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



IMSH 2021 | Virtual Presentation

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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















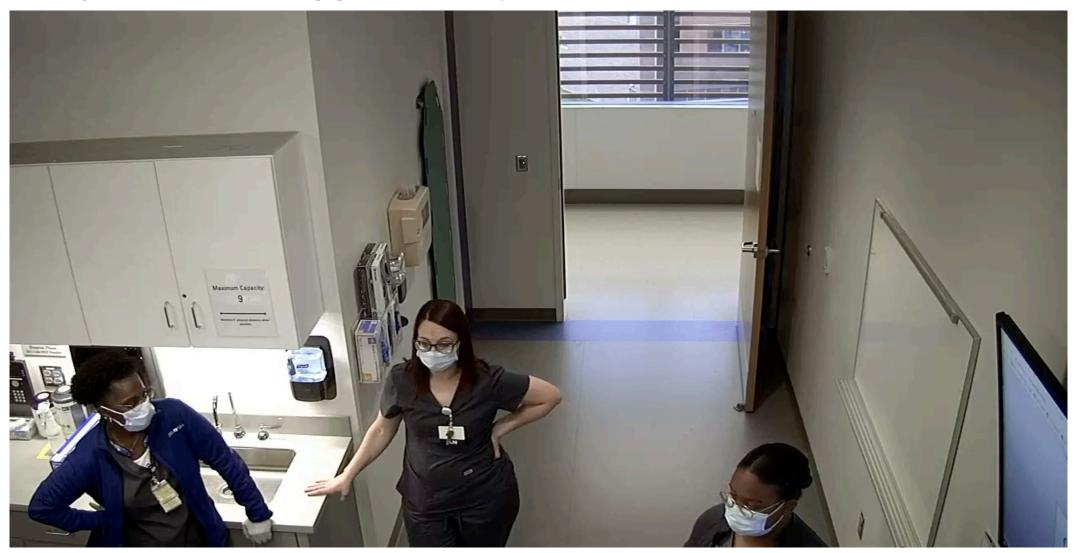


Learning Objectives

- 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.



Imagine if this happened in your sim center...









