

Care Home IPC Webinar: The Impact of Care Home Education

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Slide 1: Introduction

Hi. My name is Ross Darley. I'm the infection control manager for NHS Dumfries and Galloway. And welcome to my presentation for the webinar 'The impact of care home education'.

Slide 2: Objectives

So what are our objectives today from this training resource.

Well, it's to give you attendees or anyone listening an understanding of the impact of UTI and Catheter Associated UTI on residents.

We're going to give a bit of an overview of E.coli bacteraemia and the role of the infection prevention and control team reviewing these cases.

We are then going to review the data regarding A & E attendances and the number of E.coli bacteraemia admitted directly from care homes.

We are going to review the impact of UTI and CAUTI education that was undertaken locally.

And then we are going to consider what this means for the future and what the data is telling us.

Slide 3: Should We Be Concerned by a UTI/CAUTI?

So should we be concerned by a resident or patient presenting or developing a urinary tract infection or a catheter associated urinary tract infection.

I will be very honest, as a nurse I was fully aware of UTI and what that was. What I probably wasn't so familiar with until starting my role in infection prevention and control was that that was the source for many severe blood stream infections that we would see in hospitals and cause real mortality and morbidity for patients.

So what I am going to do is just talk about one or two things that you will probably mostly be aware of but just want to reiterate some of the basics of UTI.

So first thing is that it is more common in woman. Unfortunately ladies are designed slightly differently to men and it makes them more pre-disposed to the development of UT infections.

Urinary Catheters. As soon as we put a urinary catheter into a patient or resident then that increases the risk of UTI development. Now this is multifactorial. There are a number of reasons for this but keeping it as simplistic as I can it's probably as a result of us creating a ladder of entry from the outside world into the bladder itself, a sterile area.

UTI dipstick and sampling is quite a complex issue. You may have seen drivers out there asking people 'don't be a dipstick' 'don't dipstick patients' etc and it does have a role in some aspect of urinary assessment. What we tend to see is patients routinely getting a UTI dipstick certainly when they are admitted to hospital sometimes or on the development of symptoms. And that's really important because you can't rely on a dipstick only without considering what your patient presents with. And I am sure there are patient's out there that have started treatment courses for UTIs that do not present with a UTI but just because of the result of a positive dipstick.

So there is lots of work for us to do in that area and the resource you really need to focus on is the SIGN guidelines looking at the management of UTIs, looking at the management of CAUTI. And when we move on to talk about sampling, again another

complex issue in my world, that makes things extremely challenging but be driven by medical expertise in that area.

There are a number of treatments available for urinary tract infection and CAUTI and medical staff will generally follow antimicrobial guidance for this treatment phase. It tends to be somewhere between 3 and 7 days.

A wee bit about aseptic technique. I am wanting people to think about the importance of this as this is a key element in the prevention of contamination at the entry point of the catheter. And it can be really challenging to insert catheters in places like care homes or in people's own homes. So be aware of the difficulty and risk that that poses.

But the main thing I want to concentrate on today is making you all aware of the link between these two things the UTI and CAUTI development and the development of a secondary blood stream infection.

Now I have added here a couple of infections that we tend to see within hospital relating to catheters.

The first one is a Staph. aureus bacteraemia infection. That's where the bacteria from the external part of the body or the skin gains entry into the bladder. Not that common but we occasionally see it and the 33% written on the screen there is to give you an idea of the mortality rate associated to this blood stream infection.

So the implication of someone getting an infection from a catheter that goes on to develop into a Staph. aureus bacteraemia, one in three potentially die. But that's depending on other factors such as age and comorbidities.

The second one that we are really going to concentrate on, and a bit more frequent that we would see in hospitals, is something called E.coli bacteraemia or ECB. And this again is a 10% mortality rate. So this is a very severe infection when patients or residents get this. Now how it works is that if your bladder has an infection within it, it is very easy for the infection to travel up to the kidney area where blood is transferred at that point and filtration of blood happens and therefore the bacteria will infect the blood stream and therefore cause that septic bacteraemia.

