Podcast Transcript

Evidence-Based Practice Guide: IV Push Medications

Guest: Loretta Dorn Arebalo

Loretta K. Dorn Arebalo, RN, MSN, CRNI, CQM/OE, brings over twenty years of healthcare leadership experience, with a significant focus on the administration and safety of IV medications. She is the original developer of the P2 document for risk management and an educator on evidence-based practice, frequently speaking at nursing conferences about IV medication protocols. Currently, Loretta chairs the patient safety committee at Quality and Safety Education for Nurses (QSEN) and serves as a peer reviewer for the Journal of Infusion Nursing. Her expertise includes quality management, risk management, and international healthcare standards, with numerous publications and speaking engagements to her credit.

Host: PIERCE: Pierce DNP, MSN, RN, CNE

Dr. Pierce is a nurse leader committed to ensuring nurses are well prepared and offered abundant opportunities and resources to enhance their skills acquisition and confidence at the bedside. With 15 years in nursing, she has worked at the bedside, in management, and in nursing education. She has demonstrated expertise and scholarship in innovation and design thinking in healthcare and education, and collaborative efforts within and outside of healthcare. Scholarship endeavors include funded grants, publications, and presentations. As a leader, Dr. Pierce strives to empower others to create and deploy ideas and embrace their professional roles as leaders, change agents, and problem solvers. In her position as the Sr. Course Development Manager for Elite, she works as a project engineer with subject matter experts to develop evidence-based best practices in continuing education for nurses and other healthcare professionals.

Episode 1: Evidence-Based Practice Guide: IV Push Medications

Transcript

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Candace Pierce: This is Dr. Candace Pierce with Elite Learning by Colibri Healthcare, and you are listening to our Elite Learning podcast where we share the most up-to-date education for healthcare professionals. Welcome to the IV Push Medication Safety Podcast Series, where I

get to dive into the critical aspects of intravenous medication administration and how we can ensure patient safety. This topic really seems straightforward, and we often overlook the significance of what we are doing when we give medications intravenously. Before we decided on this topic for a podcast, I did spend some time reviewing medication errors, and what I found really highlighted that medication errors were related to IV medication administration in approximately 70% of cases, with about 26% of these errors classified as serious. Some of those common errors included administering the drug at the wrong rate, using the wrong mixtures, or combining incompatible drugs. Additionally, the Institute for Safe Medication Practices has identified numerous risks and has developed guidelines to standardize safe practices, indicating the widespread recognition and efforts to mitigate these errors. So, data really indicate that medication errors related to IV administration, including IV push medications, really are a significant concern in healthcare. The statistics of clinical errors really underline the critical need for stringent safety protocols and continuous education to minimize risks associated with IV push medication administration. For this series, we're really going to go back to the basics a little bit. Joining me for this discussion is Loretta Arebalo. Thank you, Loretta, for joining us for this podcast.

AREBALO: Thank you so much. I'm really looking forward to talking about this very important topic.

PIERCE: Absolutely. Can you share a little about yourself and your passion for this topic?

AREBALO: Sure. I have been working with different organizations and as an ICU nurse for a very long time with the practice of IV therapy. And of course, this became near and dear to my heart when I saw errors happening and decided I really wanted to be able to make a difference. So, I do have my master's in nursing, and in fact, my capstone project was evidence-based nursing for IV push therapy because I thought it was so very important.

PIERCE: Absolutely, and it really is when we start looking at medication errors and the statistics around them. To really start the discussion, I wanted to kind of get into some historical background if that's okay. Can you give us an overview of the history surrounding unsafe acts in IV push medication administration?

