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TRANSCRIPT - GR 02 24 23 "To Infinity and Beyond: Why Aspiration Matters in Healthcare Simulation Practice" Christine Park, MD, from the University of Illinois College of Medicine

Medicine Grand Rounds

- Welcome all to medicine grand rounds. Thank you. Usually the chiefs are introducing, but I wanted to introduce a open with a special. This is sponsored by this grand rounds are sponsored by the Academy for excellence in education, but also co-sponsored by a Bunch of different groups. My name is Nero Sham, the Director of the Academy for excellence in education here, and this is the culmination of our excellence in Education Week, which has been directed by Katherine Mutter and Nora Kern, who are also in the crowd. This grand rounds is co-sponsored by the Department of Internal Medicine, obviously anesthesia the School of Nursing and Medicine Simulation Center collaborative and also the Clinical Performance Education Center. So I really think all those organizations for sort of helping us organize this grand round speaker today.
- Today. Our grand round speaker is Dr. Christine Park, who is the Director of Simulation at the University of Illinois College of Medicine. She's a professor of Anesthesiology and Medical Education. She's the past president for the Society for Simulation Health Care, and actually created their code of Ethics, which has been translated into 19 different languages, and used pretty broadly throughout the world regarding simulation in the code of ethics. So
- a she started a multi-woman multi-site women in leadership meeting, and is a fellow in the American Society for anesthesia and Medical Simulation and Society for Simulation.
- I wanted to tell those on Zoom that if you have any questions you can put them in the chat. We will get to questions at the end, but it gives me great pleasure to introduce Dr. Park, who I spent some time with yesterday telling her about some of the cool stuff we're doing here at Uva. Kind of opened her eyes to some of these things, but i'm really interested to hear talk today about to infinity and beyond. Why aspiration matters in healthcare simulation and practice. Thank you.
- Thank you, Dr. Shaw.
- I'm so delighted to be here, and I also I'm sure that nobody could see me if I stood here. So it would sound like this, and I need to disclose the first that I have.
- and part time gig with a company called C a healthcare, and I will not be discussing any of their products today.
- so I just want to start with sharing with you that, as you can see here, that I started my career in general.
- But actually, what I want to connect to is this is the idea of
- going back to, if you, if you would be so kind to accessing what were you like as a child? And you know from this photo. You can see children are willing to do all that. What would happen if I tried to cut this chair? I had no idea what would happen, but it was just the sheer curiosity of it.
- and over time we become more and more rules driven, which which that's important. But when it comes to innovation and sort of breaking out of the boxed and creative thinking.

- Those can be constraining that rules driven kind of mentality. And so I would like to invite you to join me, if you would, to kind of be in that sort of child like head space as we go through our top today.
- as I said in the in the preamble to my talk.
- Neil Diamond and his introduction to Fahrenheit, 451 talked about 3 principles that are important.
- and for any work of Science Fiction, and I actually believe they actually inform a way to think about anything that is meaningful to us in our lives, and the questions are 3: what it one.
- if the if only. And if this goes on like this.
- and the what if kind of opens a world of just absolute possible. What what if I cut this chair? What would happen?
- It's unconstrained by what you think the result will be. It's just sort of a flight of fancy.
- The next is, if only, and then, if only opens a world of possibility in a way that could be, you know, really amazing and glorious, or really scary and awful, you know. If only a Martians took over the world, or you know whatever, If only we could all move to Mars.
- and it's a way for us to kind of break out of this sort of near horizon Kind of thinking about what's the next thing that's coming.
- And then the third concept is, if this goes on like this.
- and if this goes on like this is perhaps the most cautionary of the 3,
- because it starts with, Where are we today? And where are we now?
- And if we continue on the path that we currently are on, where would be back endpoint and an office as an opportunity to say, this is amazing. I definitely want to continue on this, or I feel like this is not going in a direction that I particularly love. And now is my chance to make a difference.
- and I want to try to connect these 3 concepts to this stuff about simulation. I'm going to talk about today.
- and ultimately it comes down to the natural size of aspiration.
- And indeed, when I looked up the School of Medicine at Uva's mission and vision statement. Aspiration is very firmly in the mission and vision Statement is part of the DNA of who you are, and what you do every day, whether it's patient care or education, or what have you?
- So I feel like i'm, You know, in a very crowd of like lines today.
- So a little bit of history about simulation
- in case you don't know



Unknown Speaker

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healthcare simulation actually has a longer history than you might.



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Thanks.

