



# Inpatient Quality Reporting Program

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## Support Contractor

### SEP-1 Early Management Bundle, Severe Sepsis/Septic Shock Part I: Severe Sepsis

#### Presentation Transcript

**Moderator:**

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**Speaker(s):**

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**August 24, 2015**

**2 p.m. ET**

**Matt McDonough:** My name is Matt McDonough, and I'm going to be your virtual host for today's event. Before we get started on today's event, I'd like to cover some housekeeping items with you so that you understand how today's event is going to work, and how you can interact with our presenters throughout today's event.

First and foremost, audio for this event is available via Internet streaming. And, if you hear my voice right now, then you understand that. That means that no telephone line is required, but computer speakers or headphones are necessary to listen to the streaming audio.

Now, we do have a limited number of dialing lines. If you encounter difficulty with Internet streaming today, please send us a chat message, if you need that number, and we'll do our best to get that to you as quickly as possible. Also, today's event is being recorded.

Now today, you may have some difficulty with audio from time to time, and we'd like to cover some tips to help you resolve those. If your audio from your speakers is breaking up or your audio suddenly stops, simply

# Inpatient Quality Reporting Program

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## Support Contractor

click the Pause button that's located in the upper left side of your screen. Wait about five seconds, and then click the Play button. Your audio stream should resume, and you should be able to hear our speakers clearly again.

Now, if you're hearing a very bad echo on the call right now, and I know that happens frequently, what that means is you're probably connected more than once either in multiple browsers or in multiple tabs in your browser. You're hearing the audio feed more than once. So, simply close all but one of those browsers or tabs, and the echo will clear up, and you should be hearing only one audio stream.

Now, because we're streaming over the Internet, we are in a listen-only mode today as attendees. But, that does not mean that we can't submit questions to our presenters today. On the left side of your screen, there is a Chat with Presenter option. Simply type your question into that Chat with Presenter option, and click the Send button.

When you do that, your question is sent to all of our presenters today. And, as time and as resources allow, we'll answer as many questions as we can. However, please realize that all questions are being archived to be addressed at a later time.

That's going to do it for my introduction. So without further ado, I'd like to hand it over to our first speaker of the day.

**Candace Jackson:** Thank you Matt. Hello, everyone, and welcome to our *SEP-1 Early Management Bundle, Severe Sepsis/Septic Shock Part I: Severe Sepsis* webinar.

My name is Candace Jackson, and I will be your host for today's event. Before we begin, I'd like to make a few announcements. This program is being recorded. A transcript of the presentation along with a Q&As will be posted to our new inpatient website [www.qualityreportingcenter.com](http://www.qualityreportingcenter.com) within two days, and will be posted to [QualityNet](http://QualityNet) at a later date.

If you registered for this event, a reminder email as well as the slides were sent out to you to your email one hour ago. If you did not receive the

# Inpatient Quality Reporting Program

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## Support Contractor

email, you can download the slides at our inpatient website, again at <http://www.qualityreportingcenter.com>.

And now, I'd like to introduce our guest speaker, Bob Dickerson. Bob is the Lead Health Informatics Solution Coordinator for the Measure Development and Maintenance team at Telligen. He's a registered respiratory therapist with a Master of Science degree in Healthcare Services Administration from the University of St. Francis in Joliet, Illinois.

Most recently, Bob has been supporting the Centers for Medicare & Medicaid Services with development and maintenance of hospital clinical quality measures. This includes responding to questions from hospital personnel regarding quality measures using end user feedback, in information from literature reviews in the revision of existing quality measures and helping develop the specifications for new measures.

Bob has extensive experience with development and implementation of interventions processes, and systems in a hospital setting to support national quality measures resulting in improved processes and outcomes for patient care. His experience includes facilitation of intervention implementation, data collection, and process improvements related to severe sepsis and septic shock in the hospital setting for the Surviving Sepsis campaign.

He was also involved in supporting the transition from a paper-based medical record and physician-order system to an electronic medical record system with physician-order entry in a large healthcare system, ensuring the system supported accurate documentation and capture of information for quality reporting.

I would now like to turn the floor over to Bob. Bob, the floor is yours.

**Bob Dickerson:** Hello, everyone, and welcome to our first in a three-part education series on the SEP-1 Measure, the Early Management Bundle for Severe Sepsis and Septic Shock. In this first part, we'll work our way through the

# Inpatient Quality Reporting Program

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## Support Contractor

algorithm and associated data elements specific to the severe sepsis portion of the measure.

Before we get started, I wanted to share with you an experience I had this past June when my family and I decided to hike from the north rim of the Grand Canyon to the south rim in two days. We prepared for weeks for the nearly 6,000 feet descent to the bottom and 5,000 feet climb back up covering approximately 14 miles.

Standing on one side, looking across the 10-mile expanse to the other side, I wondered what we'd gotten ourselves into. We started out from the north rim following the trail with our guide being the trail itself, signs on the way, conversations [with other] hikers, and maps, which looked eerily familiar to the SEP-1 algorithm we're about to embark upon exploring today.

When we emerged from the Grand Canyon on the south rim on the following afternoon, I looked back across, and several thoughts came to mind that reminded me of the SEP-1 measure. At first glance, it seems unfathomable that we can make it; but much like this measure may appear overwhelming at first, we used a guidebook, and followed the trail, much like you will be using the specifications manual and algorithm as your guides. Be sure to pay heed to the warning signs and hydro safety instructions to stay out of trouble. Similarly, you need to pay careful attention to the guidance in the specifications manual.

But, we asked several hikers along the way to get an idea of our progress, and make sure we're on the right track, as you should ask questions if you're not sure how to respond to a data element. And, hydration is important as we will see when we explore the land of crystalloid fluids next month. And, I can tell you I've never drank so much water in a single day in my entire life. Now, with that in mind, let's embark upon our journey through the SEP-1 algorithm and associated data elements.

The purpose of today's presentation is to help abstractors and healthcare providers to better understand the severe sepsis portion of the SEP-1

# Inpatient Quality Reporting Program

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## Support Contractor

measure data elements and the corresponding algorithm flow. As I mentioned during this first session, our discussion will be limited to the severe sepsis portion of the SEP-1 measure. We'll continue this discussion next month with a review of the portions of the algorithm and data elements that are specific to septic shock.

During this presentation, we'll be discussing numerator population criteria, the denominator population criteria, the populations that are excluded from the measure, and also review the algorithm and respective data elements for severe sepsis. The objectives for today's presentation are noted on this slide and include being able to identify the denominator and numerator criteria, describing how to abstract severe sepsis specific data elements and explaining the flow of the algorithm.

A couple of points to keep in mind before we go further:

Again, our focus in scope today is on the severe sepsis portion of the measure. As we work our way through the algorithm, you will note that some data elements do not appear necessarily in the same sequence they're applied in a clinical setting. The algorithm needs to take into account how the data elements interact, and use these calculations to identify whether or not the intent within the measures is met. For purposes of the presentation, some algorithm images may have been edited for content and to fit the screen. So, please refer to the actual SEP-1 algorithm for the complete algorithm.

And, one other point to keep in mind is that SEP-1 is a measure based upon evidence-based clinical guidelines and published studies relevant to severe sepsis and septic shock. Our measure cannot exactly replicate the guidelines and evidence because they often lack the specificity that a measure requires. In order to make a measure work, there has to be specific start and endpoints for abstraction as well as abstraction guidance that may not be specified in a set of guidelines. Additionally, there's some patient populations that may be excluded for purposes of the measure that you would treat according to the guidelines in actual clinical practice.