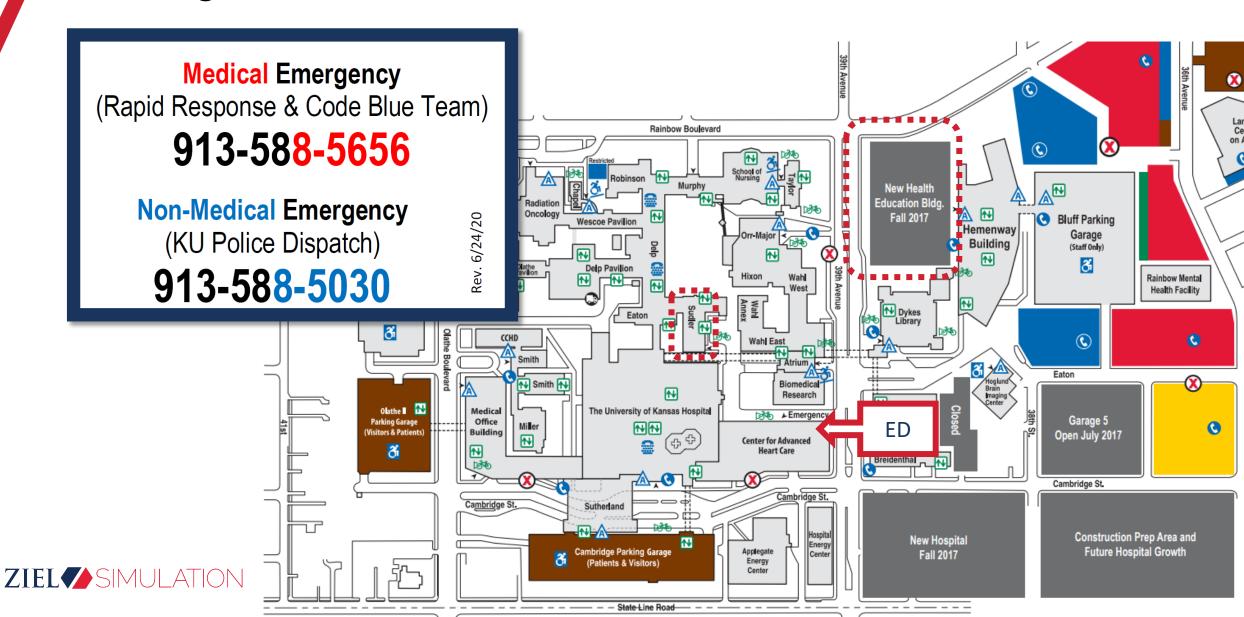


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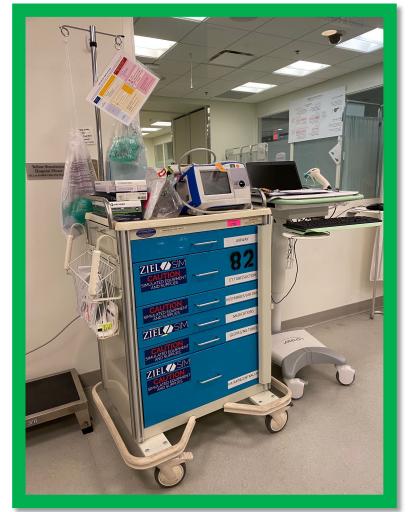
Challenges



Challenges (Continued)

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



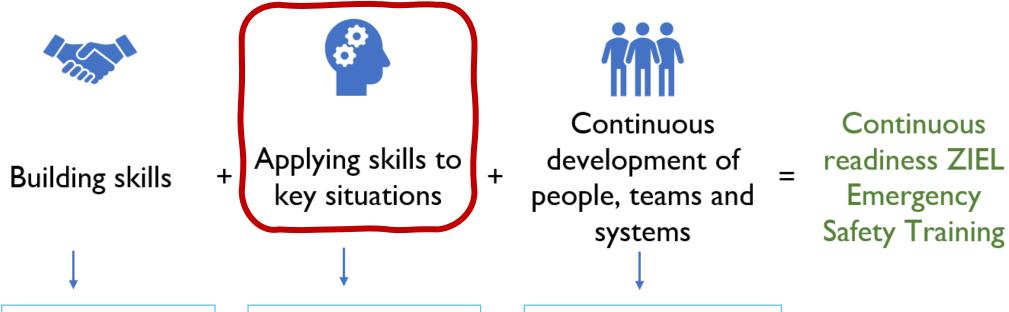






The Readiness Plan

The ZIEL Medical Emergency Safety Readiness Plan



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.

¹Fey, 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 (TUKF" 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

ZIEL MEDICAL EMERGENCY CHECKLIST (pg. 1)

sharps container by ZIEL staff.

EVENT LEAD

& CROWD CONTROLLER

1 Announce overhead (Voice of God): "This is not a simulation;

COMMUNICATION LEAD

When simulation activity specifies disposal of sharps by ZIEL staff only and not by the

of sharps blocks) to prevent accidental needle sticks until it is safely disposed.

users of the sharps, the user should take every precaution to protect the sharps (e.g. use

& CROWD CONTROLLER

Accept Communication Lead delegation from Event Lead

ext to Event Lead as Co-Lead (assist

Response or Code Blue Team with ZIEL-ERT:

p, "Confirm if able to respond to

s is [Name], [Event Lead Name] has [Building/Room]. Please confirm with 356-

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ntil minimum 3 responders have

ZIEL MEDICAL EMERGENCY CHECKLIST (pg. 2)

PATIENT CARE LEAD

Iden phot

DEFIBRILLATOR

training."

DECLARE self as Event Lead

YELL for help

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

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

ANNOUNCE "This is not a simulation; this is a

real emergency. Please stop all

CALL 913-588-5656 RRT/Code Blue

RADIO "This is a ZIEL-ERT: responders

Event Lead is [Name]."

~Min 3 ZIEL Staff Members to Respond~~

EVENT LEAD DELEGATES ROLES

Assign Patient Care Lead

Assign Safety Lead

POSITION self at doorway of room

TEXT "ZIEL-ERT: Reply to text and go

reply and go to [Building/Room].

to [Bldg /Room/Lead Name]."

NNOUNCE "This is not a simulation: this is a real emergency. Please stop all

DECLARE self as Event Lead CALL 913-588-5656 RRT/Code Blue

training.

