

Captions will appear here.

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prespective projects -- oh , one moment , we have to figure out which -- [brief pause in captioning] Now you know why we take care of the mute [REDACTED] ing . I do ask everyone 's patience as we get these things figured out . My name is miss y Harvey and we're going to start right in with our first speaker , who today -- one moment here -- is Kristina FLAVERS , the medical librarian at the hospital in Wilmington , Dell . She earn her MILS at Drexel . She regularly instruct s clinician s on evidence - base [REDACTED] ed medicine and literature search [REDACTED]

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>> Okay. Hi, everyone, thank you for coming today. Thank you for having me. I want to talk to you about what we did with our project. I was able to put together a nice project where we --- we were able to outfit several team [REDACTED] teams of residents doing their patient center clinical rounds, and I had the pleasure of joining them and teaching them how to use resources and basically what an embedded medical librarian can do. So, next slide, please. So, the first thing I did is put together some private goals. What we wanted to do is bring everyone together. The attending physicians, the nurses, the medical students, the residents, and myself as the medical librarian. I wanted to show them the resources we spend all of our money on. I wanted to show them when to use what resources and what resources [REDACTED] we had. How to search them. Mostly in an area where they were needed the most. So at the bedside. We understand that adult learners [REDACTED] learners actually learn best where they do their work, so we wanted to take hold of that. Go ahead for the next slide, please. So, when I talk about us using [REDACTED] using eye pad. They came out right when our project was beginning to launch so we went with that instead of the original iPad one. We found the ideal thing was to partner with IS in the early stages. One thing we had to do when we wrote the grant was get a letter of support from IS, which was great because that started a dialogue with them and we really faded [REDACTED] their support throughout the entire process, from purchasing the iPads, getting the styles, deciding [REDACTED] if we have enough wi-fi to cover everything [REDACTED] [REDACTED] [REDACTED] everything. So that was a great thing that the NLM had us do. Really turned out well. We also were lucky enough to get a lot of support from stakeholders in organizations. I answered to the vice-president of medical education, so having her on board was easy enough, but we also were able to pull in support from the chief financial officer, our director of nurse education, and actually the chairman of the department of statistics, which was fabulous because he really brought in the resident director and then all the residents themselves. They wanted to please him. The residents themselves were looking for a way to make rounds move more efficiently. They used -- which probably happens at a lot of your institution -- the computer on wheels and at that part they were getting old and having issues getting on to wi-fi and they broke down a lot. So they were happy to try something different. The other place that we really needed to key in was with the internal review board. They had to approve because our faculty and students were conditioned to be human subjects [REDACTED] [REDACTED] subjects. So that was different and we weren't expecting. Then we surveyed everybody before and after. So, go ahead to the next one, please. On the next slide you'll see the different resources. So, myself, I was definitely a resource on the project. I had been using an iPad and was able to experience its speed and utility before we released [REDACTED] it to whole group. I had several

resources on the iPad. So the program director suggested a few more resources, and one of the things we use a lot and still use to this day. It's called the iBook. That becomes really helpful with the residents because they're asking you to pull articles on the go, and it makes it a fast, easy way to get articles to them. Go ahead to the next slide, please. So, to implement the project, we actually had three teams, and -- an attending senior resident, two more residents, regularly on rounds and then two or three med student s. Myself, and sometimes pharmacy will join us, nursing joins us at almost every patient room. Sometimes we see nutrition and respiratory therapy. So we can be a large mass of 10-15 people moving down the hallway. We also see lots of kids. When the project launched it was RSD Stephens, and anyone who works in pediatric hospitals, that means you go through the roof so you see a lot of little kids, 23 months and younger with basically bad cold but they're bodies can't handle them as well. So we were very busy during the launch of the project, and we had an interesting participant response. A lot of people were excited before the project began. They really kind of wanted to get their hands on an iPad. A lot of them it was the first time they used an iPad. Unfuneral nursing dropped out because of access issues, which was one thing I was not prepared for. We do our access to the EMR through a MEDIFRAME app, and you had to have off site access to access that within the building, and they don't give that to unit nurse so they couldn't access the EMR or other resources. They also were afraid of the security for the iPad. None of them wanted to be the person who put it down and then it got stolen, which is understandable. But made things hard on us from the grant perspective. The attending physicians, we had 75% of them absolutely loved it. The rest of them didn't want to have anything to do with it. They were too busy teaching and had been teaching for a long time and thought it interrupted their process flow. The residents and medical students really liked it. But what it turned out to be is what they really liked was me having it and showing them how to do it. Not really a bad thing. Going to keep me working, but we really wanted them to kind of accept it more as part of their workflow. Pharmacy fell in love with the iPad, and actually went and bought themselves their own. So that was interesting they kind of captured on to it that quickly. Go ahead to the next slide, please. I touched on a lot of the outcomes already. What was also very unexpected was the high-end effect we had on education. There's two of my favorite residents using the iPad. They had a lot of fun with it. Go ahead to the next one. With patient education, the kids