# Inpatient Quality Reporting Program

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## Support Contractor

The fact that they're excluded does not mean they should not be treated as if they have severe sepsis or septic shock according to the guidelines. It simply means for purposes of the measure, they're not included in the measure. And, the strength of evidence and guidelines is variable. As such, the strength of evidence upon which some of the data elements collected for the measure are based upon will vary as well. SEP-1 is an evidence-based measure of clinical practice designed to help identify where gaps in care may exist.

So, let's talk a little bit about the denominator. The patient population for SEP-1 includes acute care inpatients who have been discharged, are 18 years or older, and have an ICD-10 principal or other diagnosis code of sepsis, severe sepsis, or septic shock. Now, these codes are identified in appendix A in table 4.01 of the [Inpatient Quality Reporting Program Specifications Manual, version 5.0a](#). But, we have received a number of questions asking why patients with codes for sepsis were included when only those with severe sepsis or septic shock are actually in the measure. Now, the reason for this is because historically coding for severe sepsis and septic shock has been inconsistent. The intent with including these codes is to cast a wide net, and then, through the abstraction process, narrow the field down to those cases that actually have severe sepsis or septic shock.

Now, there are some populations that are excluded. Those that have the presence of the first three on this slide (which [are] patients for the Directive for Comfort Care within three hours of severe sepsis presentation, or within six hours of septic shock presentation, and patients who have an administrative contraindication to care) may not have the opportunity for appropriate care to be implemented, so they're excluded. If the length of stay is greater than 120 days, patients are excluded. And, this is a standard exclusion with just about every measure. Patients who are transferring from another acute care facility may already have care initiated at the other facility and would not be reflective of care provided at their receiving facility. The next two, patients who have expired within three hours of severe sepsis presentation or who expired within six hours

# Inpatient Quality Reporting Program

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## Support Contractor

of septic shock presentation again may not have had an opportunity for appropriate care to be implemented. And, patients receiving IV antibiotics for more than 24 hours, which may be reflective of previous care and not necessarily care for a new case of severe sepsis, are also excluded. As we go through the antibiotic portion of the measure, you will note this exclusion has some specificity to it that is not identified in the exclusion statement.

And, while this is a bundled composite measure, I'm going to break it down into sections based on severe sepsis and septic shock. And this is for two reasons. First of all, it makes a little easier for us to take in and understand. And, secondly, because while all patients in this measure will have severe sepsis, they will not all have septic shock. As I mentioned earlier, our focus today is on the severe sepsis section of the measure. As such, we'll be reviewing the data elements associated with severe sepsis presentation and the measures that need to be completed within three hours of severe sepsis presentation, which are the initial Lactate level measurement, broad spectrum antibiotic administration, and blood cultures drawn prior to antibiotics. And, the repeat Lactate level within six hours of severe sepsis presentation for those cases in which the initial Lactate level is elevated. Now, please note the three-hour and six-hour timeframes are the latest timeframe [for] which these data elements can be completed. Some would also have an earliest timeframe which we'll talk about when we discuss each data element.

Now, this slide displays the numerator criteria for septic shock, which we'll cover next month when we review the data elements associated only with those cases that also have septic shock. So, let's talk about the first data element for severe sepsis.

First data element is administrative contraindication to care. Now, if allowable value one, which is equivalent to Yes, or two, also equivalent to Yes, are selected, the case goes to category B and is excluded from the measure population. If allowable value is three, which is equivalent to no, is selected, the case will continue. So, let's take a closer look at some of the details of this data element.

# Inpatient Quality Reporting Program

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## Support Contractor

This data element is identifying whether or not there's documentation the patient or surrogate decision-maker refused blood draws, fluid administration, or antibiotic administration during the hospital stay. There are two allowable values for Yes and one for No. The description of each allowable value is noted on this slide, as well as in the specifications manual.

There are few points to keep in mind associated to this data element. The documentation is limited to that from a physician, an advanced practice nurse, or a physician assistant, or a witness-signed consent form, which clearly indicates the patient or surrogate decision-maker has refused blood draws, fluid administration, or antibiotics. There's not a timeframe associated with this measure. So, you will need to look through the entire medical record from arrival through discharge. If this is documented at any point in time during the hospitalization, it will result in the case being excluded from the measure, and no further abstraction is necessary. So, assuming we're responding no to this data element, we'll move on to the next data element.

The next data element is transferred from another hospital or ASC. Now, this is not a new data element, and it's been used for other measures. If Yes is selected, the case goes to category B and is excluded from the measure population. If No is selected, the case will continue on the algorithm. So, let's take a closer look at this data element.

This data element is looking for documentation that the patient who was an inpatient, outpatient, or in an ED observation department of a hospital or Ambulatory Surgery Center was transferred into your facility. The allowable values are either Yes or No.

And there are few things to look for on this one. You want to select Yes, if the patient is transferred in from an Emergency Department or observation unit outside your hospital. Now, this applies even if the Emergency Department, observation unit or other hospital is part of your hospital system. If it has a shared medical record of your system, or shared provider number, or is in close proximity, you're essentially looking for



# Inpatient Quality Reporting Program

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## Support Contractor

patients that were in a physically separate facility and transferred in to your facility. Selecting No will take us to the next data element.

And, our next data element is severe sepsis present. There are two allowable values for this, selecting allowable value two, which is No, will result in the case being excluded from the measure population. And, selecting value one, which is Yes, will result in the case continuing.

Now, this data element is looking for documentation in the medical records supporting the presence of severe sepsis. If there are multiple episodes of severe sepsis documented, you will abstract only the first episode. And, as I mentioned, the allowable value is either Yes or No.

There are two ways in which severe sepsis can be identified based on documentation. Severe sepsis is present, if the three criteria outlined in the data element, which includes documentation of suspected infection to a more SIRS criteria, and a sign of organ dysfunction are met or if there's a physician, advanced practice nurse, or physician assistant documentation of confirmed, suspected, or possible severe sepsis. Now, the goal is early identification of severe sepsis to assess whether or not treatment is timely and appropriate. So, if both are present, the criteria is met, and there's physician documentation, you will want to use the earliest of those two. So, let's take a closer look at some of the requirements associated with this data element.

Documentation of a suspected source of infection can be a confirmed infection or one that is suspected or considered possible. This data element is not looking for a diagnosis of an infection rather that one is suspected. Now, this will most likely be physician, advanced practice nurse, or physician-assisted documentation, but nursing documentation is also acceptable. In fact, in facilities that perform screening for severe sepsis or septic shock, during the Emergency Department triage process, this screening is typically performed by a nurse. And, part of the screening process is a brief patient history. The history may very well reveal the patient has been seen in ED early in the day for an infection or that they're currently being treated for infection of some type. Please note, as per the

# Inpatient Quality Reporting Program

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## Support Contractor

exclusion guidelines for abstraction, documentation of sepsis, bacteremia, and septicemia are not acceptable as suspected infections.

Now, the SIRS criteria are listed in the severe sepsis present data element and consist of a temperature that is greater than 38.3 degree centigrade or less than 36 degrees, a heart rate that is greater than 90, respiratory rate greater than 20, or by cell count greater than 12,000 or less than 4,000 or greater than 10 percent bands. If any two or more of these are present, the SIRS criteria part of the severe sepsis clinical criteria is met. Now, the temperature, heart rate, and respiratory rate will typically be found in nursing documentations such as vital signs. And, the white cell count will typically be found in lab results reports.

