



Pictured, l-r: Jerrod Copeland, Dr. Keyur Vyas, and Pamela Higdem, RN

A woman with short reddish-brown hair, wearing a white lab coat, stands in a hospital hallway. Her lab coat has a name tag that reads "UAMS Pam Higden BSRN, CIC Infection Prevention". She is smiling and has her hands clasped in front of her. The background shows a modern hospital interior with large windows and a glass wall.

# INFECTION PREVENTION

## *A Q & A with UAMS Medical Center Professionals*

In the past, hospitals were a dangerous place where patients could be admitted with a minor health issue and emerge with a serious disease. In the mid-nineteenth century, it was observed that women undergoing childbirth in a Vienna hospital were over three times more likely to die from fever if they were treated by medical students (who were exposed to infectious patients) than those in a neighboring ward treated by midwifery students. Eventually, Louis Pasteur discovered that microorganisms were responsible for infectious disease, and nineteenth century physicians like the Scottish surgeon, Joseph Lister, became champions of disinfection in clinical practice. Since then, nosocomial, or hospital-based, infections have decreased so dramatically that the uninitiated might think this is merely a historical issue. Preventing such infections, however, continues to be a major concern in hospitals to this day. The work of the infection control teams that keep our hospitals safe is a quiet, ongoing and continuous effort that often goes unnoticed by patients and visitors. This month, we decided to take a look into the behind-the-scenes world of hospital cleanliness.

Our chief editor, Smith Hartley, spoke with four healthcare professionals at University of Arkansas for Medical Sciences to gain an understanding of the important work that goes on behind the scenes to keep their hospital clean and their patients safe from the threat of infectious agents. Dr. Keyur Vyas is an Infectious Disease Physician and Medical Director for Infection Prevention, Jerrod Copeland is the Clinical Housekeeping Director, and Pamela Higden, RN, is a Certified Infection Preventionist and is the Director of the Infection Prevention and Control Program.

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**Chief Editor Smith W. Hartley** Could you describe the importance of having a hand/gloves policy at a hospital?

**Keyur Vyas** The foundation of everything we do is going to be making sure that hand hygiene is considered one of the most important things. All the fancy and expensive devices and interventions do not matter if we're not doing the basic interventions that we all learned in kindergarten. It's very important for, not just hospitals, but healthcare facilities at every level to make sure that they all have a consistent policy of when hands are to be sanitized, when their staff are to perform hand hygiene, when they're going to encourage their patients to perform good hand hygiene, how to do it, when to do it, and then when is it appropriate to use gloves? And all of that needs to be done consistently, taught consistently, and then needs to be monitored to make sure that people continue to follow the appropriate methods to keep patients safe.

**Pamela Higdem** I just wanted to add that I think the public sometimes believes that healthcare providers should wear gloves every time they do anything, and that is just

not the case. Gloves are not really antimicrobial and you don't need them for everything. People need to have human touch. And so, skin-to-skin human touch is still important in healthcare.

**Vyas** With appropriate hand hygiene.

**Higdem** Right, with appropriate hand hygiene, that's correct.

**Editor** Alright, good. And how does a hospital identify high-touch areas?

**Jerrold Copeland** From an environmental services standpoint, when you look at patient rooms, we're going to be looking at items that are often touched by the physician, the caregivers, the patients themselves, any family members who might be there. So, around the bedside, the bed rails, the over-bed table, the bedside table, the call light, any light switches and doorknobs in the restrooms, remote controls, are going to be some of the high-touch areas that we're going to focus on cleaning daily, every time we're in the room for cleaning purposes.

**Vyas** A lot of it is common sense; you know

what people are going to touch whether it's the doorknob or the bedside table or the rails, but there's also research that goes into that. Published literature, as far as areas that people may not initially think of. All of that goes into consideration, so that is how we decide which areas need to be addressed.

**Editor** Is there a clean-to-dirty process? Does that make sense? Is that something that your team uses, or hospitals in general use?

**Higdem** Always. Everything from when EDS (the environmental services department), or others go to clean a room, an operating room, an exam room, they start with high surfaces and clean down to the floor. That's also with instruments. Once an instrument is used, we start from the cleanest part and move down. So yeah, everything is clean to dirty.

