



Using Immersive Healthcare Simulation to Transform Practice

ZIEL

ZAMIEROWSKI INSTITUTE
FOR EXPERIENTIAL LEARNING

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THE UNIVERSITY OF
KANSAS HEALTH SYSTEM

KU MEDICAL
CENTER
The University of Kansas

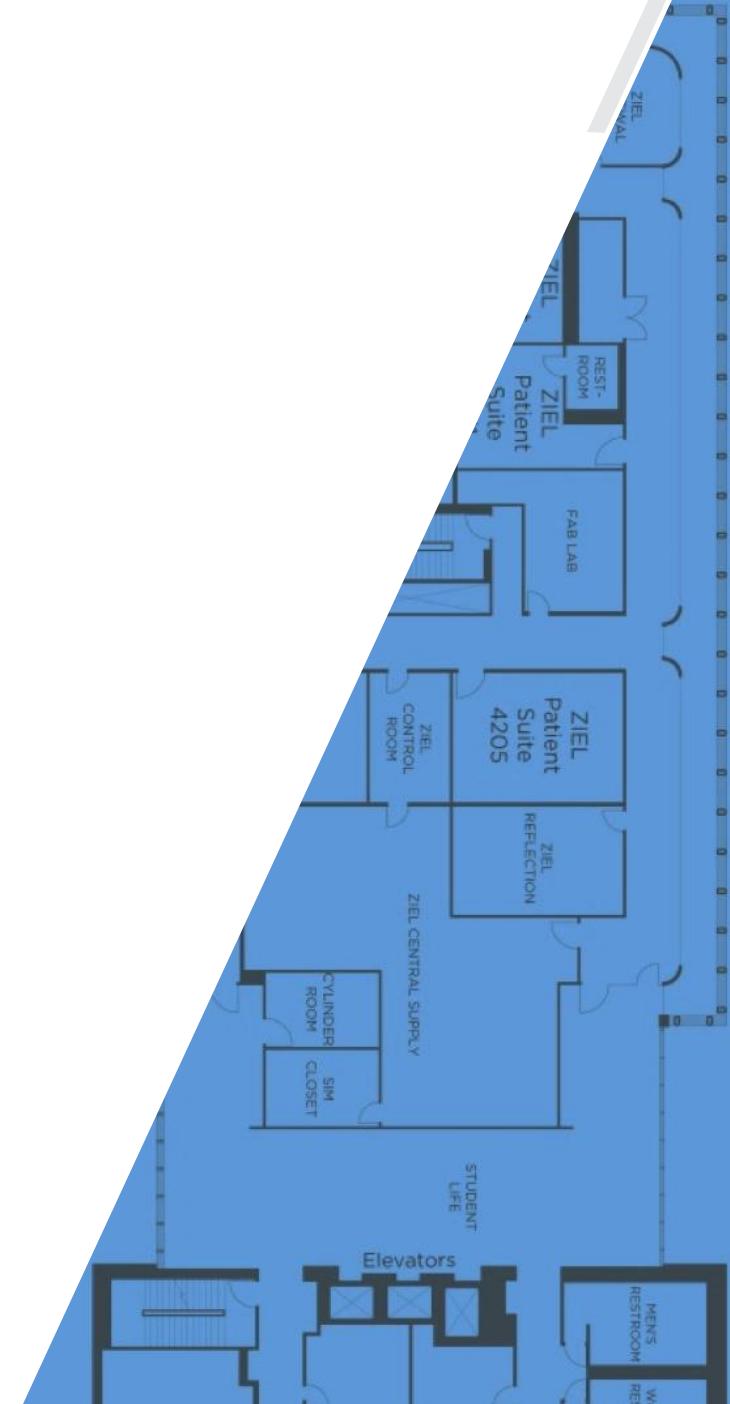
Disclosures

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

I will speak to my experience, which is intricately tied to the specific equipment and software The University of Kansas Health System uses as standard practice.

How SE can reduce cost and improve quality...

...by determining and addressing the root cause of systemic and persistent clinical issues through simulation.



Zamierowski Institute for Experiential Learning

A partnership between...