Slide 4: Let's Focus on ECB

Ok. Let's focus just a wee bit more on what E.coli bacteraemia is and give you a taste or a flavour of what we do within hospitals when patients or residents present with this infection.

So E.coli is the most common cause of bacteraemia in Scotland. So if we look at bacteraemia that means bacteria in the bloods. So it's a sort of septic event.

E.coli is a normal bacterium that we all have. It forms part of the normal gut flora and helps human digestion.

Slide 5: Initial ECB Data (2022–2023)

So before we went ahead and planned some education round about the prevention of UTI, CAUTI or E.coli bacteraemia within a care home sector we wanted to look first at the data that we were presented with in 2022-2023.

Now we first reported 164 total ECB cases across that whole year. When we broke the data down we noted that 89 or 54% of these cases were from a urinary source. Eight cases were admitted directly from a care home which was about 5% of the total, however this is likely to be higher as at the time we were having some IT issues around about addresses of care homes. So we would anticipate that the number would be slightly higher.

From the eight cases directly admitted all eight were from a urinary source. Broken down six UTI and two sourced from a urinary catheter.

Our next decision was to look at the rate of ECB so how we undertook this bit of work is that we looked at the total number of residents within in region within a care home, divided it by the number of people who had had an E.coli bacteraemia and it gave us a rate of 0.75.

We next repeated that with the rate from the community or other sources of admission with E.coli bacteraemia versus the population of 145,670 which gave us a rate of 0.05.

Therefore, you were 15 times more likely to develop a urinary source E.coli bacteraemia from a care home rather than from your home setting.

However, in reflection this is not a huge surprise because the patients that are within a care home environment have lots more care and comorbidities therefore are more likely to develop complications.

Slide 6: It's Not Just About ECB

So this next slide takes our journey a wee bit further than just looking at E.coli bacteraemia.

So we decided to use the measure of emergency department attendance as a guide for us to look to see if any improvement work could have an impact in that area.

So we looked at the same time as the other data – January 2022 only to March 2022 – just a quarters worth of data, and we recorded 337 attendances to the emergency department that were direct from our care homes. And that worked out approximately 11.6 attendances per care home in our region.

We then looked at the data and looked at the attendances specifically and noted that 31 attendances were directly related to urinary issues which was just under 10%. However, that doesn't include presentations such as confusion, falls, which may have an underlying urinary source as well. So I anticipate that that number would be much higher than what we are recording at this point.

Slide 7: UTI/CAUTI Care Home Education Required

Ok, so we have our base line data, we have our ECB rates and we have our A & E attendances. So what are we going to do about it?

So I am not going to go into this in too much depth because Suzanne's presentation will be on the National Infection Prevention and Control care home site will go through what education and what you can do to try to develop your own program.

But what we will say is that we rolled it across all care homes with the focus within a year. We didn't get all care homes but we attempted to.

We focussed on hydration, mobility, UTI assessment, aseptic technique, sampling and reviewing national guidance round about CAUTI and UTI management.

Slide 8: Did This Education Make a Difference? (ECB 2023–2024)

Ok, so let's see whether the education that was undertaken has had any impact on our data to the following years looking at E.coli bacteraemia.

So in 2023-2024 we reported 151 E.coli cases in total. So that is a decrease of 14 from the previous year so a very positive start.

We reported 80 of these that were related to a urinary source. A decrease of nine from the previous year. So again very positive.

This time we recorded 11 cases admitted directly from a care home. This was an increase of three cases however please be aware as I described previously that we were not 100% sure about our baseline data figures coming in from a care home in 2022-2023 because of IT issues.

Again the vast majority were related to urinary source. This time there was a slight change where most were related to CAUTI rather than UTI.

So had we made a difference in the prevention of UTI? Very difficult to know at this stage and maybe too early to gauge. Maybe a bit more on CAUTI prevention going into the next year.

