Sepsis Early Identification and Treatment

Ladies and gentlemen, and thank you for joining me TMF Health Quality Institute's Early Identification and Treatment of Sepsis webinar. Your host for today, Marlene Kennard, will now begin.

Thank you, Tina, and welcome everyone. We're so glad you could join us today. You're in for a treat. Our speaker today is Carolyn Johnson, and she has six years of experience in clinical care and four years of experience in education and training. She's been a quality improvement consultant with TMF health Quality Institute since 2017 and worked with nursing home staff in providing training and education focused on improving knowledge and early identification of sepsis in nursing home.

Prior to joining TMF, Ms. Johnson worked as an occupational and employee health nurse and worked on projects relating to quality improvement and compliance. Johnson holds a Master of Arts and Communication Studies and a Bachelor of Science of Nursing from Baylor University, is a registered nurse and a certified professional and health care quality. You may have the floor.

[INAUDIBLE] for that wonderful introduction. Again, my name is Carolyn Johnson, and I am excited you are able to join us in our webinar today in early identification and treatment [INAUDIBLE]. We are going to take a look at our objective today. What we're going to talk about is what sepsis is, how it progresses, how we move from sepsis to severe sepsis to septic shock.

Recognizing our early signs and symptoms of sepsis [INAUDIBLE] evidence based treatment for optimal resident outcomes. I'm [INAUDIBLE] off with a chat question. We'd love for you to go ahead and chat in on what you think the answer is. So it's sepsis causes tissue to die because of lack of – is it lack of oxygen, red blood cells, carbon dioxide, or hemoglobin? And I'll give everyone a moment to chat in their questions, the question is, sepsis causes tissue to die because lack of – is it oxygen, [AUDIO OUT], carbon dioxide, or hemoglobin?

Come on, we've got some shy folks [INAUDIBLE] let's see some answers. Aha, here we go. Oxygen, [INAUDIBLE] nursing.

And that is right. The answer is oxygen. Oxygen sepsis causes tissue to die because of lack of oxygen.

Sepsis can affect anyone at any age. This is a picture of Dr. Carl Flatley. Dr. Carl Flatley is the founder of the Sepsis Alliance. He is holding a picture of his daughter Erin.

Erin was 23 years old when she went in on a Thursday for an outpatient hemorrhoidectomy. She discharged Thursday after her procedure and on Friday, was starting to have complaints of
extreme pain. So her [AUDIO OUT] took her to the ER. The ER physicians suspected infection, but since she recently had had surgery, he contacted the office of the surgeon.

Her white blood cell count was elevated, and they prescribed her a topical cream instead of ordering antibiotics, because they were concerned the antibiotic would cause diarrhea. [AUDIO OUT] discharged from the ER. The family was not notified that Erin's white blood cell count was elevated.

A week in, her pain continued to increase, and her urinary output decreased. On Sunday, they went back to the ER. Erin did not look critically ill, and she was not treated as an urgent patient, although she was critically ill.

One was seen in the ER. The ER physician suspected a kidney infection and ordered a CAT scan, a consult with an infectious disease physician, and ordered an antibiotic. The antibiotic that was ordered, but was not given to her for hours, because Erin was not allowed to take anything by mouth since she was waiting for that CAT scan.

Infectious disease physician came in, and he assessed Erin. And that physician ordered three more antibiotics. Five hours later, they were still not given to her. Each hour that appropriate treatment is not given increases the chance of death by 7.6% each and every hour.

Her dad reported that he could see something was wrong. Her pulse was increased. Her blood pressure was dropping. And at that point, Erin's dad insisted that a physician come check on his daughter. A physician came in, checked on his daughter, and verbalized that he thinks that Erin may be septic. Next day, Erin passed away.

Flatly founded the Sepsis Alliance. And the mission of the Sepsis Alliance is to save lives and reduce suffering by raising awareness of sepsis, a medical emergency. This slide is a little different from the slide that you will see in the CD tool kit. There's a PowerPoint that you received, but even CD toolkit has a video from the Sepsis Alliance called Sepsis Emergency, which is a very powerful video that is provided by the Sepsis Alliance. I encourage you to watch the video and check out the Sepsis Alliance website for information and resources on sepsis.