The organ dysfunction part of the severe sepsis clinical criteria requires that one of the findings on this slide be present. Most of these, such as the Lactate, INR, aPTT, platelet count, bilirubin, and creatinine, will most likely be found in lab result reports. The urine output and blood pressure parameters will most likely be found in nursing documentation. On the next few slides, we'll go a little deeper into some questions that frequently come up regarding the organ dysfunction parameters.

We've received a number of questions that point out that severe sepsis guidelines indicate to not use abnormal lab values that are caused by a chronic disease, such as elevated creatinine in a patient with End Stage Renal Disease. All medication use, such as an elevated INR, in a patient taking warfarin when determining the presence of organ dysfunction. While this is not specifically addressed in the current version of the manual, the intent is the same. And, we're working on revisions to clarify this in the future version of the manual. Establishing the point from which a 40 millimeter of mercury drop in systolic blood pressure should be considered a sign of organ dysfunction can be a bit of a challenge. Measure specifications based this on the last previously recorded systolic blood pressure normal for that patient. So, the challenge is how does one define normal for that patient? Keep in mind most cases of hypotension for severe sepsis are identified based on the systolic blood pressure being less than 90. But, in the event its systolic blood pressure is greater than 90

# Inpatient Quality Reporting Program

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## Support Contractor

and there has been a systolic blood pressure drop, you do need to identify whether or not the decrease was greater than 40 from the normal to determine presence of organ dysfunction.

And, in order to help you with this, we've developed some examples. But keeping in mind that you may not know what any given patient's "normal" is. You should take into consideration the previous blood pressure readings that are available. For purposes of the examples, we are operating under the assumption the patient has not been in ED or hospital very long and we have a limited number of blood pressure recordings.

In the first example, we have three systolic blood pressure readings that were 130, 132, and 128. The readings are all fairly consistent with one another. Since the last was 128, the systolic blood pressure would need to drop to at least 87 to be a drop of greater than 40. Now, the patient would have already met criteria because the systolic blood pressure is less than 90.

In our second example, we have three systolic blood pressure readings of 140, 142, and 138. And, let's say in this situation, the patient's systolic blood pressure jumps up to 180 from one reading and then back down to 138. This represents the change of 42. However, this is not a decrease of greater than 40 from normal because the 180 reading is not normal for this patient.

And our third example, let's say we have two systolic blood pressure readings of 138 and 136. And, in this situation, the systolic blood pressure jumps up to 178. And then, the next reading is down to 95. This does represent a decrease of greater than 40 from normal because 95 is more than 40 below 136. Now, if someone's systolic blood pressure has significant fluctuations like this, you may also want to confirm these represent true abnormal readings and not erroneous readings due to equipment issues or something like that. And, of course, like anything in medical record abstraction, determining whether or not it is an erroneous reading, it's based upon documentation indicating that it is an erroneous

# Inpatient Quality Reporting Program

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## Support Contractor

reading. If that documentation does not exist, you must assume it is an accurate reading.

Now, let's take a look at the timing of the criteria. The timing of the three severe sepsis clinical criteria and where to start looking and determining if they're always in six hours of each other, can also be a bit of a challenge. There are some strategies you can employ to make this less challenging. And, since we're looking for the earliest episode of severe sepsis, the starting point should be the time of arrival. Some of the criteria are easier to locate in a medical record than others. So, I would recommend starting by looking for something that is either flagged or easily identified in your medical record. An example might be an abnormal lab value or an abnormal vital sign. Then you set at the anchor point around which you look for the other criteria. Now, keep in mind the clinical criteria do not need to be met in any specific sequence but all three of them must be met within six hours of each other. So let's [see some] examples of this.

In our first example, let's say we have a Lactate of 2.3 that is identified at 0800 in a lab report. This fulfills the organ dysfunction criteria. We then start looking in the periods six hours prior to this because we want to find the earliest documentation. So, that time period would be 0200 to 0800 for the remaining two clinical criteria. And, let's say we find nursing notes that are 630 with the rest period of 24 and the heart rate of 120. This fulfills the two or more SIRS criteria part. We look further and find at 0700 the physician documented possible UTI. This fulfills the suspected infection criteria since all of these were present within six hours of each other from 0630 to 0800 with met criteria for severe sepsis. And, the severe sepsis presentation time is when the last of the three criteria were met, which is 0800.

OK, let's take a look at another example. In our second example, we find a lab report with a white cell count of 14,500 reported at 1200. This fulfills one of the two required SIRS criteria. So, we do need another SIRS criteria. Now, let's sift back over the previous six hours to 1200 for the other [criterion]. And, we find the nursing documentation at 0800 vital signs with a temperature of 38.4. This represents another of the SIRS

# Inpatient Quality Reporting Program

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## Support Contractor

criteria so we now have the two SIRS criteria we need. Physician documentation 0900 indicates presence of pneumonia. Now, we fulfill the suspected infection criteria. And, after carefully reviewing the 0600 to 1200 time period, we do not find any sign of organ dysfunction.

Now, we're going to continue to review the medical record for signs of organ dysfunction; but, we need to shift the timeframe within which we look, based upon the point the first of the SIRS criteria was noted. Since that was 0800, we'll now look at the time period from 0800 to 1400 for the sign of organ dysfunction. In this case, we find nurses' vital signs that record a blood pressure of 88 over 50 at 1330. This fulfills the organ dysfunction criteria. Since all three were present within six hours of each other, 0800 on the first SIRS criteria is identified and 1330 when the blood pressure criteria was identified as organ dysfunction. We have now met the criteria for severe sepsis. So, for severe sepsis presentation time in this case, will begin when the last of these three criteria were met which is 1330.

Now, once you've identified the presence of the clinical criteria, you still want to look prior to that for any physician, a best practice nurse, or physician assistant documentation indicating the presence or suspicion or possibility of severe sepsis. As you may recall, if both are present, you will use the earlier of the clinical criteria being met or physician, APN, [or] PA documentation. Now, if the clinical criteria are not met or are not documented, then physician, APN, or PA documentation indicating the presence or suspicion of severe sepsis is acceptable to establish the presence of severe sepsis. If the criteria are not met and there is also not physician, APN, or PA documentation of severe sepsis, but you do find physician documentation of septic shock, this is acceptable to use to establish the presence of severe sepsis. Now, this is because septic shock cannot be present without severe sepsis also being present. And we'll talk more about this during the next presentation, which will focus on the septic shock part of the SEP-1 measure. In this case, you would also use the septic shock presentation date and time for the severe sepsis presentation date and time.

# Inpatient Quality Reporting Program

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## Support Contractor

Now, let's move on and take a look at severe sepsis present date and time data elements. Severe sepsis presentation date is the entry of the date of the presentation of severe sepsis. And, severe sepsis presentation time is the entry of the time. And, we're looking at either when the last of the clinical criteria were met or if the physician, APN, or PA documentation occurred. Now, if either is entered as "unable to determine," the case will be assigned to category D and fail the measure. If a valid date and time were entered, the case will continue.

There are a couple of points to make regarding severe sepsis presentation date and time. Triage date and time are used only for patients who arrived to the emergency department with severe sepsis or severe sepsis is identified as present or suspected during triage. For all cases where severe sepsis presents after triage, and this should be whether the patient is still in the Emergency Department or after they've been admitted to the hospital, you will use the earlier of either the last of the clinical criteria met or physician, APN, [or] PA documentation. So next, let's move on to our next data element.