AREBALO: Absolutely. Just to maybe talk a little bit about why this is so important and what can happen. We know that in the US, at least 90% of all hospital patients have some type of IV therapy. So, it's a really common procedure. However, with IV therapy in particular, with IV push medications, when they're administered, they have immediate bioavailability. Once you put it in, you can't take it back out. In addition, there's really a very narrow therapeutic dose range. And of course, it's difficult to reverse the effects once a medication is given. Also, what I've noticed in being in a lot of different institutions and throughout different surveys that we've done, which we'll get into as we talk, there's a complete lack of standardization for the one process that a nurse does every single day that has no definite step-by-step standardization. So, if you go into every hospital, you see one nurse doing an IV push, another one doing it completely differently. It does become a bit hard to make sure, and I know you

talked about it, that everybody is following the standards or following the same process. It is a very dangerous, potentially adverse event. In fact, there's a lot of studies which have shown that, as you mentioned, IV medications are associated with 54% of adverse drug reactions and IV drugs also with 56% of preventable adverse drug reactions. So, 56% or 59% of all the cases for adverse drug reactions usually occurred during administration. Because of that, the ISMP, which is the Institute for Safe Medication Practices, actually started to look at this and say, okay, this is something that we really need to make a top concern for all of the healthcare facilities in this country.

PIERCE: And it's something that is so routine that we do so often during our day. I think, you know, we do more IV push medications than we typically put in catheters. So, to not have stringent evidence-based guidelines like we do for Foley catheters is very interesting to me. Since you've seen some of these unsafe acts as you were doing your dissertation, can you give the statistics between when it started being looked at and did, we see positive results once it was identified?

AREBALO: ISMP actually was the first organization that noticed a lot of adverse events because people mandatorily report adverse events to them. So, they started to look at it and say, maybe we need to really understand a little bit better what's actually happening. They did several surveys that were created to try to understand holistically what the problem was. This goes back to, you know, originally back in 2010, they did a survey just to understand what was happening in the environment and the economic impact originally of medication safety. As a result, the first clue they learned was that nurses were using the Carpuject pre-filled syringes as vials. So, they found this issue first. Once they discovered that, they conducted a holistic survey in 2014, which revealed a lot of unnecessary dilution and a lot of things happening like mislabeling or not labeling, how fast a drug is given being different across the board. So, they did the survey and then decided that we needed to pull together a panel of experts. In 2015, they pulled together a panel of experts to actually create the safe medication practices guidelines that were sent out. From this, in 2018, which is kind of interesting, they redid the survey and of course they found that even after putting these guidelines out, there wasn't a lot of follow-ups in terms of people uptaking the guidelines. So that was something they learned as well. It really started a movement to say, what can we do to get out there to talk about these guidelines so that they become more prominent in nursing actions? The Infusion Nurses Society, which writes the standards or practice for infusion therapy, reviewed the standards that ISMP had put out and they incorporated them into their guidelines or into their standards as well. Of course, the difference between a guideline and a standard is a guideline is suggested and based on expert understanding, and a standard is what we should all be adhering to for all IV therapy. So that would be different when I talk about infusion nurses' standards versus the ISMP guidelines.

PIERCE: Mm-hmm. I want to make sure everybody knows what ISMP stands for. That's the Institute for Safe Medication Practices. So, when we're looking at the history and kind of those key factors for unsafe practices, you really hit on that lack of standardization. When you were talking just now, what I heard was limited education. I'm thinking that maybe those protocols,

they didn't get out there, they were not educated on them. So, I'm looking at limited education too. What are some of those other key factors that probably contribute to the prevalence of unsafe practices in the past and even still today?

AREBALO: For IV therapy, we could spend hours talking about this, but the first thing is that, and I realized this when I did my capstone as well, there is a huge lack of training to start with in nursing schools. Many schools will have, if they're lucky, a week or two or three of basic theory and maybe they get to practice, but most schools assume that once they get into the hospital, they'll be taught based on their policies and procedures. The other thing too is, of course, during COVID, if you recall, there were times when nurses couldn't even get into a clinical setting to do their clinicals. So, it's starting to see that effect as well. But in general, we did a survey with the group we created through QSEN, which is Quality and Safety Education for Nurses. We realized that this was an issue across the board. Two nurses in Arizona did a survey in 2019 of nursing schools, and interestingly enough, every nursing school taught the students differently how to administer an IV push. So, there was no standardization for nursing schools either.

PIERCE: Interesting.

AREBALO: Once the student reaches the facility and they're given a lot of instruction, that instruction many times comes from a preceptor who may not be aware of the standards either. Or if the nursing student has gotten some information around the standards, the preceptor will say, well, that's not the way that we do it around here. So, this is the way that you're going to do it here. A lot of it, I think, is related to the fact that the policies and procedures even, and I know we'll get into this a bit more later too, aren't necessarily updated all the time so that what the nurses are following may not be the standardized evidence-based practice either.