What is sepsis? What is sepsis? Sepsis is the body's overwhelming and life-threatening response to an infection. When you become septic, it causes an inflammatory response throughout the body. Not enough oxygen is reaching the tissue. If not recognized, sepsis can result in organ failure, tissue damage, and even death.

Why do we care about sepsis? There are over a million reported cases of sepsis in the United States every year. The number one leading cause of hospital readmission. It is, overall, our nation's third leading killer and once we progressed to severe sepsis, our mortality rate is 20% to 50%, 20% to 50% – such a big number.
[AUDIO OUT] right in, and let's look at how sepsis progresses. How we move from sepsis to severe sepsis to septic shock. We start with our SIRS criteria. SIRS is for Systemic Inflammatory Response Syndrome, Systemic Inflammatory Response Syndrome. There are four components within our SIRS criteria – temperature, respiratory, heart rate, white blood cell count.

When we look at temperature, the criteria is 101 degrees or more or 96.8 or less. I always like to note here that with some of our residents and our resident population, we might see their temperature run a little bit lower. Some residents may not hit that 101 or greater, but that doesn't mean that they don't have an elevation in temperature.

If they're usually running at those 96s, low 96s, they can jump up to 99. And that could be a very significant jump for them. So always keeping in mind that our care is directed towards the individual. [AUDIO OUT] in mind.

The [AUDIO OUT], respiratory rate – is it 20 or greater? Heart rate – is it 90 or greater? White blood cell count – is it 12,000 or more? Is it 4,000 or less? Is something going on that our body can't produce enough white blood cells? Also, very scary, very dangerous.

So our SIRS criteria – temperature, respiratory rate, heart rate, white blood cell count. How does it get to sepsis? Sepsis is two or more of the SIRS criteria – remember, that's temperature, respiratory rate, heart rate, or white blood cell count – plus, a suspected or confirmed infection.

It is that infection component that we are coupling it with. The four most common infections that develop that progress to sepsis most commonly is urinary tract infection, pneumonia, wound infection, or abdominal infection. Most of the time, it is a bacterial infection that develops and progresses into sepsis. But keep in mind, it is not always bacterial. It can be viral. It can even be fungal. So that's sepsis.

So how do we move from sepsis to severe sepsis? Severe sepsis encompasses the components of sepsis. But now, it also includes the new or acute onset of organ failure or organ dysfunction. One or more of our vital organs is starting to say when we progress to severe sepsis.

When we talk about organ function and organ failure, for our residents and for our facilities, we want to look at what we can assess here and now for our residents. We have to send out for [AUDIO OUT] metabolic levels are also very important, but we want to also make our assessment in the room with what's going on, potentially, with our residents.

There are assessments that we can make looking at respiratory status. Is the O2 level, is that oxygen saturation 90% or less? For a resident who does not have respiratory disease, that is potentially [AUDIO OUT] factor going on and so really looking into that.

Neurological state – is there an altered mental state, confusion? Are they alert and oriented times 1, times 2, times 3? What is usual for the resident? A lot of times, we know our residents. We
work with them day in and day out. So we can sometimes be able to know, hey, our resident is not acting like their usual self.

We can look at cardiovascular. We can look at the heart rate and the blood pressure for our resident. We can look at renal status. What is their urinary output? Is it normal? Has it decreased? Has it stopped? And so all assessments that we can make in our residents and looking at organ dysfunction [INAUDIBLE].

To septic shock. Septic shock, once again, encompasses sepsis and severe sepsis. But now, it also include a systolic blood pressure of 90 or less that does not respond to fluids. This does not respond to fluids. You can have two large IVs, rapid infusion of fluids. It's not bringing up your blood pressure.

Another indicator is if you're lactate level is 4 or greater. 4 or greater of a lactate level puts us into the category of septic shock as well. Altogether, when we look at our SIRS criteria, that temperature, respiratory rate, heart rate, white blood cell count, those are non-specific. We can have two or more of those. We can all have all four of those.

For several different disease processes, remember, it is that infection component that we are looking for. Infection is the engine that drives the train. You want to catch that sepsis in its early stages. You can move from that infection to severe sepsis. Remember, severe sepsis encompasses the organ failure, organ damage. You can go from that infection to severe sepsis in as little as two hours.