Health Education Building

Opened in Summer 2017



Introductions

Device Manufacturers – Design

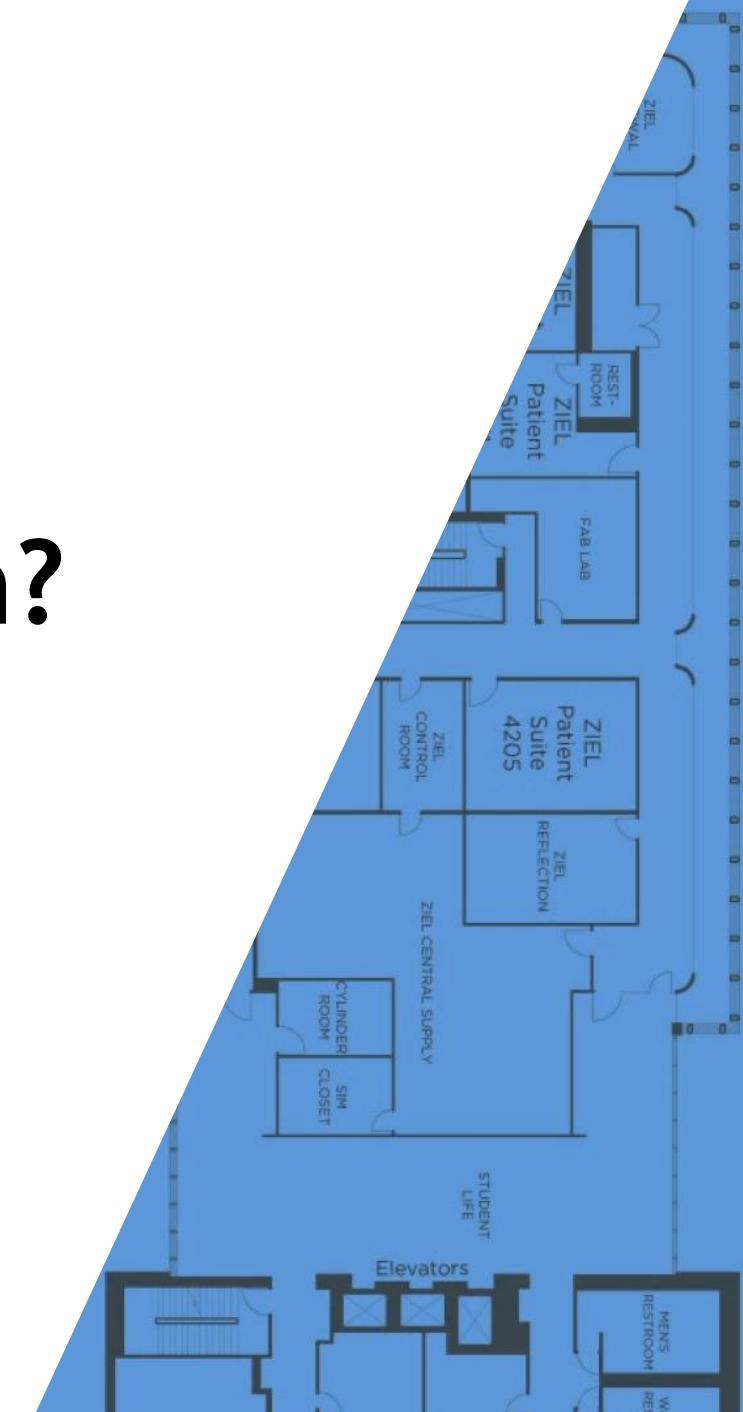
Device Manufacturers – Sales

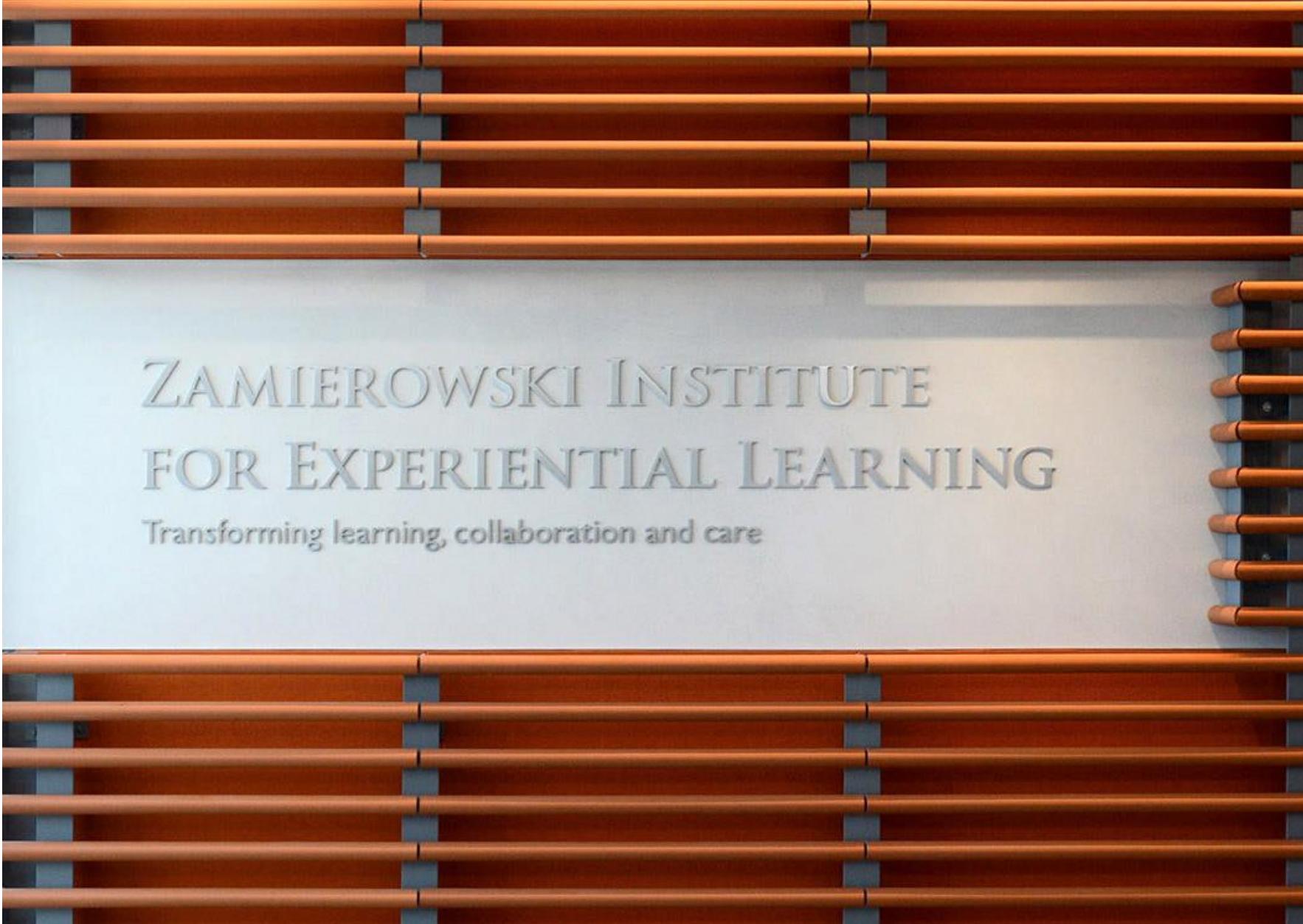
Health System / Hospital Employees

Clinicians

Others?