YELL for help

RADIO "This is a ZIEL-ERT: responders reply and go to [Building/Room]. Event Lead is [Name]."

TEXT "ZIEL-ERT: Reply to text and go to [Bldg /Room/Lead Name]."

POSITION self at doorway of room ~Min 3 ZIEL Staff Members to Respond~~

EVENT LEAD DELEGATES ROLES Assign Patient Care Lead Assign Safety Lead

IEL Medical Emergency Badge Buddy 2of4

COMMUNICATION LEAD

& Crowd Controller

ACCEPT delegation from Event Lead

POSITION self by Event Lead as Co-Lead

VERIFY activation of RRT/Code Team

TEXT continuation of ZIEL-ERT: "Confirm

or, RADIO continuation of ZIEL-ERT: "This is

REPEAT Until min 3 ZIELsters confirmed

~~Min 3 ZIEL Staff Members to Respond~

ASK Patient Care Lead if additional

needed, via text or radio

CLOSE communication loop when ZIEL-ER

is concluded via text: "ZIEL-ERT

clinicians needed

SOLICIT more clinical responders, as

if able to respond to [Bldg / Room]

[Name], [Event Lead Name] has

activated a ZIEL-ERT in [Bldg/Roon

Please confirm with name if able to

COMMUNICATION LEAD & Crowd Controller

ACCEPT delegation from Event Lead POSITION self by Event Lead as Co-Lead

VERIFY activation of RRT/Code Team

TEXT continuation of ZIEL-ERT: "Confir if able to respond to [Bldg / Room

RADIO continuation of ZIEL-ERT: "This is [Name]. [Event Lead Name] has activated a ZIEL-ERT in [Bldg/Room Please confirm with name if able to respond.

REPEAT Until min 3 ZIELsters confirmed ~~Min 3 ZIEL Staff Members to Respond~~

ASK Patient Care Lead if additional clinicians needed

SOLICIT more clinical responders, as needed, via text or radio

CLOSE communication loop when ZIEL-ER is concluded via text "ZIEL-ERT

ANNOUNCE "This is not a simulation: this is a

real emergency. Please stop all training.

YELL for help DECLARE self as Event Lead

CALL 913-588-5656 RRT/Code Blue

RADIO "This is a ZIEL-ERT: responders reply and go to [Building/Room]. Event Lead is [Name]."

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ANNOUNCE "This is not a simulation: this is a real emergency. Please stop all training

YELL for help DECLARE self as Event Lead

CALL 913-588-5656 RRT/Code Blue

RADIO "This is a ZIFI -FRT' responders reply and go to [Building/Room]. Event Lead is [Name]."

TEXT "ZIEL-ERT: Reply to text and g to [Bldg /Room/Lead Name]." POSITION self at doorway of room

~~Min 3 ZIEL Staff Members to Respond~~

EVENT LEAD DELEGATES ROLES Assign Patient Care Lead Assign Safety Lead

ZIEL Medical Emergency Badge Buddy 2of4 **COMMUNICATION LEAD**

& Crowd Controller ACCEPT delegation from Event Lead

POSITION self by Event Lead as Co-Lead VERIFY activation of RRT/Code Team

TEXT continuation of ZIEL-ERT: "Confirm if able to respond to [Bldg / Room] RADIO continuation of ZIEL-ERT: "This is

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REPEAT Until min 3 ZIELsters confirmed ~~Min 3 ZIEL Staff Members to Respond~~

ASK Patient Care Lead if additional clinicians needed SOLICIT more clinical responders, as

needed, via text or radio CLOSE communication loop when ZIEL-ERT is concluded via text: "ZIEL-ERT

r harm

nedications/flushes, etc.)

his is used for simulated

ssings, bandages)

additional clinicians needed ith receipt of staff member/responder olicitation.