And remember, when you move into category of severe sepsis, your mortality rate – 20% to 50% – 20% to 50% of the time. When you progress on to septic shock, that jumps up to 40% to 80%. 40% to 80% chance of dying. That is your chance of dying. If you survive sepsis, what potential lifelong complications might you be living with? How long has your vital organs gone without proper oxygenation? It can lead to permanent kidney damage, amputation. They may survive sepsis, but maybe surviving with lifelong complications.

What to do about that? We want to recognize sepsis early. We want to recognize it early. Survival depends on timely assessment and treatment when changes first happen in our resident's condition. To help us with that is to know which residents are more susceptible to developing sepsis. Who is at a higher risk of developing sepsis? That way we can keep a close eye on those residents during changes in their status.

Question – another chat question for us. Chat in your answers. Chat in your answer. The question is, two early signs and symptoms of sepsis are – the two early signs and symptoms of sepsis are – is it confusion and headache? Fever and nausea? Shortness of breath and cough? Extreme pain and general discomfort? The two early signs and symptoms of sepsis are – confusion and headache? Fever and nausea? Shortness of breath and cough? Or extreme pain and general discomfort?

And the answer is, extreme pain and general discomfort. And we will talk about that a little bit more in the next section. At risk for developing sepsis. Who is at an increased risk for developing sepsis in our residents? Anyone with an infection – young, old, or healthy. It does not matter. If you have an infection, you have that potential of [AUDIO OUT] and developing sepsis.

Our age population at 65 and older account for 60% to 85% of all episodes affected. If you are 65 and older, you are three times more likely to develop sepsis. [AUDIO OUT] at an increased risk. Recent hospitalization, our chronic illnesses, our wounds, invasive lines, drains, and catheters all present at an increased risk of developing sepsis. So these are residents to really keep a close eye on any changes in status related to sepsis.

Signs and symptoms of sepsis are sometimes dismissed. They can be subtle. So really keeping a close eye on our residents, looking at changes in mental status, discomfort, confusion, weakness, any of our acute changes.

If you're not familiar with Stop and Watch, Stop and Watch is an interactive tool. And it is a great tool to utilize in our facilities, and to really open up communication, and speak with each other on what's going on with our residents throughout all care aspects within the facility, and to not be scared to say anything or document what's going on or any changes that's going on with our residents. So, really, Stop and Watch is an amazing tool to use to help us to identify early changes going on with our residents.

The CDC put this together. This comes from the CDC vital signs report. And this is a list of the top six signs and symptoms to look for in our residents who may be septic. Confusion and disorientation – remember, that lack of oxygenation going to the brain causing that confusion or disorientation. Shortness of breath – remember, that increased respiratory rate, increased heart rate. Our body is working so hard to try to produce oxygenation, so we see that increased respiratory rate, that increased heart rate.

So a fever, shivering, chills. Our residents communicate with us that something may be going on, that they're having a fever, that they're not feeling well. We may check in on a resident, and they are clutching a blanket. They look like they're cold. We think, oh, it may be a little bit cooler in the room. Maybe you need another blanket. Let me turn the temperature up, make this resident a little bit more comfortable.

And we go back and we check on that resident, and they're still clutching their blanket, signs of chills and cold. And we go and we take their temperature, and they have an elevated temperature. So we're really kind of keeping that focus on [AUDIO OUT] and the changes that we're looking for in our resident, so fever, shivering, cold.
Extreme pain and discomfort is usually thought of as a late sign and symptom, because in a lot of disease processes, it is a late sign and symptom. In sepsis, it is an earlier sign and symptom. Remember, when you become septic, that causes that inflammatory response throughout our system. And our body is not producing oxygen appropriately, and we feel that pain and discomfort.

[ AUDIO OUT ] are clammy, sweaty skin is also a sign and symptom in sepsis. So this comes from the CDC. Our top six signs and symptoms to look for in our residents who are septic.

Heart attack, just like a stroke, just like a trauma, sepsis is a medical emergency. The speed and appropriateness of treatment in those initial hours can make a difference in our patients' and residents' outcome. For every hour that an appropriate treatment is delayed increases the risk of death by 7.6%—each and every hour.

