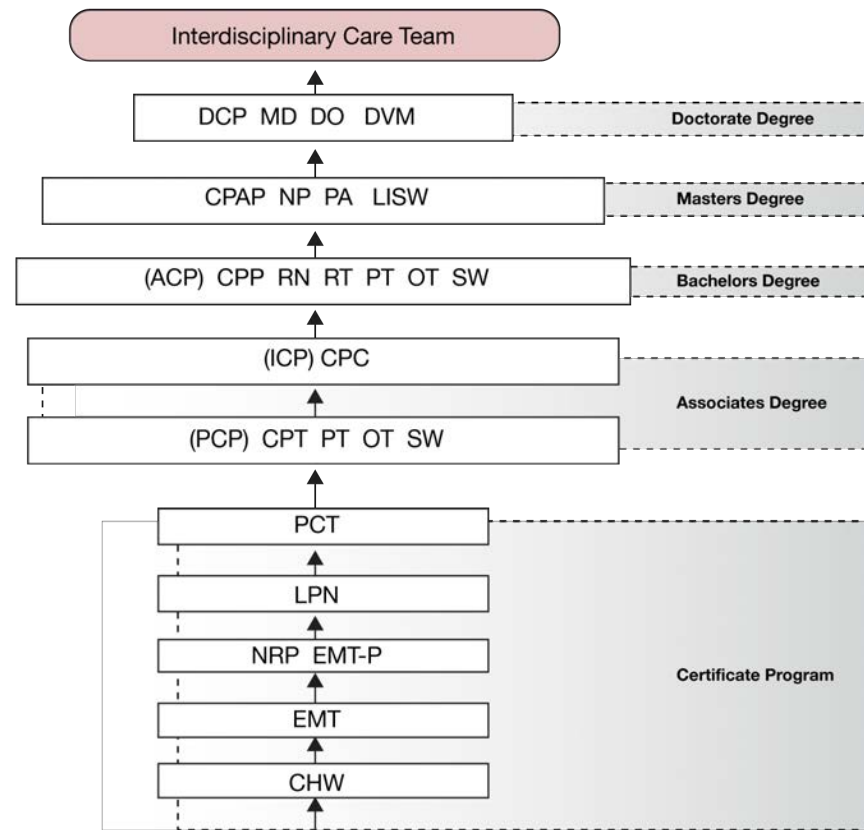
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Education & Technology Challenges

- The Community Paramedicine Curriculum must **integrate** mobile **technology learning** and specifically address the **competency** necessary for use of mobile and hand held medical devices.
- Current and future generations of “tech-savvy” students will be **demanding instruction in such technology**



Value of the Community Paramedic in the Health Care System across the Continuum



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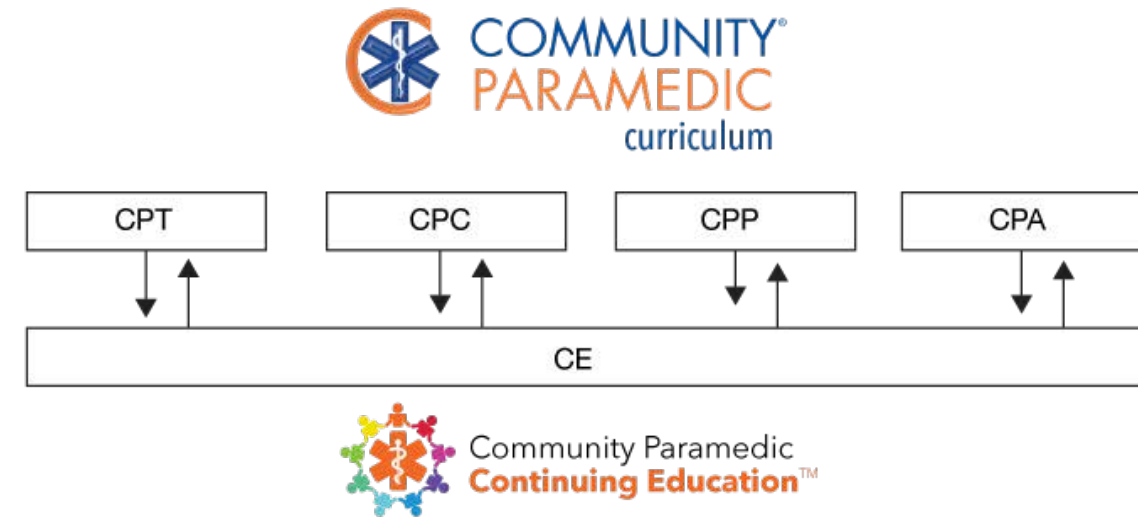
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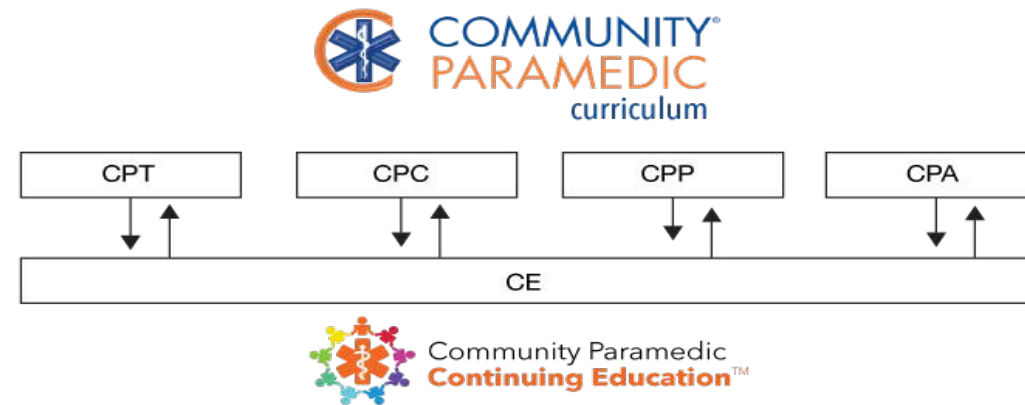
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Career Pathways

- Standard definitions of CP profession
- Coordinated educational curricula
- Professional association, licensure
- Code of ethics, accreditation processes
- Legal recognition, service reimbursement



The Community Paramedic Curriculum & Career Pathway



Description	Title
Basic life support provider; entry level	Primary Care Paramedic (PCP)
Advanced life support provider with limited skill set	Intermediate Care Paramedic (ICP)
Advanced life support provider	Advanced Care Paramedic (ACP)
PCP, ICP or ACP with prevention, public health, and post acute skills	Community Paramedic (CP)
Ambulance service	Paramedic Service

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For Further Information



Mary Ahlers
Mobilece.org
mary.ahlers@mobilece.org



Responsive Innovation.

Curt Bashford
general-devices.com
cbashford@general-devices.com



Eric Bunzow
Mobilece.org
education@mobilece.org



Josephine Kershaw
thechristcollege.edu
josephine.kershaw@thechristcollege.edu



Dudley Smith
camts.org
dudley.smith@camts.org