PIERCE: I was going to go back to something you said at the very beginning of this. A lot of schools think that the students are going to be taught based on the facility that they're in. Yet, it seems like the policies, procedures, guidelines, all of those things at each hospital are different. It seems very confusing to a student who goes to multiple facilities and learns to do it one way, but then goes somewhere else and is told this is wrong, you have to do it differently.

AREBALO: Yes, yes, that is very confusing for students. Not every preceptor has gone through formal preceptor training. Even within your preceptors, they may tell you something completely different, which causes even more confusion.

PIERCE: So, who's right and who's wrong?

AREBALO: I have noticed that in many institutions, they may not have a step-by-step process or procedure. For example, there might be an IV therapy procedure that simply says to follow the physician's order and use aseptic technique, without detailed steps on how to give an IV push. That’s why QCEN created a step-by-step guide, as we couldn’t find one anywhere else.

PIERCE: It also seems like the medications you administer affect how you give that IV push medication. Do you give it over five minutes? How much do you dilute it? Do you not dilute it? So, in addition to the guidelines, now you have to figure out the differences in medication administration.

AREBALO: Correct. Nurses often have a hard time knowing where to find that information. There are various resources for IV push administration regarding individual drugs, timing, dilution, etc. Unfortunately, the information can vary across different IV nursing books. The source of truth for each manufacturer is in their package insert, but nurses don't always have access to those. They typically go to the automatic dispensing cabinet and get their medication once it's ordered. Unless the institution has information buried in their EMR or ADC, they don't always have the same information. In terms of dilution, many nurses are more likely to dilute narcotics or drugs associated with stigmas than medications like heparin or Lasix, based on myths and misconceptions.

PIERCE: I've heard some of those.

AREBALO: Yes, and those are absolutely untrue. You're still delivering the same amount of drug, and many manufacturers specifically state not to dilute. Diluting a drug unnecessarily is a medication error. Just like if you pull a medication from a Carpuject vial without using the proper holder, it's off-label and considered a medication error. Many institutions don't have the holder available, so nurses improvise with what they have. Another issue is that nurses sometimes use pre-filled saline syringes to compound medications, which are off label. The gradients on those syringes aren't meant to be exact, so the correct dilution may not be achieved. Also, some institutions don't carry the proper saline vials, forcing nurses to use inappropriate methods. Nurses should not be compounding more than two drugs in a syringe; that should be done in the pharmacy. Labeling is another critical issue. There are numerous examples of injury from non-labeling syringes. For instance, I know of a case where a nurse left an unlabeled syringe on the counter, and the next nurse assumed it was one thing when it was something else, leading to severe patient harm. Every syringe must be labeled immediately after drawing the medication to avoid such errors. Also, pre-filled syringes from the pharmacy should be trusted. While it can be nerve-wracking to use something you didn't prepare yourself, trusting the pharmacy's labeling and preparation is essential. However, using unlabeled syringes is not safe at all. And certainly not putting it in your pocket and relying on memory.

PIERCE: Yes, and not remembering what it was. You never know what you'll run into when you leave that med room. My memory isn't what it used to be. Pre-filled syringes, unnecessary dilution, poor medication labeling—what about when IVs are blocked or it's harder to push through? That could also cause issues.

AREBALO: Absolutely. If an IV isn't working, your patient isn't getting their medication, and you could cause infiltration or extravasation if the drug is harmful. Always check for patency

before injecting. Even with a running saline line, you should stop the IV, push saline in at the lowest port, give the medication at the correct rate, and follow with a saline push at the same rate. Don't leave the room; stay with the patient and restart the pump afterward. The standard is always to give the IV push closest to the patient.

PIERCE: So how have standards for safe IV push medication administration evolved over time? Are there other organizations involved in this?

AREBALO: Yes, organizations like ISMP, INS, and the Patient Health Quality Network have been involved. Most IV pushes are given by nurses, but there's discussion about involving pharmacists more in the nursing workflow. Teaching nurses about new devices and standards is essential. Even with ready-to-administer syringes, nurses need training on how to use them correctly. Pharmacy organizations should also adhere to these practices and understand nursing workflows.

