Designing and Testing a Simulation Center's Response to Actual Medical Emergencies

ZIEL
ZAMIEROWSKI INSTITUTE
FOR EXPERIENTIAL LEARNING

IMSH 2021 | Virtual Presentation

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The University of Kansas Health System

KU Medical Center
The University of Kansas

Disclosures

No relevant financial disclosures. Any specific equipment, software, or other vendors mentioned are not endorsed by the presenters.

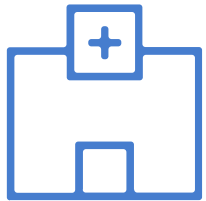# ZIEL by the Numbers

Utilization in FY2020

18,969 LEARNER HOURS

7,654 LEARNER ENCOUNTERS

11 SIMULATION ROOMS

28 FULL TIME STAFF

7 DEBRIEF ROOMS

50% INTERPROFESSIONAL ACTIVITIES

ZIEL SIMULATION

- A PARTNERSHIP BETWEEN -

THE UNIVERSITY OF KANSAS HEALTH SYSTEM

KU MEDICAL CENTER
The University of Kansas

Learning Objectives

1. List at least three tools to promote staff coordination, communication, and compliance to the medical emergency response procedure.

2. Describe the steps used for designing, testing and improving the simulation center's medical emergency and safety policy and procedure.

3. Weigh the cost and benefit of investing in an all-staff experiential learning program for medical emergency response.

ZIEL SIMULATION

Imagine if this happened in your sim center...

Policy
Procedures
Tools

The University of Kansas Health System

KU MEDICAL CENTER
The University of Kansas

"Write a policy and they will do it."