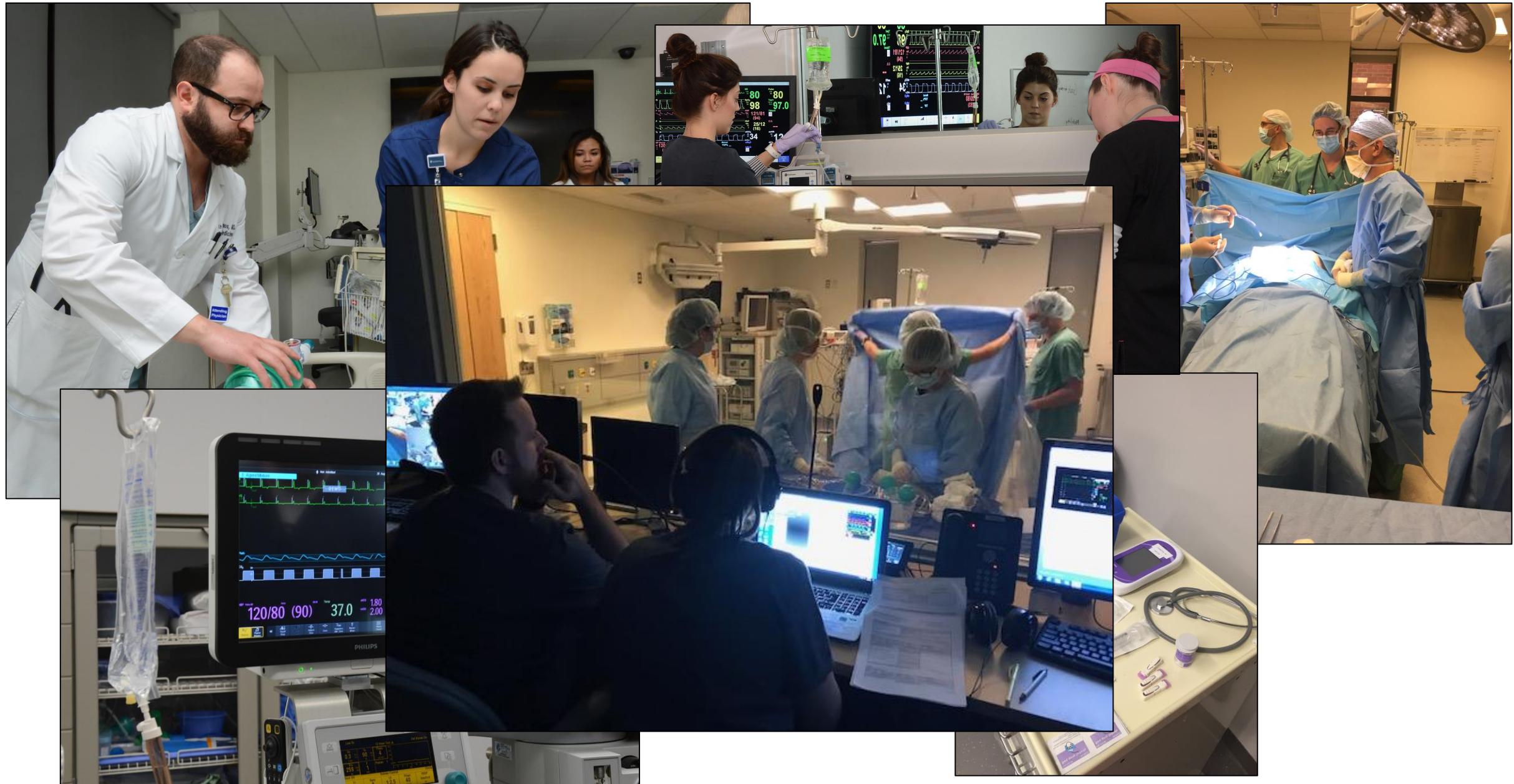
What is healthcare simulation?



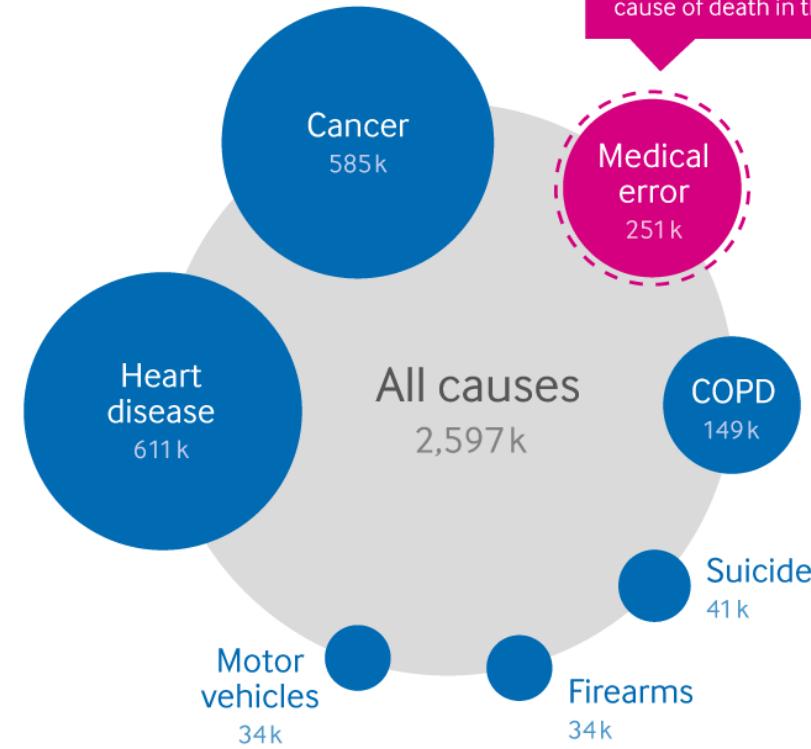


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Transforming learning, collaboration and care



Causes of death, US, 2013



However, we're not even counting this - medical error is not recorded on US death certificates

thebmj Read the full article online
<http://bmj.co/mederr>

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Data source: http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf

What is systems-integrated simulation?