What do we want to do about that? What can we do about that? If a resident is septic, treatment comes from the Surviving Sepsis campaign. And it recommends, within the first hour of recognition, do a blood lactate level, obtain blood cultures, administer broad spectrum IV antibiotics, and administer fluids.

Surviving Sepsis campaign provides best practice recommendations for treating sepsis. These interventions have been proven to decrease mortality. Post-acute care settings, we can begin this treatment once sepsis is identified. It's not always necessary to wait for lab results. Immediately following identification of sepsis and treating sepsis with IV antibiotics and fluids can potentially be the lifesaving measure for your resident.

Questions to ask ourselves. Does our facility have sepsis reduction efforts in place? Do we have a screening process? Do we have a process for sepsis treatment and standing orders? For newly-admitted residents, screening for sepsis every shift. For the first [INAUDIBLE] days of a skilled nursing admission, tracking those temperatures, that heart rate, the respiratory rate, or any changes in a resident and their acute care status.

[ AUDIO OUT ] that call for a urine culture and possibly a CBC on the third day of admission, that we can track and see any potential changes going on with our resident, and then pass down contact, the nursing facility physician, if any screening criteria is positive, that we can notify our physicians and our [INAUDIBLE]. The processes, protocols, information, and education is very important for our staff to help facilitate [INAUDIBLE] efforts.

A picture of our early identification and treatment pathway is a great screening tool that we could potentially utilize. On the right-hand side, it has our signs and symptoms, our SIRS criteria. And on the left-hand side, has our signs and symptoms of infection. Sharing this with our staff members, and our families, and our residents can help us give that education and awareness of hey, we have this screening tool and the process forward pathway in helping to recognize and identify our early signs and symptoms of sepsis.
This will be provided to you. This is available on our website. It also will be presented as part of the CD toolkit that will be shared with you in each facility.

I would like to review. We have several questions that go along with the case study. So I'd love it if you chat in your answer. I'm going to read the case study. We have a 74-year-old female, a long-time nursing home resident. She has a medical history of coronary artery disease, osteoarthritis, and stroke, with left leg weakness.

She normally eats in the dining room, but wanted to stay in her room today. She asked for a blanket, because she feels chills, and is not acting like her usual self. She's pail, and she stated, it burns when she went to the bathroom. You also notice that she is coughing more than normal.

Her vital signs are, her temperature is 100.3. Her heart rate is 117. Her respiratory rate it is 22, and her blood pressure is 105 over 43. Her O2 saturation is 90% on room air. [AUDIO OUT] her resident, does she have two or more of the SIRS criteria? Go ahead and chat in your answer. Does she have two or more of the SIRS criteria? I'll give you a moment to chat in your answers.

[AUDIO OUT] chatted in as yes.

[AUDIO OUT] correct, yes, she does have two or more of the SIRS criteria. Looking at that heart rate at 117 and her respiratory rate at 22. What about her temperature? Her temperature is 100.3. That [AUDIO OUT] is a criteria within our SIRS. Would that qualify her in the SIRS criteria? If you recall, in our discussion, part of the criteria of SIRS is 101 or greater.

But always keep in mind, our care is towards the individual. And for her, temperature may run a little bit lower. And so just because she doesn't hit that 101 threshold does not mean that she does not have a significant increase to [INAUDIBLE] change in her temperature. So absolutely, we're going to note that 100.3 in her temperature and concerns that we want to address. Absolutely, you guys are correct.

All right, question – does she have a possible or active infection? Double or active infection? You are correct. She possibly does have an infection. We noted that she stated, it burned when she went to the bathroom. So we can't say for certain that she has a urinary tract infection, but we know she has symptoms that could lead us to believe she possibly has an infection. So correct, possible infection.

Does she have additional organ dysfunction? Doe she have additional organ dysfunction? And looking at her vital signs are a sign of her history. Does she potentially have additional organ dysfunction?

Some say possible. Some say yes.

OK, she potentially possibly does. She doesn't have a history of respiratory disease. Her O2 saturation is 90%. I'm looking at that 90% on room air and [INAUDIBLE]. And so that 90% is
going to be concerning for us, especially potentially looking at her history and her trend. If she's usually in the 96s and above, that 90% is now going to be concerning for us and definitely worth us looking that her saturation is 90% on room air.

