Hospital Inpatient Quality Reporting (IQR) Program

Support Contractor

SEP-1 Early Management Bundle, Severe Sepsis/Septic Shock: v5.6 Measure Updates and FAQs

Presentation Transcript

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Candace Jackson: Thank you everyone for joining today's presentation, titled *SEP-1 Early Management Bundle, Severe Sepsis/Septic Shock: v5.6 Measure Updates and FAQs*. I am Candace Jackson, the IQR Program Lead for the Hospital Inpatient Quality Reporting Program with the Hospital Inpatient Value, Incentives, and Quality Reporting Outreach and Education Support Contractor. I will be the event moderator for today. Before we begin, I would like to make our first few regular announcements. This program is being recorded. A transcript of the presentation along with the questions and answers will be posted to the inpatient web site, *www.QualityReportingCenter.com*, and to *QualityNet* at a later date. If you are registered for this event, a reminder email, as well as the slides, were sent out to your email a few hours ago. If you did not receive that email, you can download the slides again at our inpatient web site and that is *www.QualityReportingCenter.com*. I would now like to welcome and introduce our guest speakers for today, Noel Albritton, Lead Solutions Specialist and Jennifer Witt, Senior Health Informatics Solutions Coordinator from the Hospital Inpatient and Outpatient Process and Structural Measure Development and Maintenance Support Contractor.

The purpose of today's event is to clarify the most frequently asked questions, changes and rationale behind the updates to the SEP-1 measure and guidance in version 5.6 of the specifications manual.

The objectives for the presentation today are to explain the changes to the measure and guidance in manual version 5.6 and to review the frequently asked questions.

This slide provides a list of the acronyms that will be used throughout today's presentation.

Today's presentation of frequently asked questions will follow the same format as our last Sepsis webinar. We will review frequently asked questions, then review the relevant guidance from the manual, followed by questions we would like you to respond to. I would now like the turn the presentation over to Noel and Jennifer. Noel and Jennifer, the floor is yours.

Jennifer Witt: Thank you, Candace. We will begin with updates to the *Administrative Contraindication to Care Severe Sepsis* and *Administrative Contraindication to Care Septic Shock* data elements. For manual version 5.6, the updated guidance allows for documentation of patient non-compliance with care documented within the specified timeframe for these data elements to be acceptable. So, if there was documentation of a patient pulling out IVs within the specified timeframe for the *Administrative Contraindication to Care Severe Sepsis* data element, value one "Yes" will be selected for this data element. I would also like to point out more general documentation of a patient's refusal, or documentation of patient non-compliance with care, must reflect it would result in not being able to collect blood draws or administer IV fluids or antibiotics. For example, nursing documentation stating, "patient refusing to go to the bathroom," would not suffice these data elements because this would not prevent blood draws, IV fluids, or IV antibiotics. However, if the nursing documentation stated, "patient lying in bed, refusing all care," this would suffice the data element because it indicates the patient is refusing all care which would result in not being able to administer blood draws, IV fluids, or IV antibiotics.

Let's review this example and frequently asked question for the *Administrative Contraindication to Care Severe Sepsis* data element. Here we have an APN note within the specified timeframe that states, "Patient uncooperative, yelling and screaming at staff. Security called." Is this documentation acceptable to select value one "Yes" for the *Administrative Contraindication to Care Severe Sepsis* data element? As we can see, the APN's documentation reflects the patient's action of non-compliance which would prevent blood draws, IV fluids, and IV antibiotic administration and would allow value one "Yes" to be selected for the data element.

For the *Broad Spectrum or Other Antibiotic Administration Selection* data element in manual version 5.6, further clarification has been added to the guidance regarding the documentation identifying the presence of C. diff. When we look for a physician, APN, or PA documentation identifying the

presence of C. diff, explicit documentation confirming C. diff is present is not required. Given the nature of C. diff and the length of time for positive cultures to return in this case, physician APN, or PA documentation such as “suspected, likely, or possible C. diff” are acceptable for identifying the presence of C. diff as this updated guidance states. Therefore, if a monotherapy or two-combination therapy antibiotics were not administered within the three hours following the *Severe Sepsis Presentation* time, but there was physician, APN, or PA documentation of “suspect C. diff, or likely C. diff, an oral vancomycin, rectal vancomycin, or IV flagyl was administered within the three hours after the *Severe Sepsis Present*ation time,” then value one “Yes” would be selected for the *Broad Spectrum or Other Antibiotic Administration Selection* data element.