In this data element, it's directed for Comfort Care severe sepsis. And, it has two allowable values. Selecting one Yes will result in the case being assigned to category B and being excluded from the measure population. If two, No is selected, the case will continue. The data element is looking for documentation in the medical record from a physician, advanced practice nurse, or physician assistant of comfort measures only that is present prior to or within the three hours following the presentation of the first episode of severe sepsis. As I mentioned, the allowable values are either a Yes or a No.

As previously mentioned, the timeframe is prior to or within three hours after severe sepsis presentation. And, the only acceptable documentation is that from a physician, APN, or PA. The data element includes the only terms that are acceptable in the exclusion guidelines in the inclusion guidelines for abstraction. Note that if any of those acceptable terms are used in the negative or stated as conditional, you should select allowable value two which is No. Some examples of this might be documentation

# Inpatient Quality Reporting Program

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## Support Contractor

that Comfort Care was refused by the patient, that the patient was not appropriate for hospice care, or perhaps Comfort Care only, if the patient arrests.

So, let's next take a look at our next data element in the algorithm. The next data element is the discharge disposition in which there's several possible allowable values. If allowable value six, expired, is selected, the discharge time is evaluated, and a sepsis expire time is calculated. Essentially, this will result in any patient who dies within three hours of severe sepsis presentation being assigned at category B and being excluded from the measure population. Selection of any other allowable value will result in the case continuing.

For discharge disposition, you're looking for the final place setting the patient was discharged to on the discharge date. For discharge time, as the name applies, you're looking for the time the patient was actually discharged. Now, for discharge disposition, there are eight total allowable values, which are listed on the slide. And, this includes one for not documented or unable to determine.

Now, there are a couple of key things to keep in mind in regards to discharge disposition. Don't use coding or uniform billing forms when determining this. And, there are a number of examples in this data element as well as a hierarchy to help you if there's contradictory documentation in the medical record. Now, in regards to discharge time, if the patient dies, the discharge time is the time documented that they died. And, as I mentioned a couple of slides ago, there's a time calculation that results in excluding patients who die within three hours after severe sepsis presentation. Now from here, we'll move on to the next page of the algorithm.

And, the next thing that happens on the algorithm is the counters are initialized. For [the] purposes of today, we'll be referring only to the Sepsis Three Hour Counter and the Sepsis Six Hour Counter. The counters keep track of data elements that are completed appropriately and timely in a relation to severe sepsis presentation and septic shock presentation. At

# Inpatient Quality Reporting Program

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## Support Contractor

the end of each case, they're evaluated for the number of correctly applied elements in each of the applicable counters. Once the counters are initiated, we'll start looking at intervention type data elements that will contribute to the counters in determining whether or not the case is in the numerator population.

So, our next data element is Initial Lactate Level Collection. It has two possible allowable values. Selecting two No, results in a case bypassing the counter. Selecting one Yes, results from the case continuing. This data element is looking for an initial Lactate level drawn in a time period six hours prior to two to three hours after severe sepsis presentation. As noted, there are two allowable values, one for Yes and one for No. Now, there are few things to note for this data element. If there are multiple Lactates drawn for purposes of the measure, you want to abstract the one drawn closest to severe sepsis presentation time as the initial Lactate level. The documentation must specifically reference a Lactate or Lactic Acid was drawn. So, general references is to labs drawn is not acceptable. A physician order to draw is not sufficient. There must be documentation indicating the Lactate was actually drawn. Now, if attempts were made to draw the Lactate level that were unsuccessful and they were documented as being unsuccessful, you can count those. And, if the Lactate level is drawn but no results were available, you can still count it as drawn and select allowable value one.

So, let's move on to the next set of data elements which are the Initial Lactate Level and Date and Time data element. For these, a date and time value is entered. If it's entered as "unable to be determined," the case will bypass the counter. If the date and time were entered as valid values, the case will continue. As the data element names would imply, we're looking for the date and the time initial Lactate was drawn.

Now, it is important to emphasize to use the date and time the initial Lactate level is drawn or collected and not the date and time it was reported. There's a point later in the algorithm where you'll want to reference the reported results. For purposes of these data elements, you may want to focus on the time drawn. After the date and time is entered,



# Inpatient Quality Reporting Program

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## Support Contractor

the algorithm will perform a calculation based on the entered values. That calculation is Initial Lactate Time. Now, depending on the results of this calculation, you may get to add one to the Sepsis Three Hour Counter or possibly bypass the counter and not get a point.

The Initial Lactate time is a calculation in minutes of the initial Lactate level date and time minus the severe sepsis presentation date and time. And, there are two time references for the results, a minus 360 minutes, which is equivalent to six hours prior to severe sepsis presentation and 180 minutes, which is equivalent to three hours after severe sepsis presentation.

There are two ways the calculation is then applied. If the result is greater than or equal to minus 360 minutes and less than or equal to 180 minutes, this means the initial Lactate was drawn within the appropriate time window. In this case, one is added to the Sepsis Three Hour Counter, and the case proceeds to the next page of the algorithm. If the time is less than minus 360 minutes or greater than 180 minutes, this means initial Lactate was drawn either more than six hours prior to presentation or more than three hours after severe sepsis presentation. The case then bypasses the counter and proceeds to the data element on the next page of the algorithm.

Our next data element is Broad Spectrum or Other Antibiotic Administration. This data element has two possible allowable values. Selecting two No will result in the case being directed to the W off page connector, which will take the case to the last page of the algorithm. Selecting one, which is Yes, results in the case continuing. This data element is looking for whether an IV antibiotic was administered in the time window from 24 hours prior to and three hours after severe sepsis presentation. And, as I've mentioned, there are allowable values for Yes and No.

There are a few important things to look for. This data element is only interested in IV antibiotics. Other routes do not count. If there's at least one dose of an IV antibiotic given in the timeframe 24 hours prior to three

# Inpatient Quality Reporting Program

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## Support Contractor

hours after severe sepsis presentation, select Yes. For purpose of this data element, it does not matter what antibiotic was given. Only that at least one was given and documentation must reflect actual administration of the IV antibiotic.

Now, if IV antibiotic is given both before and after presentation, use the dose given closest to and before severe sepsis presentation to select Yes. Once it's been identified as an antibiotic was given in the specified timeframe, the algorithm moves on to the next set of data elements, which are the Broad Spectrum or Other Antibiotic Administration Date and Time. As the name applies, these two data elements involve abstracting the date and time of the antibiotic that was administered. If you're unable to determine and that is entered for the value, the case will be assigned to category W and go to the last page of the algorithm. So, if valid date and time were entered, the case continues.

Now, things can get a little interesting at this point and can be a bit confusing, depending on when in the time window the antibiotic or antibiotics were given. You'll be looking for the earliest date and time that an IV antibiotic was given during the time window of 24 hours prior to through three hours after severe sepsis presentation.

So, let's break this timeframe up a little bit and first focus on the period 24 hours prior to presentation. If any antibiotic was given in that time period, you want to abstract the date and time of the earliest dose. Now, this means you may be looking for a dose of that antibiotic that was given earlier than 24 hours prior to presentation. For example, if the presentation date and time was, say July 15th at 10 a.m. and the patient received four doses of an IV antibiotic in that 24-hour period prior to presentation, which would be July 14th at 10 a.m., you still need to look back further for the earliest dose of the antibiotic. You will need to look to see if any doses were given prior to July 14th at 10 a.m. If the earliest dose, for example was on July 14th at 8 a.m., then, July 14th at 8 a.m. is the dose and time you enter for the antibiotic date and time.