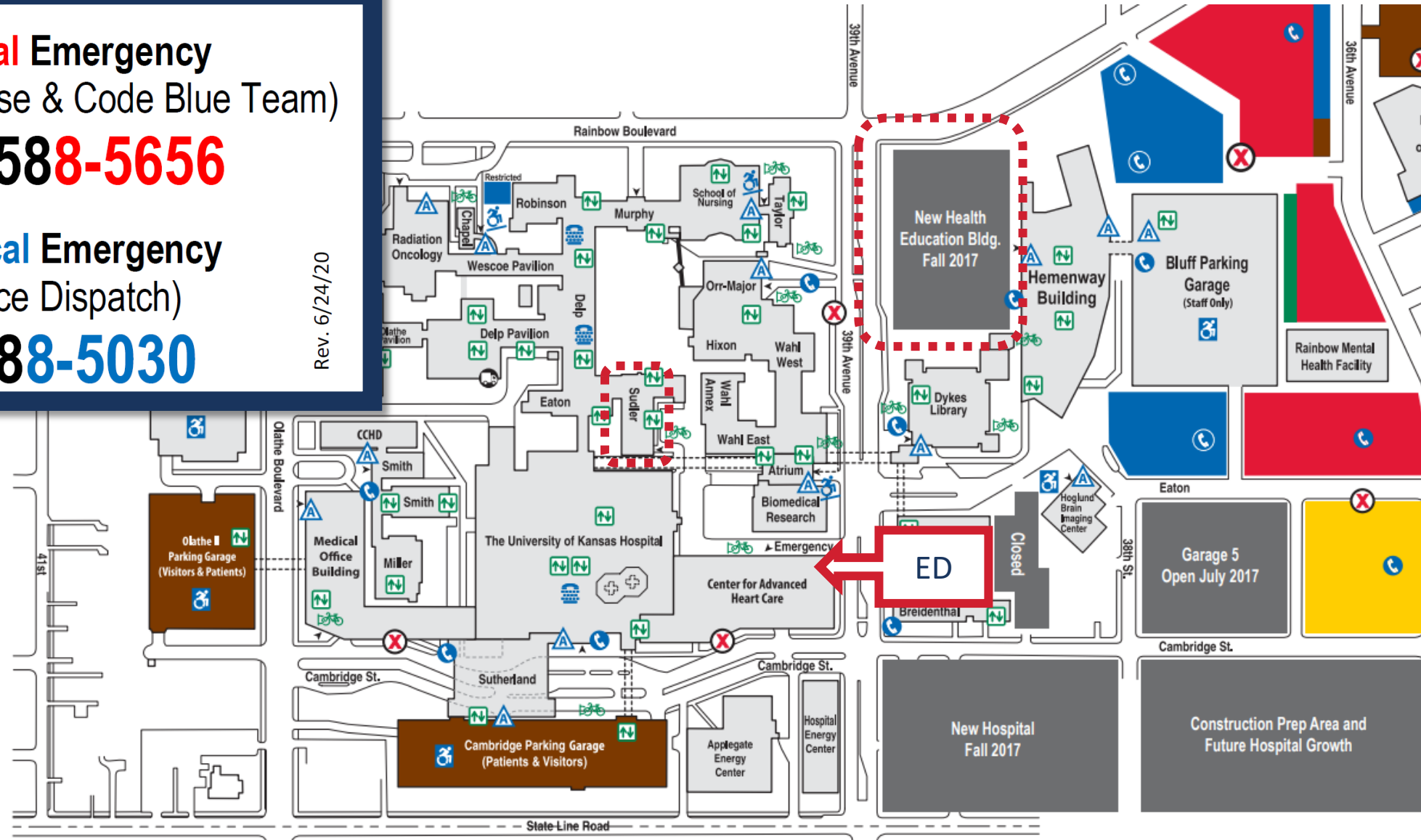*-No One Ever*

Challenges

Medical Emergency
(Rapid Response & Code Blue Team)
913-588-5656

Non-Medical Emergency
(KU Police Dispatch)
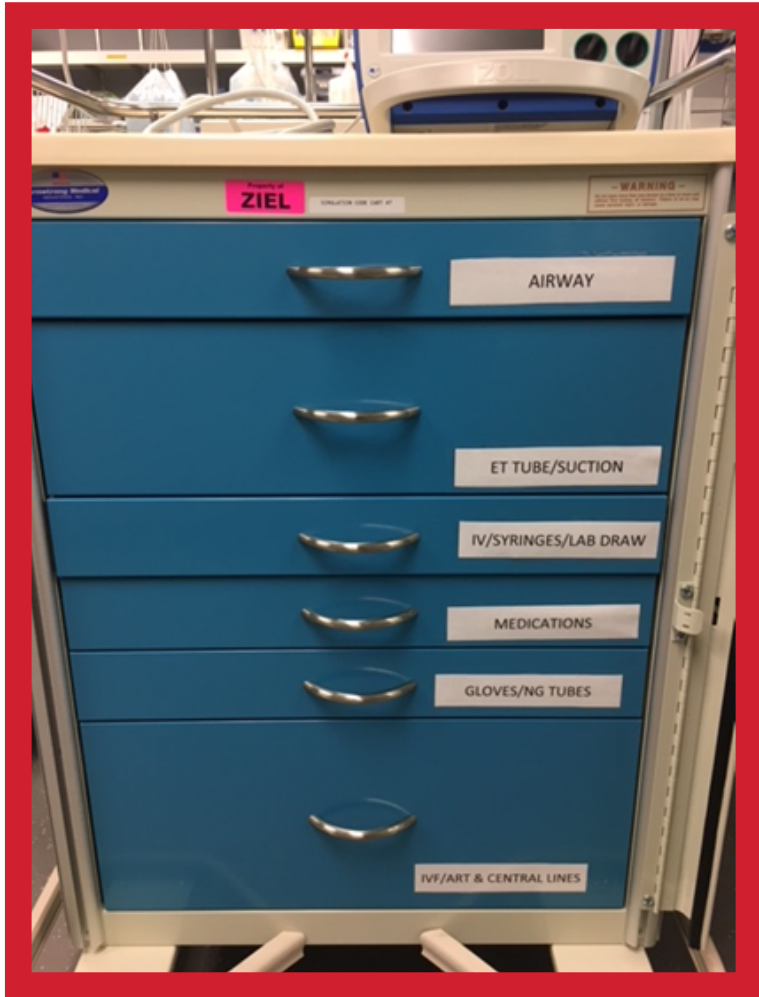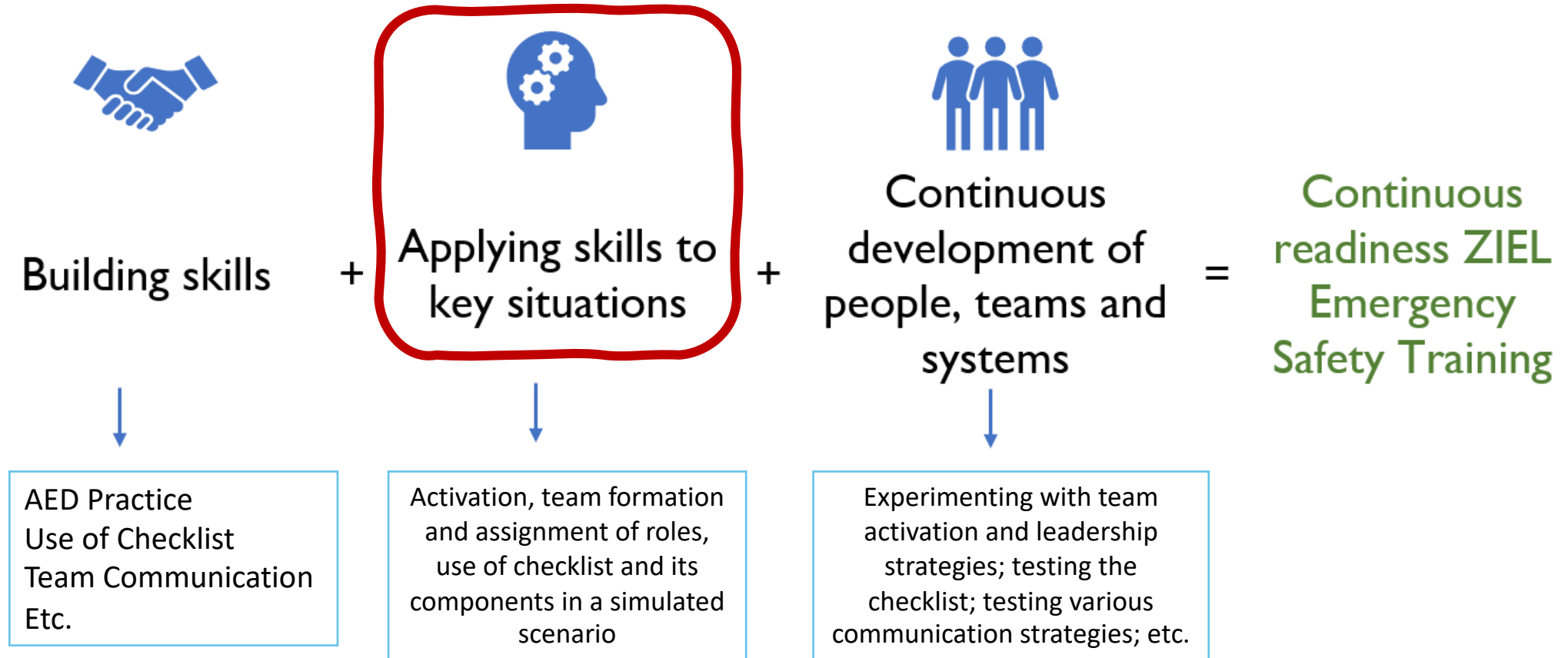**913-588-5030**