**Editor** Could you describe what that process means? Clean to dirty, what does that mean?

**Higdem** Well, for example, with an instrument. With like tweezers, and we call them



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forceps, the bottom of it is going to be the part that's going to have blood or tissue on it. If you put the cleaning agent on the bottom of it and then move backward toward the handle part, you're just going to spread whatever blood, tissue, and germs were on the bottom from the dirty part back up to the clean. That's what it means. You start at the clean part and wipe down. That can be a room; we start with the overhead lights and then we move down the wall and the equipment, the bed, all the way down to the floor. It's the same as the bathroom. You start at the shower head and you move down to the top of the toilet down to the bottom of the floor.

**Vyas** The concept is you don't want to contaminate an area that's already clean, or cleaner; everything is relative. So, you want to start with the cleaner area and move down, because you're not going to contaminate from cleaner to dirty, but you could very easily contaminate from dirty to clean. The other analogy is when you wash your car. Anybody that does it professionally, or the recommendations for doing it at home, is that you start at the top and you rinse down to the bottom. You don't want to rinse the bottom and then have dirty water cascading over the part you just cleaned. So, it's really trying to ensure that you don't contaminate areas that are not as dirty.

**Editor** Nice analogy. And how can a hospital control the air and the airway pollutants? Is there anything that can be done?

**Vyas** There are things that we do. Hospital

airflow is quite rigorously engineered and controlled. Our management of air flow is in particular directions and a lot of that is based on regulations. For example, certain areas where you don't want anything filtering into a particular room are under positive pressure, so there is more air that's pumped into that room so that the air from outside doesn't flow in. Other rooms, we may want to have under negative pressure, because you don't want whatever is in that room leaking out into a corridor or into an adjacent room. And so, there are pressure differentials that are physically implanted and that our engineers maintain for certain areas. And some of those are requirements. Operating rooms have to be under positive pressure and that's to keep things that might be in the air outside of that environment from floating in and settling into an open surgical field.

Other areas, if a patient has a particular infection, say tuberculosis, well, you don't want that infection spreading into the hallway or into an adjacent room, and so those rooms are under negative pressure. So the air flow is controlled very rigorously to make sure that it's flowing in the appropriate way to help prevent infections or transmissions. Sometimes, we do things like have HEPA filters on our various areas and our air handlers to trap bacteria and viruses and contaminants to keep things like that from spreading into areas that we don't want them to be in.

We also do sampling of certain areas for things like mold and other contaminants, especially when we might be doing something like a construction project that's going

to generate dust. So we work very hard to control our air and environment to make sure that air flow is appropriate and in the direction that we want it. We also work hard so the quality of the air, both within the facility as well as whatever is discharged outside, is both appropriate and according to regulation.

**Higdem** The common, easy answer is that we never open windows in a hospital. We keep all outside doors closed, and the back dock where food is brought in and equipment, supplies, those doors are opened, the truck backs out, and we close that so that we don't get bugs entering in. I'm talking about the kind that fly around.

**Editor** I didn't realize that. I thought you could open windows, but that does make sense. Let's talk a little bit about the process of contamination disposal. I'm sure you have big policy and procedure manuals on this, but if you could just give a little description of how that works and the importance of this process.

**Copeland** From a patient unit perspective, what we do is we go in each individual patient room on a unit and each unit will have usually one to two soiled utility rooms. These utility rooms will only hold dirty supplies, contaminated supplies, just your regular trash. And then you have what's called biohazard waste as well. The biohazard waste is anything that's soaked heavily in a blood or bodily fluid. If you just had a band-aid with a little red dot on it with blood, that would just be considered regular trash, but if

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we have wound dressings or anything that's heavily soaked or saturated, it will go into a real thick red bag with a biohazard label on it. And certain units will all have a trash can and a biohazard receptacle in it as well.

Housekeeping will go along and will pick those up. They're stored in these soiled utility rooms and then a trash technician will come by and they will gather up, in big closed bins, all the trash. And then in a separate one, a technician will come around for the collection of all the biohazard materials. The regular trash is taken away, just the regular household trash that you may find similar to what would be in your home, just paper, plastic, cardboard, food, whatever, and it's taken out to a big trash compactor that's picked up a couple of times a week. The biohazard material is sent to a different area. We can't even transport the stuff together; you always have to keep your biohazard waste separate. It's taken and it is packaged up into some thick red bins and is taken away by a special company called—our vendor here is called Stericycle, and they autoclave or incinerate all that red bag waste.