kids, of course-- little kids in the hospital and they were kind of fascinated by the iPad but we were able to do different things. The visual DX was fascinating. We were able to calm down mom and dad with a rash or an abscess. They could see how the rash or abscess was going to change in the next few days, so that real

really gave a lot of parent's peace of mind. Nursing reference centers. Some nurses were not aware how much patient Ed were on that and were able to grab that. And we make kids help -- health in an app. The follow up surveys we sent to our teams have a lot fewer people respond. The people who did respond, all responded very positively. But we did not get the numbers we had gotten with the pre survey presurvey. Overall they preferred that I do a lot of the clinical decision searching. I still go out on teams. I have teams request me. I have attending physician's request me. So that's a good feeling and that means we had an impact. And then one last satellite. One thing I did find, I did over

overextend myself for this project. So at that time there were three rounding teams. Now there are four. So, I had a hard time covering all the teams and have been requested by some of the intensive care units as well. We did have some IF issues. We were able to overcome several of them by our partnership but

some we couldn't overcome. Overall the product was very successful. I think the last line says it all. We were able to add another professional medical librarian to our staff, which is something we hadn't had before. The hospital never had two librarians at this location. So I think that's fabulous. That's the best thing that came out of this. Our profile has increased amongst everyone in the hospital hospital. So I think that's my time and I want to hand it over to the next person. And thank you very much.

>> Thank you, Kristina. Before we move on, I want to interject two quick things. My apology -- I need people to type in the chat box their Zip code. So, please put in your Zip code. So, secondly, I do ask that people save their questions for these speakers until all four of them have finished. Our next person is Bruce Johnston. Bruce is an associate professor of resources and health sciences librarian at Robert Morris university in Pittsburgh, Pennsylvania. Involved in the provision of library services and instruction to students and faculty in the school of nursing and health sciences. His student enrollment exceeds 550 students. He has served on several university committees and is co-chair person of the institutional review board. Bruce graduated from the Pittsburgh school of library sciences and has held several positions at the university of Pittsburgh medical center. Which has included director of the Blair library learning resources center, at the hospital in Pittsburgh. Pittsburgh. Bruce has been a contributing author to a 2012 book called medical and dental care and patient data. So turn of to Bruce.

>> Good afternoon, everyone. Thank you, missy, for the very nice introduction. Before I get started on my power point I want to throw out kudos to many people who helped us pull this grant off. The first group of people would be Renee and missy and Tristan at the RML, and our Coe collaborate or



implementation time frame. Infection control ramifications rose to the top of the discussion rather quickly, and we did some research and unfortunately didn't find whole lot of information out there or even from apple as to how to address potential infection control when iPads are used in direct patient care. So we took the liberty and developed some of our own, took into account existing policy for infection control devices at UPMC.

UPMC. And we addressed security issues particularly since the iPads were being used out in one of the hospitals. And lastly we had to look at HIPAA compliance to make sure we addressed all the HIPAA compliance issues that surround electronic devices. So, moving along, next slide. We did have a grant implementation in March and April where we gave six RMU news

newsing students two RMU faculty, and two UPMC nurses iPad devices. We did have to get IRB approval because we were conducting research, doing surveys, et cetera. So we had to get dual approvals. And also in that phase we up

graded the devices, added software on several occasions with we could get them back from the students, which wasn't easy at the conclusion of the course we administered a survey to the students and the next couple of slides are basically some of the survey results. We did have six students and one of the clinical instructors respond to our survey. And basically the outlook, the results, were fairly positive. Students did use the iPad. Used them both in the clinical setting as well as the classroom setting, and for home homework assignments. One just quick thing before I conclude here. We had already anticipated using this project in what's called a dedicated education unit which we participated in for the past four or five years, where staff nurses act as instructors and are supported by university