PIERCE: Absolutely.

AREBALO: We worked with QSEN to create a checklist covering new infection control processes, assessing vascular access device patency, using pre-filled syringes, and labeling. This checklist was peer-reviewed and published, aiming to standardize nursing practices. Unfortunately, despite these efforts, implementation barriers remain. Many nursing schools and institutions haven't adopted these standards yet. The average time from new evidence-based information to practice implementation is 17 years, which is shocking.

PIERCE: That's crazy, but I believe it. Let's discuss this more in episode two. We're out of time for episode one. Thank you for joining Loretta and me for this first episode discussing IV push medication safety. Join us for episode two, where we'll continue this discussion.

Episode 1: Evidence-Based Practice Guide: IV Push Medications

Transcript

Candace Pierce: Welcome back to episode two of our podcast series on IV push medication safety. I'm Dr. Candice Pierce and joining me to finish this discussion is Loretta Dorn Arabello. Loretta, thank you for taking the time to continue this discussion with me.

Loretta Dorn Arebalo: Absolutely, thank you.

PIERCE: So, in episode one, we spent a lot of time kind of understanding the historical context about what we as nurses identify as such a routine skill. Took some time to identify the risks and consequences of unsafe IV push medication practices. So, for this episode, I thought we

could focus on evidence-based standards, best practices, and maybe take just a quick little look at the role of education, regulatory, and quality improvement for ensuring safe administration IV push medications. All right, Loretta, in episode one, we ended up talking about standards and the 17 years that it takes to get standards implemented. So, I was thinking we could jump right back into those evidence-based standards and specifically kind of starting with what are some of those pivotal moments or events that have led to the establishment of these standards and maybe even help to highlight the need for the standards in facilities?

AREBALO: Standards are created when there are patient issues. In other words, when harm is caused. We all want to make sure that our patients receive the best care possible and that we do no harm. That's an essential tenet of what we do. Being involved in creating standards or guidelines means that each individual nurse, clinician, and person can contribute to a greater body of knowledge. While there can be lots of knowledge from publications and literature, it's hard to translate that information into practice. It often seems like theory, and everyone remembers from nursing school that there's lots of theory, but what do you do with it? That gap is often the problem in translating a standard or guideline into practice. In addition, someone has to be responsible for implementing it. How do you move an organization of 1,000 or 2,000 nurses to ensure that they're all doing the right thing? Who is going to understand that this is what we should be doing? I have an example of a nurse I worked with at a big university hospital. For her clinical ladders program, she decided that this topic was very important to her of not dilating, using Carpujects correctly, making sure we were providing the IV push at the right rate, and preventing speed shock from high-alert drugs. She created a whole campaign with signs like "Give a hoot, don't dilute" with pictures of owls in the med room. She worked hard with practice committees and nursing leadership to make the change. This one floor nurse on a med-surg unit, using this as part of her clinical ladders, holistically changed her whole system to ensure that patients were getting IV push medication delivered safely. One nurse can make a big difference if they're willing to take that on and are passionate about it.

PIERCE: Right. Yes. That's a really good example of using your nursing voice to make positive changes. It didn't have to be on a huge scale. Being able to do that within your own organization is significant. But I do see that she had to have buy-in from many people. Do you have, along the lines of that story, examples, or advice on how a nurse can get buy-in from their leadership?

AREBALO: Many organizations have a unit council, though not all. Nurses can go to a unit council and present the evidence for why something is important. Sometimes you can provide all the evidence in the world, but if it costs too much, it's not going to happen. Understand too that pharmacy usually holds the budget for medications and related supplies. They might decide that the cost is too high, even though we know the safer option is better. Materials management always having labels on your cart or a place to prepare medications is also crucial. Getting buy-in means finding out what we can do to make things safer and getting a stakeholder in nursing leadership. Without buy-in from the top level, it's difficult to make a change. Change has to come from the top down, although you can help from the bottom up. It

has to be managed through policies, procedures, education coordinators, and whoever writes the policies and procedures. You have to be armed with information and standards and understand how to enact them in real-life practice.

