



# CMS 2012 Tri-Regional PACE CONFERENCE

Programs of All-Inclusive Care for the Elderly

Philadelphia | March 2012



## TRANSCRIPT

### Infection Control – Hydration and the Incidence of UTIs

*Karen Nichols, MD, Chief Medical Officer, LIFE UPENN*

*Monique Dowd, MA, RD, LDN, CDE, Clinical Dietitian, LIFE UPENN*

Thank you. Good morning. That was actually - we didn't plan this but a perfect segue into what Monique and I want to talk about. Just as a little bit of an outline of how the talk is going to go, I'm going to start with a little bit of background information that's probably very familiar to a lot of you. Then I'll present our observations as to what we saw in the center. And then Monique is going to go through the changes in interventions that we went through to impact on these changes. And then at the end we have a couple of plans for the future. And we will probably have time for questions, if anybody has any.

Okay there we are. As individuals get older, the prevalence of just plain bacteria in their urine and subsequent infections tends to increase significantly. The first set of data that you see for women and men at 20 percent and 10 percent is for generally healthy community-dwelling individuals over the age of 65. These are the older folks that are playing golf or going to the mall with their grandkids, being very active in their church, very independent and taking care of themselves very well. The second set of numbers is the prevalence in the nursing home population. I would suspect that these numbers are much closer to what we would see in our PACE population since our populations are very similar.

When I was putting this talk together I was looking for some data that actually talked about hydration or fluid intake and how it impacts on urinary infections or even just bacterial urine. It was very, very difficult to find. The closest that I found is there's some very old studies that were done back in the '60s and the '70s that were very small. There were only a couple of them. The information was very inconclusive in those studies. Intuitively, however, you would think that if you increase your fluid intake, you're going to increase your flow of urine, which would decrease the incidence of bacterial seeding and then infections. So it sort of makes sense just on an intuitive basis.

These are some of the conditions that, in addition to being very prevalent in our elderly populations, also make people very prone to urinary tract infections. Between the prostatic hyperplasia, uterine prolapse, constipation, all these kinds of things tend to cause stasis of the urine, decreased bladder emptying, urinary retention. And all of these factors impact on the incidence of the infection in the urine.

Confounding the issue of either stasis or obstruction is the fact that a lot of older individuals just don't drink water. They either don't like the taste of water or claim it doesn't really have a taste, or have difficulty getting to water. Their thirst mechanism tends to become impaired the older that we get. So

while we may be sitting around right now being very dry thinking, geez, you know let me get something to drink, our members don't have that process. Thank you.

They also have difficulty either from arthritis of various other ailments in their mobility so they can't get to the bathroom as easy, and certainly having to do and not being able to get there is not a pleasant situation. So they're very less likely to even want to drink water or anything else for that matter.

So as we were looking at our infections, we found that urinary tract infections were always in the majority. We had a number of hospitalizations either for just straight UTIs or urosepsis. And this was looking back over several years. One particularly hot summer we made a real effort to almost force water on people. We would give it to them every time they turned around, encouraging them to drink at every turn. And almost as an afterthought, and when sort of reviewing all of the infections for that particular period of time, it was sort of like an 'a-ha' moment because our urinary tract infections had gone down. So at that particular time we made a conscious decision that we were really going to work on our hydration efforts. And that's when I sort of talked with Monique, and we actually put some things in place so that we could really try and kind of get a handle on this. In addition to increasing the hydration efforts, we also had to kind of tighten up our efforts in tracking just to make sure that we were really catching and capturing all of the infections and some of the things weren't falling by the wayside.

So over 2011, we sort of had a real effort to look at this. And this is the graph that's in the handout. The blue lines look at is our urinary tract infections, as expressed as a total number of infections - I'm sorry a percentage of UTIs out of our total number of infections. In 2010, I added 2010 in I don't know why. But the numbers were a little bit skewed in 2010. But 2011 shows a definite decrease. We started in the first quarter with a rate of about 65 percent urinary tract infections. By the second quarter, it came down to 55 and in the third and fourth we were well into the 40's, 48 and 46.

The red part of the graph, I also took a look at during that same period of time our hospitalizations for urinary tract infections, urosepsis and dehydration. Now this is where the proviso comes in. In colleagues in the emergency room a lot of times will take a look at our members. They're elderly, they have a number of medical problems, their family is there saying, "You know something's just not right. They're just kind of off today." They look around, they do labs, they do this, they do that. Can't necessarily find anything real substantial but they need to admit them at least overnight for observation, so we'll call it dehydration. Maybe it is, maybe it isn't. I think that that definitely kind of skews the numbers a little bit. But having that being said, our numbers toward the fourth quarter at the most did decrease somewhat in terms of the hospitalizations.

Okay, at this particular point, I'm going to turn things over to Monique. And she's going to talk about what we actually did in our center.