university's faculty on the patient unit. Unfortunately, timing and scheduling things didn't pan out for the semester, the spring 2012 semester, so we didn't use the DEU model and instead we were -- we were sent to an IPU, which is patient education presented some barriers just because of the patient population in the ICU and the families that may or may not be present during limited visiting hours and when our students were there. In conclusion, we are going -- can you move ahead? Again, future directions. We are currently doing a re-enactment of this particular project, with nine students. This semester it's coming to fruition where we'll have nine iPads in specific medical, surgical units and will be collecting something additional data and hopefully more patient education, family education. The title of

the new study is, use of iPad 2 technology in three distinct learning environments, classroom, and the lab. So we'll have nine students in that particular project. I now I went over my time but thank you very much.

>> Thank you so much. Our next speaker is Joe Y. Nicholson, the education and curriculum librarian at the NYU health sciences library, and New York City, and has his master's degree from the University of Illinois and a master's in public health from Columbia University. Prior to coming to NYU, Joe was a trainer for the national training center. And now I'll turn it over to Joe. Thank you.

>> Thanks, Missy. Hi everybody. Thanks for coming to the webinar today. So, our project we did here at NYU,

we titled the project using anatomy apps and mobile resources to improve learning in the anatomy lab, which is a really long title. Next slide. Mostly as you can tell by the title of the project, our focus was on specifically the apps and the resources that would be used. We had several partners for our project, including NYU's division of educational informatics, the office of medical education and the anatomy lab faculty and staff members. And it was really important from the very early stages to have strong relationships with all of these different units because they really helped contribute not only to what resources we wanted to put on to the iPads but to how they would be deployed, how the students would use them, and how the library would be able to interact with the students. Next slide. So, the overall goal of the project was really to improve and speed up the student learning of anatomy. With NYU's new curriculum that was just started in the past couple of years, anatomy here is no longer taught starting on day one of medical school your first year and your first semester. Instead they teach it in units that are two or three weeks long and are embedded sort of near where the students are learning about the disease mechanisms of that part of the body. So, the first unit is in December of the first year. The first time they step into the anatomy lab and start with the trunk section of anatomy. As a result of this compressed schedule, the students don't have nearly as much time in anatomy lab and there's a big push to find ways to speed up student mastery of everything they need to know from anatomy. That really drove our goals and objectives. We also wanted to measure how comfortable the students were using the iPads and whether or not they felt that specific resources on iPads helped or hindered their learning. So, not only was this a trial run of using iPads in a targeted way in our curriculum but it was a trial run of specific types of resources to see what the students -- what was best suited for our students

students, and definitely auxiliary goals to demonstrate to the faculty members and medical students how effective and useful library librarians can be in helping them figure out technology,

get the resources they need, that sort of thing. Next slide? So, here at NYU I work a lot with the office of medical education and the division of education in format ics. Ed DEI has been collaborate ing with anatomy faculty for several years to create the bio digital human. That's a 3-D interactive human body, and they've put it in the anatomy lab. They have a display of it there and the students can look at it there and try too do some virtual dissections as they're doing real dissections. The DI is really interested also in technology in general and how technology can improve learning. So they had already purchased 30 30 iPads and were going to roll out the iPads so the students would be using the iPads at the dissection tables. However they only had the anatomy classes lab national all apps to put on the iPads and they weren't sure what else to do with these. So there was a clear opening for us there to add some value to the iPads by loading them up with some other resources. So, after consulting with the anatomy faculty, we put on the dissector, the grant's dissection

dissector is our anatomy classes mandatory textbook. We also added netter's anatomy app, and we added ianatomy from the national library of medicine. And just to try out some different things and see what was going on. Next satellite. -- next slide. So, on this next slide, you'll see photos of the students actually using the iPad at their lab tables. Setting up the iPads took between 10 and 20 hours for three of us to do. There was a lot of initial setup, but since then, when we had everything loaded, management has been very minimal. The iPads are stored in locked cases in the anatomy lab. The 27 different student groups of six students each are responsible for their own iPad assigned to their table. When we first deployed the iPad, the students were a little skeptical. They had already been in anatomy lab for a week and were already using their printed textbooks, but after about a week and after another week, the printed textbooks become difficult to use during anatomy labs as the body gels on the print pages, they start to smell funny, the pages stick together and get kind of gross. So the iPads were a pretty good solution to that. As you can see in these pictures, we just have our iPads in gallon size Ziploc bags. You can throw away the Ziploc bag afterwards and works through the rubber gloves and the bag. Surprisingly easy to navigate although it is a little bit slippery. Next slide. So, now that we are almost a year into this project, the student groups have pretty much left behind their printed textbooks and rely solely on the iPads and the iPads they can easily go from their own anatomy class lab manual into grant's dissector where their instructor has made notes with my help, what to look out for, things to do or not do. They also were sort of watching to see what they do with the iPads, to see how they use them. They look up definitions of words, seek further information on structures by clicking on the words either through grant's dissector or hopping over to a web browser