PIERCE: Absolutely. Do you have examples of improved patient outcomes when these standards are implemented?

AREBALO: So, we know that some of the, just based on some of the adverse events we've seen, because we're tracking them constantly, we know that we're not seeing them as often as we used to. However, having said that, depending on the organization's culture, if you have a punitive culture where you're not going to report things, or if you don't want to make a big deal of it, and I think the example we talked about previously was not having the carpeject holders, for example. So, who do you go to? What do you say? How do you get more on board? Or do you just do your job? Hope your patient does well and goes home. So, it's the time to do it. It's who to go to.

PIERCE: Do newer nurses even know that these injectors exist?

AREBALO: Well, so that's a good question, one that of course we won't know for sure unless we ask everybody about a different institution. And don't forget, I get on the floor, I've had my orientation, I get on the floor and my preceptor says, you don't need it, just do it this way, it's okay. And so, then it just continues on and on because that's just the way we've always done it. I've been in some institutions where I am frequently distressed at how IV push is delivered, and I do an assessment I go to them, you know CNO or whoever it is and I've had this comment before, well, we've got a lot of other things that are super important coming up, and so I'm not sure that this is a good time to retrain the entire staff on that.

PIERCE: What are some best practices for safe IV push medication administration according to guidelines?

AREBALO: So, yeah, so I think, you know, we talked a little bit about these are the five main things that we're making sure, but we want to make sure they're using prefilled syringes or cartridges and using the holder to give all the medications. And the reason is because they're labeled with the correct medication. They have the exact amount of medication that you need in them, and you don't need to dilute them. Because remember to every time you dilute a medication, there's also the potential for infection during the compounding process. I've seen nurses that very often are compounding at the patient's bedside, so they're moving away the dinner tray and the salt and whatever it is, and they're drawing up on the bedside, or they're doing it on their carts, and I've seen carts filled with paperwork with the vial on top of it that they're trying to draw from. So not the best place to perform what should be aseptic, right? So, there's always that as well. Again, diluting, you have no idea if you've diluted the correct amount, if it will change the concentration of the drug if the impact will be different, you don't know. If it's designed not to be diluted, you don't dilute, right? Because that's a harm. In addition, you know, watching how fast you give it, because you could create speed shock or a

bolus or any type of potential adverse event like that if you're not giving it exactly according to what the manufacturer wants you to give it at.

PIERCE: What is speed shock?

AREBALO: So that's essentially when you bolus somebody with a medication that may cause harm like tachycardia or some kind of a reaction that you weren't expecting. And then of course we talked about failing to label syringes because then if you're drawing out a vial, you don't label it. You have no idea what you're giving the patients. I mean, I would personally, if I had an unlabeled syringe in my pocket, I would throw it away and start from scratch because I wouldn't just give something without knowing what it is. And then again, we don't want to compound more than or put more than one drug in a syringe. Using prefilled syringes or cartridges and their holders is essential. They are labeled correctly, have the exact amount of medication needed, and don't require dilution, reducing infection risk. Diluting medications at the patient's bedside or on carts is not aseptic. Speed shock or adverse events can occur if medications are not given at the correct rate. If a drug is designed not to be diluted, don't dilute it. Not labeling syringes can lead to administering the wrong medication. Never put more than one drug in a syringe; that should be done in the pharmacy.

PIERCE: You have shared so much about what you have worked on with QSEN and a couple of the other organizations, but what role really, what brought about the interest in the research to identify risks associated with unsafe IV medications? Like whom, who really, who started the specific research?

AREBALO: So, this research started back with the Institute for Safe Medication Practices when they were getting a lot of reports of adverse events related to IV push. And so, from that, it developed into a whole discussion movement need to change the standards across the board for nursing, for pharmacy, et cetera. And I got engaged pretty early on because that's my area of expertise. In fact, one of the nurses on my team who works very closely with INS did a roundtable at one of the INS meetings to try to understand or gauge interest. Even these very well-seasoned nurses that have been performing IV therapy for 20-plus years did not understand all of the standards or didn't understand what ISMP was trying to do. And partly because I think ISMP tended to be more of a pharmacy-related organization, whereas the Infusion Nurse Society, and American med-surg nursing organizations like that are more nursing-inspired. And so, whenever you have a pharmacy-based organization, many times nurses don't know what's going on with it, think it's just for the pharmacist, et cetera. So, Infusion Nurse Society picking up the content and included it in their standards, was very important for nursing to be able to recognize, understand, and start acting on it.