# Inpatient Quality Reporting Program

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## Support Contractor

Now, let's take a look at a patient who has a presentation date and time of August 3rd at 1 p.m. and they received two doses of an antibiotic in the 24 hours part of presentation, one on August 3rd at 8 a.m. and one on August 2nd at 8 p.m. You want to find the earliest dose of that specific antibiotic. And, looking back further, you find the patient did not receive any previous doses of this antibiotic; but, they did receive a different IV antibiotic on August 2nd at 10 a.m., which is earlier than 24 hours prior to presentation. Now, since this 10 a.m. dose is a different IV antibiotic than one given within the 24 hours prior to presentation, you can ignore it. The August 2nd at 8 p.m. dose represents the earliest date and time for the antibiotic that was given in the 24 hours prior to presentation.

Next, let's take a look at antibiotics that were only given in the three hours following severe sepsis presentation. This would mean they didn't receive any IV antibiotics for the 24 hours prior to severe sepsis presentation, and this is a little bit simpler. You basically abstract the date and time of the earliest dose of an IV antibiotic given in that three hour period.

Now after Broad Spectrum Antibiotic Administration date and time are entered, the algorithm will perform another calculation. And, this calculation is called "Broad Spectrum Antibiotic Time." Depending on the value that results from this calculation going from right to left, the case may be: assigned to category B and be excluded from the measure population; they could be assigned to category W and directed to the last page; they could continue down the algorithm to the Broad Spectrum or Other Antibiotic Administration selection data element; or, they could bypass that data element and add one to the Sepsis Three Hour Counter. So, since there are so many options here, let's take a closer look at the calculated values and what happens.

The broad spectrum antibiotic time is a calculation in minutes of the Broad Spectrum or Other Antibiotic Administration Date and Time minus severe sepsis presentation date and time. There are three time references for the results. Zero minutes is the same time as severe sepsis presentation, minus 1,440 minutes is equivalent to 24 hours prior to severe sepsis presentation. 180 minutes is three hours after severe sepsis presentation.

# Inpatient Quality Reporting Program

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## Support Contractor

Now, if the Broad Spectrum Antibiotic Time is less than minus 1,440 minutes, meaning the earliest dose of the antibiotic was given more than 24 hours prior to severe sepsis presentation, then the case is assigned to category B and excluded from the measure population. If the time is greater than 180 minutes, meaning the antibiotic was given more than three hours after severe sepsis presentation, then the case is assigned to the W category and directed to the last page of the algorithm.

Now, if the broad spectrum antibiotic time is greater than or equal to a minus 1,440 minutes and is less than zero minutes, this means the antibiotic was given within the 24 hours prior to severe sepsis presentation and the case will bypass the Broad Spectrum or Other Antibiotic Administration selection. And, you will add one to the Sepsis Three Hour Counter and then move on to the next page. If the time is greater than or equal to zero minutes and less than or equal to 180 minutes, this means the antibiotic was given within the three hours following severe sepsis presentation. When this occurs, the case goes on to the Broad Spectrum or Other Antibiotic Administration Selection data element.

So, let's take a closer look at this data element next. The Broad Spectrum or Other Antibiotic Administration Selection data element has two possible allowable values. Selecting two, which is No, results in the case bypassing the Sepsis Three Hour Counter and being directed to the next page of the algorithm. Selecting one, which is Yes, allows one to be added to the Sepsis Three Hour Counter and the case continues to the next page.

This data element is looking at the consistency of the antibiotics given within the three hours following severe sepsis presentation with the guidelines for broad spectrum IV (A) antibiotics identified in the data element, and in table 5.0 *Antibiotic Monotherapy, Sepsis* and table 5.1 *Antibiotic Generic/Trade Name Crosswalk, Sepsis*, which are located in appendix C. As mentioned, allowable values for this are Yes, indicating selection is consistent, and No, indicating the selection is not consistent.

The scope of this data element is Broad Spectrum Antibiotics for Initial Antimicrobial Treatment, which is consistent with the Surviving Sepsis

# Inpatient Quality Reporting Program

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## Support Contractor

Campaign International Guidelines for Management of Severe Sepsis in Septic Shock published in 2012.

The data element is looking for antibiotics that were given or started within three hours following presentation that are consistent with the table. The antibiotics do not need to be totally infused to count. First, review the medical record for antibiotics listed in table 5.0 *Antibiotic Monotherapy, Sepsis* that were given or started within three hours following the presentation. If at least one was given that is on table 5.0, you may select Yes for this data element. Now, it doesn't matter for purposes of the measure how many other IV antibiotics were started or given in a timeframe as long as at least one was from table 5.0.

Now, let's say you've reviewed the antibiotics in another case on table 5.0 and did not find the patient had received any. This is where you will review the combination therapy from table 5.1 *Antibiotic Generic/Trade name Crosswalk, Sepsis*. Again, review the medical record for antibiotics given or started within three hours following presentation. When you find antibiotics were given on table 5.1, note the shaded row immediately above that antibiotic name to identify the antibiotic class. When you've identified the classes of all the antibiotics that were given from table 5.1, you will then refer to the combination antibiotic therapy table, which is located in the Broad Spectrum of Other Antibiotic Administration Selection data element.

This table has two columns, column A and column B, under which different classes of antibiotics are listed. Match up the classes of the antibiotics that were given from table 5.1 to the columns in the combination antibiotic therapy table. Now, there must be at least one antibiotic given from a class A and at least one from a class in column B to be considered an appropriate combination. As with monotherapy for purposes of the measure, it doesn't really matter how many different antibiotics were given as long as at least one of those was from a class A category and one was from a class B category. I think the combination therapy matchup maybe a little bit easier to follow using an example in the tables themselves.

# Inpatient Quality Reporting Program

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## Support Contractor

So, let's say we have a patient who is given Gentamicin. Now based on the shaded row immediately above Gentamicin in table 5.1, the class that it's in is Aminoglycosides. Now, let's say the same patient was also given Vancomycin. And, based on the shaded row immediately above it in table 5.1, Vancomycin is in the class of Glycopeptides. Now, let's see where these two classes of antibiotics are listed in the combination antibiotic therapy table and see that Gentamicin, an Aminoglycoside, is listed in column A. Then, Vancomycin, a Glycopeptide, is listed in column B. Since the patient received at least one antibiotic from a class in column A and at least one from a class in column B, it means the intent of the data element of selecting Yes is appropriate. Now, let's move on to the next data element in the algorithm.

And, the next data element is Blood Culture Collection. This data element has two possible allowable values: two, which is equal to No and will bypass the counter, and one, which is equal to Yes and will resolve in the case continuing. This particular data element has a timer window that starts 48 hours prior to severe sepsis presentation and runs through the three hours following severe sepsis presentation. And, it's looking for whether or not a blood culture was drawn during this time period. As I mentioned, there are two possible allowable values, one for Yes and one for No.

If a data element is looking for documentation, which supports if a blood culture was actually drawn, a physician order to obtain a blood culture is not acceptable. If attempts were made to draw a blood culture and they're unsuccessful and the documentation reflects this, then selecting Yes is acceptable.

Now, while the time window starts 48 hours prior to severe sepsis presentation, you may not need to actually look back that far. 48 hours represent the maximum timeframe for looking back. Now, if the patient is on antibiotics within the 24 hours prior to severe sepsis presentation, you'll start abstracting 24 hours prior to that first dose given in the 24-hour period. If the patient was not started on any IV antibiotic prior to presentation, you'll start abstraction 24 hours prior to severe sepsis

# Inpatient Quality Reporting Program

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## Support Contractor

presentation. And, if the first or earliest dose of IV antibiotics is more than 24 hours prior to presentation, just go ahead and select No for this data element. There's no need to look back further for a blood culture.