Rev. 6/24/20

Challenges (Continued)

Medical Equipment Similar to Real Equipment --> Not Intended for Human Use

The Readiness Plan

The ZIEL Medical Emergency Safety Readiness Plan

Building skills + **Applying skills to key situations** + **Continuous development of people, teams and systems** = **Continuous readiness ZIEL Emergency Safety Training**

AED Practice Use of Checklist Team Communication Etc.	Activation, team formation and assignment of roles, use of checklist and its components in a simulated scenario	Experimenting with team activation and leadership strategies; testing the checklist; testing various communication strategies; etc.

[1]Fey, M, Roussin CJ. (2020, June 17). "Road Map to Relevance: SimZones Curriculum for Preparing People, Teams and Systems." *Weekly Webinars: Connecting and Learning with CMS.* from Center for Medical Simulation [Video file]. Retrieved from https://youtu.be/QUppdy9h95U.

Tools

POLICY | 4 UPDATES IN 18 MONTHS

CHECKLIST | 6 UPDATES IN 18 MONTHS

BADGE BUDDY | 2 UPDATES IN 6 MONTHS

ZIEL EMERGENCY AND SAFETY POLICY

Zamierowski Institute for Experiential Learning (ZIEL) further expands, clarifies, and/or replaces aspects of associated Emergency and Safety policies provided by the University of Kansas Medical Center (KUMC) and The University of Kansas Health System (TUKHS) and located in specific buildings occurring in ZIEL simulation center space, which include Su... Education Building fourth and fifth floors. This policy exclu... operational space.

1. PERSONAL SAFETY AND SECURITY

   a. Entry and Check In

      i.

      ii.

      iii.

   b. Iden... part Iden phot

sharps container by ZIEL staff.

ii. When simulation activity specifies disposal of sharps by ZIEL staff only and not by the users of the sharps, the user should take every precaution to protect the sharps (e.g. use of sharps blocks) to prevent accidental needle sticks until it is safely disposed.

ZIEL MEDICAL EMERGENCY CHECKLIST (pg. 1)

EVENT LEAD & CROWD CONTROLLER
1 **Announce overhead** (Voice of God): *"This is not a simulation;*

COMMUNICATION LEAD & CROWD CONTROLLER
1 **Accept Communication Lead** delegation from Event Lead

ZIEL MEDICAL EMERGENCY CHECKLIST (pg. 2)

PATIENT CARE LEAD
- Stay with patient, provide reassurances, obtain basic information (name, symptoms, etc.)
- Continuously engage in conversation in order to monitor for changes
- Provide first aid/CPR per level of clinical scope, as needed
- Hand-off information to Rapid Response / Code Blue Team upon arrival