PIERCE: It seems like this topic would be a really good starting point for interprofessional collaboration. Not even just between pharmacy and nursing, but physicians as well, bringing them all together. Are there other professional organizations that are trying to push for this or regulatory bodies like the Joint Commission that are trying to push for better standards in this area?

AREBALO: So Joint Commission and state health departments or organizations usually look at standards, they look at guidelines fairly frequently, and they incorporate them into what they're looking for in different hospitals. And so Joint Commission is aware, they've started to say, okay, we need to start looking for these standards, but whether it becomes a, I'm going to call it punitive, but you know, a hit on their survey or not depends on, on what the joint commission decides. Right. So, and then when the health department comes in, they're looking for more things like, you know, aseptic technique and safety and, and looking at ID bands and things like that. So very, very slowly, some of these concepts do get picked up in the survey results, but one of the organizations of interest for infusion therapy as well as AIMI, although they're more from the engineering side of thing that's American Association of Medical Instrumentation, everybody's got an acronym. They're more from an engineering point of view as well, but they work closely with the ISO standard organizations who create the standards for product development. And so, I've gotten a little bit involved with them as well, but the product development organizations are trying to work so that the products that are made for clinicians on the floor make it easy for clinicians to use and not have to remember all these things.

PIERCE: Are there any emerging trends in technology to help maintain these standards?

AREBALO: I think the use of the ready-to-administer syringes is very important. I'm seeing more and more organizations start to purchase them. But again, the nurses have to open the package and it's all ready to go. It's all labeled and they just have to remember the rate to give it at and they have to remember to give it at the lower port of the patient's injection site or on their line and make sure that they are flushing with saline before and after so that there's no cross contamination or any adverse events related to whatever drug that was in there. So those are the main things I have to remember, but that's, you know, and obviously, barcoding to make sure you're getting the right drug with the right patients. And a lot of these ready-to-administer come with the barcode right on it. So, you're not just taking a syringe with nothing on it to the room.

PIERCE: So how can healthcare organizations monitor and evaluate compliance with the standards?

AREBALO: So that's a really hot topic. And when I say it depends on the organization, are they even concerned about teaching IV push right when they hire them? A lot of institutions I've been in don't teach IV push necessarily as a skill. They rely on the nurses, you know, either education or experience or their preceptors in the hospital. I think it should be included as an annual skills assessment. So, if there are any updates, the organization can inform the nurses at that time. There also needs to be in the organization somebody that's monitoring all the standards of practice. And I don't mean just for IV therapy, but across the board. So, if somebody's monitoring it, then they should be creating policies and informing the nurses of what those policies are. But I will tell you also that with as many policies as there are for nurses in an organization, it's really difficult sometimes to memorize those policies.

PIERCE: You're right, it is. Or to even recognize that this is a skill that needs to have guidelines and a policy.

AREBALO: Correct, exactly. And even nurses understanding that there's new information out there is so very difficult. They're relying on the institution to let them know if something has changed. The average nurse doesn't have the resources or time to go to these conferences, to read these journals, to do all of these things to try to keep up their practice. Meanwhile, certain states, most states require some sort of CEU activity. Which one do you choose? There's so much new information, it's overwhelming.

PIERCE: Right. Absolutely. And this this skill is really thought of as so routine, and I do it so much. Is this really something that I need to have continuing education on versus a topic within whatever area that I'm working in cardiovascular versus pediatrics? So, which one am I going to choose, the one that seems more routine or the one where I'm like, I need to know the latest evidence-based practice and pediatrics or cardiovascular? So, it's a really interesting topic. And I see how it is so hard to really get buy-in from organizations and from nurses, not even realizing, hey, this needs to be looked at. This is causing medication errors. This can really harm a patient. I think if they really knew and identified that this really could harm a patient, or they are harming a patient, that they would put more time in trying to understand the skill better.