Does she screen positive for severe sepsis? Does she screen positive? So we're not diagnosing her with severe sepsis. In our screening tool, does she screen positive?

We're getting some good stuff in, and people are saying yes.

In our screening tool in just looking at our screen, yes, she would screen positive for severe sepsis and in looking at our assessment and her vital signs. If this were our resident, we're taking care of her, what would our next step be? What are we going to do for her?

We're going to notify our physician. We're going to notify our mid-levels. We're going to follow our chain of command. Because we know, hey, her screening, her assessment, she's had some changes that now needs to be voiced. So anytime, we're going to call our physicians. We're going to call our mid-levels. We always want to gather all of our vital signs together, get our changes of data together. Because we want to provide that information over to our physicians and relay that information.

This is our SBAR. It could be a very helpful tool to utilize when we call our physicians, when we notify them of a changes in status. On the right-hand side, before we call a physician, what changes are we looking for? What potential early signs and symptoms, early warning signs there in that second box to the right. And that situation, background, assessment, [AUDIO OUT] normal SBAR criteria. Once again, collecting all of our information, our changes in status, our baseline, how it's varying currently go to our physician.

And in our recommendation, we say, if you think that your resident may be septic, if you are concerned about sepsis, when you call your physician, say, hey, I'm concerned. Our resident screened positive for sepsis. By the physician getting the information, the physician says, yes, I think this resident is septic, we can get writing sepsis campaign measures and get those going for our residents – those cultures, the fluids, and antibiotics. So we can get those started.

And if it's not – if we call, and our physician says, no, I don't think this resident is septic, and it gets ruled out – that is OK. That is OK, because we are still calling for a reason. We're calling because there was a change in status with our resident. This SBAR tool, once again, is also available on our website, as well as in the CD toolkit that will be provided.

Preventative measures – any time we can prevent, we want to prevent it. So our flu and pneumonia vaccines for our residents who can receive the flu and pneumonia vaccine [INAUDIBLE] for those who can receive it. Also, additional preventive measures – cleaning our scrapes and our wounds. And it sounds so trivial. We deal with cuts, scrapes, wounds, paper cuts
all the time, and we don't always clean them. But it is so important that we do. It is so important that we do.

In 2012, there was a boy named Rory Staunton. He was a healthy 12-year-old boy. He was playing basketball in his middle school gym. And he jumped, and he dived for a ball, and he cut his arm. He cut his arm, and his coach didn't clean it, didn't send him to the nurse to get cleaned. Just put down a couple Band-Aids over the cut, and Rory went about his way.

He went home, went to sleep, and woke up in the middle of the night. He was crying, screaming, throwing up, telling his parents, my leg hurts. My leg hurts. Well, it was [INAUDIBLE] at that time. The next day, they go to the pediatrician. The pediatrician said, I think Rory has a stomach bug. At the time, they lived in New York, and there was a stomach bug going around at the time. So the pediatrician said, I think this is a stomach bug.

And the parents are like, no, there's these other things that we're seeing that we're concerned about. And the pediatrician said, I do think it's a stomach bug, but I think Rory needs to head on over to the ER. At the very least, he needs to get fluid replacement because he's lost a lot of fluid from throwing up.

And so the family head on over to the ER. When they get to the ER, the ER did blood work, but they never looked at his blood work results, because he was only there for two hours to get fluids for his stomach bug. He received the fluids. They were ready to discharge him. And when I say, they were ready to discharge him, they were ready. They printed his discharge paperwork 12 minutes before his last set of vitals.

His last set of vitals showed that he had elevated temperature. His heart rate was 131. They discharged him, and he went home. And his family reported the next day that Rory was getting worse. He could barely move. His skin was mottled.

They called the pediatrician. Hey, something's wrong. They reported that the pediatrician said it's a really bad stomach bug and to give him Tylenol and Motrin together. It didn't work. They called the pediatrician back. Something is wrong. Something is wrong.

They then went back to the ER. When they went back to the ER, they said, Rory was in septic shock. They sent him up to the ICU. He spent three days in the ICU. They had to resuscitate him multiple times. And on that Sunday, they resuscitate him, and they weren't able to bring him back, and Rory passed away. From a cut on the arm on Wednesday to passing away in the ICU on Sunday.