- So first of all in the upper left-hand corner, going back to the 1,900 sixties, was the invention of human-based simulation with standardized patients, and at the at a very similar time, and in fact, in the same institution.
- This mannequin, called SIM One was also invented.
- and it made the cover of Life Magazine in 1,964.
- And but that mannequin could do things that our current
- the best technology can't even do. For example, anyone who ever gives sexual calling. You know that the patient often posticulates this man. It can. Could.
- It was amazing. But the use of this much technology. Imagine the computer. It took to run this thing in 1,964. It was the size of an entire room.
- and the use was relatively mundane. It was teaching young students and young interns had to integrate.
- And at that time, and maybe even today.
- that much technology for that one kind of use, even though that's an important skill. Didn't really have it.
- and it continues to be a challenge for us to think about today. The roi and the vlive simulation
- in the upper right hand corner. Going back in the early 1,009 hundreds, we see that nursing schools were using life-size dolls
- to teach nursing students skills of nursing, and in fact, they they worked with a company that made dolls to expand their dolls, to to make them fully life size. Prior to that they had been stuff with straw and stuff like that. So they're already attempting to make things more realistic.
- But I mean that's that that's sort of this past century. Going back 3 centuries into and seventeenth century France.
- we see in the lower left Hand corner this ivory carved figure
- that was designed to teach people about the process of labor and delivery.
- And you can, I mean, I find this so tickling that they tried their best to do the highest fidelity they could with the technology it had at the time. And you see, they have her going like this, you know, to try and make it seem like she was in a lot of pain
- with labor.
- So they already were thinking about. Kind of how do we make this learning stick.
- and then going back a couple of millennia. The lower right hand corner shows a mannequin that was created to teach acupuncture.
- and the way that they gave the learner positive feedback, if they got the right channel, was to load those channels with the liquid mercury, and so maybe there was an unintended consequence. But you know they were. They were thinking about, you know. How can we? How can we make the learning work?
- So? Health care Simulation actually is a couple of 1,000 year old concept.
- and most of the ways that simulation was used was as a tool.
- It's an extension of bedside teaching the way. A stethoscope is an extension.

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and the first question I want to ask you along those the 3 questions. The framework is what if simulation was more than a tool.

- and maybe that seems crazy. But I would like to share with you Why, I think it already is
- so in the development of any profession, and we were the same in medicine and nursing and engineering. What have you
- most of those things don't start as a full
- profession? They start as a kind of an application that they started as a trade a craft. What have you
- over time? There are multiple things that happen, skills, development, accreditation, licensing, and so forth.
- and the development of code of ethics is one of the milestone events in the professionalization of of of any profession.
- and I would like to submit to you that health care simulation today is already a practice which means it require. It is the expert use of established methodology and techniques. It does require a specialized training. It does require lifelong learning.
- and then there are standards of best practice and codes of ethics that form the foundation of what we do in simulation.
- So what makes codes about this special? And because you know they're not long.
- So maybe they're kind of using this. But what makes them special is that they're self imposed. First of all.
- they are aspirational.
- and so they don't tend to be transactional concrete. So here's what you do in your day-to-day work.
- They identify values and standards that are important to everybody in the equation, and perhaps most importantly, they assert an identity to the public.
- And that's an important part of any code of ethics in any profession.
- So speaking of codes of ethics, the Hippocratic both is perhaps the oldest and well-known code of ethics and in health care professions.
- But if you look at the actual content
- that's a little crazy like it's, I. I swear by Apollo, and then it says crazy things like I'm gonna treat my teacher the same as my parents. And if my teacher needs money I'm going to give my teacher money.

Unknown Speaker

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and I feel like that we don't do that anymore.

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So the for the Hippocratic code.

- the impact actually far exceeds the actual content. And there's certain attributions I don't know if you know this are not actually correct. So the first do no harm is actually not in the original hypocritic code, even though it's often attributed.
- Nevertheless, it was the first known assertion of a of a of a professional standard.

Unknown Speaker

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for in healthy

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and, in fact, you know, professions like piracy.

- also had coach of ethics, so you know they were took their work very seriously. They would say. You know they wrote things like, you know you shouldn't have fights on board, but take it on to take it on shore and resolve it with your source and your pistols.
- and also a concept of equal sharing amongst all the pirates.
- and or the thing that I find really interesting about this book, which was published in the 1,007 hundreds.
- is that it on its front cover.
- made a big highlight of 2 famous female pirates. So, pirates in some ways we're thinking about equity in the workplace like way before.
- So. coming to the code of ethics for simulation
- in 2,018, we convened that United Nations, so to speak, of simulation, and it involved a multinational group of people from about 25 different companies. It was multi professional. So it wasn't just clinicians people who are educators, researchers.
- operation specialists, and all the really we try to be as inclusive as possible.
- And it was multi modality. So we're having a conversation about modalities. So there is technology based. There's also things like computer and modeling and simulation that was included.
- And then it was also multi-ceptor so, including academia, people, are hospital-based people from industry for people who the Governor.
- And as a group of people we use the United Nations Development programs 6 value areas because we felt they mapped incredibly well to what we were trying to achieve in simulation.
- There's a QR. Code here if you want to grab it. Otherwise you can look it up on Google Healthcare simulation code of ethics.