**Editor** I know you deal with a lot of chemicals. How are chemical contents minimized? How do you make the decisions to minimize their use?

**Vyas** We review all of the chemicals and things that are used in our cleaning. We have personnel and committees that need to review products that are on the market and we always want to make sure that we have a good balance in achieving the efficacy that's necessary. You always have to walk that line of...you can always clean something with something that's very harsh, but then you have the breakdown of surfaces, you have irritation for your personnel that are using it, and so you may actually cause more problems with that. On the flip side, you could use something that's very mild and it doesn't get the job done, which is obviously not what we want either.

So, we do review our products, through a committee that's knowledgeable about using these things. And then also, we will often trial things so that our frontline personnel that are actually using the products can give us good feedback about things like irritation or cleaning. Something may sound great, but then it leaves a very sticky residue when you actually use it; then it won't serve the purpose that we need it to. And so, we have a process for identifying products that are appropriate and will be as efficacious as we need them to be to maintain a clean environment.

**Copeland** One of the other ways that we

apply some of these chemicals and use them to clean is, here at this facility, we use microfiber cleaning cloths and mops. It's not your traditional loop mop with just a regular rag where you're smearing a chemical around. The chemicals are diluted to a proper ratio and then we use a microfiber cloth to wipe floors, wipe walls, wipe surfaces with, and it's a lot more effective than just using a plain cloth or a loop mop and just smearing or moving around the dirt or the germs, and killing them on contact. The microfiber will actually pick up a lot of the small microscopic type germs and dirt and debris where it would be more difficult to get with just a regular mop or a cloth or a rag.

**Editor** And what are some of the special or harder to clean machines or areas of the hospital?

**Higdem** I'm sure you all have seen in the news about the complex equipment used in surgery and endoscopes, also used in surgery and outpatient clinics. There is expert training that is required for anyone who works in those areas. Both during the procedure, immediately after the procedure, there are some, what we call, point of care cleaning steps. Then, the equipment is sent to our sterile processing department, otherwise called SPD, and those people are



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**—Copeland**

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trained. Everybody has a training period, a return demonstration, and a competency that is annually checked or the manufacturer comes up with something different for that particular machine or instrument. So, the manufacturer guidelines are published online and the CDC, FDA, all send out notices to everyone. So, we even have people whose responsibility it is to keep online to make sure we’re on top of everything.

**Editor** **Alright. I kind of know the answer to this, but how important is the role of nurses in minimizing infections?**

**Higdem** Well, cleanliness is everyone’s job and it’s not just nursing. The facility provides ready-to-use wipes that we use to clean and then disinfect areas where microorganisms may be common, like those high-touch surfaces. The receptionist when you come in—especially during flu season—you will see them wiping off their area where people just come to ask questions. In the kitchen, in the laboratory, so everyone in a hospital is now taught, not just nurses, but everyone, even physicians are taught that if you see something that can be wiped up, get one of these wipes, they’re all over the facility, and clean it. If you see trash on the floor, pick it up. It’s everyone’s job to make sure that we keep aseptic or as few germs as possible.

**Vyas** From the same point of minimizing

infections, cleanliness is certainly a large part of that. There are lots of other interventions and things that go into minimizing infections for people that are admitted into the hospital. The last thing that anybody that works in healthcare wants is for somebody to come in for a problem and then end up with another problem that was preventable. Nurses often get the most attention for that. The spotlight falls on them because they are the frontline as far as taking care of the patients. You know, the physician may be guiding the care, but as far as the amount of time that they may be in contact or in the room with the patient, the nurses probably win that every time. They’re in so often.

They also have a great role in education of the patient. And so, because of the amount of time that they’re face to face with the patient, in contact with the patient, they’re there, often times, teaching the patient and their family about things that they can do to help prevent devices getting infected or prevent acquisition of infection. So, they have a vital role to play, along with everybody else. We often think about nurses, we think about physicians, but when we think of all the people that our patients come in contact with; therapists in all sorts of different fields, chaplains and nutritional personnel, environmental services, I could go on and on, I’m sure there are people that I’m leaving out, but it’s really everybody’s responsibility. That’s one thing that we try to stress is that

everyone has a part to play in trying to keep our patients safe.