Ref: SSH Dictionary

- An engineering term meaning to bring together the component subsystems into one system that functions together. *[In healthcare, the ability to improve the quality of care and patient outcomes through re-engineering of care delivery processes.]*
- A category of simulation program accreditation that recognizes programs that demonstrate consistent, planned, collaborative, integrated, and iterative application of simulation-based assessment, research, and teaching activities with systems engineering, and risk management principles to achieve excellent bedside clinical care, enhanced patient safety, and improved outcome metrics across the healthcare system(s) (SSH).

Device-Integrated Simulation

- An engineering term meaning to bring together the **component subsystems** into **one system** that functions together....

...in which the **component subsystems** are the medical devices and the **one system** that functions together is a replication of the clinical environment as it actually functions in the “real world.”

Testing, Training, Observation, and Response

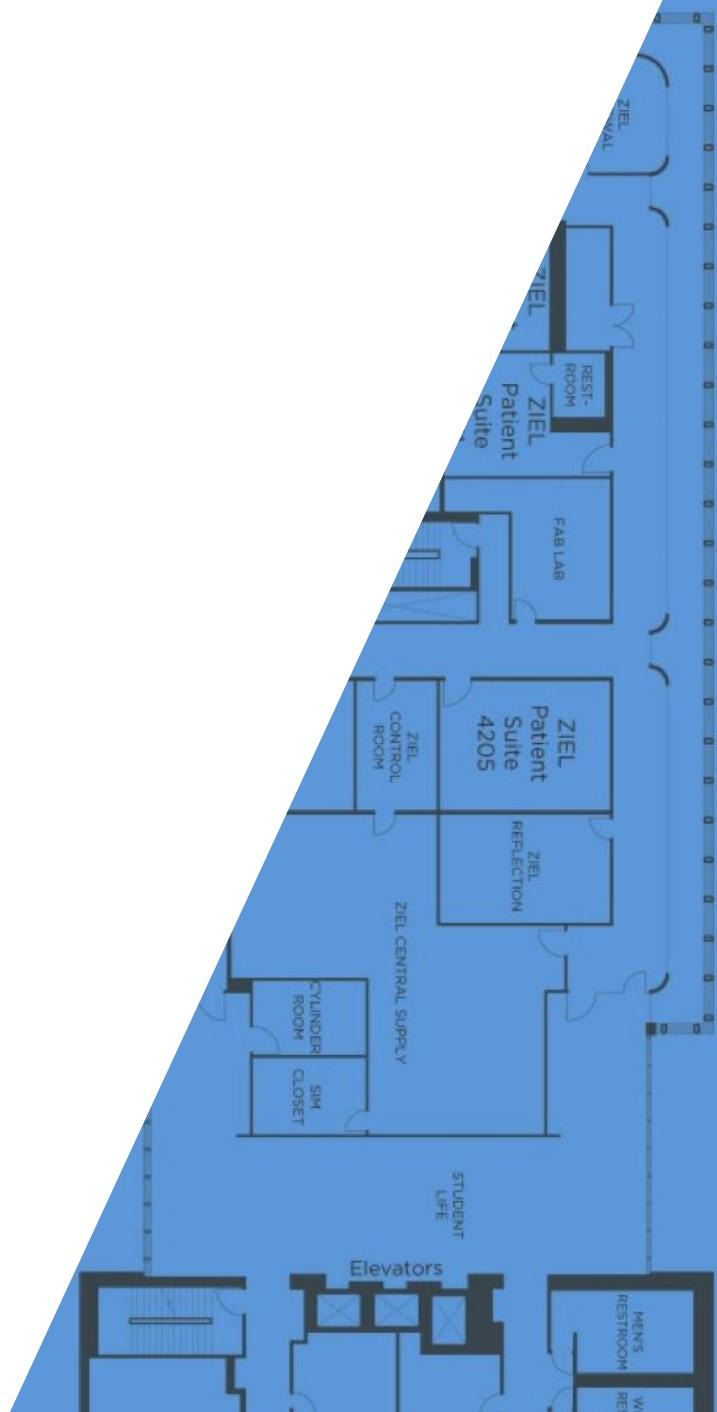
Testing the systems already in place

Training learners on specific targeted objectives

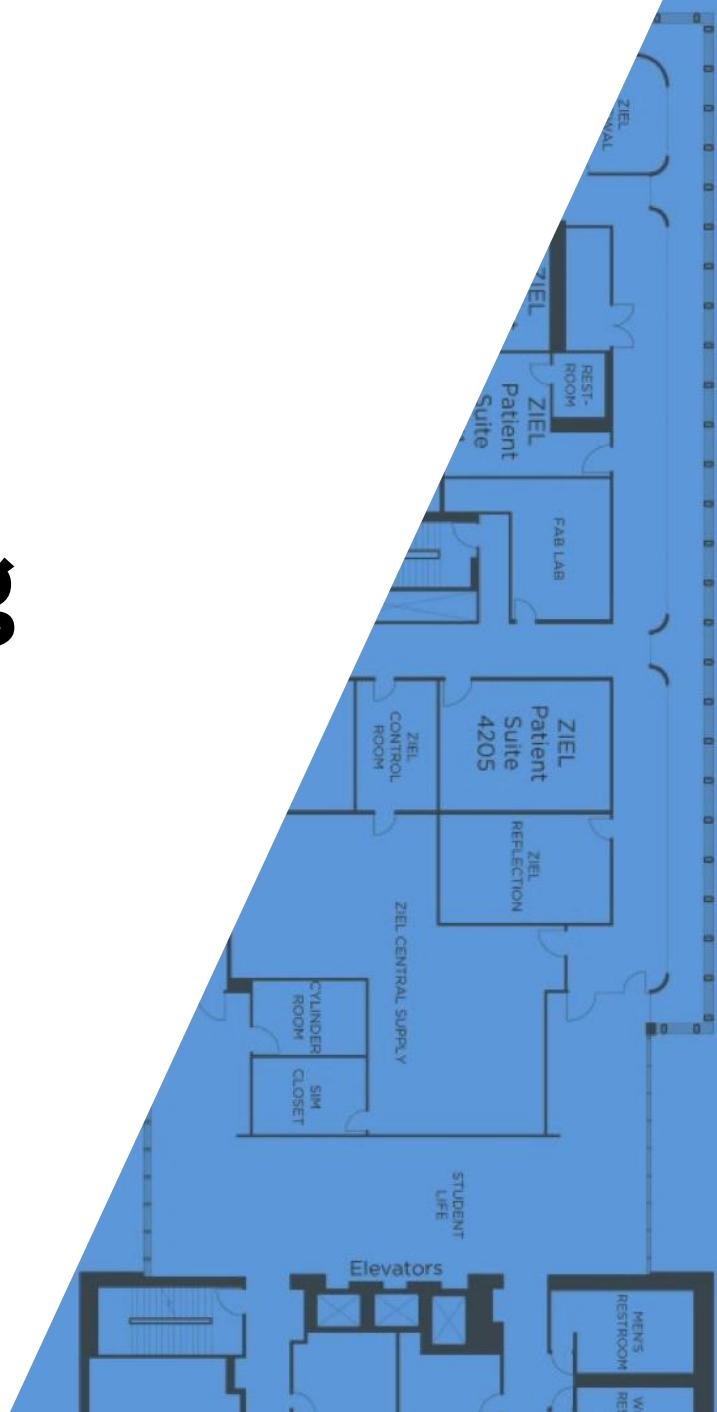
Observing how the learners interact with those systems