Unknown Speaker

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and those value areas are integrity, transparency. professionalism, accountability. and a mutual respect. I forgot that one and finally, and what's most interesting to me is the results orientation part of it.

- And as Dr. Shaw mentioned, it's been translated into 19 different languages. Now.
- then, we're very proud of the this effort of the grassroots. All these different people who are speaking different languages to get the code of ethics and make it accessible to as many people as possible.

- So that's the code of ethics. The next question that I would want to explore with you here today is the phone. and it's this: If only healthcare simulation could go beyond clinical skills, training and assessment that has formed the bulk of our efforts. And then the development simulation is the idea of training and assessment.
- But what if we could do more than that? And I want to share with you a few examples where I think it is for this I'm going to pull out a little bit of stuff from the code of ethics. SO One of the lines in the code of ethics talks about honoring the skills.
- values and vulnerability and knowledge of learners and colleagues.
- What do we mean by that? So we developed a program called First Step.
- Now first death and simulation residences.
- For the most part our efforts are in training people what to do
- and how to prevent death. It's all you had to have difficult conversations. It's all this sort of professional forward with. But forward.
- But that happens to the vast majority of clinicians even, you know, no matter what your profession.
- And what do we do to prepare learners for that? Actually.
- we often just see that we say, what do we say to them? I mean, i'll tell you what was Ted to me. You know what it's gonna happen in your career as well get used to it.
- And so we thought, what if we could create an anchoring experience. In this case it was for med students, and we have an interprofessional version as well to catch them before they go to their rotations.
- and to give them that first patient death experience in a.
- so that, no matter what happens later, they have the coping, at least the framework of probing skills, resilience, and those kinds of things to help to try and help them
- incorporate that into their professional identification before it happens to them for you.
- So the experience includes multiple phases. So it involves a patient depth experience in which a patient does pass away, and we tell the learners in advance. At the end of this this a. You will make no mistakes, and to the patient's going to die.
- and after that actually was interesting, is we? It was a hot topic of debate. People. Many people felt, if you tell them in advance they're not going to.
- They're not going to connect, and they'll just be, you know, whatever, and i'll tell you we that was absolutely not the case.
- After the simulation. They had 3 different kinds of processing. One was just a journaling exercise. Write down what it was on your mind to that for 10 min.
- Next was to have a eap counseling actual counseling session.
- and the vast majority of learners had no idea that there was such a resource available, nor how to access it.
- And then the third was the traditional.
- and I'm going to share with you some members. But I more than that, I would like to have the learners voice speak for themselves, and the next couple of slides
- when we found that with the question of my professional education has prepared me for patient deaths. we went from less than one to about 30 and 30% isn't, you know, 80% or 90%. But I think that's fair.
- One event. Can a person really say I'm fully prepared. I'm not sure. So I think that 30% is a really honest and good place.
- and the idea of wellness and resilience for coping is part of my professional identity as it comes t0 One. You know me taking care of patients in the future. We went from 90 t0 84%,

- and then the various modalities that I explained to you all had sort of a very high degree of resonance from the But let me share with you here the one of the learners, and this was in his journaling session.
- So this is the exactly the kind of thing we were trying to achieve
- in this integration, and in this transition of the stuff that you learn about the doing of doctoring, and how I'm going to incorporate that into my sense of myself
- and you can. You'll note that this learner, even though we told him ahead of time. The patient's totally gonna die
- by the end of a scenario did not experience that anticipation as a
- as diminishing his experience.
- And then, a year later, a different learner wrote us something about her reflections on what it happened in the interim.
- And again, here we see when we're talking about an anchoring experience.
- If we leave it to whatever happens, this lunar, which is going to be would have anchored on this idea of I need to be stoic and emotionally constricted. Whatever messaging she had received.
- Instead, she was able to reflect back on the things she had learned in the simulation.
- And what's really interesting for me here is myself. Personally, I don't have a memory of my first patient death which I find to be so tragic for myself.
- Whatever messaging I got around that time was, it's not worth remembering, or I don't know what I was. I too busy to care. I wish that I could get that that memory back.
- And so and so the event is actually quite intense for everyone involved, including the people who are acting and the text and the faculty. Hold your briefing.
- and we have done our best to find ways for people to decompress.
- And this year we're adding for this year this April's program, we're going to be bringing in therapy animals. So I'm very excited to see how that goes.
- All right. Next, I don't maximizing safety and minimizing both the physical and psychological risk. and the other concept is about exhibiting humane behavior and honoring diversity and inclusion.
- What do I mean by that? So this as I'm sure everybody here is familiar with Kobe's experiential learning cycle.
- and I believe in a simulation. We do a really good job of those first 3 things, the concrete, the reflection, the abstract, and separation. But how much do we really do in the active experimentation phase.
- I think we do so we, the learner, comes in. They have the experience. Afterwards we give them feedback, the debriefing. How? What would you do differently?
- But then, how much do we say? Let's go back and let's try to crash your pressure bike on purpose and see what happens there's not enough of that, in my opinion.