DEFIBRILLATOR
- Retrieve defibrillator (AED) and/or Stop-the-Bleed Kit

VERSION 6 | 2020.06.24

VERSION 6 | 2020.06.24

Tools (Continued)
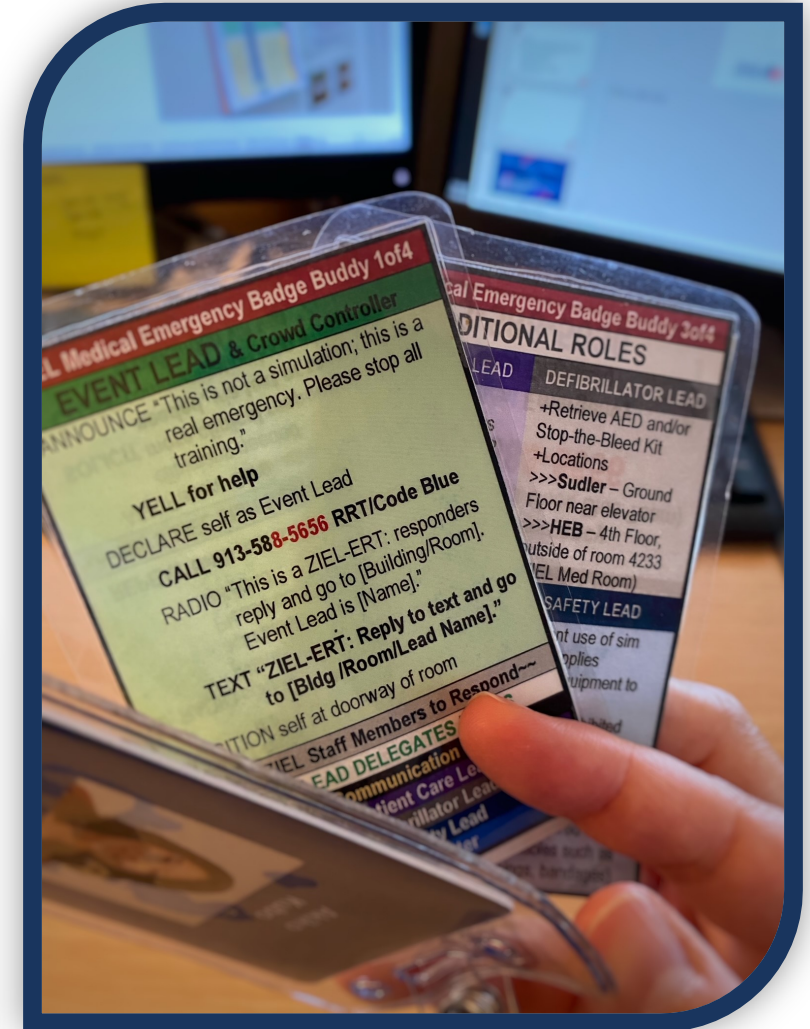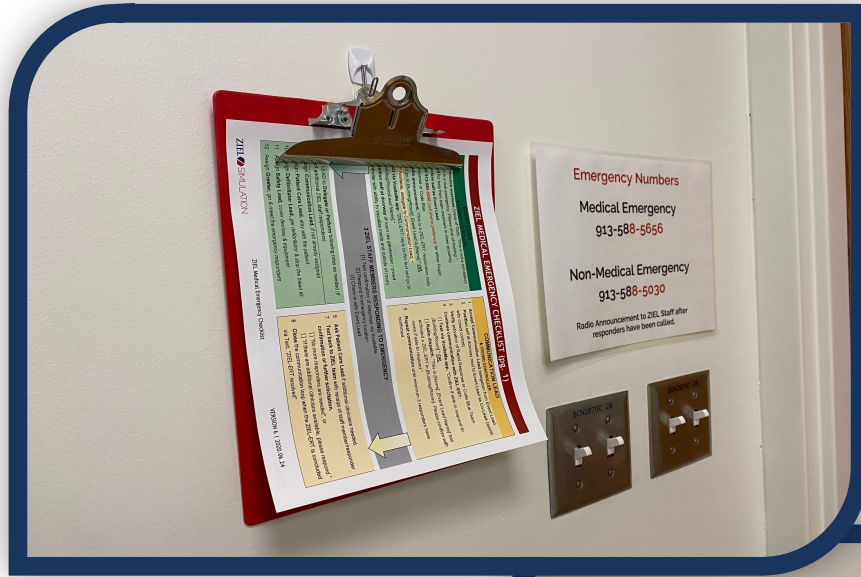
Designing
Testing
Improving

Planning Process Timeline

- First Sim Event Planning Meeting: 6/20/2019

- Held 3 Emergency Safety Event Management immersive simulation events for the full ZIEL team over a 1 year period

8/26/2019	9/6/2019	9/11/2019	1/27/2020	1/29/2020
•Intro to Checklist •AED Practice	•Checklist Review •Tabletop Practice	•Immersive Simulation	•Checklist Review •Tabletop Practice •AED Practice	•Repeat of Immersive Simulation