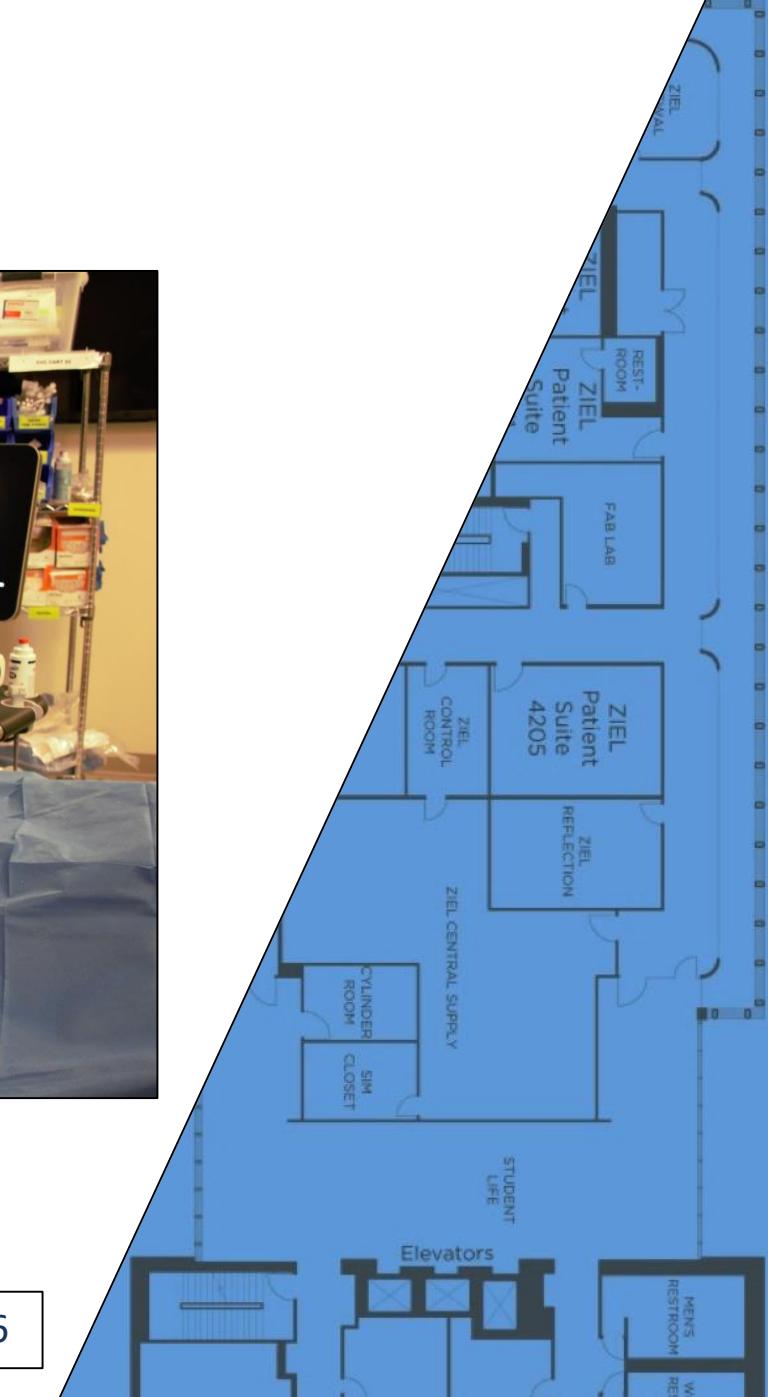
Responding to those observations for meaningful change.