**Editor** **And on that topic, how is the entire hospital staff continuously updated and trained in techniques for cleanliness and minimizing infection, and how important is this training process?**

**Copeland** We have annual competency trainings that we go through and then we also have a daily huddle where each day we review one or two cleaning topics, as just reminders. Then there’s always the kind of regulatory changes that may come across. We maybe have some changes in standards for the OR or some changes for the pharmacy IV sterile room that we may have to change up when regulations change. We use a lot of other departments to help us, infection control as well, as far as refresher training on how to don and doff personal protective equipment when we go into rooms that may have contact or airborne isolations; so, it’s a lot of training and retraining in the hospital. That’s how we do it from the EDS side.

**Vyas** PPE is for self-protective equipment, so things like gowns and gloves and masks. Across the board, our personnel, especially our clinical personnel—therapists, nurses, physicians—when they’re hired, they go through a training process. Same thing for our students in residence, and then we continuously provide training. There are competencies they have to go through on an annual basis. We will go through and have further pushes as needed or identify topics that have either changed or we feel we need to reinforce and go through. So it’s a continual process. It’s certainly not a one and done thing.

**Higdem** In addition, we have annual requirements for infection preventionists to teach every department that has critical impact. So we wouldn’t necessarily see the person who does billing or insurance claims every year because they don’t actually see patients. In our annual reviews, we talk about the ways that we put patients in isolation, why they’re in isolation, what

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specific PPE is required for that. So, those would be planned, scheduled in-service kinds of things. But then the other thing we do, the infection prevention team, is make rounds on all the units and just stop staff in the middle of the hall and just stop staff in the middle of the hall and ask them questions. “How long do you have to wipe something to keep it at clean? How often are you supposed to clean your hands? Show me how you do that.” Things to just spot check and make sure folks weren’t asleep during class or haven’t forgotten something. So, it’s constant.

**Editor** And overall, how does the hospital balance between preventive cleaning maintenance schedules and alerts that receive quick and efficient response? I’m thinking more in the responsiveness to imminent situations.

**Vyas** We talked about the endoscopes that we use that are difficult to clean. All of our equipment, every single piece...we try to use single-use equipment for as much as we can. Anything that can or would generally be a single-use item, we try to do that. There are a lot of things, though, that can’t be because they are very specialized or very expensive. The manufacturer will

provide cleaning and guidelines for every piece of equipment and we adhere to those. In addition, we review recommendations and guidelines from regulatory bodies like the FDA, CDC, other agencies that provide alerts. And so, all of our equipment has a preventive maintenance and cleaning schedule. For something like a duodenoscope, they are cleaned between each patient use. Now when we receive alerts, we monitor professional communications, professional societies, as well as the FDA. Manufacturers also know when we have a piece of their equipment and will let us know when something changes.

So, when we receive that alert, we act very quickly if it’s something that needs to be addressed. Occasionally, if it means there’s something that needs to be pulled out of use until it can be addressed, that’s done. We have our day-to-day or per-use cleaning schedules that are followed as well as preventative maintenance. So, it may not be just cleaning, which is not, I do not believe, scheduled, but it may be that every fifth-use or tenth-use or whatever it may be for any particular piece of equipment, biomedical engineering may need to check it out or it may need to go back to the manufacturer for routine upkeep. All of those are followed,

but when we get something like the alerts with the duodenoscopes, we do whatever we need to from guidelines or recommendations to endpoint to try and be as safe as we can for our patients.

With the duodenoscopes, there were multiple recommendations that came out about how their cleaning should be modified or what further monitoring may need to be done. We take all of that into consideration and put it into a plan. It may be to modify our routine cleaning, it may be to do more frequent checking.

The other piece of equipment that had a lot of national attention was a heater cooling unit that we used in cardiac surgery. Really, there have been a fair number of different kinds of these machines and this was for one specific model from one manufacturer. The contamination of that led to a particular kind of infection in a certain number of patients. For us, luckily, we didn’t have that kind of machine. But that provided an opportunity for us to look at our machines, make sure that they were being serviced and cleaned properly and to ensure that we were doing everything we needed to ensure that we had the best functioning equipment possible, and that it was operating in a safe manner. We take those alerts that come

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across very seriously.