Unknown Speaker

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So we've created a program called a Rehearsal for authenticity.

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and in this we're actually having a standardized patient sort towards a more of a coaching relationship. The learner gets to come in. They get to experience 3 different facets of patient. After that's likely to be frustrating for them.

- But then I get to so either the standards patient or the lunar can time out in a moment.
- Say, hold on! I felt awkward about that. I felt
- frustrated. I felt whatever.
- and then the Sp will encourage them to do all kinds of things and the purpose here. What we say is, don't do your best. Do your fearless mess up on purpose. Have you ever yelled at a patient?
- Let's try it now because you definitely don't want to do that for me. Let's try it on. Now let's see what that feels like. Let's see what we can pull from that.
- So this is a. A rehearsal for authenticity is one of the programs that we do for all of our second year, and also our fourth year medical students.
- All right. So the third concept on what if simulation could be more than a tool
- has to do with maintaining vigilance not only about the things that we want to happen. But what about the unintended consequences?
- And this is an area where I think there's so much so much room for that.

Unknown Speaker

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And the question is, the question is.

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if we teach someone to use a hammer, there's everything gonna look like.

- And indeed, we have some evidence that suggest that it does so. In anesthesiology. There's a couple of steps in the difficult area we management algorithms. One of them has to do with placing an Lma or super glatic airway.
- and it's often just you weren't on the job. It's not that big a deal. Why would we waste time in the simulation to teach it?
- The second one is correct with
- it's a very, very low frequency, very high consequence. Events. Simulation is the perfect place to learn this right. and what we did experimentally is, we brought in a knocks and a student residence. We train them in both both of the procedures in simulation.
- One group got the Lma first, the other group got the correctly thyroid enemy first, and I'll confess to you, actually, we didn't do this on purpose. We did it because it was an expediency of scheduling.
- and then, after they got all their training, we knew that they knew all the steps, and we gave them a difficult airway scenario in simulation.
- We were sure that, having taught them all the steps that the performance would be perfect. You can probably guess that it was not so. If you look at the Red Bar. You can see of a group that got trained and crank first.

- We're
- They were took much longer to make a decision to place an hour May
- and they were much faster to pull the trigger on doing a craig.
- Conversely, the group that got trained in L and a postman. First.
- we're much faster to make a decision to put in an element, and they took much longer to pull the tri. Now I don't know which of these 2 is correct, or even if either of them is correct. But one thing I know for sure is they're not both correct, and there's a difference ultimately of a 2 X difference in time
- for the learners. and, as it turns out.
- this precedent exists in other fields as well. So in the us Air Force based on the order of way. The pilots are trained to recognize. Certain aircraft
- affects their downstream bias and decision making on what is and is not an enemy aircraft. It exists in forensic identification and fingerprint analysis.
- It exists in practicing physicians. So this exact same phenomenon was was observed among practicing and sociologists after a one-hour correct training session.
- the number of anesthesiologists who completely bypass that lem a step doubled.
- and many of them and the decision to go to Craig very fast, went also got cut in half.
- So you can understand something that's so simple as the order in which we show learners. Things can create
- massive, massive, downstream consequences. Can you imagine us Air Force Pilot, a forensic person let alone in health care?
- So a lot of interesting things for us to think about with respect to unintended consequences.
- Now I want to ask you all here a question about this. So this is a picture of from Dr. Low with Simulation Lab, a central line training task trainer. Can anybody think of a potential, unintended consequence of training central lines on this device?
- Just shout it up patient discomfort. So I know that's a great one, right? Because in general we don't attach vital signs to this. So it's just a inert piece of plastic totally one other pardon.
- Yes, yeah.
- Okay. yeah, totally. I grew with all that. And here's another thing. Do you see that? That? So that I mean, I don't know if you know this. But this device is fixed to place a right-sided line. and so the looters by and large are gonna look anchor to this presentation.
- and they're going to learn their skills on a right side of the presentation. So i'm not. I don't know Dr. Vlog, you know of any device that presents a left s0 Opportunity to practice a left-sided placement.
- And so, in fact, this happened a very similar thing happened t0 One of my colleagues was teaching on the Thurs, and tsis model, which is a very similar. It's only a right side or model.
- He actually because he had taught so many times on that model, actually placed on a real patient who needed a left side of Thoris, and Tas did it on the right side.
- because he was so accustomed. So the idea of an intense, unintended consequences.
- Now the third example comes from my observations yesterday.
- and it has to do with the the soft and bomb cadavers which are absolutely amazing, and I want to show it to you, and then maybe think about what could be a potential, and it's not a bad, but I mean it's in the consequence.
- It's absolutely amazing how many people have seen that before.
- A few have seen it before I, Dr. Shah said he wished he had a picture of my face when I first saw it, because my eyes popped.
- It's incredible. The potential learning is absolutely amazing, and is based on what you're already doing.