8/14/19 Pre-Learning Content

Simulation Safety Article & Webinar

First Draft of Emergency Checklist

Current Emergency Safety Policy

Overview of AEDS on Campus

8/26/19 Intro to Checklist and AED Introduction

Logistics:

- Review AED differences

- Tabletop Workshop Activity

    - Role play scenarios

    - Practice Checklist Usability

8/26/19 Intro to Checklist and AED Introduction

Gaps Uncovered

- Communication Plan

Team Solutions

- Voalte Me
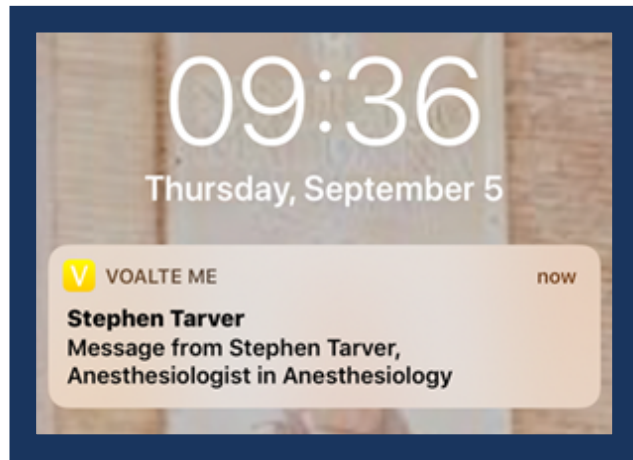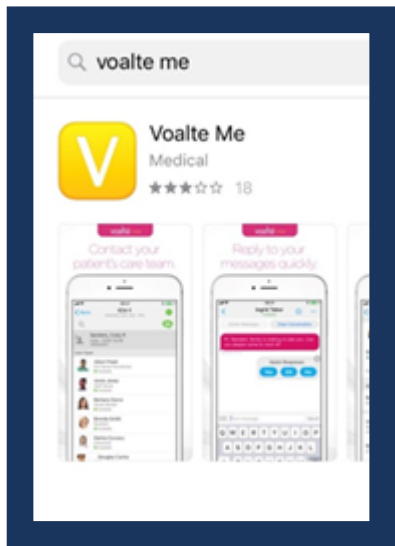
9/6/19 Checklist Review & Tabletop Practice & AED Practice

- Updated Communication Plan
  - Group Messaging App (Voalte)
- Hands On AED Practice

ZIEL SIMULATION

9/11/19 Immersive Simulation Event #1- SP Chest Pain

Logistics
- Full team blocked for morning event
- Health System RRT Members on call

Case:
- Standardized Patient (SP) with chest pain
- Simulated cut suit skin on patient as safety measure to prevent AED use
- Safety Monitor for safety in communication and for SP

Agenda:
- 8am – 8:30am: Pre-brief
- 8:30am – 9:30am: Sudler x2
- 9:45am – 10:45am: HEB x2
- 11am – 12pm: Team Debrief and Lunch

ZIEL SIMULATION

9/11/19 Immersive Simulation Event #1- SP Chest Pain

...ed
...oad on Leader was too much
...e Lead Role identified
...ment looked like the actual RRT

...between buildings meant that
...bers missed out observing

...s
...ation Role assigned to another
...ber
...e Role didn't need to be clinical
...kers to our equipment
...ure of the event to allow team
...o observe without walking to the
...ing