Thanks, Dr. Nichols. So I'm just going to start off talking about the hydration needs in the elderly. Pretty much you probably know that the hydration needs very according to weight. And we anal dieticians have a simple formula of 30 cc's per kilogram that will give you the amount of fluids needed daily in the elderly. The elderly actually have lower fluid needs than those under the age of 56. Under the age of 56 it's around 35 cc's per kilogram. So, for example, a 120-pound person, their fluid needs would be about seven glasses of fluids a day. And that would be equated to 56 ounces. A 180-pound individual would be approximately ten to eleven glasses a day. But what our goal at our center is to try to give a minimum of six glasses per day through a variety of ways that I'll talk about.

How can you meet your hydration needs? Well, the obvious are through beverages, preferably caffeine-free because we know that caffeine can cause increase your risk for dehydration. So we take the route of more nutritious fluids like juice, water, milk. And you can also meet your fluid needs obviously with high-content water foods that are high in water such as your fruits and veggies. They have about 75 to 90 percent of fluid content, water content. And then also we have soup and, you know, Jell-O, ice cream, other ways for our elderly to meet their nutrition needs.

Sorry about that. So what were the old hydration efforts at our center at University of Penn at LIFE. We were pretty minimal on what we were doing. We pretty much were providing fluids during our breakfast and lunch meals. And it was comprised of juice or water. And so the efforts really didn't go beyond that except in the summer months we would try to push more fluids. But fluids are always available on demand from the members upon request.

And so what we, Dr. Nichols and I, had gotten together and we talked about ways that we could increase the fluid intake in our members. And we pretty much came up with three strategies. And the first strategy was really increasing the variety of fluids, the type of beverages that we provide. So we were really just giving water and juice at meals. And then we decided to, you know; give variety because that increases the fluid intake in our elderly. So at breakfast we were adding the milk, the four-ounce juice and water unlimited. And then at lunchtime we took away the juice just because of the sugar. And we also wanted to give something that was very flavorful. And we found a product called Vitality. It's also given to the military to help with hydration. It's vitamin enhanced. And we provide three different flavors of that. And it's actually been a positive result. And along with the three different flavors of vitamin-enhance water, we also give regular water.

And then, in addition to our meals, we also - a second strategy that we do, aside from increasing the variety, is that we are increasing the frequency. So by providing more fluids throughout the day, then we're obviously doing to get more fluids in the members. So by increasing the frequency, what do we do, how do we do that? Aside from the meals, we give water bottles in between meals, at snack time. We also make it a team effort in our center, not just from the dietary department. We have recreation, who provides - we make sure they're fully stocked with fluids, the clinic, transportation as they go on the van. So there's lots of opportunities, lots of provisions of water bottles and fluids throughout the day. And I think we've seen some good results, so this is behavioral nutrition at its best.

The third strategy would be to also increase the fruit. We already give lots of vegetables at lunch, but we've also started giving fruit at breakfast and lunch. Whether or not it's fresh depends on what's available. But we know, as we said, fruits and veggies have a 75 to 90 percent fluid content. So it's working out nicely.

And I just want to end with what we plan on going in our next steps is we really, really would like to focus on education of the caregivers at the center, the patients, the caregivers at home and make it everyone's job to provide - to increase the fluid intake of our elderly. I think it also would be a neat idea to start reporting episodes of vomiting and diarrhea from caregivers, you know maybe throughout the day, where we could be aware or maybe prevent to intervene dehydration. And I'm going to pass it on to Dr. Nichols.

And so just concluding, also we're going to obviously continue the surveillance of our infections. We've already been able to identify a couple of what I call repeat offenders who have certain physiologic

abnormalities or urological problems what we've had to address to try to maintain them infection-free. A couple of people we had to do suppressive antibiotics with we're also going to continue looking at our hospitalizations and see if we can really make a dent in at least the hospitalizations for urinary infections and then the dehydration.

The other thing the we're going to start to look at with the other providers in the center is whether the infections that we're treating, are they really true infections where was the person really symptomatic, were they just a little off, their mental status wasn't quite right. At this particular point, we haven't gone back to kind of do chart reviews to see if all of the people that we were treating with the idea that it was a urinary infection that was impacting on their behavior or their mental status, whether or not those things corrected purely by treating their infection. Sometimes it has, sometimes it may not have, in which case in retrospect maybe this really wasn't an infection that we were treating and there are other things that we need to do for them.

So, I think that we're to the end at this particular point and with plenty of time left. Any questions? We'll take questions if there are any. And I can't see.

Yeah, I have a question. I wanted to find out how do you segregate your population of your CHF patients in this program.

Very interesting question.

Well we do have a diet order called fluid restriction. So it depends on how severe the CHF is and if the doctor or nurse practitioner orders that fluid restriction. And if so, we do have bracelets that indicate to the caregivers if they are and how much the fluid restriction is.