AREBALO: Correct, yes. And I think that leads to sort of a question about who's looking at the quality of the complaints of the adverse events in the organization. And so, we know that nurses have to fill out some kind of a form or maybe it's on their computer if there was an adverse event. So, if I administer an IV push med and I didn't put a label on it, but I think everything went okay, am I going to report that? If I administered it from the cassette up above of the IV pump and the patient doesn't suffer any untoward reaction that I know of, am I going to report that? Right. Exactly. The problem is that they don't know they're doing anything wrong unless something happens that they're aware of. And honestly, it's very hard to see what's actually happened once the drug is in the patient.

PIERCE: Well, you're not going to know you did anything wrong.

AREBALO: You assume that the drug is working like it's supposed to. But how do you know that the catheter related bloodstream infection that they just got was related to their central line? Was it related to their procedure? Was it related to when you went to dilute the medication and you did it on a surface that had some sort of bacteria? How do you know?

PIERCE: And you're not going to. Yes, it's going to be really hard to track that. So, when it comes to the challenges that you're seeing and really getting people to adhere to these standards, what do you see as those challenges so that we can work to overcome the challenges?

AREBALO: Yes, so there's, and we actually talked quite a bit about that in one of the talks that I gave for Sigma, but there's a lot of barriers to implementation of the standards, right? We talked about time, energy, and effort. And the other thing that I've run across frequently with nurses, especially well-seasoned ones, is, "Well, we've always done it that way. I've never had a problem. Why would I need to change?" So, you run into resistance to updating standards of care in a lot of institutions. And I mentioned already just the time to know what they are providing the means or the different materials to be able to work according to the standards. And then again, the biggest barrier is, okay, I got it. How do I get there? Who's going to help me? And add to that nurse turnover rates.

PIERCE: Very high.

AREBALO: We have a huge nurse turnover rate in this country. We use travel nurses. And so how do you keep the staff up to date? If they're coming into the institution from another institution, how do you keep them up to date? So that's another barrier. And of course, as I mentioned during COVID, lack of training for nurses for the clinical field or in the clinical hospitals because sometimes they weren't allowed in. We've got nurses graduating now that really haven't ever touched a patient. It's all been simulation. And so, you've got a ton of barriers that lead to nurses not following procedures. If I'm a travel nurse, do I really know all the procedures in the hospital?

PIERCE: I think I can identify another barrier as well that I've seen firsthand and that a lot of your organizations have educators or dedicated educators for a unit or a floor. But I noticed that your educators, they continue to get all these other roles put on their shoulders or hats on their heads of like, "You have time. Can you take this on, and can you take this on and this on and this on and this on?" And then it's like, well, when do I have time to actually be an educator at that point? So, then we lack the educator being able to educate the staff.

AREBALO: Exactly. And the educators might have so many different areas they have to educate on. They're doing cardiac classes, they're doing back safety classes, they're doing so many things, right? And so, they have to be able to know where to spend their time and somebody's telling them what to train on as well. And they may not also know what the standards are either because again, it's back to who's training the trainers.

PIERCE: Absolutely. So, when it comes to promoting safe IV push medication, what does it look like as far as interdisciplinary collaboration? Who takes ownership of that? Is it really just the nurses' problem? Is it more than them?

AREBALO: There are positions in many institutions called safety medication officers. Sometimes they're pharmacists, sometimes they're nurses, sometimes they're attached to the pharmacy, sometimes they're attached to the quality department. And so, in many institutions that I've been in, they're leading the effort because they look at the complaints, they're trying to figure out what's going on. They're trying to say, "Okay, we need to change this." A lot of times they lead the efforts, and they do because it's a position that could be either nursing or

pharmacy. They do tend to draw in more interdisciplinary, but you need your materials management folks to come to the table, you need the pharmacist, and you've got to have your CFO because he's the one writing the checks for all this material. Yes, you need your nurses, you need your quality department, and your risk management as well. Risk management is also huge, because IV therapy lawsuits can cost the organization more than anything else.

PIERCE: I did not know that.

