Recording: Welcome to the VA HSR&D Investigator Insights Podcast Series. In this episode, Dr. Ron Shorr, director of the North Florida/South Georgia VA Health System’s Geriatric Research Education and Clinical Center, talks with Gary Fischer, senior healthcare architect in VA’s Construction and Facilities Management Office, about a long-running, partnered study evaluating the design of nursing units to help reduce falls among VA inpatients. They also talk about the value of conducting partnered research, where research and program offices work together to improve the outcomes of the data, and ultimately improve care for VA patients.

Maria Hecht: Ron Shorr and Gary Fischer, welcome to the HSR&D Investigator Insights Podcast Series. I am Maria Hecht with the Center for Information Dissemination and Education Resources.

Dr. Fischer: Thank you, Maria. I'm Gary Fischer, and I'm a senior healthcare architect in the Office of Facilities Standard Service. I manage the development and update of the space, equipment, and planning standards that the VA develops for every service that might be part of a medical center, a CBOC, a long-term care site, and a research facility, as a matter of fact.

Dr. Shorr: I'm Ron Shorr. I direct the Geriatric Research Education and Clinical Center here at the North Florida/South Georgia VA. I'm also a research professor of epidemiology at the University of Florida, and I’ve been doing research on patient safety and healthcare quality for a pretty long time, and I’ve been specifically studying the falls which occur in hospitals for a good ten or 15 years.

Maria Hecht: So, Ron, first of all, you’re studying falls that are related to healthcare facilities, and the particular work that we’re talking about right now is nursing unit design. I'm just curious, when and how did the idea for this particular research work germinate?

Dr. Shorr: I was the principal investigator on an NIH grant, which was a trial of bed alarms to see if they prevented falls. I’d always been interested in the relationship between unit design and hospital falls. And in that study, actually, my co-investigator and I walked around Methodist Hospital in Memphis, where I worked with a nice big yardstick or tape measure to actually try to get some preliminary measurements to see if we could correlate unit design features with fall rates at a single hospital, and we were never really able to do this in a rigorous way. When I relocated to take the directorship of the GRECC here in Florida, a new faculty member was coming to the design and construction school, named Sherry Ahrentzen [PH], and Sherry was sort of the catalyst because she actually was a scientist, around space and its allocation. So, we could be a little bit more rigorous than walking around with a tape measure.

Maria Hecht: Thank you. It’s really interesting how frequently we will find an investigator who said, "Well, it came up as a question from previous work,” which leads me into a question for you, Gary. What level of awareness or familiarity did you have with VA research as a whole, and specifically HSR&D, prior to working with Ron?

Dr. Fischer: I had very little interaction with the Office of Research and Development, certainly knew that VA had this big research arm. But the day-to-day work that I do, it never really presented the opportunity to investigate research and development further, the kind of research that was carried on, and if there were any opportunities that might exist where that research could be applied to our facility work. We had contacts in the Office of Research and Development but never something that materialized into an effort like this. However, beginning in the fall of 2020, we started on a project to update the space and planning standards for a research and development facility, and Dr. Chu [PH] was our primary point of contact with the office, and so those standards covered biomedical, health sciences, clinical, and rehab research. And so, that kind of came along as this project was going on, and I’ve been able to put a few more pieces together.

Maria Hecht: Interesting to hear that you were aware but really hadn’t kind of gotten into working as a true partner in the meat of a project. Ron, let me shift back to you for a question. Why nursing units, as opposed to another aspect of patient care like a room or hallway?

Dr. Shorr: Yes, that’s a great question, and many, many cups of coffee were actually expended in trying to figure out what might be, as we would say, the suitable unit of analysis, and we had considered rooms as well because the vast majority of falls do occur in a patient room. What got us thinking more, about making the unit of analysis the nursing unit, was that we know that, through the VA data systems, they capture a numerator and denominator for falls divided by the number of patient days at the unit level, and we weren’t sure how… whether we could even determine the room that the patient was in when they fell. So, we felt that, at least for this first aspect, we would actually be better served by studying the nursing unit. Just some things like staffing levels are often measured at the unit month level. We hope in the future we may actually be able to understand what makes some rooms safe and other rooms less safe, but we were certain the data was collected at the unit level as far as falls go, and we couldn’t really tell how many falls might occur in Room 315, but we knew they would occur on Three South.

Maria Hecht: Yes, that makes sense. So, Gary, let me ask you when Ron approached you about this project, what were your initial thoughts?

Dr. Fischer: I was totally anxious to participate because research is something that my office is always talking about, wanting to infuse into our standards so that we can justify the standards that we come up with, with some real data like that. So, there was no hesitation. I came in, I think, a little bit… several months after months after the project had actually started, when Ron and I connected. Along the way, I’ve been able to really support the direction of the work and some of the basics, data that we needed, because of my connection with our various facilities around the country.