**Higdem** And Smith, every patient that's admitted to UAMS is a part of somebody's family. The leadership of UAMS wants this hospital to be considered to be one of the safest in the world, and because of that, the culture here is, from leadership to everyone...for example, let's say one of Jerrod's housekeepers saw a nurse or a doctor come out of a room without washing their hands. It is their right and their responsibility to say, "Pam, you didn't wash your hands." And I'm then to say, "You're right. Thank you." It's everybody working together as a team to make sure, as Dr. Vyas said, that the preventative maintenance is done, all the cleaning is done. Also, because of our leadership support in this and firm commitment, we have all the top products and materials that we need. We just got all kinds of new hand hygiene, and by that I mean soap and alcohol-based hand scrub, so that our hospital is right on top of all the needs to give the safest, most effective care for our patients.

**Editor** That works right into my next question, which is how is the priority of cleanliness and control achieved as a shared focus between administration and all staff?

**Vyas** I think these are the foundational things that underline everything that we do. It doesn't matter how great our service in one area or another is or what our results are if we can't do the simple things of keeping the institution clean as well as keeping our staff focused on making sure that we keep our patients safe. It's certainly one of the highest priorities from both the standpoint of administration down to every one of our personnel that we need to make sure that we do everything we can to keep our patients safe.

**Editor** With cleaning chemicals probably always improving as with everything else, how do you find that perfect balance of a good cleaning product and being safe? And is that always improving? Is that something that you're always trying to enhance?

**“Almost all chemical cleaning companies are coming up with new ways to get the effectiveness of the clean with the least harmful chemical.”**

**—Copeland**

**Copeland** Yes. I would say most companies that make and create cleaning chemicals are always looking to get closer to the line of how caustic is it and how effective it is and how safe it is. That line gets sharper all the time, as they come out with something better. It's good when you can move away from products like a Clorox Bleach, where you're having to wipe everything down with bleach all the time—that starts to wear surfaces out; coverings and especially ones that are rubber or plastic. These companies began to develop cleaning chemicals using ingredients like hydrogen peroxide, which is not harmful at all—you could almost use that without gloves—and use that for cleaning and disinfecting. There's obviously certain levels. You find out from an infection prevention standpoint what is an acceptable level of cleanliness or protestable in their eyes or their standards, and you can use different kinds of chemicals and different kinds of processes that are not as harmful or are more safe, easier on the environment, easier on the people around it breathing in the chemicals. Mostly, chemicals we use now, you really can't hardly even smell. They're really pretty safe, unless you start using bleach, which is about the strongest chemical that we in the EDS department use.

**Copeland** When getting a bleach product, you usually get this strong odor, which sometimes is good because it's a strong ... if you walk in and you smell the bleach smell, you either have one of two thoughts: "Oh my god this is so strong, I can't take it" or "That place is clean. It's got the bleach ..."

**Copeland** It's got kind of a cue of cleanliness, but Clorox has even made a product called Fuzion which is just as effective as the 10% bleach solution, but there's hardly any smell. Bleach will also, if you're wearing

black pants or a dark navy blue scrub uniform and you were to get a drop of bleach, it would harm your clothing. You can spray this stuff all over you and it won't discolor anything at all. Technology is coming a long way. Almost all chemical cleaning companies are coming up with new ways to get the effectiveness of the clean with the least harmful chemical.

**Vyas** One of the things that, perhaps, illustrates that point of continuous improving: when you're talking about a surface that is to be wiped with a chemical, for various different types of organisms, each chemical has something called a "wet contact time;" the amount of time that that surface has to be wet for it to be effective. That may be different for different microbes. Certain bacteria, if it's wet for 10, 15, 20 seconds, they're going to die, they are going to give up. It's not a big deal. Other things, things like *Clostridium difficile* which forms spores and is one of the things that's harder to get rid of, you may have a much longer contact time length, three minutes that a surface has to be wet with bleach. With a lot of the products that we use, what we've seen over the last few years is, there is continual improvement.

For many of the things where it might have been a longer period of time, you know, three or four minutes, some of the products are now down to one minute. You can understand the pressures of appropriately cleaning a room and doing it in a timely fashion, so that you can get that next patient that is waiting in the emergency room back up into a regular hospital room rather than waiting in the emergency department. Cutting down on the time that those surfaces have to be left wet; that certainly plays a part. Not to mention, they're easier to use for our personnel that are doing the cleaning.