So really, I share this story, because we need to clean our scrapes and our wounds, but we also need to be advocates for our residents, be advocates for those that we take care of. Because looking back at it, what if that wound would have been cleaned when it initially happened? The
first time he went to the ER, if they looked at his blood work results, his white blood cell count was elevated.

What if who took that last set of vitals the first time they went to the ER would have said, hey, look at these vitals. Why is his temperature still elevated? Why is the heart rate elevated? So really being advocates for our residents and those we take care of. And then, of course, we always want to practice good hand hygiene.

So sepsis is our body's overwhelming and life-threatening response to an infection. Anyone who has an infection may be at risk for developing sepsis, so know those signs and symptoms and share our education with our residents, and family, and our staff members and always remembering sepsis is a medical emergency.

Resources – of course, the CDC, the Surviving Sepsis campaign, and the Sepsis Alliance, once again, developed by Dr. Carl Flatley, founded by Dr. Carl Flatley, and has amazing videos and resources available. If you want to know more about Rory Staunton, the 12-year-old boy from New York, his family's created a very [AUDIO OUT] site to have a lot of wonderful information and resources. And of course, on our website at TMF. We have some great resources and information available.

If you have any questions, please chat in your questions for us. Chat in your questions. I have a couple more slides I'd like to go over with you. But if you have any questions, please feel free to chat them in.

On our website, we also have pre-assessments and post-assessments that you can provide as an interactive tool in working with our staff members. And so this is a really great tool to be able to use. So once again, utilized on our website and on our CD toolkit, we have the pre and the post-assessment, as well as the answer key available, if you want to utilize that as an additional educational and training tool for your staff.

Information – please, feel free to reach out to us at improvesepsis@tmf.org. I'd like to share with you that, once again, all of our information is available online. Here is a link to information online, and a copy of the CD toolkit will also be mailed to the facility for those who have participated.

When you go online, and you look at our website, this is a screenshot of what our website looks like in the Early Identification and Treatment of Sepsis section. The bottom third is where you can find all the training tools, the PowerPoint, any handouts and, once again, our pathway identification and treatment, assessing [INAUDIBLE], and a lot of additional tools for you to be able to utilize as education and training for your staff.

We'll go back to see if you have any questions. Please, we'd like to answer any questions that you might have.
Can you remind the audience how to call in a question? She said, gentlemen, if you have any questions at this time, please press star 1 on your telephone keypad. If you have any questions, please press star 1 on your telephone keypad. Hello when someone joins the queue. Actually, I do have someone right now.

OK, go ahead.

I pressed the wrong key. Sorry, I don't have a question.

OK.

Sorry.

No worries. While we're waiting for folks to chat in questions or call in, [INAUDIBLE], you have done training in Texas nursing homes on some on-site training and some court training. And those pre and post-assessments, you've given at each training. Can you tell us, on your on-site training, the percentage knowledge gain?

Yes, we have provided on-site training to 102 different facilities throughout the state of Texas. And the knowledge gained from the pre-assessment that's done at the very beginning of the education and the post-assessment that's at the very end, the knowledge has been 42% total in all 102 facilities. And so that has been an amazing knowledge gain increase. And so we're very excited to be able to report the fact that the training is making and providing in the knowledge of early identification and treatment of sepsis.

And everyone in the tool has access. So you can use this PowerPoint. You can use the pre and post-assessments to do your own training on sepsis and in-services at your facility. While we're waiting for some more questions, can you tell the audience – you told me – about the DON that was impacted by the training? Can you tell the audience that story?

Yes. I like to do follow-ups with the training that I've provided. And so I was doing a follow-up with a director of nurses who was providing a train-the-trainer education session for a group within their company. And he told me that after the sepsis training, he received a call from a friend after she'd had a colonoscopy, and then she started having complaints of not feeling right, including her pain level.

When this director of nurses heard her signs and symptoms, he told her that she needed to go to the emergency room right away. He said, she needs to either go to the ER, or she needs to see her doctor right away, because he said, this wasn't right, especially after a colonoscopy, for the signs and symptoms that she was describing.