and looking things up. The students have reported they really like this ability to go back and forth and find out the point of need. Learning has improved the flow of their studying and have actually -- they feel like has helped them learn more quickly. In addition to just having the iPads and the resources on them in the anatomy lab, as a result of the funding I was instant site-ed to come into the anatomy lab so students would have some resource to talk to if they had a problem or cooperate access something. That's great to be involved in the anatomy lab. Even though the first day it was kind of disturbing. After that, I got used to it, and the students have been able to see me on a more personal level and not as some computer that they're talking to. So, it's been good to connect with both the students and the faculty members, and forge a better bond. So, in this slide you see some of the students with their iPads. This was from the "New York Times" article written about our anatomy lab reconstruction from this past January. Next slide? One of the questions we used to measure success was asking the students if they felt that each of the resource helped enhance their learning and this was on a scale of one to five, five being the most. As you can see in these results, all of the resources were rated pretty favorably. Their own lab manual in grant's dissect or were the highest but there really isn't that much difference among the resources. They really found the resources easy to use and felt like they didn't hinder the learning at all, they just helped improve their learning, make everything easier and better.

>> Next slide. So, while our project was only a small part of the reenvisioning of the Anatomy lab course at NYU, we do consider it success. Not only did it help the students learn the material more quickly but helped enhance the standing of the library in the school, both for students and faculty members. We've sort of proven our value and proven what we can do and how we can do it. Also, as a result of our use of inclining. And they're using the base guide for all incoming students this fall. So we considered that a success, too. We're getting imbedded in a lot more of the curriculum -- through these efforts. Next slide? So, if you want to read or see more about what NYU is doing in anatomy lab, you can read "The New York Times" article about it or the "Atlantic monthly" did a video. Thank you so much.

>> Thank you so much, Joey. Our final speaker is Kristina with AHIP, who leads the health signs team at upstate university in warm Syracuse, New York. Upstate university hospital is a trauma one facility and serves the entire upstate New York region in that capacity. Their response during emergency situations is critical to the well being of the community. Serendipitous conversations resulted in Kristina's partner partnership with the regional resource center for the upstate region, and that partner -- partnership led them to MAR for the project.

>> Thank you, Missy. Next slide. So, I had just, serendipitous conversations with the regional coordinator for emergency preparedness here in our region. Missy, next slide. So, our region is very extensive. And it covers approximately 2.2 million people. The facility throughout the region are very diverse in nature it in majority major -- but the majority of them are small, rural hospitals. There are only very few larger hospitals

in this region. And because the region is so large, the communications within the emergency first response community are challenging. You can see that's a very rural area. There are very few rural or urban populations in this area, and for these groups to get together and train and get together and share techniques and abilities, is very difficult [unclear] [unclear] [unclear] difficult. And so when the grants came up, after these conversations, we saw an opportunity. Next slide. So, what we did is we looked to identify our partners, budget, what type of applications we might be able to use to help with communications and first response. What type of training we needed to do for our participation [unclear] [unclear] [unclear] participants. Then we were able to participate in a live role-playing training event. If you haven't had the opportunity I strongly encourage over to give it a run. It's a lot of fun and an eye-opening eye-opener. We had some outcomes and then some fairly interesting unanticipated learning moments. Next slide. When we talked about identifying our partners, there are a lot of things that ran through our mind [unclear] minds. Oops. Back one slide. The geographic area. We wanted to make sure we included a variety of representational sample of each of our geographic locations, a high northern/southern/central, and we ended up with the west. Our largest conversation was about whether or not we should ask innovators or laggards or the representational sample? And we went back and forth because we thought that was an innovative group. We'd really be able to see a lot more of the uses of the iPads and the applications and see them used effectively in the situations but we also realized that in a real-life situation there are probably more laggards out there than there's innovator [unclear] [unclear] innovators. And so we finally just went for the old representational sample, and we did. We ended up with one of our participants was a wonderful innovator. They did -- he was an innovator, and his hospital is an innovator [unclear] [unclear] innovator, and they just took the whole project to another level, and then we had a mid-range [unclear]