- And can anybody think of a potential unintended consequence of learners doing whatever dissections or whatever on this kind of amazingly realistic could ever.
- I mean, it is amazing. The more amazing it is, the harder it is sometimes to think about the unintended consequence.
- Yeah. I don't. I have no idea what you're gonna say. So I was a medical student. My cadaver was you guys or like our that looks like a person. I don't know what that does.

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Yeah. I mean, let me jump off of that. So it's similar a similar thing when reflecting back on that first death.

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Simulation we did.

- The patient was voiced by a standardized patient through the microphone, but the body of the patient was a mannequin.
- So it? Was it Not only was it plastic like it was literal, plastic, and we had Learners have incredibly, incredibly strong reactions to thinking about the humanity of this person
- and the thing, and the conversation that they had shared. So I can imagine. If this were a very early learner. and we didn't
- invest the time to prepare them for what they were going to see. We already do for the normal, formal, and prepared, i'm with the mannequin cadavers right.
- But this is next level. And what could potentially.
- what could potentially someone's reaction be? And how should we prepare them ahead of time?
- What should we do for care afterwards if we're going to have them do that, and i'm calling out early learners. But maybe it's the same for me, too.
- because if I was gonna I don't know, do a correct training on this on this cadaver, and I failed.
- I might have a very different
- sense of my performance. Then, if I do it on a piece of plastic or a formal and preserve, could ever.
- So David Meyer did share that for some of the procedures that you all do down there that there's a huge amount of fluid
- that we can't have build up in the tissues, and so he'll annotate a leg or a shoulder.
- and that he does take steps to prepare the learners for what they're going to see, because that because it's so realistic.
- So I would challenge you to think about
- the things that you do in simulation or all of education, to always have the exercise of thinking what is a potential unintended consequence.
- and it goes to things for us standardized patient. We want to portray a patient who is on house and who is on drugs. How are we going to cast that case. If we cast the case as a black person, an indigenous person, and a white person, a woman, a man.

- all of those are going to have downstream consequences on how to learners in print on that. And because we don't have the time to show them everything
- we need to understand, for all the choices that we make.
- You know what are the consequences? I'm
- fine by making this decision.
- Okay. So the next one on the what it has to do with results, orientation
- and creating impact across a range of outcomes. And here I want to share that we to flex out of students and trainees. What about practicing providers?
- So in aviation?
- There you I don't know if the pilots go very frequently to practice any of in a simulation.
- But the other thing that's a huge strength is that there's some massive data sets that are created from simulation and massive data sets created from actual flight operations
- and the issue. Things that are observed in actual flight are fed into simulation. Things that observed in simulation are fed into actual flight. Practice guidelines. And here's an amazing example. It was noticed in simulation that the pilots were landing the planes in such a way that they were burning a little bit of extra fuel at the end of the flight. I don't know what it was. A half percent something.
- This is the thing you would never ever be able to notice in real flights, because there's no
- place that tells you exactly where the field is being burned.
- and through that analysis, and it was totally safe. So the plan. The pilots were not crashing the plans they were doing in the bounds of safety.
- But they said, Gee, pilots, if you land the plane this way versus that way. We can save 0 point, 5 Of you at the end of the at the flight they track with fuel usage over time, and Indeed, they notice that there was a decrease.
- Think about how many I don't know billions of dollars. There's a point 5% savings and fuel.
- and this kind of synergy.
- at least in my understanding doesn't exist in a scaled systematic level in health care yet.
- and we have enormous opportunities to do that.
- SO One of them has to do with this game screen based simulation that exist in anesthesia. It's very flawed and perfect, but the opportunities are still interesting and let me take a short digression as anybody. Her about a Sany diagram, so I may know what that is, because I didn't before I start on this. So the diagrams were created
- essentially to create visual charting.
- and for this it was used to chart the progress of Napoleon's armies across. I think it was Russia, but you can easily see the width of the. The band is a set in the number of people.
- so you can see there are parts where they diverted off, and you can see over time. The army got smaller and smaller. so it's a nice graphic way to to display that.
- And so for the industry to send that we have
- over and in fact, by now approaching a 1 billion data points.
- And i'm not aware of that much data existing in simulation anywhere.
- and by looking at all of the decision points of the anesthesiologist to play this, you can see that most of them
- we're in lock step pretty much until about the
- little small diversions. But at that point you can see there's some large diversions in decision making
- some of which lead to success, and some of which lead to failure.