I think we were probably round about an average year for the impact of the education could be debated either way.

Slide 9: What About Emergency Department Attendances?

Ok so I think what we can say is the impact of the education that was undertaken in the care homes regarding UTI development and CAUTI development then ended up into an E.coli bacteraemia admission into hospital was fairly inconclusive. I think at this stage due to data difficulties.

So what about our second measure, what about emergency department attendances?

So the work started as I said in January to March 2022 where we reported 11.6 attendances per month. As you can see in the graph in front of you over the next year or so that pretty much continues on a downwards trajectory with a wee blip there in April – June 2023. But overwhelmingly fairly stable all the way through to October to December 2024 where we had a bit of an increase and a consistent increase back up to the last data that we had.

Now the first thing I think we need to be clear on is that this is just A & E attendances from care homes, this is not urinary specific sources so we need to have a look at that in a bit more depth.

But there is something suggesting something has changed and is it directly related to the education that we provided.

I have put an arrow there just at April to June 2024 and I will come back on the next slide to tell you why I think things started to go in a different direction as you can see going forward into October to December 2024 and January where we were starting to get higher rates consistently again.

Slide 10: Number of A & E Attendances for Genitourinary Reasons – Quarterly Trend

Ok so this graph in front of us now helps us understand whether the education that was undertaken had actually any impact on the deterioration of A & E attendances for urinary sources.

The work again started in January to March 2022 and I think over that next year we can positively say that there was a reduction in patient's attending our A & E departments for these reasons which is really positive.

A bit of a blip in April to June 2024 and then a reduction again so data needs to be reviewed in a wee bit more depth to give us the assurance but the feeling was that it had played some role in the reduction of patients having to present to A & E from care homes which has loads of positives, the most important being the positive of the patient not becoming unwell, having to cause anxiety by A & E attendances. But it also has the positive effect of reducing pressure on the front door of our NHS facilities.

You will note that I have a second arrow there or another arrow there similar to the one before and again what we have seen since the arrow point is again an increase again in general A & E attendance from care homes and a bit more of a consistent increase in attendances for urinary tract infections and CAUTI. And the main reason we think for this is because our lovely IPCN for care homes locally had a lovely baby so she was on maternity leave so I think this starts to show, very early stages of course, that it's about consistent education and recurrent education within these facilities as with any NHS facility at all, if you keep the education consistently going you can keep your rates at a lower level.

Slide 11: What Does This All Mean?

So what does this all mean for us going forward?

Well, I think it's fair to say that prevention of CAUTI and UTI education across care homes can make a difference. I think we have some very early evidence to show that it certainly makes an impact on presentations of patients from care homes into the A & E departments.

I think we will continue to do some work round about prevention of UTI and CAUTI leading to the development of E.coli bacteraemia. So we have a considerable piece of work to do within that field.

We did witness a 63% reduction in UTI and CAUTI presentations at that one year delivery step which was really really positive, but I think we have to consider that in light of the Care Home IPCN education only happening for that initial one year and if we don't continually promote and educate staff with the big turnover of staff then you start to see your rates returning again. So it's about repeated education within this field.

I think there is no doubt about it that if you can stop as many UTI's and Catheter Associated UTIs then that will have a huge positive impact on residents. But it also has associated improvement costs to the NHS with presentations and admissions within our system.

I think that ECB prevention is really challenging and there is evidence out there to say it is one of the most challenging infections to try to prevent not just within care

homes but across the whole of our communities. But the main message I think is prioritisation of education within care homes and in all facilities associated with the management of UTI and CAUTI would have a significant benefit to our patients and residents.

Slide 12: Thank You

So for everyone that is listening, thank you for tuning in and logging into this presentation.

I just wanted to go over just some of the important points round about the implication of the prevention of UTI and the prevention of catheter associated. If we do this well and consistently it can make a huge difference for the residents that you guys are looking after so wonderfully well.

So again, thank you for listening and take care.