Root Cause Analysis

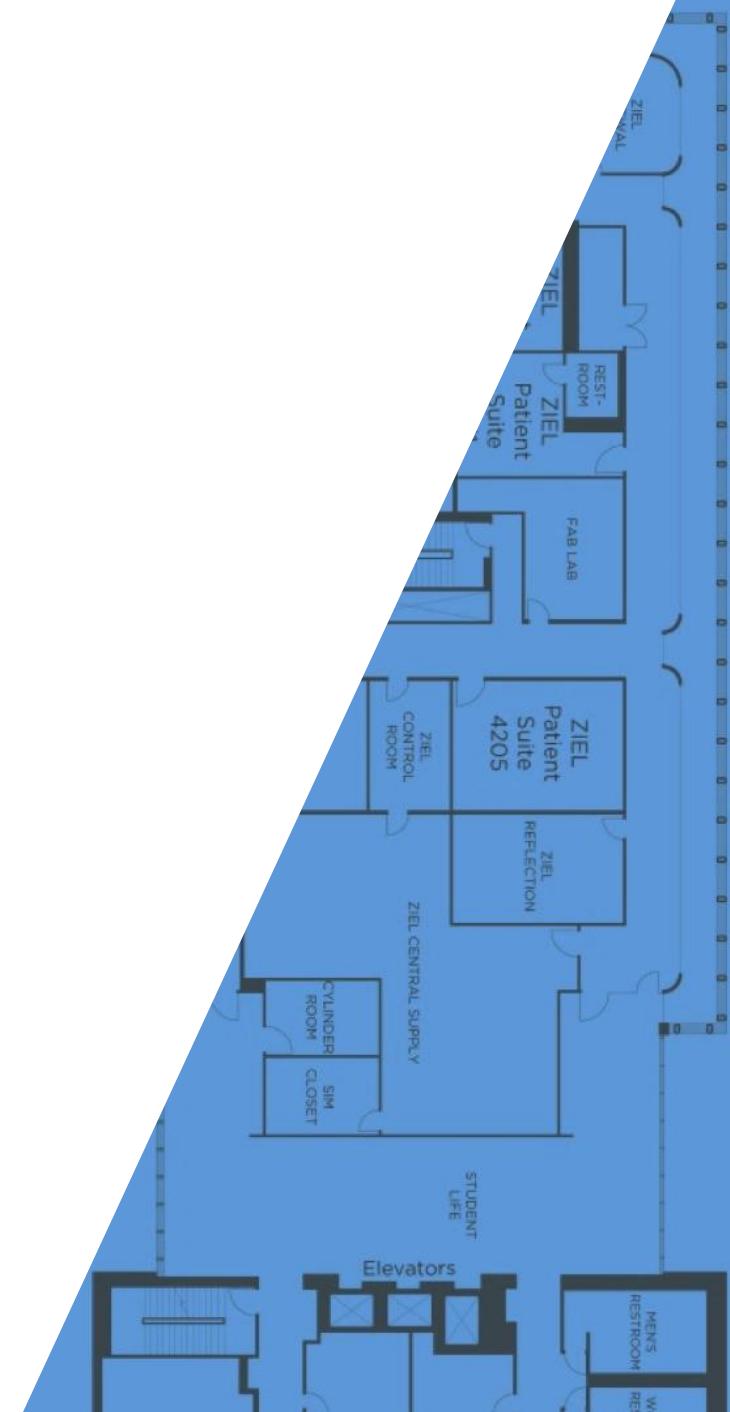


Central Line Insertion Training



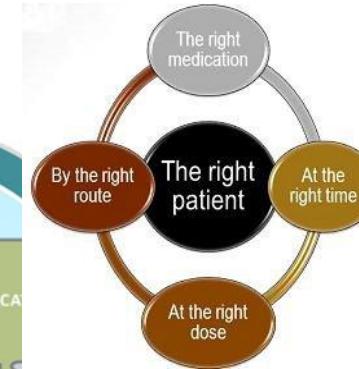
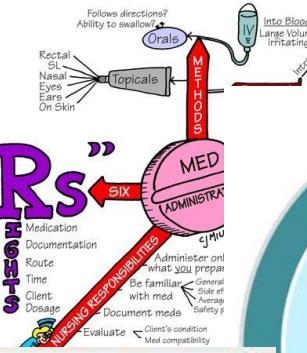


Medication Administration



Rights of Medication Administration

Replicating Safe Practices in Simulation Training



The 8 rights of medication administration.

Check the name on the order and the patient.
Use 2 identifiers.
Ask patient to identify himself/herself.
able, use technology (eg. bar-code scanning).

Check the medication label.
Check the color.
CHECK FOR ALLERGIES.

Check the order.
appropriateness of the dose using a current drug
reference, calculate the dose and have another nurse
calculate the dose as well.

Again, check the order and appropriateness of the route
ordered.
client can take or receive the medication
by the ordered route.

administration AFTER giving the ordered
medication, and any other specific information as
the site of an injection or any laboratory
test needed to be checked before giving
the drug.

for the ordered medication. What is
? Why is he/she taking this medication?
get they have the RIGHT to REFUSE.

that the drug led to the desired effect.
ment your monitoring of the patient and
nursing interventions that are applicable.

eNursePath.blog



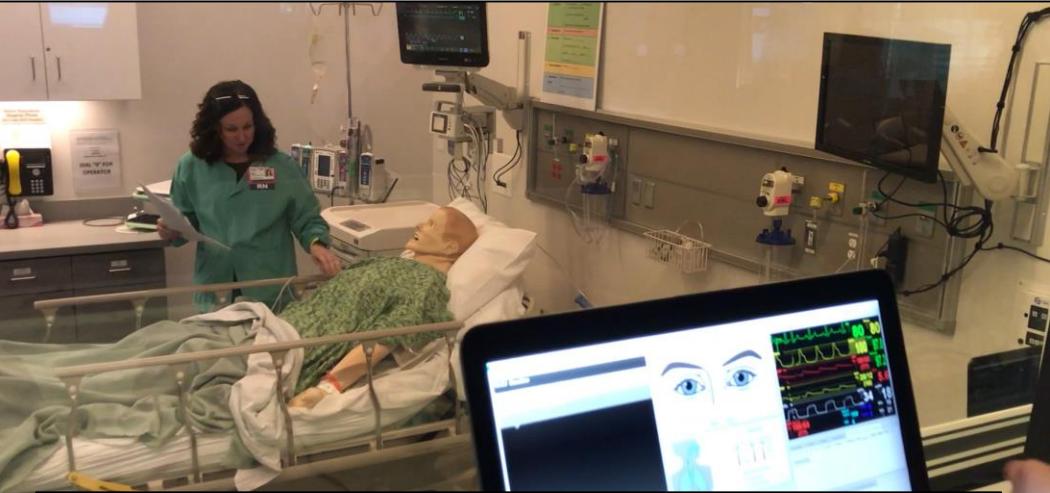
Pre/Post Myocardial Ischemia



Omnicell Integration: Can we get what we need when we need it?