- And you would think, with a group of practicing anesthesiologists, shouldn't we all be making essentially the exact same decisions. This is not a super difficult case. I'll tell you it was not exotic.
- I mean it was exotic, but it was one that we often are trained for, and I prepared for.
- and more importantly, mapping the performance to this kind of graph
- I'll point out the upper right hand corner is good behavior that is frequently applied. So that's the Holy Grail. We would love to see a lot up in there.
- but we don't so the next kind of best it, for in terms of training out training focus is the is number 2.
- So this is good behavior. So it's likely to increase your chances of success.
- but it's been frequently applied. So that's like a hotspot, for if I'm going to design some training, then I want to create some performance improvement.
- That's amazing. And
- when we look at the mapping of these players and all they've done with all the decision points that they made.
- I would love to say that there was a lot in that upper right hand corner. But there's not there's 0. I it's just absolutely shocking.
- There are a number of things in that upper left hand corner, and the one in the big blue is, it has to do with increasing ventilation
- on this patient who has molecular hypothermia.
- And again. Amazing like that's what seem part that's part of the Biblical teaching for for the handling this kind of situation. And yet it's infrequently about.
- So if we were going to design some simulations to help people get better in this, we would focus our efforts heavily in our upper left hand corner
- all right. So we've been through a lot together. And so the last part we wanna I want to kind of engage in a little bit of. you know. idealistically
- So if things continuously. if things continue this way.
- simulation can improve health outcomes for everyone every year.
- And in the words of Martin Luther, King, Jr. We are all caught.
- and an inescapable network of mutuality, and whatever it affects any one of us directly affects us all in this room, and directly
- the public, as it turns out, has a very well formed opinion about simulation. SO 20 years ago the Gallup organization did a poll, they asked people: what do you think is the importance. And this was for internal medicine people that I think it's generalizable.
- How important is that your doctor participates in simulation throughout the course of their career, and 92%. The American public believes that it is important to do so. This was 20 years ago.
- So I believe that in addition to the students and the trainees, we all a lot to Our public to adopt and to bring simulation into sort of the entire course of our careers.
- and as a kind of a last thought here.
- I want to read this to you. Simulation based education
- is a cultural, social, and political undertaking that is embedded in systems of power.
- and we need to embrace these health professions as a social undertaking as well as just a clinical one.
- and to see that the pedagogical experiences that we create
- can and do powerfully influence professional values and attitudes and critical practice.
- And with that I'm going to conclude.
- And it's 1240, and I think we do have time for questions. Right?

- Thank you. Everyone.
- Okay.
- Thank you for that talk. I will say that simulation.
- Where do you see the future of augmented reality and virtual reality fitting in here? Because
- there's a lot of money going towards that, and it's very expensive to do. Do you feel like that? Money is worth it or not? In
- second part of that question is, whenever I've seen it done it's like one person with a headset doing it individually. We're in medicine. It's very much a team support as opposed to an individual thing. Yeah, I love that question, and I I don't know if I'm in the minority. I probably am a minority on this.
- and so
- let me preface by saying, I personally have not seen a moment where I said, if we don't have a we are for this, the learning is not going to work
- so. But why do I say that going back to the pilots.
- The fidelity is based on the level of expertise. So I've driven. I've flown
- a 787 dream liner in the simulator before, and that equipment has the actual real
- coffin of the bone in 77. Do you think that not anything to me? You know the the flight instructor was like. Just try to keep the the bobble in the middle and try not to crash the plane like
- That's it right.
- And so same for early learners, you know they make something almost paper could be enough to make.
- As you get more and more experience, the fidelity starts to me more and more to you.
- However, what is fidelity is also conditional. so like I'm an anesthesiologist.
- If you put a mannequin on a table in this conference room and made, the 0 2 sat go down. I'm so conditioned to be responsive to that. Then I'm very likely to respond in a very realistic way, even though there's an audience of people watching me, and we're in a conference room.
- So the fidelity has to be right. So the now the question is visibility right in here, and we are.
- I'm not sure that it is for the expense. I'm not sure that it gets there, for people who are in practice to say God, when I was there it was.
- I always couldn't tell the difference if I was in a real setting and the other fascinating thing is there's a great book on gender database that talks about VR. And people process their vertical, whatever the thing is.
- you know the thing that issue motion sickness in 2 main ways.
- and men predominantly process. In one way women predominantly process in another way. VR: for the most part was develops that technology was developed using male subjects.
- And so it was adjusted for
- the male dominated kind of motion sickness. So a huge number of women experience motion, sickness, and so for myself.
- You can't really recommend it. even if it is great
- until we fix something like that.
- So that answer your question.
- Thank you, Dr. Park. Great talk. I think I was really curious about the first death experience that you highlighted for medical students, and how
- that seem to be incredibly formative for the students who you shared their journal entries for on the corollary. Did you find that
- for people who maybe didn't engage as much with the mannequin in that scenario that

- that maybe they had some other takeaways, and how that ultimately played into their education.
- Yeah, absolutely. SO One of the things that we really underscored is that we didn't have an expectation that everyone should break down crying. you know, and there was a lot of curiosity among the learners about. Should I compartmentalize, or should I not compartmentalize? And our role in exploring? That was not to say there is no should here but that to sort of name it, and to kind of sit with it. So just be.
- And the learners intersected in very different ways. So we heard, for example. one learner during the debriefing, said, yeah, I didn't really think that the simulation itself was the most realistic thing. And yet I don't know, because I've never seen a patient die. So maybe it is.
- and then went on to say: When I was a freshman in college, my roommate died, and how I found out is you just never came back from winter break.
- and I I never realized until this moment that I have never given myself a chance to process that. So, even if the simulation itself is not make you feel like if somebody actually died. it kind of opens a territory for people to start integration process. Does that answer your question. It does. Thank you.