mid-range person and then we had someone who has had a lot of difficulty. We also -- there is a difference we hadn't anticipated between the hospital administrations and how innovative or risk-tolerant those hospital administrations were. And we were surprised because we were very cautious in putting together our partners. Our memorandum of understanding was pretty clear about what we were doing, and so when some of our hospital administrations were not so risk-tolerant, in the end in practice, we were surprised because we thought we

would figure that out fairly clearly. Next slide. The budget was a very easy thing to do because, really, the majority of the money went right to the iPads. We spent a little time justifying [unclear] [unclear] justifying the iPad. We also went with iPad 2s, and at that time the iPads were the only device out there that met all of our needs, because we really did need something that could show video, that had good presentation of text articles, that could do both web browsing with either a wi-fi or a broadband connection, and at that time in the

price range -- who would have thought i pads would be considered cheap but they were a cheaper device when you put all of those difference functionality's into it. The communication software was another big challenge. We actually tried several communication software packages, some of which we had to pay for and some of which we were able to get demos for, and then in the end we also were able to identify ways that we could have savings when buying applications for the i pad. By and large they were dependent upon how large our group was, but that was great. That had long-term benefits for the organization because, as we ramp up other i pad and more like apps, projects here, we're able to leverage that knowledge we gained. Next slide. So, the applications are pretty general. I won't really go into these. I will speak about the hip would woe's because our initial project was that we would be sharing information that each of our emergency preparedness centers had on hand. For example, if they had an emergency plan for their hospital, we wanted to be able to share it so that the other hospitals would know what the commitments of the other hospitals were. We were hopeful we would be able to get samples of contracts that the hospitals had with vendors in case of's. For example, with potable water or non potable water so those hospitals and organizations that did not have the contracts, could leverage the Lange and -- the language and see what other organizations were doing in the end it turned out none of the hospitals wanted to share this information. That was a really big eye-opener for us. Next slide. Our other HIPAA woe came as another really big shocker. One of the great things we thought we could do with the i

ipads is when you have to transport a patient from one hospital to another, in an emergency situation, sometimes that patient goes missing for a period of time, and in the true emergency situation, that patient might actually run into some type of danger or accident when they're moving from one location to another. You can imagine in the midwest when there are tornadoes, you're evacuating from one hospital but might be going into the path of another tornado. Maybe that patient doesn't get there what we hoped to do is to take one of these intake forms -- I'm sorry the picture is not that great -- and have that filled out and attach that to the patient and then also using the abilities of the i pad to take a picture of that or we could actually send a completed form with a picture of the patient and send that to a trusted recipient at the intake hospital, along with information about the care team that might be going with that patient in the transport vehicle. And we had -- we thought we were clear on this. What was interesting is that New York state, as an entity, was fine with doing this. But -- and other of the hospital hospitals in our participant group were fine but other hospitals within the group were not fine with doing this, and what they said is that this is a HIPAA violation. So, there is obviously a lot of gray or a lot of leeway in how different organizations are translating what HIPAA really means, especially what HIPAA really means in an emergency situation. So this was an eye-opener for us, us, too. That the hospitals themselves disagreed and then, of course, the state was coming back and saying this is okay. Next slide. So, as it turned out, when we had our innovators and our

laggards with the training, the training, as you might guess, was challenging because there were some people who were just far advanced during the training than other people were. We actually needed to show people how to turn on an iPad. The communication's part of it became even more difficult with those persons who were not early adapters of technology, and we spend a significant amount of time demonstrating and role playing with our communication's software. Actually didn't help as the communication software wasn't 100% great. We ended up going with our adobe product because the first responders in the central area of New York state and really in the end throughout the country, tend to use adobe, and that would include the military. So we thought we would jump on that band wagon. But adobe really had some problems in trying to push through the audio, and of course when the audio wasn't going through, the video certainly wasn't going through. So we faced those challenges. What we really learned is that when you are trying to leverage a technology like an iPad, in an emergency situation, is that the users of those devices really need to be incredibly comfortable with them in an emergency situation, you can't stop and locate your iPad on your desk and try to figure out what's going on. You really need to integrate that iPad or whatever your device is, into your life. You need to be very comfortable with it. It needs to be near you at all times. You never know when this emergency might hit. That was the biggest difference we were able to eyeball between our innovators and our laggards, was technology, is that the innovators, the iPad was never out of their sight in their car in their home, at their desk, to their meetings, did show and tell, whereas the other participants had their iPad, on their desk in a drawer, and then whenever they needed to use it for the purposes of the pilot project, they would take it out of their drawer, plug in it and then try and go through things. But there was a real difference in how successful they were in doing that. Since they didn't really play with the technology. Next slide.