Now, assuming there was a blood culture in the appropriate timeframe, you'll next abstract and enter the date and time for the blood culture. As with other date and time data elements, if you're "unable to determine" and that is entered for either date or time, the case will bypass the Sepsis Three Hour Counter. If an acceptable value is entered for both date and time, the case will continue.

Like I mentioned, the time window has a maximum look-back of 48 hours. Again, it does not mean you will necessarily need to look back that far. If there are multiple blood cultures drawn in the time window, you should abstract the earliest date and time within the 48 hours prior to three hours after severe sepsis presentation. Now, the rationale for the time window is: one, to help limit how far back the abstractionist must look for blood cultures and second, because the blood culture more than 24 hours prior to starting an antibiotic or more than 48 hours prior to severe sepsis presentation is considered too old and not valid for purposes of the measure. Now realizing this data element may seem a little bit confusing, let's walk through a couple of examples.

For illustration purposes, let's call severe sepsis presentation time "Time Zero." This is towards the right of the blue timeline. Our maximum time window within which to look for blood cultures is from 48 hours prior to presentation, which is on the far left of the timeline, through three hours after presentation, which is on the far right of the blue timeline. However, we may not need to look in the entire time window. You will not need to look back further than 24 hours from the time that antibiotic has actually started. So, let's look at some examples.

Let's say, for patient number one, antibiotic is given at the same time as severe sepsis presentation. The maximum amount of time you would look back for blood culture is 24 hours prior to when the antibiotic was given. So, if presentation and antibiotic administration time were 10 a.m., you

# Inpatient Quality Reporting Program

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## Support Contractor

will look back no further than 10 a.m. the day before or 24 hours prior to severe sepsis presentation.

If, in our example of patient number two, the patient presents with severe sepsis at 7 p.m. and was given an antibiotic 10 hours prior to severe sepsis presentation at 9 a.m., then the furthest you will look back is still 24 hours prior to when that antibiotic was given or 9 a.m. the day before. In this case, the time is then 34 hours prior to severe sepsis presentation.

Now, let's say patient number three was given antibiotic exactly 24 hours prior to severe sepsis presentation. The furthest you look back, is still 24 hours prior when the antibiotic was given. But, because that was 24 hours prior to presentation, the time window for the blood culture is 48 hours prior to presentation. So, if presentation was 0800 on July 25th and the antibiotic was given at 0800 on July 24th, you would look back a maximum of 24 more hours or 0800 on July 23rd for the blood culture.

After the blood culture date and time were entered, the algorithm calculates blood culture time. This looks at the timing relationship between the blood culture and severe sepsis presentation. Depending on the results of this calculation, the case may proceed or bypass the Sepsis Three Hour Counter.

The blood culture time is a calculation in minutes of the blood culture collection date and time minus severe sepsis presentation date and time. We have two time references of minus 2,880 minutes, which is 48 hours prior to severe sepsis presentation, and 180 minutes, which is three hours following severe sepsis presentation.

If the blood culture time calculation is less than minus 2,880 minutes or greater than 180 minutes, which means the blood culture was drawn outside of the acceptable timeframe, the case will bypass the Sepsis Three Hour Counter and continue on the algorithm. If the time is greater than or equal to minus 2880 minutes and less than or equal to 180 minutes, this means the blood culture was drawn within the acceptable timeframe, and



# Inpatient Quality Reporting Program

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## Support Contractor

the case goes on to the blood culture antibiotic time calculation. So, let's take a look at this calculation next.

The blood culture antibiotic time calculation looks at the timing of the blood culture in relation to when the antibiotic was given. Depending on the results of this calculation, the algorithm may add one to the Sepsis Three Hour Counter or may bypass the Sepsis Three Hour Counter. Blood culture antibiotic time is a calculation of the Broad Spectrum or Other Antibiotic Administration Date and Time minus the Blood Culture Collection Date and Time in minutes. It has one time reference of zero minutes, which indicates the blood culture was drawn at the same time as the antibiotic was started.

So, if the blood culture antibiotic time is less than zero minutes, which means the blood culture was drawn after the antibiotic was started, the case will bypass the Sepsis Three Hour Counter and will continue on the next page of the algorithm. If the time is greater than or equal to zero minutes, this means the blood culture was drawn before the antibiotic was started and one is added to the Sepsis Three Hour counter and the case moves on to the next page of the algorithm.

Next, the algorithm will look at the Initial Lactate Level Result to determine whether or not a repeat Lactate level is indicated. If allowable value one is selected, a repeat Lactate is not indicated, and the case will bypass the repeat Lactate level collection data elements. If values two or three are selected, a repeat Lactate is indicated, and the case will move on to the Repeat Lactate Level Collection data element.

As I've mentioned, this data element is looking to the actual results of the initial Lactate. The allowable values represent ranges for the initial Lactate level. Because the numerator statement references an elevated Lactate level but does not specify what elevated is, we've received a number of questions asking what value represents an elevated Lactate. The algorithm reflects if allowable values two or three are selected, a repeat Lactate level is required. As such, any initial Lactate level greater than two is considered elevated for purposes of the measure.

# Inpatient Quality Reporting Program

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## Support Contractor

For this measure, we're looking for the actual results of the initial Lactate level that was drawn earlier in the algorithm. If you have documentation and initial Lactate level was drawn but the results are not documented in the medical record, select allowable value three. So, let's assume the allowable value entered for Initial Lactate Level Result was either a two or three, this will then direct us on to the next data element.

And, our next data element is Repeat Lactate Level Collection, which has two possible allowable values. If you select two, which is equivalent to No, the case will bypass the Sepsis Six Hour Counter and continue. If you select one, which is equivalent to Yes, the case will continue.

As the label implies, the data element is looking for documentation that a repeat Lactate level was drawn. The timeframe for this to occur and be able to select Yes is within six hours following presentation of severe sepsis.

If the initial Lactate level results are greater than two millimoles per liter, you will need to look for whether or not a repeat Lactate level was drawn. If you find there's more than one repeat Lactate level drawn, you should abstract the one drawn closest to the initial Lactate level time that is still within the six hours following severe sepsis presentation. As with Initial Lactate Level Collection data element, the documentation must specify a Lactate or lactic acid was drawn. A physician order to draw is not sufficient, there must be actual documentation that a repeat Lactate was drawn; or, in the case where an attempt to draw was made but it was unsuccessful, documentation reflecting attempts were made but were unsuccessful. Now, assuming a repeat Lactate level was drawn, we'll then move on to the next set of data elements, which are the Repeat Lactate Level Date and Time data elements.

As with the other date and time data elements, if unable to determine is entered either for the date or the time, the case will bypass the next counter. If a valid date and time are entered, the case will continue.

# Inpatient Quality Reporting Program

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## Support Contractor

These data elements are looking for the date and time the repeat Lactate level was drawn or collected, not the time it was reported. You're entering values for date and time that are always in the time window six hours after severe sepsis presentation. And assuming acceptable values are entered for the date and time, the algorithm moves on to another calculation.

This calculation is the Repeat Lactate Time calculation and it's looking at the time relationship between the repeat Lactate draw time and severe sepsis presentation. Depending on the results, the case either will add one to the Sepsis Six Hour Counter or bypass the counter.