Unknown Speaker

01:01:15

Yeah.

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01:01:16

I hate to keep asking questions, but I'm gonna keep asking it.

- This might be a lecture in itself.

Unknown Speaker

01:01:23

Where do you see the future of simulation going

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01:01:26

because

- we can keep spending money on mannequins and
- \$100,000, \$200,000 that are realistic.
- or we could spend \$2,000 or \$3,000 on a softened bomb cadaver
- and kind of do something we do. The internship readiness course, or I helped Catherine mutter with the internship writing this course, and we did do something where we compared

like high fidelity, low fidelity, and for some of you that I had to learn this vocabulary myself when I was doing it, and high fidelity was on this mannequin driven thing low. Fidelity was, we literally had a problem set with an instructor there, and almost like oral boards, walk them through it.

- and I felt like the learning was just as good between the 2. And I mean, I'm just curious. It's like. maybe we don't need all these bells and whistles. Yeah, I I I do, I do think, is with the advent of computer technology.
- and the first mannequin that was driven off of a of a you know, like a CPU,
- there was a and this was in the eighties more and more emphasis on more technology must be better to the point that we're calling Mannequin's high fidelity. But isn't really, you know, like, if an Sp: maybe that's high fidelity. So I personally think we maybe need to abandon this concept of high and low to talk about
- what is the right fidelity for this situation.
- And so for myself. Personally, I think the future of simulation needs to go in the direction of scalability. and that very likely means either technology has to be so good that it's accessible by a large amount of people.
- Or we need to think about what's the right amount of fidelity we need for those learning outcome, and
- to create data where we can understand it. So can you imagine
- it? Well, I don't have to imagine I'll tell you so. I've looked at the data set of almost 1 point
- 5 million an aesthetics across a practice that covers many different locations. And we asked the question. Gee! It just interestingly, is there
- the do women patients have their ha high.
- more tightly or loosely than the male patients.
- and when we found shopping, we should be the same is that there's about a 15% female upload for having worse high blood pressure management
- which I it's like I have time. I don't know what such my pay, or generally my patient is so. Why would that be a thing? And yet it is so? If we wanted to make a difference on that.
- Can we get, you know, 50,000 people to go to the same center to prep. We probably can't.
- and it's probably going to require a lower.
- Hi, Dr. Bark, Thank you so much for that talk. I'm also fascinated by your first step simulation, and I was curious because I went to medical school here. There might be a first simulation now, but I did not have that at least, and I was curious to know if you felt your students.

Unknown Speaker

01:04:43

We're better able to pick fields based on their ability to cope with death in general, so I guess my best example is, I'm. A pediatric neurologist.

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01:04:55

I have had one death in my experience, which was awful for me. My husband's a cardiac surgeon. He's had many deaths, and I think it's something I did not think about as I was

picking a field, and I'm lucky that I didn't pick a field that has a high mortality rate, because I think

- I have a more difficult time coping with something like that. And I'm curious if
- you have a perception of students are better able to pick fields more suited to what they are capable of handling.
- That's an amazing question
- we have. We are engaging a little bit of longitudinal analysis
- so far.
- at least, at least, we haven't heard in the students written comments that they made a decision based on that experience.
- On the other hand, we Haven't explicitly asked that question. So I can't. I don't know for sure.
- I really don't know.
- and it interestingly for those of us who are in practice
- again, I'll use the in a seizure example. But 85% of anesthesiologist experience that I'm on anticipated
- catastrophe
- and based on that
- 12%
- think about meeting with you. I mean to me that is shockingly high.
- and I think it also points to not only sort of preparing people for how to choose a profession, but also when you're in a profession, how do we create? You know, if we can create the scaffolding ahead of time.
- and the sort of I mean wellness and resilience.
- and we better put people to not be and not have 12% people thinking of leaving the field based on patience
- and reflex to a couple of questions in the chat here to alter things. This is coming from Dr. Evan, healed. He's one of our general internal medicine outpatient physicians. He comments that this is a
- very thought, provoking talk, and asked, Should we make training longer to include simulation or place something?

Unknown Speaker

01:06:58

What direction should we go in.

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01:07:02

Oh, yeah, because everything's I mean for every new thing. So we've got to go. I mean, I think that.

- And that's sort of the if things go On this way like training, and medical school is going to be 12.