>> Here's a situation where we were able to demo the iPad. This is a situation where there was a chemical spill, and one of the things that we really liked with the iPad was its ability for just in time training. Next slide. For example, everybody in a hospital is trained in how to evacuate patients when the elevators are down. But much of that training is done when they first arrive in the hospital. So it can be two, three, four, five, ten years old. With an iPad and the video capable capability, you can train at the top of the stairs and send a team down, and then you can keep doing that, which can improve your efficiency and your success at working through a procedure in which you've been trained but

that training may be somewhat

stale.

Next slide. Next slide. The other thing we learned is just like the training with evacuation -- oops, one slide back. Insure the participants in the emergency plans within the hospital had received training. They actually have a piece of paper which explains their role, which they're supposed to keep next to them at all times. What we discovered during our live event was that many of the people who reported to the situation room didn't really know what their role was. Then of course we had all the fun things, like the battery dies that they were using for their walkie-talkies were dead. That the -- so then they had to use runners, and those runners were running to floors to find out what was going on and then running back to the situation room. So they weren't even using their cell phones. The situation room was very much dependent on white boards, which there was one, and they ran out of color markers and didn't have enough colors to differentiate. And there was one computer they were trying to use to communicate with the intake hospitals, the evacuation hospitals and the state, which is coordinating the entire event event. So, very interesting experience, and the use of an iPad in those situations, if everybody had had an iPad. Many of the challenges that the situation team had really could have been resolved. Certainly with runners running back and forth, of course, you can obviously see that using the iPad with the two-way video, you can take pictures of what's going on and send it immediately back to your situation room.

Next slide. This is actually a diagram of what the logistics are during an emergency situation in upstate New York, and what we discovered is not only did individuals not really understand what their roles were but they didn't understand where they were in the entirety of the response to the emergency. And though everybody should have had this and should have reviewed this, because we all knew about this live training event coming on, that was not the case. With the iPad, we were prepared -- we had this on our iPad and actually ended up passing it around at our live training event so people could see what was going on before them or after them, and who needed needed the information they had.

Next slide. This is another information form that we had that describes what services are available in the hospitals in our area.

Next slide. This is a PICTOgraph of a method to communicate with students if English is not the first language, and that can be used in emergency situation, our iPads are equipped with this and this our first responders really liked.

The next are a few pictures of actual situations that occurred two summers ago in upstate New York with the flooding we had. And the next slide -- where is the next slide -- oops. Oh well. I'm sorry. So, with the outcomes, what we discovered is that the integration with the hospital, university, disaster response planning, is this library previously had no role in that, and now, moving forward, the library will have a larger role of a library facility and also the library staff, and also the knowledge of our emergency room response here at our university hospital to ask the library for assistance when it comes to information resources. We had that same outcome at all of the hospitals except for the hospital where we had the most technology challenge person, and it's not necessarily because of her challenge with technology, but because if she -- because of the way she ran the live training event. So she ran it by herself and not with a situation team so the situation team did not really see how the iPad could be integrated and those information resources integrated. We had an incredible response from our first responders, the police, fire, EMT