Now, we would like you to answer the following question: “MD notes at 1500: probable C. diff Colitis. MAR notes - PO vancomycin at 1730 given within the timeframe. Which allowable value would be selected?” A, value one “Yes” or B, value two “No.”

Noel Albritton: I’ll repeat the question for everyone. MD notes at 1500: ulcerative colitis MAR notes - PO banco at 1730 given within the specified timeframe. Which allowable value would be selected? A, value one “Yes” or B value two “No.” All right our responses are slowing down, if we can close the polls, please.

The correct response is A, value one “Yes.” Allowable value one “Yes” is selected for the *Broad Spectrum or Other Antibiotic Administration Selection* data element based on the physician documentation which identifies the presence of C. diff by the documentation of “probable C. diff within the 24 hours before the antibiotic” and the documentation of “oral vancomycin administration” on the MAR that was administered within three hours after the *Severe Sepsis Presentation Time*. As you can see by the documentation provided in this question the physician, APN, or PA documentation of “probably C. diff” indicates that C. diff is likely or suspected. Therefore, the documentation is acceptable for identifying the

presence of C. diff and using the oral vancomycin to suffice the *Broad Spectrum or Other Antibiotic Administration Selection* data element.

Jennifer Witt: Thank you, Noel. The *Directive for Comfort Care or Palliative Care, Severe Sepsis* and *Directive for Comfort Care or Palliative Care, Septic Shock* data elements also received an update. To further clarify acceptable documentation required for these data elements, the guidance has been updated to include "only the earliest physician, APN, or PA documentation of an inclusion term documented in the following context suffices." To be clear, documentation sufficing this data element should include one of the only acceptable inclusion terms provided in the data element documented in one of the contexts provided on this slide. For example, the first context states "comfort measures only recommendation." Acceptable documentation would also include palliative care recommendation or hospice recommendation. Documentation of an inclusion term that is not within one of these contexts would not be used to suffice the data element. For example, if the physician documented "discussed comfort measures," this documentation would not be acceptable to select value one "Yes" because the discussion of comfort measures is not included as an acceptable context. A discussion reflects that comfort measures, hospice, or palliative care were talked about as options. A discussion does not necessarily reflect these options are being considered as variable alternatives to regular care are at a point of becoming a decision.

To review another example for the *Directive for Comfort Care or Palliative Care, Severe Sepsis* data element, let's look at this frequently asked question. Here, the physician's documentation states "discussed comfort care versus palliative care with patient and family. Palliative consult ordered." With this documentation, should value one "Yes" or value two "No" be selected? In this scenario, the physician includes documentation of a discussion with the patient and family regarding comfort care and palliative care, which would not be acceptable to select value one "Yes." However, the end of the PA's documentation reflects a palliative consult was ordered. Therefore, a palliative consult would be the

acceptable inclusion term and the documentation reflecting the palliative consult was ordered would be an acceptable context. So, value one "Yes" would be selected in this scenario for the *Directive for Comfort Care or Palliative Care, Severe Sepsis* data element.

The *Crystalloid Fluid Administration* data element did not receive further updates for manual version 5.6. However, we continue to receive quite a few questions regarding portions of the data element. So, I would like to review and clarify some of this guidance. We frequently see questions regarding the triggering events for *Crystalloid Fluid Administration*. In the previous versions of the manual, cases with *Initial Hypotension* and *Initial Lactate Level Result* greater than or equal to 4 or documentation of Septic Shock would proceed to the *Crystalloid Fluid Administration* data element. *Initial Hypotension* remains one of the triggering events. The presentation of Septic Shock is also a triggering event for *Crystalloid Fluid Administration* and this encompasses Septic Shock met by physician, APN, or PA documentation of Septic Shock or Severe Sepsis with *Initial Lactate Level Result* greater than or equal to 4 because both allow value one "Yes" to be selected for *Septic Shock Present*. Therefore, if value two "No" is selected for *Initial Hypotension*, the case then proceeds directly to the *Septic Shock Present* data element in the algorithm. I also realize you may have further questions related to *Crystalloid Fluid Administration* and Septic Shock based on *Persistent Hypotension*. We will review that scenario later in the presentation.