## “...infection prevention starts with cleanliness, and that’s everybody’s job.”

—Vyas

Luckily, there are multiple companies that make these sorts of products and they’re always trying to one-up each other in all of these realms of efficacy, safety, toxicity, and that’s led to significant improvements in the products that are available.

**Editor** What’s the best way to sustain and build upon the reputation of a hospital being clean and well-maintained?

**Higdem** From my standpoint, it’s to remind everyone that infection prevention starts with cleanliness, and that’s everybody’s job. Hand hygiene, as Dr. Vyas said, you were taught that when you were a little kid. Somebody said come and eat, but first, wash your hands. It’s not something you don’t know how to do. So anyway, that’s where it starts for us. The other thing, from my standpoint, is employees have to pick up and clean up after themselves. If they eat in the break room and don’t wipe up where they spilled something, or they microwave something and don’t clean up the microwave, real bugs are going to come there and bugs defecate all over everything, and then you’ve got that to clean up. So, it’s not just where the patient is, but it’s the entire facility where all of us human beings eat and live and breathe, and we’ve all got to clean up after ourselves.

**Copeland** From the EDS standpoint, we try to look at the culture in which the whole hospital works, and we kind of lump everybody into two buckets. We call them renters versus owners. You’re going to treat your area that you work in; your unit, your floor, your office, differently as if you were renting versus owning. An example of it is if you go on a trip and you get a rental car, are you going to swing it through the car wash on your way home? Probably not. If you own it, you’re going to take a vested ownership in that, and it’s going to be clean

and well-kept and well-maintained. And, you have more pride in your area and your work whether you’re in there all day, you’re in there 8 hours a day, or 12 hours a day, or whatever it is.

**Vyas** We really look at making sure that we empower all of our personnel to do the best job that they can do. We give them the training and the equipment and the responsibility to make sure that our patients are safe, that they’re getting excellent care. If there are issues that come up, we want our personnel to bring that to the attention of administration, whether it’s infection prevention, environmental services, etc. We want to know what may be an area that we can improve, so it’s really about empowering your personnel to speak up. To not just let you know what the problems are. Our frontline personnel often are the people that have the best solutions as well, and so allowing them to be a part of that process, to know that the leadership and the administration value their input and are really here to make sure that we’re there to let them function to their ability and to provide excellent care. And that’s really our goal to provide, not just the physical equipment and the environment, but also the training and support for them to be able to do that. And it’s an ongoing thing. As I think I’ve mentioned, we do walk rounds where we go around and we talk to the frontline personnel and say, “What’s going on? Are there problems? How can we help find solutions? Are there questions? Are there clarifications we need to do?”

Other things that are working great, we need to disseminate that information across the house to other places. It’s a continual process. You never get all the way there. There’s always room for improvement no matter how good things are. I think that’s the biggest thing—it’s a culture of safety as well

as a continual striving for improvement and making sure that all your personnel know that our goal is to always keep getting better.

**Copeland** I’ve got one other thing I’d like to add about the reputation of the people that work in the hospital. One of the things that our environmental services department has is a patient ambassador. We talk about reputation, we’re always wanting to assist the perception of the cleanliness of the facility and of the care that they’re receiving, so we have a service that we provide where we have ambassadors that go around and check up on the patients and say, “Have you seen your housekeeper today?” And they’ll visit new patients and kind of set the tone and let them be aware of the services that our department provides. And if you have other things like a need for linen and we don’t have that service, we’ll say, if it’s something linen-wise, “Your nurse can handle that. Here’s your call light if you need anything.” Then we follow-up towards the end of the day. Obviously, is there anything on the floor, is the trash can full?

But then also, we regroup every day and go, “Look, alright, where did we see issues today? Are there hot spots where people are maybe having some extra care given and their room is creating a lot more waste? We need to go in there in the evening more.” We also have a turndown service on some of those higher volume units, where we can go in and get an extra touch later in the evening as opposed to them waiting from 3 p.m. all the way to 7 or 8 the next morning. It just allows us to manage that perception a little bit better.

**Vyas** We also survey all of our patients that are admitted and these are questions that are asked. “How clean was your room?” It’s a big long survey that many hospitals use, that is administered by a third party, but we take that information that we get from those responses and use it to drive our improvements, making sure that we’re doing everything we can to provide a great environment of care. ■