ZIEL SIMULATION

1/27/2020 Optional AED Practice & Checklist Review

- Hands on practice with AED

- Workshop activity to practice checklist

  - Role play scenarios

- Experience using messaging app prior to next sim event
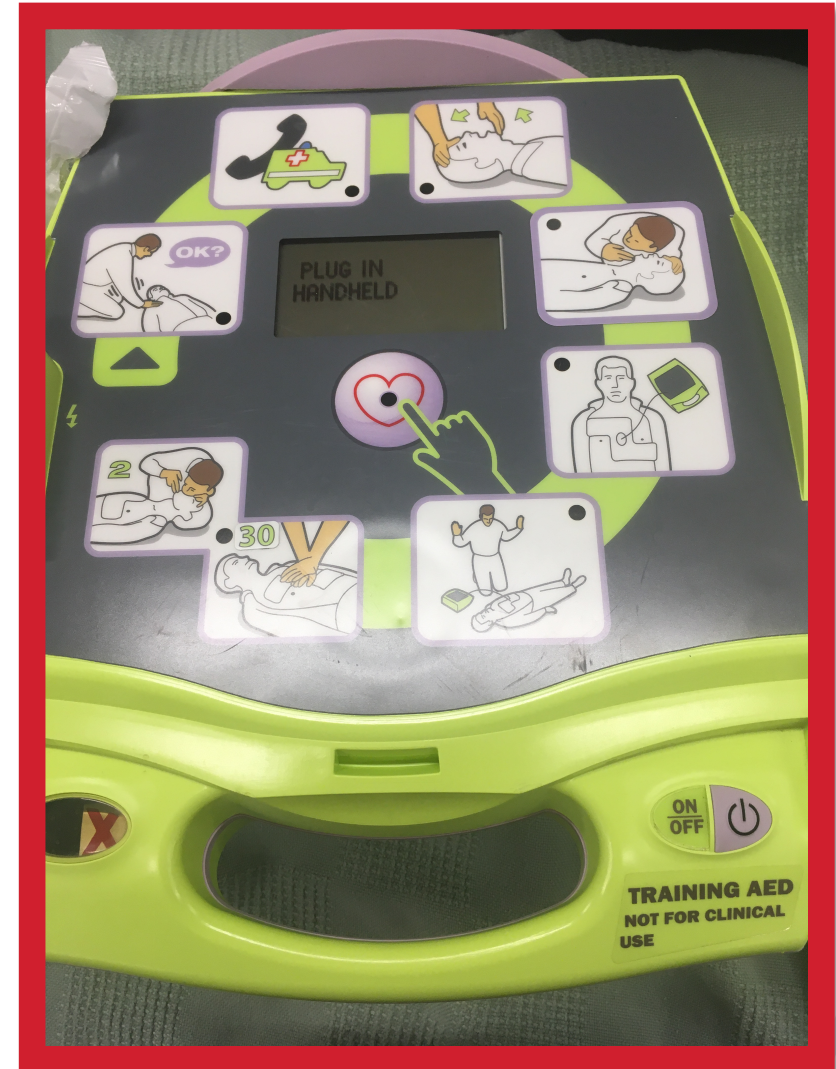
1/29/20 Immersive Simulation Event #2- SP Chest Pain
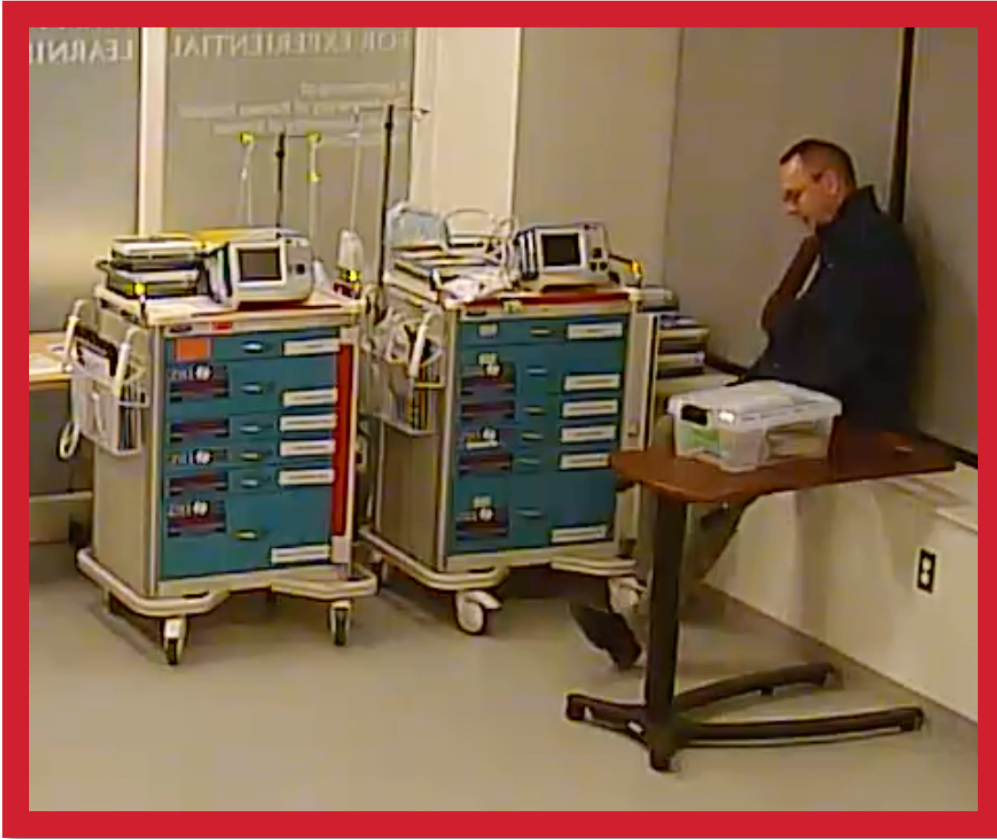
Logistics:

- Same case as 1st sim event

- Different standardized patient

- Only ZIEL team, not RRT Team

- Only 1 case per location, not 2

- Added video streaming viewing for sim observers

ZIEL SIMULATION

1/29/20 Immersive Simulation Event #2- SP Chest Pain
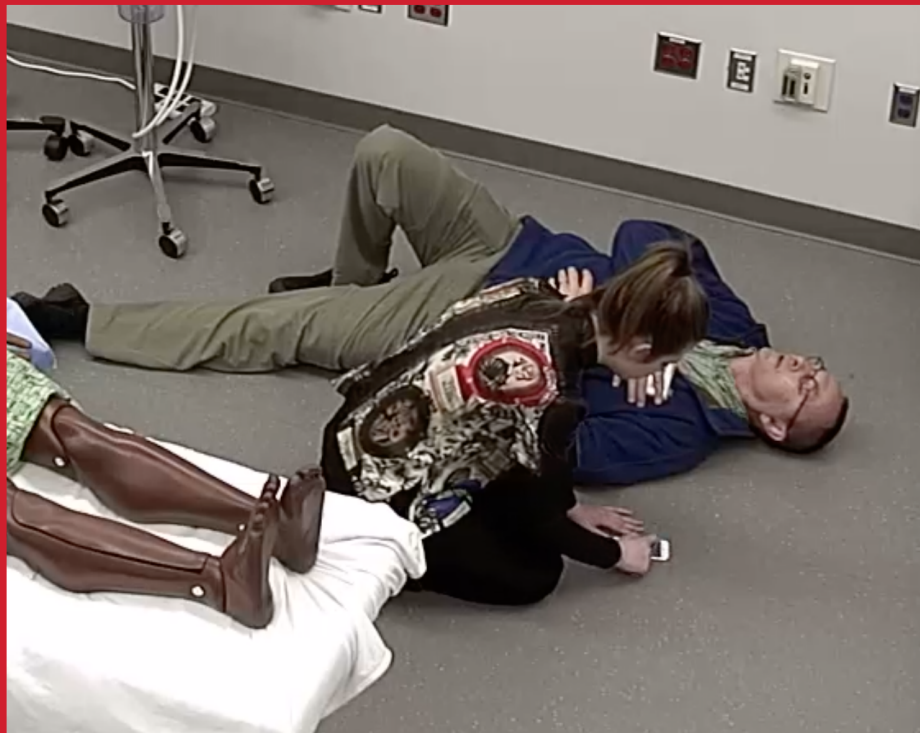
6/1/20 & 6/8/20 Deliberate Practice Sessions

Why

- Request from staff for opportunity to practice all roles

- Wanted a bleeding patient, needed content

How

- Stop the Bleed® Course

- Emergency Safety Checklist Practice

  - Small groups for activation/assigning roles activity

6/1/20 & 6/8/20 Deliberate Practice Sessions

6/10/20 Immersive Simulation Event #3- SP Bleeding

Logistics:

- Strategic placement of staff in sim spaces
- Advance notification to observers on viewing options/response

Case:

- SP with bleeding wound on arm
- Used wearable arm wound and blood pump
- Safety Monitor for safety in event

Agenda:

- 8am – 8:30am: Pre-brief (Zoom)
- 8:30am – 9:25am: HEB x1
- 9:40am – 11:00am: Sudler x1

6/10/20 Immersive Simulation Event #3- SP Bleeding

Gaps Uncovered

- Continued improvements needed for group messaging app
- Logistics and video streaming/Zoom worked well

Future Plans for Implementation

- Cancelled January 2021 event due to COVID surge
- Start the scenario with only non-clinicians present
- Inclusion of sim instructors in event as learners