in this region [redacted] region, my partner for the project, Donna, actually respond [redacted] [redacted] responds with these first responders and so she had that iPad out and real-life situations for the entire time of the project. And during that time was actually able to help them shave minutes off of response times to locations that were fire, missing persons, et cetera. The other thing that we were able to find is a much greater awareness of the national emergency preparedness groups, the list serve, the information being shared very regularly throughout these groups, and all of the persons in the pilot got into these list serves, joined many of these groups, and also shared this information with their hospitals. So that was a really great outcome. We didn't really anticipate that [redacted] [redacted] that. We weren't thinking about that when we first went on. Next slide, because we just got good pictures. Here's a slide -- I do have permission -- with one of our EMTs using the iPad in a first response situation. They were actually looking up using TalkSNet. There was a spill and they were trying to figure out what was going on. Next slide. This is a great slide because it depicts so many situations in an emergency situation the way the iPads could be used, both in the hospital situation we're using but also this event. If I were in a situation trying to describe what type of equipment I needed to get this vehicle out of the road, probably wouldn't be really good [redacted] [redacted] good at it but I can certainly take a picture and share it with the iPad and push that to somebody else and they're going to see exactly what's going on. With the iPad you can do that with live video, and so this was considered to be a wonderful innovation that the iPad can help with in the emergency situations to enhance, improve communications between geographically dispersed responder [redacted] [redacted] responders. And that's the conclusion of my presentation. And I guess missy, are we going to take questions?

>> Yes. Let me just share my screen here [redacted] [redacted]

here. And first of all, a couple of little quick things before we start with questions. I want to remind people to please type their Zip code in the chat box, and want to offer an apology there seemed to be some kind of a flight delay [redacted] [redacted] de -- slight delay when we click on things, so I just spend apology [redacted] [redacted]

apologies. One person type in a question while Bruce was speaking and I'll read the question first: When you mention infection control, are you talking about hand-washing or computer virus infections? Is Bruce there? Okay. Let's move on to -- anybody else have another question to ask.

>> Missy, this is Cristina [redacted] [redacted] Cristina. I might be able to respond to that, because we didn't have this question come up for this project, for emergency response, but we have family resource children [redacted] [redacted] center in our children's hospital and we have iPads in that location, and they actually did a little test and when we were talking about infection control it's about how many germ [redacted] [redacted] germs and bugs are on your iPad versus what is on

your desk or computer. They found the iPad had a lot more germs and critters on the iPad, and so for infection control it became very important that we be able to put that iPad in a sleeve and disinfect it when we moved it from patient to patient or room to room or staff person to staff person. So that's what he might have been referring to with infection control. Not viruses. From what we know the iPads are fairly immune to viruses. Botulin efficiency control procedures in a hospital.

>> Let me just also interject. I did just get a message as well.

well, so one who was with Bruce's project, and that's what he was talking about, the infectious control on the iPad devices. Other questions?

>> We're having a strange delay, even with the captioner. Just want to make sure we don't miss anyone's questions. Type in the chat box. To unmute yourself, press star 6 on your phone. -- to unmute yourself. One last time, any other questions? Once again, you can hit star 6 on your phone. Okay. Well, I guess that's it. We'd like to thank tremendously all four of our speakers. This has been very interesting for me and such a delight to see how the funding has been used for institutions and going to have another lunch with the RML and we'll be highlighting the project. So I want to thank everyone for their time today, and we look forward to all of you joining us.

us. Thank you so much. Have a good day.

>> Nancy? Are you still there? I can answer the in February. Infection control. We followed the policies which had to do with wiping the devices with alcohol pads. For the covers of the devices, we purchased at least 50 disposable clear plastic covers that we required in our guidelines for our students to replace everytime they entered UCMC and everytime they were in a patient's room, so that in the course of six weeks and six months

onsight visits to the clinical rotation, they replaced the covers probably -- well, we blew through 50 in six weeks, so they were replacing the covers on a regular basis and disposing of them so that the actual iPad screen was never exposed and we were -- we did have some reservations about using alcohol on the glass iPad screen so we did buy the covers, and then the external parts of the device were wiped down following UPMC's

UPMCs infection control policy for basically -- so just --

>> Bruce , I want to ask a follow up question . Another person is asking , where did you get the spatial iPad screens that disinfect them between patients ?

>> The sleeves we bought through Amazon through -- on Amazon . They were fairly -- very inexpensive . I don't have any invoice in front of me here . But they were basically under a dollar apiece .

>> We have another person with a question . Is Joey still there ? Asking , Joey mentioned Los Angeles mention inclination and inclination , and inclining inkling s and this personality asked him to talk more about that .

>> Inkling is a web and iPad platform for textbooks . So they have a huge variety of textbooks . They're getting more and more into medical textbooks . I can answer any more specific questions about it . I know a lot of medical schools are currently deploying iPads to their medical students and using Inkling Inc. LONG . Has a lot of features . Doesn't work like a normal eBook . Just sort of flows along like you imagine something on an iPad

iPad would they call them panel panels , not pages , and they have interactive tests and quizzes and all kind of things to help improve