Interestingly enough, since we've embarked on this, we have not had any more admissions for CHF or fluid overload with people with renal disease, end-stage renal disease. We've not had those issues at all.

Hi, Fred Sherman, [inaudible] senior life of Harlem, New York.

Welcome.

Thank you. Thanks for a lovely presentation. At the sake of being somewhat facetious, but think you'll agree with me, there's three types of physicians who treat older people. There's the obsessive-compulsive geriatrician who has to take care of every problem. There's the prioritizing geriatrician who picks out the top three or four. And then there's what I call the urinary tract geriatrician who attributes everything to a urinary tract. So and I think your last point, which was an excellent one, one of your final points really alluded to asymptomatic bacteruria. And I, as the medical director of my program, would actually wonder why when the presenter before you talked about having e-Coli after three or four infections, I would be absolutely amazed at that because she's been treated with all kinds of antibiotics, and she should certainly be growing out something resistance. So I spend a lot of my time trying to find out just what you're alluding to. Is it a symptomatic bacteruric patient, you know, or not. And what exactly are the symptoms and how long have they had it. Because, as you know as well as I do, that there's data. And people that are chronically urinary incontinent the treatment doesn't change their incontinence. And all they do is regrow back their bacteria. So I think that urinalysis of that data would be very important to us. And the other thing that I'd like say is that in terms of - I'd like just to know about how you hydrate, how you offer the water to people. Because my experience is, and I wrote

about this, it's called the water offer test. If you offer water to some older adults and they refuse it, and you ask them if they're thirsty, they say "no." But then you say, "Oh, well why don't you try, drink it, just have a drink." And there are some people who say they're not thirsty, they're not thirsty because of all the things you said, but they finish all the water. They will literally drink a whole glass of water in front of you after telling you they're not thirsty. So my question was, how did you present the fluid to them? What did you ask them or tell them?

Well it's interesting. I think the water bottles - I know it's not the best as far as recycling goes and environment - but I think the thought of them getting something for free and I don't know if that's -

Gotta love something free.

I mean I think that's part of it. They're very willing to take it and then they open it and they feel, I don't know if it's comforting or whatnot, but the water bottles are a - they love them.

My point is it's the older adults who say that they're not thirsty that I'm concerned about because of all the reasons you mentioned.

Right. So we don't really ask, "Are you thirsty?" We just sort of say, "Here, here's your bottle." And we've been doing it for so long that everybody realizes that when they're leaving breakfast or they're leaving, you know, for their afternoon activities, they're supposed to have a bottle. You know everybody else has one, you know, so everybody gets an eight-ounce, about this big, about an eight-ounce bottle of water. We haven't looked at how many actually drink the water. I had a conversation with a family member once. And we were talking about this person and their urinary tract infections. And I said, "Well, you know we're trying to get him to drink more water." She goes, "Yeah, I know. She brings her bottle home every day." So every day she brings home her bottle of water. She says, "I drink it." But I think, well could you get her to drink it. But so it's really not in asking do you want something to drink or do you want any water, it's just here, this is for you. It's time to have this now.

Thank you.

I think also with the Alzheimer's members, it depends on the caregivers. Like some really make an extra effort to, you know, queue them and direct them. And we have our feeding assistance tables, and that helps as well.

[inaudible] so that we could get an idea of your statistics.

Right now, we are at about 435, about 435. During 2011, and I did figure out the calculations. Our average census for that year was about 420. We started at 411, ended at about 436, something like that.

I'm curious about the Q/A angle to your efforts in terms of definitions and data integrity. So as the doctor alluded to earlier, if you have a positive culture but no symptoms, do you define that as a UTI? I mean do you have definitions in place, and are those shared with your contracted providers like the hospitals that you're dealing with so that you're really, you know, comparing apples to apples?

That's a work in progress. We are really sort of looking in our center right now as to make those definitions and figure all of this out. Probably later on we'll end up, you know, trying to work with the

hospitals that we use, our nursing facilities and getting their definitions as well. But for right now, we're just sort of getting our hands on what we're doing. But it's certainly something that we're looking at. I have a couple of questions. One of them is we're smaller, we're rural and our ladies don't like to be messed with too much. But I try to insist on a catheterized urine specimen. And the other statement or question I had was because we're small, we don't have a bladder scanner. And do you feel strongly that we should probably push for that through our auxiliary or something?

I don't feel strongly. I know that they're expensive because we've been looking at trying to purchase another one ourselves, and they can be kind of costly. In terms of the cath urines, we're fortunate in that we haven't had to do too many. We've been able to kind of catch them without too much intervention. Some of our nursing home residents, not so fortunate, and we've had to resort to cath specimens on them. Did I - was that in any way an answer?