are needed", or

l clinicians available, please respond. oop when the ZIEL-ERT is concluded

VERSION 6 | 2020.06.24

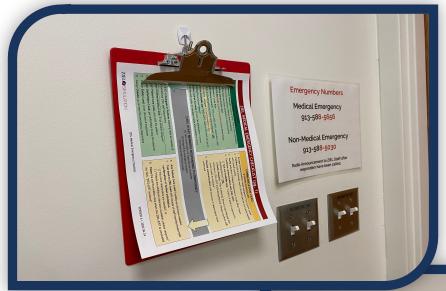
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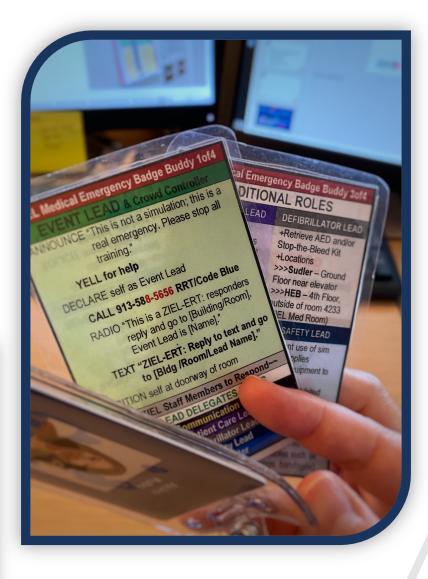
VERSION 6 | 2020.06.24

ZIEL SIMULATION

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





8/14/19 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

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

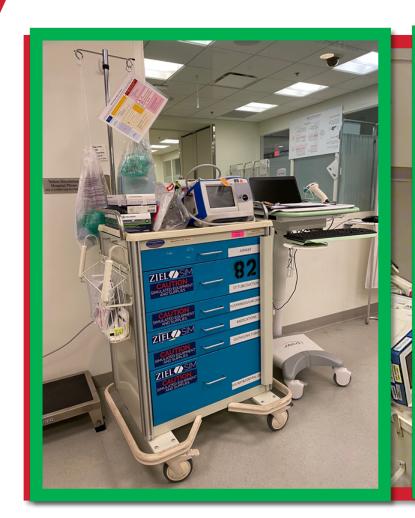
Agenda:

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





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





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pad on Leader was too much e Lead Role identified nent looked like the actual RRT

between buildings meant that pers missed out observing

S

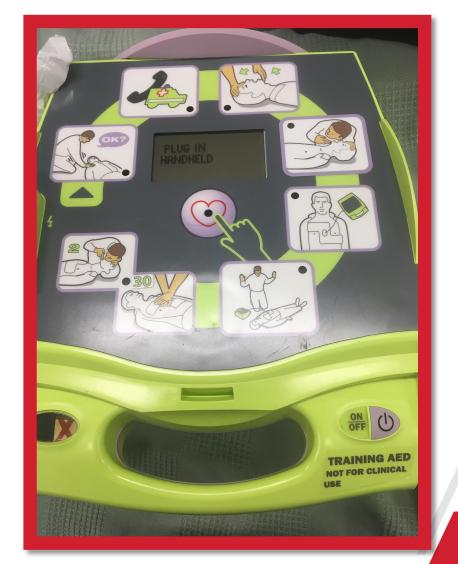
ation Role assigned to another per

e Role didn't need to be clinical kers to our equipment are of the event to allow team observe without walking to the ing



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



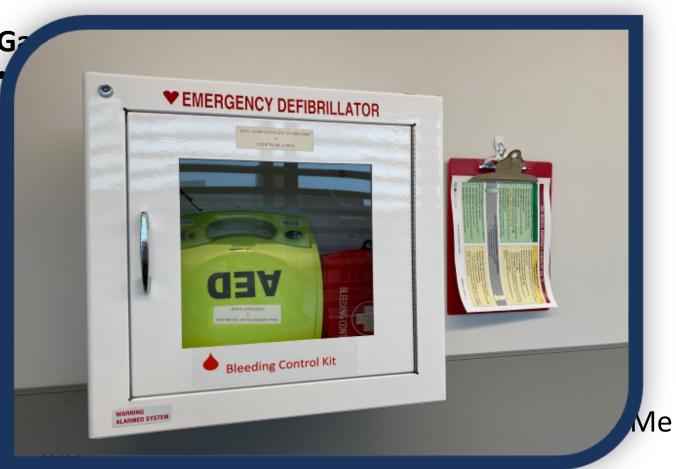
Logistics:

- 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



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

ZIEL MEDICAL EMERGENCY CHECKLIST (pg. 2)	
PATIENT CARE LEAD	Do not move the patient [Non-Clinical] Stay with patient, provide reassurances, obtain basic information (name, symptoms, etc.) [Clinical] Provide first aid/CPR, as needed Hand-off information to Rapid Response / Code Blue Team upon arrival
DEFIBRILLATOR LEAD	Retrieve defibrillator (AED) and/or Stop-the-Bleed Kit ZOLL AED Plus and Stop-the-Bleed Kit Locations Sudler - Ground Floor near elevator HEB - 4th Floor, outside of room 4233 (ZIEL Medication Room)
SAFETY LEAD	 Prevent use of simulation equipment & supplies with potential for further harm (e.g. defibrillation, invasive devices, modified or re-used supplies, simulated medications/flushes, etc.) Cover devices and equipment with blanket or sheet to prevent use Remind individuals, "Remember, this equipment or supply that you are about to use is used for simulated purposes."
GREETER and CROWD CONTROLLER	Meet emergency responders and direct them: [] Sudler: in front of Simulation Prep South - G004 door [] HEB: outside of elevators Obtain wheelchair and/or stretcher from ZIEL storage Maintain crowd control by minimizing bystanders
	DOUBLE-CHECK [1] Ensure ZIEL equipment and supplies do not leave ZIEL space [2] Check-in with available ZIEL Director in person or remotely [3] Notify Director of Business Operations for record keeping

	ZIEL MEDICAL EMERGENCY CHECKLIST (pg. 2)
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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 LEAD	 Retrieve defibrillator (AED) and/or Stop-the-Bleed Kit Ask Patient Care Lead if either is needed ZOLL AED Plus and Stop-the-Bleed Kit Locations [] Sudler - Ground Floor near elevator [] HEB - 4th Floor, outside of room 4233 (ZIEL Medication Room)
SAFETY LEAD	 Prevent use of simulation equipment & supplies with potential for further harm (e.g. defibrillation, invasive devices, modified or re-used supplies, simulated medications/flushes, etc.) Cover devices and equipment with blanket or sheet to prevent use For non-prohibited equipment or supplies, caution individuals, "Remember, this is used for simulated purposes." (e.g. oxygen delivery devices, expired consumables such as dressings, bandages)
GREETER	 Meet emergency responders and direct them (they might come in waves): [] Sudler; in front of Simulation Prep South - G004 door [] HEB: outside of elevators
CROWD CONTROLLER	Obtain wheelchair and/or stretcher from ZIEL storage Maintain crowd control by minimizing bystanders Rem ove learners and additional people from the space, as needed
	DOUBLE-CHECK [1] Ensure ZIEL equipment and supplies do not leave ZIEL space [2] Check-in with available ZIEL Director in person or remotely [3] Notify Director of Business Operations for record keeping



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







The Readiness Plan

The ZIEL Medical Emergency Safety Readiness Plan





Building skills

Applying skills to key situations

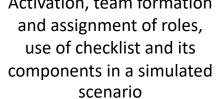
AED Practice Use of Checklist Team Communication Etc.

Activation, team formation and assignment of roles, use of checklist and its components in a simulated

Continuous development of people, teams and systems

Experimenting with team activation and leadership strategies; testing the checklist; testing various communication strategies; etc.

Continuous readiness ZIEL Emergency Safety Training





Continuous Development Process

Post Event Survey Topics



Instructor performance



Session Content, structure, logistics



Self Assessment of the impact of training



Open ended Comments from learners

Post Event Survey

Results

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

Results

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.

Second Event



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

Third Event

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

All Events

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

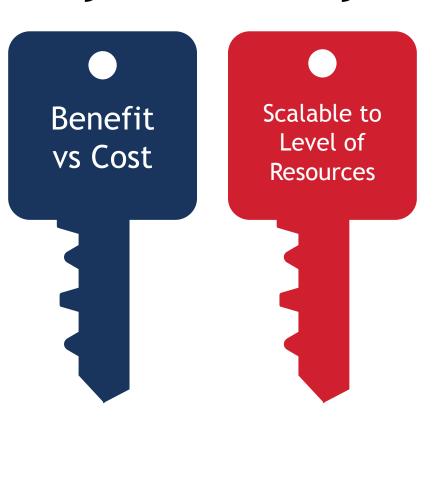
Learner supported and handoff to RRT

Staff covering equipment/supplies

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



Key Takeaways



Utilize Shared Templates



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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