The repeat Lactate time is a calculation of the repeat Lactate date and time minus the severe sepsis date and time in minutes. It has a one time reference of 360 minutes, which is equivalent to six hours after severe sepsis presentation. If the repeat Lactate time is greater than 360 minutes, it means the repeat Lactate was drawn more than six hours after severe sepsis presentation and the case will bypass the Sepsis Six Hour Counter and continue to the next page of the algorithm. If the time is less than or equal to 360 minutes, this means the repeat Lactate was drawn within six hours of presentation, and one is added to the Sepsis Six Hour Counter, and the case continues on to the next page of the algorithm.

On the next page of the algorithm, the case was evaluated for whether or not septic shock was present. Now, for purposes of this presentation, we're going to say septic shock is not present, which will be allowable value two, No. This will then direct us to the W page connector category under the last page of the algorithm where we're going to count up the number of counters.

So, on the last page of the algorithm, the first counter, the algorithm count is the Sepsis Three Hour Counter. There are only two directions we can go, the counter is either equal to three or it's less than three.

If the Sepsis Three Hour Counter is less than three, it means that one or more of the required elements was not completed appropriately and within the three hours following severe sepsis presentation. This includes the

# Inpatient Quality Reporting Program

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## Support Contractor

initial Lactate draw, antibiotics started, and blood cultures drawn. If it's less than three, the cases are assigned to category D, and the case fails the measure.

If the Sepsis Three Hour Counter is equal to three, it means that all the required data elements were completed appropriately and within three hours following severe sepsis presentation. If the counter is equal to three, the case continues along the algorithm to the initial Lactate level result. The response to the initial Lactate level result data element will determine whether or not the Sepsis Six Hour Counter is evaluated. If allowable value two or three were selected, indicating the initial Lactate level result was elevated, the Sepsis Six Hour Counter is evaluated. The counter will have either one point or zero points. If it is less than one, this would indicate a repeat Lactate was not drawn in the appropriate timeframe, and it should have been. In this case, this case will be assigned category D and fail the measure. If the counter is equal to one, that means the repeat Lactate was drawn in the appropriate timeframe and the case is then evaluated for presence of septic shock. Now, for purposes of this presentation as mentioned, we're seeing the patient does not have septic shock. So, the case moves on, and is assigned to category E, and it passes the measure.

Once the category D or E is assigned, you're done with abstraction as designated by the end of algorithm stop box. And, congratulations, you successfully navigated the twisting trail of the severe sepsis portion of the SEP-1 algorithm. Next month, we'll tackle the septic shock portion of the algorithm.

Now, there are some resources that are available that include a SEP-1 factsheet and Frequently Asked Questions sheet posted on [QualityNet](#), as well as the Hospital Inpatient Questions and Answers Tool on [QualityNet](#), which now have some Q&As for SEP-1 posted.

And, I do want to sincerely thank all of you who submitted questions to us via [QualityNet](#). Your questions and feedback and comments have helped identify some areas for improvement to the measures that have resulted in

# Inpatient Quality Reporting Program

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## Support Contractor

some important revisions. These revisions were posted on *QualityNet* on May 29th as version 5.0a of the manual. Based on your feedback, your questions, and comments, we continue to look at ways to improve this measure and simplified data collection. Thank you all very much.

**Debra Price:**

Well, thank you Bob. Next slide please. Next slide, please. Next slide. And, next slide. Thank you.

This is Debra Price, and I will be talking to you for the next minute or two about the continuing education procedure that we have. Today's webinar has been approved for 1.5 continuing education credits. This slide has listed it as 1.0, but we have been able to get it to 1.5.

We are now a nationally accredited nursing provider, and as such, all nurses report their credits to their own board using the Board of Registered Nursing provider number shown on this slide. Next slide, please.

OK. We now have an online CE certificate process. And, you can receive your certificate two different ways. If you registered for the webinar through ReadyTalk, a survey will automatically pop up. This survey will take you to another registration. The registration that you've already done is for ReadyTalk. It's for the webinar. It's not for your certificates. You will need to register separately on this next slide. Next slide, please.

OK. This is what the survey will look like. And, if you look on the bottom of this slide, you'll see a little gray box that says "Done." And, when you click Done, next slide, please, this is what's going to pop up. This slide is very important because it's a separate registration than the one you did to get into the webinar. This registration takes you to our site where the certificate is. If you've never received this CE certificate from us, you will click on the new user link. If you've been receiving certificates from us, then you're an existing user. Next slide, please.

This is what the new user will look like. Put your first name, your last name, your phone number, and we're asking everybody to register a personal email, not your hospital email account, because we've been finding that most hospitals have firewalls that are not allowing our

# Inpatient Quality Reporting Program

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## Support Contractor

automatic responses to enter. So, if you could please put in an email like Yahoo or Gmail of whatever you use at home, put that into the space over there. Next slide, please.

This is, if you've already been receiving our certificates, this is what the existing user screen looks like. Your username is the entire email, like dprice@hsag.com, your entire email, not just, you know, the front part of it and whatever password you registered. Next slide, please.

OK. Now, I'd like to turn the program back over to Candace Jackson. Candace, the floor is yours.

**Candace Jackson:** Thank you, Debra. We wanted to thank everyone today for participating in our webinar. And, we hope that you've found this information very useful. We now do have about 15 minutes left of the presentation time to try to address some questions that were submitted. We realize that not all of your questions were answered today, and we will be posting them on our website at a later date, if they were not answered.

Along with Bob, today we have Dr. Tefera. Dr. Tefera serves as the Lead Physician and policy adviser for CMS' Hospital Value-Based Purchasing Program and has a special interest in assisting with the sepsis bundle measure. So, I will go ahead and start asking them some questions in regards to the sepsis information that we have presented today.

And the first question I have is: do both antibiotics from the combination antibiotic therapy row from column A, one from column B, need to be given within three hours in severe sepsis presentation or only one needs to be given within the three hours and why?

**Bob Dickerson:** So, the answer to that is going to be that they both need to be started within that timeframe. They both don't need to be totally administered however. The rationale for that is: one of the things that is really important in treating severe sepsis is getting the broad spectrum antibiotic started early. So, that is the rationale for that time window and why they would both need to be started within that time window.

# Inpatient Quality Reporting Program

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## Support Contractor

**Candace Jackson:** Thank you, Bob.

**Dr. Tefera:** And also, I'd also like to add that this represents a national standard of care. And, I think it would be the expectation of most providers in their management of the septic patient that they'd initiated antibiotic therapy as quickly as possible.

**Candace Jackson:** Thank you. Our next question and I will go ahead and ask this question. I'm not sure that it's relative to septic shock or severe sepsis, so we may have to defer it to next time, but we'll let Bob and Dr. Tefera decide that. The question is: Can an order for IV fluid rate bolus be considered a rate is as fast as the site will allow?

**Bob Dickerson:** I would actually like to defer that one to our next presentation because we will be talking more on the crystalloid fluid administration, what constitutes the appropriate volume, and we'll also be talking about the duration of administration of the crystalloid fluids as well.

**Candace Jackson:** Next question: for severe sepsis presentation, will there be an accessible list of clinical infections?

**Bob Dickerson:** So, that is a great question. I really appreciate that one being asked. As you know right now, there is not a list of infections that are in there or how to identify if a condition a physician documents is an infection or not just based on what's in the data element right now. So, we are working on some examples that will be in the next version of the manual. So, there will be some examples in there, and a little bit of guidance on what to do if a physician documents a condition that you're not sure if it's an infection or not. For the time being, pretty much what you're going to have to depend upon is what is documented.

Now, for something that is obviously an infection, such as pneumonia, you can select that. If it's something that may not be clear whether it's an infection or not, the word infection would need to be included in the documentation to confirm that it is an infection.