[inaudible]

A sample, yeah.

I'm a dietician so that's where this question is coming from. I'm curious that you do not have in your program anything about cranberry juice because there are a number of studies that indicate that it might help reduce the risk. And if you use any cranberry juice, one thing that we're using is both a regular and I have some sugar-free for my diabetics because I realize the carbohydrate content of that. According to some studies that I have read, it's best if it's given like morning and evening, that you would have a time period between it. And then I'm also interested in they talk - there's some interaction with Coumadin. And therefore, our hospital encourages people not to use Coumadin and cranberry juice. And they go back to some studies that were done in the UK. And I read some conflicting information about that. So, I would just like some of your thoughts on this.

I do know about the cranberry juice but I also know that like Ocean Spray, which is pretty much the most common brand used, is not really potent as far as medicinal for urinary tract infections because of, if you look at the order of ingredients. So I think that if we had like a medicinal one maybe from Trader Joe's or Whole Foods that that would definitely be more effective. But it's a much more bitter type of juice. You know I don't know if there are studies on Ocean Spray. But I do remember reading that it's not effective because of all the other junk they put in there. And the cranberries, the amount of cranberries is actually like at the end of the ingredients. So that's kind of my thought on that but I don't know. And was there another question?

Have you ever thought about using the Greer criteria of the Patient Safety Reporting Systems criteria that's used in long-term care for reporting your infections or defining your infections?

The short answer to that is "no" we haven't. in terms of reporting, we haven't really looked at that.

This was a great presentation, thank you. But I'm wondering did you have any unintended consequences from this? Did you have an increase in falls, for example, of folks who either because of urgency or perceived urgency in your day center?

Great question. And we haven't. We're actually in the process of sort of looking at our falls in general. So that also is a work in progress. We have a new tracking system for falls. So we may. You know, should I

do this again in another year; we may be a different answer to that. But for right now we haven't really seen an increase in falls.

I think maybe the only unforeseen consequence, we have had a couple more, a few more grievances of people returning home wet, which may, you know, be a direct result. That, again, is a work in progress.

I'm from a rural program in Virginia. We're very small. Our medical advisory committee recommended that our participants start using cranberry supplements. I'm not exactly sure of the content of the supplements, but they said that they were innocuous and they might have good effect. And we haven't studied it but we've been doing that now of I'd say about a year.

Have you seen any differences?

Have you all used that or is anybody else using it or thought about it?

We haven't. We have thought about it. We're sort of discussing it. We wanted to kind of try and do things in a relatively systematic manner just, you know, with our hydration efforts when we start to sort of plateau, then it would be the time to sort of add something else in. And we may certainly look at that. From what I understand, the supplements are better at combating infections than the juice, probably because they're a little bit more concentrated. I don't know, is anybody else utilizing them?

It's funny because I'm hearing people speaking and we're trying to approach our program from strictly evidence-based. And I know everybody talks evidence-based. We're all in school. I just wrote a paper, "Evidence-based Urinary Tract Infection." A lot of that stuff that you're saying resonates because it's all the research that some of the articles show. A couple of points that I wrote down: dipstick versus culture. One of the questions I would have for you, are you using dipstick in your clinic? Are you getting a culture sent out?

We're doing both. It depends on the situation. If we have somebody that we're pretty sure, we may just dipstick them in the center and go ahead and treat them on that basis. If either the dipstick is inconclusive or we're not really sure that this is an infection and we think something else may be going on, we may just send the culture out just to be on the safe side.

Okay. I'll just share - and again it's just something that I just wrote so it's kind of fresh in my mind, and this gentleman was asking about catheterizing someone. Evidence-based actually says that there is no difference between bit stream clean catch, beginning of the catch, end of the catch, it doesn't matter. A couple of studies in Sweden that actually specifically looked at that, and they found that even any catch, however you got it, with a nitrite leukocyte site dipstick, 92 percent positive for treatment. In other words, if your nitrite leukocyte was positive, go ahead and treat because you're 92 percent likely to have it. I thought that was really interesting because, again, we're all looking at everybody what do you commonly do. And then when you look at what's the evidence-based and what it's saying. So I find your study interesting. I mean I'd like to see a lot more of it. I know we're interested. We're a very young program. We're only at 30 or so participants in south Jersey. So we're looking at what kind of research can we produce, what kind of evidence-based can we publish. Because you have a captive audience, I think it's an amazing opportunity and good luck.

Thank you.

We have a captive audience at our county home. Ten years ago we gave everybody in the facility a cranberry tabs for two years. And it didn't change the rate of infection at all.

Really?

Now that's unscientific. We didn't intend to publish. We didn't go into it with any kind of design. But as you know, we gave everybody - because I had all the patients at that point - we gave everybody cranberry tabs and it didn't make any change at all.

Didn't, oh there you have it. Okay.