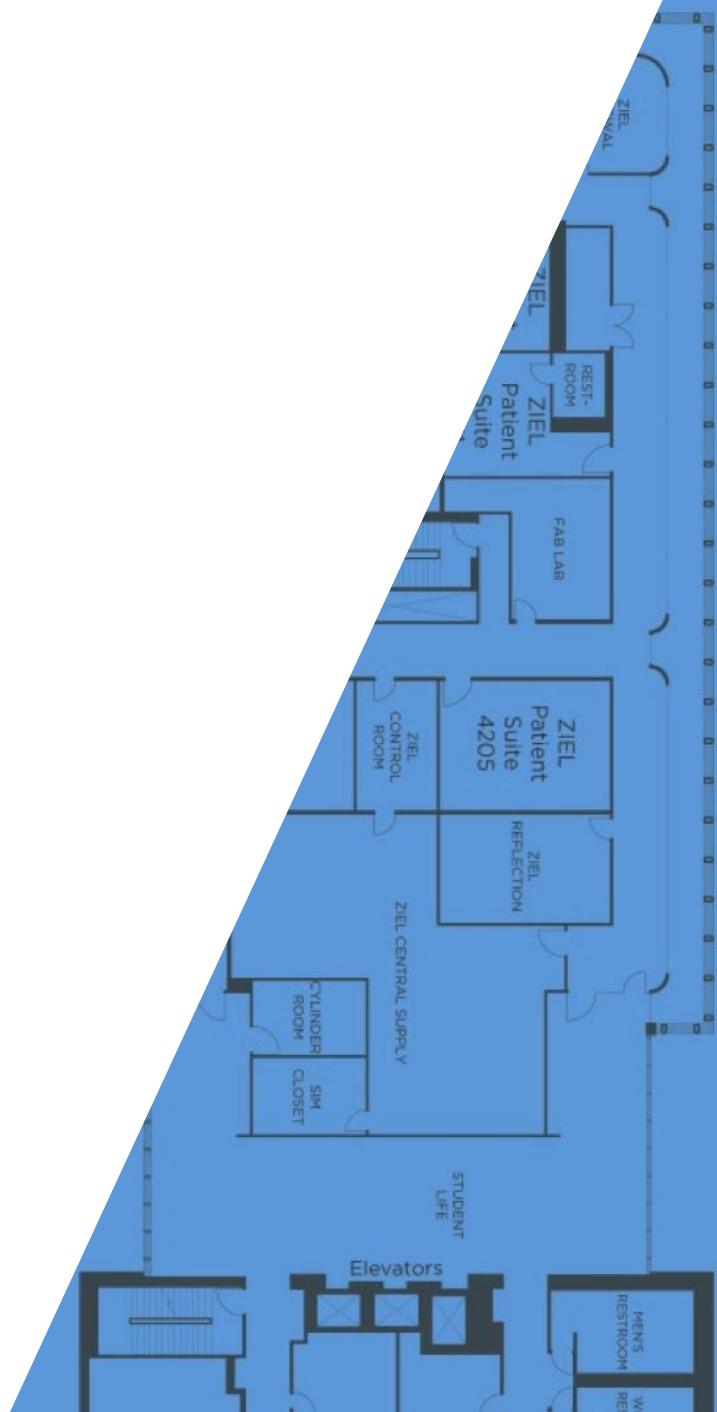
Myocardial Ischemia



Simulated OR Environment



Failure Modes Effects Analysis



Operating Room Team Training



ICU Massive Hemorrhage Situation

Identification: We need blood.

Communication: We need to order blood.

Delegation: Who orders blood?

Process: Ordering blood via system in place.

Communication: Blood is ordered.

Meanwhile, patient is moved to the OR...

Communication: Blood bank is aware blood is needed.

Process: Blood bank internal process

Transport: Who transports blood? Where does it go?

Identification: right patient, right blood

Process: administering blood to patient

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Meanwhile, patient is moved to the OR...

Video of Blood Ordering Process

Without integrated systems in place:

- Place phone call, blood arrives
- Assumptions made about every step of the process when true device integration is not complete.