And the question that just asked Ron about, why not patient rooms versus patient unit. A patient room, we can certainly research and look at maybe the best layout or what things might contribute or prevent falls in the room itself. But then the next layer is how does that all fit together in a unit, and there’s very many components of a nursing unit that will impact the success or lack of success for a given patient room design if you will.

Maria Hecht: You, taking on that question, is a really great example of how there are things that an investigator might not consider that a partner will consider to say, “This isn’t really what you want to focus on,” or, “Yes, we could focus on that, but here’s why I recommend that you don’t.” Ron, back to you. There was an upward trajectory of three-year fall rates across 317 VA med-surgical units. Were you aware of any contributing factors to the increase in that rate?

Dr. Shorr: Well, it’s interesting. I think there’s a lot of challenges in studying, longitudinally, what happens across a large number of nursing units. I’ve done work outside the VA, and we find some decreases in fall rates over long periods of time. And to some degree, this may be an aspect of fall to become sort of a more important aspect in health care. There have been changes in how Medicare reimburses hospitals when a patient incurs a fall and gets extra healthcare costs. And so, it may be that some of the increases are actually due to the fact that criteria for what would be entered into a fall incident report has changed in some nursing units. The other thing is that it may be the data entry itself. If one doesn’t have to fill out an additional form, it may be easier to capture falls. So, it… there’s a lot more to falls than just the patient falling. It’s how do you actually capture these events.

Now, I think injurious falls, which are about 25 percent of falls, result in some injury, and serious injury is a small proportion. That documentation is usually more accurate, but again, it’s hard to really know. Sometimes it also reflects a case mix, that the kinds of patients that are getting admitted to acute care over the three-year period may be sicker than previous. There’s a lot of factors that go on. It’s very hard, longitudinally, to really sort of say what single event is responsible for that increase, but it’s something to think about. I’d also want to say that gender appears in hospitals to be an important risk factor for falls, meaning men are more likely to fall than women. I think it has a lot to do with asking for help from nursing staff, which are predominantly women, for things like bathrooms and… so, that may reflect VA trends and why they might be different than other hospitals.

Maria Hecht: And so, it’s interesting because what you’re saying, Ron, is often like the, well, gee, why did we find more cancer in people? Well, because we were looking for it.

Dr. Shorr: Yes, it’s a… ascertainment bias is part of this.

Maria Hecht: Exactly. This is a question for both of you. This work was initially funded in 2018, and it’s slated to conclude next year. I really curious to understand what along the way during the course of this project has surprised each of you, both from your point of view, Gary, as the operational partner, and Ron, being in the thick of it as the investigator.

Dr. Shorr: You want to take a crack at it, Gary?

Dr. Fischer: Sure. I think the thing that surprised me -- and I think it’s because of this being my really first work with HSR&D -- was what the outcome was going to be. I got involved in pulling together some of the pieces of information that we needed to study, and at the outset, was really focused on reaching out to facilities. Gathering floorplans. Helping to disseminate questionnaires that we had for the facility engineering part of the medical center, and getting those responses in.

And then, as the work progressed -- -- and the study of the various nursing-units plans that we had, which was 50 in total -- that the research that was applied to these designs could really provide us information going forward in what we should consider, and the next time we put together a standard for our acute-care nursing unit, we provide a schematic layout for what a nursing unit should look like that we apply to both new and existing facilities. But as you might expect within the VA, we’ve got an unlimited array of nursing unit size and shape, so there’s a task ahead to how do we apply this research to every one of these conditions, but through the depth map process that we were using, it was… became easy to see how we can… we can do that going forward.

Maria Hecht: You were sort of surprised to learn that this would have… despite the massive variation across facilities, you were surprised to find out that, yes, we can… we can do this.

Dr. Fischer: Yes, and the research got down to a granular enough level of detail that it will allow us to apply it to all of these different conditions that we have in the VA, as we look at new design projects going forward.

Maria Hecht: So, Ron, what has come up during the process that’s really surprised you? What have you sort of thought, “Wow, I wasn’t expecting that to happen?”

Dr. Shorr: I think, first of all, meeting Gary was amazing because there’s a lot of talent all across the VA, but CFM, usually that… there’s not a big overlap between Gary’s group and GRECC, for example, or HSR&D… and learning about the importance of the VA’s design standards, not just for the VA, but the VA sort of sets design standards that the whole hospital world borrows from because the VA is such a large collection of facilities. And so, just realizing the importance of the project. Oftentimes, we say, well, this is just the VA, and it may not apply outside the VA, but in this particular type of work, the VA is actually a resource in the design world, and I think Gary can talk more about that, but that was a surprise to me. The second is how cool the ability to actually drill down to nursing units in 2017 and find out, at the patient level, who was admitted to the unit on February 1st and discharged on February 6th, and you can ascertain what psychotropic drugs the person was on, their age, and so forth. There’s really nothing like it to study nursing units and patients within it anywhere that I'm aware of.