And so she went to the hospital, and she was diagnosed with sepsis. She was admitted to the hospital and stayed there for two days. When I spoke with this director of nurses, he attributed the sepsis training with the quick recognition of the early signs and symptoms of having sepsis.
and in encouraging and telling his friend to go receive treatment that was needed, because she was diagnosed with sepsis.

So I am very happy to report that this training is making a difference in helping us recognize signs and symptoms and improving mortality in our residents, but not just our residents, in various settings, like with our friends, with our family. Utilizing this knowledge, putting it into our practice, and sharing this information to help increase awareness and make difference.

Carolyn, sepsis is no respecter of age or female, male. It can happen to anyone at any age, but starts out with that infection. I also remember, last year, you had a story that was very personal relating to sepsis. Would you mind sharing.

Yes, actually, last March – so I had been part of this project and providing these trainings for about a year at that point. In March, my husband was hospitalized and diagnosed with sepsis. He was initially diagnosed with bronchitis, received antibiotics. And on the last day of his antibiotic regimen, he looked at me and he goes, something is wrong.

His pulse is normally within 50. It was 112. He was breathing at about 28 to 32 breaths per minute. And I had told him, we are going to the ER now. We went to the ER, and they told him that he had developed pneumonia. And they prescribed him an antibiotic, which he started that day.

Although he was diagnosed with pneumonia, they did not do any bloodwork for him during that [AUDIO OUT]. And as part of his discharge instructions, they told him to follow up with his primary care if he was not feeling better after 48 hours. So he had this 48-hour idea marker in his head.

So he took his oral antibiotics. And the next day, he just stayed in bed and he slept, tried to rest. By that time, the evening rolled around, so it'd been about 24 hours. He was feeling worse the day before. And so approximately 24 hours after that first ER visit, his vital signs were not improving.

His temperature continued to elevate. His heart rate was in the hundreds. And he kept saying that he couldn't catch his breath. He had increased respiration. He fell on the floor, and he propped his back up against the wall and said he was so tired. He was so tired. He couldn't breathe, and he just wanted to go to sleep.

I was thinking, he was septic. I told him that we needed to go back to the ER. And he said, no, they told me to wait 48 hours. And I told him, no, we are going now.

And when we went back to the ER, they said, his pneumonia had spread from one lung to both lungs and that he was, in fact, septic. They started IV antibiotics right away, and he was admitted to the hospital. And he was in the hospital for three days.
Fortunately, he survived sepsis without any long-term complications. We went back in, recognizing the signs and symptoms, and came back in. Then he got the treatment that he needed. I share this story about my husband, because I think about the what ifs.

What if we didn't get him seen again? What if he would have waited the 48 hours? What if we didn't know how quickly sepsis can progress and how detrimental it can be? So once again, it's so important to continue to monitor those signs and symptoms and those vital signs. Because those infections can progress to sepsis very quickly.

Thank you for sharing that personal story with us. I'm not seeing any questions come across. You talking about prevention, and hand-washing, and washing wounds. There was a study done by Virginia VA Hospital, and they were wanting to decrease their pneumonia rates. And one of the things they did was a very simple, inexpensive [AUDIO OUT]. And that was to get a toothbrush and toothpaste, and brush every patients' teeth – have them brush them or be brushed – twice a day.

They had significant reduction in pneumonia. And so as you've learned, we are also doing the oral care project. And with pneumonia being the highest impact to a nursing home and its leads to sepsis, just a simple, making sure that you're at least doing some oral care, and brushing, and flossing, oral care can a preventive measure in keeping those pneumonias down. I just wanted to share that with you and the audience of what we learned in the oral care project that TMF has been doing. Are there any people in the queue?

There are no questions in queue at this point in time.

I'm not seeing any questions in the chat. Please know that anytime you have any questions, or you want some support resources, you can email improvesepsis@tmf.org. I also would like to reference you to any of the stuff that we talked about today. I know the Sepsis Alliance has a huge amount of resources that are free to anyone, and they even reference the specific diseases that's related to sepsis.

So there is a wealth of information available, and we would be glad to help you with any questions that you have. So please, reach out. And we really appreciate you being with us today and participating in our chat. And we wish you a great rest of your day. Thank you, everyone.

Thank you.

[AUDIO OUT] joining. You may all disconnect and have a good day.