AREBALO: Yes, so that's why risk management oftentimes gets involved as well to say, "What can we do to reduce some of these errors?" And obviously, in IV therapy, it's not just the IV push, but it's infections and the IVs that hang and things like that, right? But this is part of it.

PIERCE: Absolutely. So, what are some of the most trusted resources that we can go to find up-to-date recommendations for IV push rates and protocols for the medications that we give?

AREBALO: So, there's lots of nursing IV books out there. Do I know which one is the best? No. But interestingly enough, I belong to another committee which formed about a year and a half ago. And their sole purpose was to try to standardize all these nursing drug books. Because depending on which drug book you got, it may have a different rate in there or a different dilution or different, you know, a lot of things. And why? Because there's more than one manufacturer of a given drug. And so, if manufacturer A recommends this, manufacturer B recommends that, which one do you use if you're doing a standardized drug book? And so that's why the original source of truth ends up being the package insert for the drug, which by the way, nurses never have access to.

PIERCE: Well, so where do we go? The pharmacist?

AREBALO: There has been a lot of discussion that the pharmacist should be providing with each medication, the rate at which it should be given, and any dilution if necessary. It shouldn't be the nurse that has to figure all of that out. Oftentimes it is, though. So best practice would have the pharmacist put in for this package insert, because they do have access to them, give it at, you know, two milligrams per minute or whatever, and don't dilute, right? It should be right there on the label. And I don't think we're there yet with a lot of institutions. I think the pharmacists just assume the nurses just know how to do it.

PIERCE: Right. And what it seems to me is that this is not just a nursing problem, nursing issue. This is something that should be worked through interprofessionally between nurses, pharmacists, physicians, as far as at the bedside, you know, and then bringing in the other key players like you were talking about risk management and your CFO and those who are also the ones that are ordering these things. But at the end of the day, nurses can't be trying to figure this out on their own. They should have other resources and organizations should provide those resources to effectively and proficiently train them and give them the resources they need to take care of their patient safely. So, this is so much bigger than just nursing. So, as we wrap this up, Loretta, what do you want the listeners to walk away with today?

AREBALO: I want the listeners to know that they should be following the guidelines, that if they need help implementing the guidelines in their practice, that they should be using their influence to get a stakeholder or a champion on board to make those changes, that one nurse, one single nurse can make a huge difference in patient events across an entire hospital system when they start to realize the changes that need to be made. And so, I can't enforce enough that one nurse can bring together all these stakeholders and again, really make a difference. Don't think that you're just one person. What difference am I going to make? You're a voice, you're a nursing voice and you care for your patients.

PIERCE: Today, where could I find the standards? If a nurse finishes listening to us and they're like, I want to find these. Where could they find them?

AREBALO: So, if you go on the QSEN website and you look under the section around practice standards and you look under patient safety, you can find it there. Also, the American Journal, American Nurse Today has links to it as well. But we do post it on the QSEN site.

PIERCE: All right, so I know as a nurse that I have been guilty of just thinking of IV medications and giving IV push medications as just something routine that I just do. But the significance of IV push medication administration cannot be overstated because as you were just talking about, Loretta, there are so many considerable risks if we're not doing it correctly that we don't even realize that we could be putting our patients at risk. So, as we wrap up this podcast series on IV push medications, it's crucial to recognize that IV administrations carry a higher risk and severity of error compared to other medication routes. And a significant portion of errors can be attributed to skill knowledge and deficiencies. And really, it highlights the importance of ongoing education and training for our healthcare professionals, even with something that we think is so routine. So, I will say though, interestingly, I did see a study that saw a reduction in errors and their severity as clinical experience actually increases. But it's not just about experience because some of the errors also come from routine violations and learned workplace behaviors. So, it's by addressing these issues through continuous learning and adherence to evidence-based guidelines, where we can really foster safer practices and ultimately improve patient outcomes. Loretta, thank you so much for taking the time to talk with me today and to share your knowledge with our listeners.

AREBALO: Absolutely. Thank you so much. I'm so glad I was able to talk about this important topic.

PIERCE: Absolutely. To our listeners, thank you for coming alongside us on this journey to enhance IV push medication safety. And if you have not already, I encourage you to explore many of the courses that we have available on EliteLearning.com to help you grow in your careers and earn CEs.