Maria Hecht: I had a next question about what the impact would be as older facilities are sort of remodeled and designed, but you both have sort of answered it. Given that this can be, as Gary pointed out, standardizable down to a very granular level, that’s really amazing. And I just learned, given that I didn’t know this, that a lot of private health care and outside the VA takes its lead from VA design, and we can safely say, based on an any question I had, that the ideal outcome is probably going to happen. I mean, it’s highly likely that this will be applied and taken up, internally and beyond. Is that a safe kind of a… an assessment, do you think?

Dr. Fischer: Yes, absolutely. We actually have in our schedule, in FY22, to be updating our standards for inpatient acute-care med-surg nursing units, and that was my original thought when coming onboard with Ron, was that we could really use this in this upcoming project. And as schedules and contracting and COVID impacted things, this is, instead of starting about this time, this year, it’s pushed back into 2022, which actually helps us because we’ll be able to be at a point where we have some really like concrete results from this research that we can then apply to that upcoming work. When we do these efforts, we involve a whole array of other VHA subject-matter experts.

Maria Hecht: That is ultimately the goal of health services research, having those incorporated by an operational partner to great effect.

Dr. Shorr: I want to say that this has been truly an operational partnership. There’s a spectrum of involvement, one in being just a written letter of support by the investigator asking for a signature. I’d say Gary and our relationship has been on the other extreme, where we meet every other week. Gary is a vital co-investigator, and I guess I could say on this that he’s our Chief Nudge [PH]. I got everybody T-shirts, and only Gary’s said Chief Nudge, because when we need floorplans… you could be Albert Einstein, but it’s much better to be Gary Fischer.

Maria Hecht: So, Gary, I would say if that’s Ron’s experience of working with you, what has brought to your day-to-day kind of work the experience of working with a VA researcher?

Dr. Fischer: What it’s done is opened up my eyes, I guess, to the potential of what we can do within VA. We looked at different research and opportunities for the work that we do, but we’ve always looked outside the VA. This has presented itself as something that we could easily do within the VA, and as Ron mentioned earlier, our partner with the University of Florida. And because of that, VA has a unique situation in where we can do this kind of research, we’d bring the results of that into the standards that we’ve developed for all of our departments within it.

It could occur in one of our facilities. And then, we can apply it right away. We don’t have to look for a case study. We have that capability within the VA. It’s really a unique structure that we’re able to work within, opens up the door for us to have a continual working relationship along those lines. It gives us the opportunity to work hand in hand as the research is being done and can help inform the research as it’s being done versus having the research be completed and then pick it up.

Maria Hecht: That’s exactly the process that HSR&D had hoped to have happen when we began the process of bringing in operations partners.

Dr. Fischer: I’ve only been at the VA for about 12 years, but during that time, my office has not real aggressively reached out and looked into research opportunities. But having connected with this certainly gives us the future opportunity to do this more proactively.

Dr. Shorr: One thing I wanted to add, too, is I view Gary in this case as almost like a clinical expert. Some things have always come up, and… I say, “Well, Gary, what if we find that from a falls perspective that it’s best to have open wards with 25 patients,” and Gary would say, “Well, that might be true, but that’s not how we build hospitals.” So, I would say, just wearing my research hat, Gary has been sort of a touchstone into the sort of reality from an architecture and design point of view that sometimes things you find, from a falls perspective, may not actually be considered modern hospital design --

Maria Hecht: What --

Dr. Shorr: -- and yes, I’ve… that’s been really good.

Maria Hecht: What would you like other front-line providers to know about being involved with this type of physical design and assessment?

Dr. Shorr: I think it’s important to understand that any kind of event, that might be perceived as a breach of patient safety, can be met with all kinds of shame and blame, and really try to understand falls as sort of something deeper than that. I sometimes use the word “biomarker” or “vigilance,” which I think is so much tied into the environment. And if we could just begin to get away from this idea that somehow, as a health care provider, my patient fell on my shift, really begin to sort of think outside the sort of traditional box, that somehow, it’s me personally who’s failed, and there’s lots of factors that are associated with falls. That, for me, would really be [00:20:01].

It’s kind of the first approach that’s really actually put together incident reporting with patient-level variables, with space syntax, with qualitive information. This is truly an example of team science. There are real experts in this world of space measurement and space syntax that are fantastic, and I have to really thank Sherry Ahrentzen and Mahshad Kazemzadeh, who’ve been just amazing teachers. We’ve had amazing analytics led by Steve [PH] Luther, who’s the Tampa co-investigator on our qualitative team, Gail Cope, and just amazing administrative help as well. Slande Alliance and Bridget Hahm on the team. And I'm just touching on that; by no means is it me. It’s a great team.

Maria Hecht: I can’t thank you both enough. This has been a really wonderful conversation. I’ve learned a lot. This has just been really just the absolute definition of what health services and operational partners can do together and should be accomplishing, so thank you both.

Recording: The views and opinions expressed in the preceding podcast are concerned with the scope of recently concluded or ongoing VA HSR&D-funded research, and do not necessarily reflect current or to be implemented VA policy. To learn more about this research, visit the VA HSR&D website at www.hsrd.research.va.gov.