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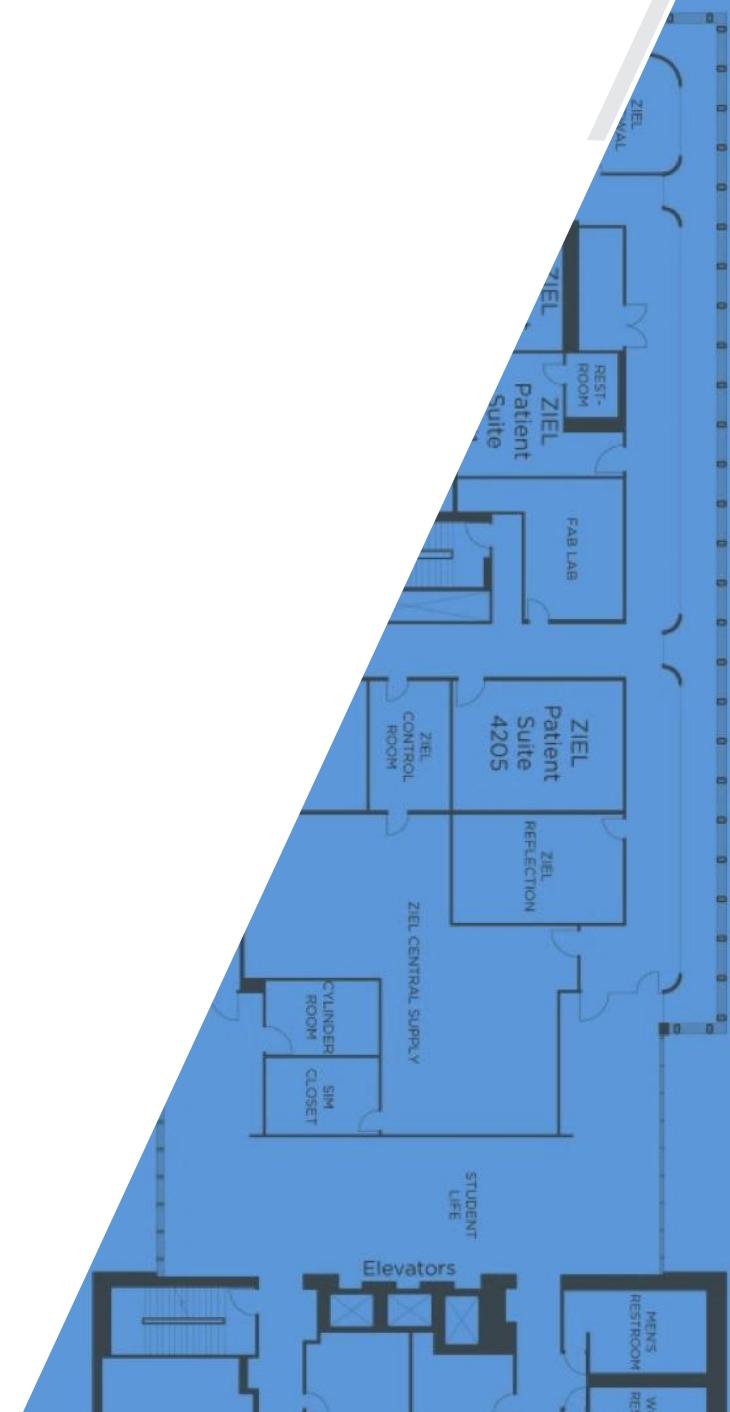
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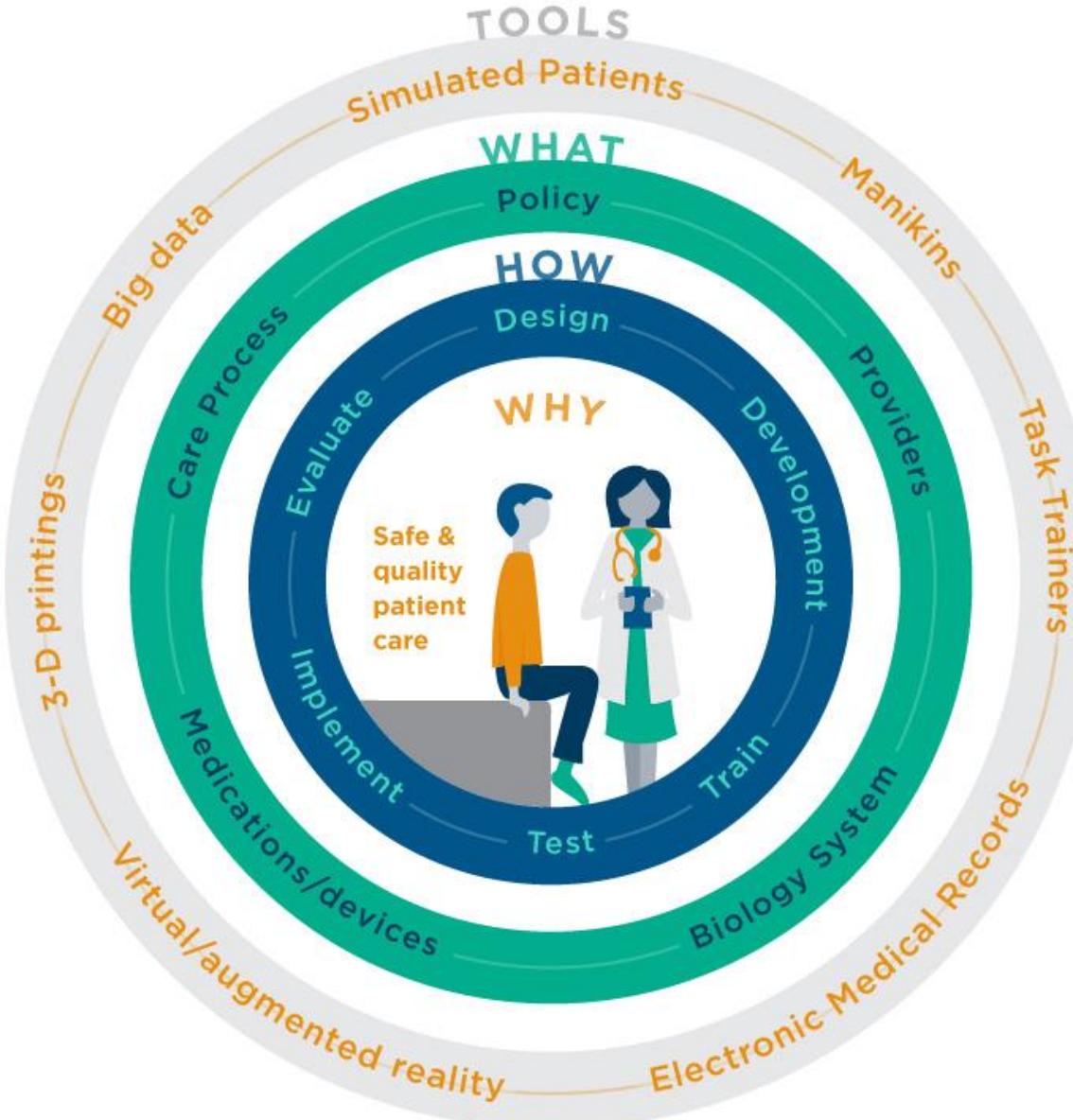
Process: administering blood to patient

Device Testing



Healthcare Modeling & Simulation

AN INTEGRATED APPROACH





QUESTIONS / OPEN DISCUSSION