I hope that helps to address that question.

# Inpatient Quality Reporting Program

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## Support Contractor

**Candace Jackson:** OK, next question: for transfers, so in an acute care facility the case is excluded, is this for all transfers or only the ones that meet the guidelines for severe sepsis, septic shock at the time of transfer?

**Bob Dickerson:** So, this would be any case that you're abstracting for this measure that is transferred in from another facility. You would exclude them regardless of whether they had severe sepsis or septic shock diagnosed at the other facility or the timing of when it was identified within your facility.

**Candace Jackson:** And, the next question, I will go ahead and answer. Is this measure a requirement for Critical Access Hospitals? And no, as the Critical Access Hospitals are not part of the IQR program they do not require them to submit their sepsis measure. However, they can submit it voluntarily and we would encourage them to do that.

Next question: how do we abstract cases when a patient's chronic diagnosis will affect the lab, for example, a renal patient with the creatinine of 2.5 normally? Secondly, how could we give this patient 30 milliliters per kilogram if it could potentially be three to four liters? Another example would be a patient with CHF and an EF of 20 percent. Are we still expected to give them 30 milliliters per kilogram?

**Bob Dickerson:** So, the lighter point to that question regarding crystalloid fluids, I would like to defer those to the next presentation where we will be talking about those kinds of situations. The first question in regards to the lab values that may be abnormal due to a chronic condition or maybe even a medication being administered, currently the data element does not address that. It doesn't say to take those. It doesn't say not to take those. The guidelines would indicate that you should only use abnormal lab values for signs of organ dysfunction that are associated with the infection. So, we are working on some language that will be published in the next version of the manual to indicate that, if those lab values are due to a chronic condition or a medication, to not use them as a sign of organ dysfunction. And yes, sorry, I had another thought, and I totally lost it.



# Inpatient Quality Reporting Program

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## Support Contractor

**Candace Jackson:** Great, thank you Bob. And, next question: if a patient has a greater than 40 drop in systolic blood pressure, a, after receiving propofol is the systolic blood pressure reading to be allowed for sign of organ failure criteria of severe sepsis presence?

**Bob Dickerson:** That's a very interesting question and interesting scenario. The manual doesn't really address those types of situations. And, I appreciate that being asked because it gives us an idea of maybe some things we need to look at for future revisions to the manual. The intent is that we're looking at drops in blood pressure. There are greater than 40 that are related to this severe sepsis or the infection, not necessarily that they're precipitated by some other events, such as administration of propofol. I don't know if that answers the question really well but we don't have a really good answer. Dr. Tefera, do you have any thoughts on that one?

**Dr. Tefera:** I would just add to your point that the intent of the measure is to identify important components in the treatment of sepsis. It is not to replace or substitute clinical judgment. So, if there is an overwhelming impression that the change in the vital signs was a result of an iatrogenic process, then the clinician should act appropriately. How that impacts the data abstraction, as Bob said, is not yet clear. But, we certainly want clinicians to react to conditions in the way they normally would.

**Candace Jackson:** Thank you. Next question, what is the definition for broad spectrum? Is it the antibiotic listed on table 5.0 and table 5.1?

**Bob Dickerson:** So yes, the intent of the measure in terms of broad spectrum antibiotics would be the ones identified on table 5.1 and 5.0. By how the measure is designed, those antibiotics are really only accounted for when we're looking at these Broad Spectrum or Other Antibiotic Administration selections. So, when you're abstracting Broad Spectrum Antibiotic Administration, you may also be looking at other antibiotics that are not on those two tables for identifying were they given a broad spectrum antibiotic and also for the date and times.

# Inpatient Quality Reporting Program

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## Support Contractor

**Candace Jackson:** Thank you Bob. Next question: are patients excluded by transfer, if the severe sepsis doesn't manifest until days after the transfer?

**Bob Dickerson:** And the answer to that would be yes. Any patient that is received in transfer from another facility, regardless of when severe sepsis or septic shock manifest itself, are excluded from the measure.

**Candace Jackson:** What is the temperature that is being used for screening? Our DOH is using 38 degrees Celsius; CMS is using 38.3 Celsius?

**Bob Dickerson:** The criteria being used for the measure is the 38.3.

**Candace Jackson:** If a patient refuses a central line (limited access) for vasopressors, is this an administrative reason? It is not an antibiotic IV fluid or blood draw.

**Bob Dickerson:** If they're refusing having a line put in, then they would not be able to administer the IV antibiotics. That question brings up a point of something we may need to look at clarifying in a manual however.

**Candace Jackson:** Next question...

**Dr. Tefera:** Just one comment.

**Candace Jackson:** Oh, OK.

**Dr. Tefera:** I think the question was on consent for a central line, assuming that there are peripheral line options, medications can still be administered peripherally. The measure no longer requires a central line. That is an optional component based on the clinician's discretion. So, that may address that question.

**Candace Jackson:** Thank you. Next question: what documentation of suspected source of infection is allowed? Is it only MD, APN, and PA documentation?

**Bob Dickerson:** Yes, currently, as worded, the data element does not state nursing documentation is acceptable. It also does not state that it is not acceptable. And, in the allowable sources for this documentation, it does indicate the entire ED record, which would include nurses' notes. And, we recognize

# Inpatient Quality Reporting Program

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## Support Contractor

that a lot of facilities that have been working with severe sepsis and septic shock for a period of time do screening during the triage process in which nursing is identifying possible sources of infection. So, we are adding language to the data element for the septic shock presentation that will make it more clear that nursing documentation is acceptable.

**Candace Jackson:** OK, thank you. Dr. Tefera...

**Dr. Tefera:** I don't think that in the care of any critically ill patient in the medical decision component of the record, the expectation is that the clinicians will be documenting the nature of the illness and the thought process. So, it's very likely that most clinicians would amply document what's necessary to meet the measures best.

**Bob Dickerson:** And, one of the things also, I should add in with this, for purposes of the measure, for that part of it, identifying severe sepsis being present, they're not looking for a diagnosis but rather one is suspected. So, I don't know if that helps as well.

**Candace Jackson:** OK, thank you. And, we have time for just one more question. So, for the infection process element of sepsis identification, can we infer from the results or does it have to be supported with documentation? For example, chest x-ray shows consolidation or density, may we infer pneumonia from that reading or do we have to wait for actual MD documentation of pneumonia?

**Bob Dickerson:** There does need to be documentation that an infection is suspected or present. There are different conditions that are non-infectious that could result in a consolidation on an x-ray. Now, if the x-ray reports were to state suspected pneumonia, [then] that would be sufficient because the x-rays are read by a physician.

**Candace Jackson:** Dr. Tefera, do you have anything that you would like to add to that?

**Dr. Tefera:** Only that a majority of acute care of the septic patient involves working with many unknowns, as the clinicians on this call are well aware. And, that initially, the driving factors will be acute care of the patient, the vital

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signs, and resuscitating the patient, and managing the suspected or likely etiologies in the most rational way possible. As the care of the patient continues and a clear diagnosis comes forward, then we'll be able to identify a source. But there are many times where a source is not identified. I think that the point to emphasize for clinicians is, again, document the medical decision making, the diagnosis under consideration, [that is] driving a suspicion of severe sepsis.

**Candace Jackson:** Thank you. And, that is all the time that we have for questions today. Again, we would like to thank you for joining our webinar. And, I hope that you found that all the information that you received was beneficial and will assist you in the abstraction of this complicated measure. And, we hope that you have a great afternoon. Thank you.

**END**