- Another way to think about it is what are some near term things fixes that we can make, so that the time that we do spend in simulation might there be a different way that we engineer this might, we think about the priorities different in the terms of the skills that we try to teach.
- I mean, that is such an amazing question. Should it be longer.
- My practical size says no. but how to make it all fit. I don't know the tough situation to incorporate everything.
- What I do it in person. Question, Christine. Thanks again for another presentation and closing out Education week.
- We so appreciate you being here.
- and I think this might for some interest, and I'm going to bet this Simpson is going to get some calls about wanting to do a bunch of things, and David wanted to make us some calls.
- You've probably seen more simulation programs than in anybody in the world in an authentic way, I mean, I've got
- the way we do it here is to ask folks to think about what they want to do in terms of learning objectives, and then we try as a team to help them use the right technology, the right place going back to your right fidelity.
- Is there? Is there any standard model or best practice about how a clinician says, I want to use simulation. And this is the pathway that occurs because that's how we do it. We are Je, Mr. Jefferson's University. SO Obviously it's been signed off on. But by the guy. But is it?
- Is it the best way? Is there? Are there better ways what's best practice? I actually think there's a way away.
- and it's so we at sale don't ever start with learning objectives. We always start with experiential objectives.
- and that tells you a lot. So if it's like. I want the learners to experience being stuck between a rock and a hard place. I want them to experience doing this procedure correctly for the first time, etc. A lot of that will create will clear out a lot of the noise
- in terms of selecting for something which is high or low fidelity. What technology specifically do you need? Do, do we? I want the learner to experience that they actually were scoping a real patient.
- Now that's pointing towards you have to use a soft and bomb count whatever versus I want the learner to learn how to manipulate this call. Now you know you don't
- right. So, starting from that experience, we want to join it to have, then the learning, because then we start, we start from the learn.
- because I don't. I don't know if that makes sense. But
- that's the question.
- Hi, Dr. Park. Thank you so much for the talk. I'm Terry Baben. Oh, I'm actually in the department of family medicine, but part of the Academy.
- so I really enjoyed it. I was wondering if you thought much about looking at the impact of the narrative piece versus just the simulation piece. And the reason I would ask is, I've I've run at another institution, a 4 year long narrative medicine
- experience, and just from those kinds of reflective experiences Many of the student learners were able to kind of look at some of the things like looking at death and dying and and their own experience with it, or lack of experience.
- I would just think it might be a really interesting thing to kind of try to parse out. What are they getting from the simulation piece?
- What are they getting? Much more from the narrative piece, and wondered if you had any experience doing that kind of thing.

- So we so I work with a health humanities. Educator: who's specific focuses in narrative medicine. What we wanted to do for first step is to marry
- the health humanities, activities which usually happen in the classroom with the real life, you know, which happens in the simulation and let them kind of collide.

Unknown Speaker

01:11:31

and we're doing qualitative analyses on the on the written reflections now.

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01:11:36

But one of the things that my colleague has mentioned is that that it seems to be important for the learners to understand that a narrative medicine process is not just a cognitive one.

- That right? So it I mean it's everything. So
- thank you
- all right. We got one final question in the chat. I want to get to it's from Dr. Max Luna. He's one of our cardiologists with significant community outreach and interest in social determinants of health. Dr. Luna highlights that the University of Illinois, Chicago, has a hispanic center of excellence. Here Uva we're collaborating with our health district and other institutions to enhance simulation.
- experience to medical students and other health care careers regarding clinical scenarios with social determinants of health of different patient simulators from minority groups. What is your experience with social determinants of health and minority? Patient simulation?
- Oh, great question so! And I'll
- let me hear you this way. One of the things that we're trying to do now in our simulation is to make as much as as much as possible. Everything we do, patient partner.
- And so in the past, I think you know, it was mostly the faculty, you know. I would say. Oh, I have a lot of X type of patients in my clinic, and I've seen X kind of situation. I want to create a simulation, and so it ultimately is from my eyes.
- So with the patient partner. What we're doing, and we're going to do them one by one is to start with focus groups. Our first one was with people who were transgender or non binary people to ask them about.
- You know their health experiences, but not just their health experiences. How would they want to see that reflected in education.
- And so now I know when the faculty says, I want to do a case of transgender person, and you say, Well, here's what the our people are in our focus group said. So it's a lot of it's a lot of very laborious work. I'm not sure if that quite answered your
- question. Experience for social determinants of help. So that's another thing that we're exploring in the using the rehearsal for authenticity. Methodology so set up us me as a clinician, scripting the person to take from the voice of the patients themselves.
- Very nice. and I'll let Dr. Shaw close this out here.
- Well.

- thank you, Dr. Park. Thank you for everybody for all of your participation in medical education, week excellence in Education Week. So I really appreciate everyone's participation, coming to all the programs in true Charlottesville fashion, as a present for you for the talk we have a Jefferson cup and some gear heart chocolates. So a very Charlotte's will ask. So thank you very much.

Unknown Speaker

01:14:37

Thank you.