ZIEL SIMULATION

Results
Reflections

THE UNIVERSITY OF
KANSAS HEALTH SYSTEM

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The Readiness Plan
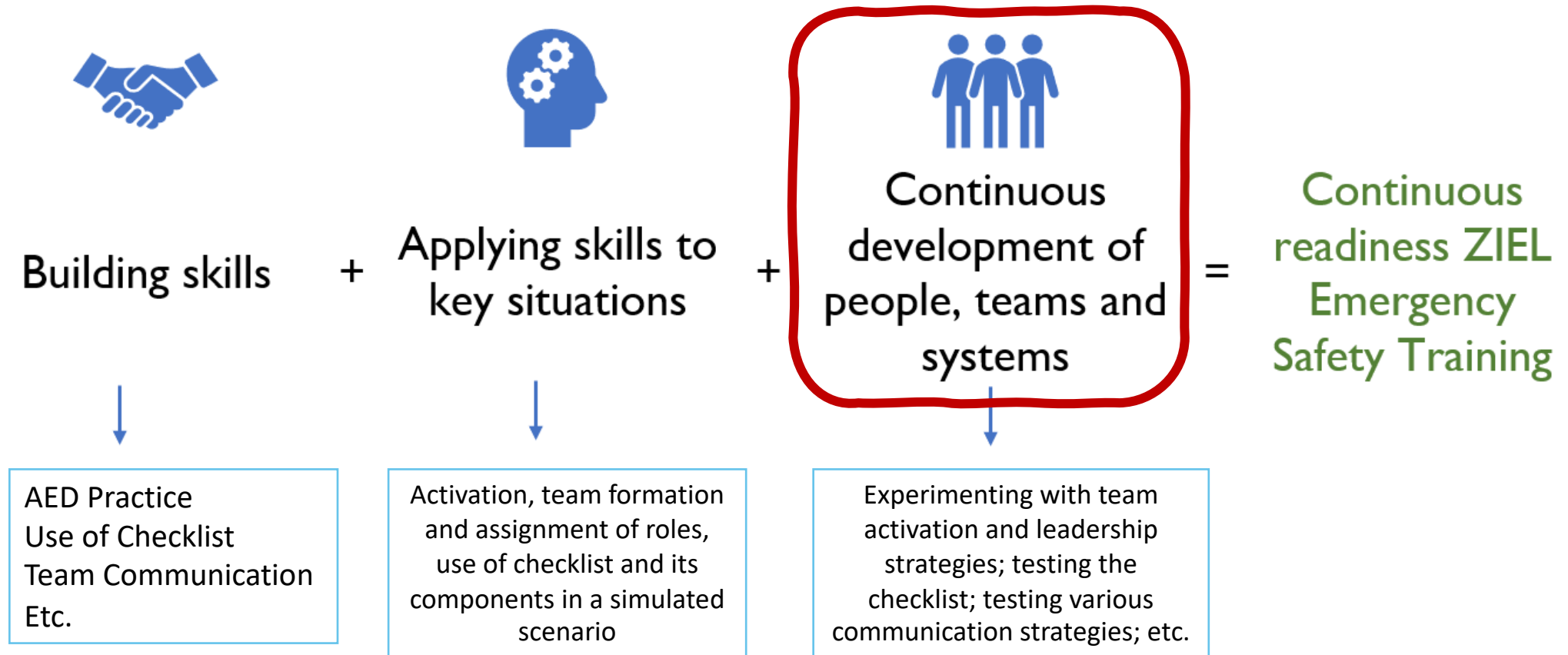
The ZIEL Medical Emergency Safety Readiness Plan

Building skills

$+$

Applying skills to key situations

$+$

Continuous development of people, teams and systems

$=$

Continuous readiness ZIEL Emergency Safety Training

AED Practice
Use of Checklist
Team Communication
Etc.

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Continuous Development Process

Instructor performance

Session Content, structure, logistics

Self Assessment of the impact of training

Open ended Comments from learners

Post Event Survey

Extremely/Very Confident I will apply what was practiced in an actual emergency after training.

1st Event 86%   2nd Event 57%   3rd Event 95%

16 participants completed the 1st event survey
21 participants completed the 2nd event survey
19 participants completed the 3rd event survey

Post Event Survey

Training will contribute to improving quality and/or safety of care.

1st Event 87%

2nd Event 86%

3rd Event 79%

16 participants completed the 1st event survey
21 participants completed the 2nd event survey
19 participants completed the 3rd event survey

Post Event Survey

Open Ended Comment Themes.

Advantage of Continuous Development approach

"I liked seeing the overall refinement of our safety processes. I think each time we work through this it helps in feeling more confident and prepared to implement what we are learning."

"I also think our process has become much more refined, and I appreciate the iterative approach."

Valued being a Participant in a Simulation

"Experiential part was vastly different from the tabletop exercise and understand why its important to go through the experience"

"I liked being able to actually experience being in an event rather than just hearing about it. I also think that I would be much more comfortable in the future if I am in this situation. "

Post Event Survey

Open Ended Comment Themes.

Importance of Cognitive Aids in performance

Importance of Practicing all roles of the response team

Valued Specific event training content. Eg. Stop the Bleed training

Post Event Survey

Most cited Open Ended Improvement Comment

MORE PRACTICE

Specific Tasks such as AED, CPR, etc.

Different settings and types of emergency

Team practice of the process, all roles

The Real Question: What would happen if a participant experienced a Medical Emergency.

During a Covid Code Blue training session we found out!

Bare bones staff present due to Covid restrictions

Usual Emergency process thwarted due to Skelton staffing

Training halted, participant treated, Rapid Response responded and transferred to ED

Despite staffing challenges most aspects of the process happened

Communication for Rapid Response Team

Learner supported and handoff to RRT

Staff covering equipment/supplies

Staff grabbing the correct for-human-use defib, etc.

ZIEL SIMULATION

Key Takeaways

Benefit vs Cost

Scalable to Level of Resources

Utilize Shared Templates

Continuous Improvement Process

Thank You.
Please do not hesitate to contact us if you have any questions.

Scan to Access Course Handouts

Or visit:

https://bit.ly/3oxnexi

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