We continue to receive quite a few questions regarding the guidance on this slide, which also did not receive an update for manual version 5.6. However, since we continue to see questions, I do want to review this guidance. The *Crystalloid Fluid Administration* data element provides the specified timeframe for acceptable fluids to be used towards the target ordered volume. The first sentence of the guidance provided on this slide states, "The target order volume must be ordered and initiated within the specified timeframe if *Initial Hypotension* or Septic Shock is present." This guidance goes on to state, "The target ordered volume is not required to be completely infused within the specified timeframe." Therefore,

although there must be documentation that the fluids were completely infused, the fluids do not need to be completely infused within the specified timeframe. As this guidance points out, the specified timeframe for acceptable crystalloid fluids is only referring to the order and initiation of the fluids being within the specified timeframe, not the completion of the target ordered volume.

Again, this guidance was not updated in version 5.6. However, due to the questions we're receiving, we wanted to review the guidance. As I previously said, the guidance does not provide a specified timeframe in which the target ordered volume of crystalloid fluids must be completely infused. However, the guidance does state the target ordered volume must be documented as completely infused. The guidance on this slide specifies how to determine if the crystalloid fluids were documented as completely infused. Here, the guidance states, "Along with an infusion start time, an infusion rate, duration, or end time is required to determine the target ordered volume was completely infused." So, to clarify, the target ordered volume of crystalloid fluids does not need to be completed within a specified timeframe, but the target ordered volume must be documented as completely infused by having a documented start time and infusion rate, duration, or end time.

Now, we will ask that you respond to the following question. *Initial Hypotension* time is 10:30. When must the target ordered volume be completely infused? A, completed by 13:30. B, completed by 16:30. C, completed by 22:30. D, none of the above.

Noel Albritton: I'll repeat the question for everyone. *Initial Hypotension* time is 10:30. When must the target ordered volume be completely infused? A, completed by 13:30. B, completed by 16:30. C, completed by 22:30. D, none of the above. If we could go ahead and close the poll, the correct response is D, none of the above.

As we reviewed on the previous slide, the target ordered volume for crystalloid fluid is not required to be completely infused within a specified timeframe. Acceptable crystalloid fluids must only be ordered and started

within the specified timeframe. The target ordered volume is not required to be completely infused within the specified timeframe.

Jennifer Witt: Thank you, Noel. Lastly for the *Crystalloid Fluid Administration* data element, I wanted to review the guidance regarding the target ordered volume and volumes within 10% less than the 30 milliliters per kilogram volume. Again, this guidance was not updated in manual version 5.6, but we continue to see questions pertaining to this guidance. The guidance states, "Crystalloid fluid volumes ordered that are equivalent to 40 milliliters per kilogram, or within 10% less than 30 milliliters per kilogram, are considered the target ordered volume." To clarify, this bullet point is referring to the ordered volume of crystalloid fluids. Meaning, if a volume equivalent to 30 milliliters to kilogram is ordered or a volume that is greater than 30 milliliters per kilogram, the complete 30 milliliters per kilogram volume would be the target ordered volume. However, if the only volume ordered was within 10% of the 30 milliliters per kilogram volume, then that volume would be used as a target ordered volume. If we look at the crystalloid fluids ordered for a patient and see at least a volume of 30 milliliters per kilogram or more based on the patient's weight is ordered, any volume of fluids less than 30 milliliters per kilogram volume would not be acceptable. The example on this slide demonstrates a scenario where volume within 10% of the 30 milliliters per kilogram volume would be acceptable. If the patient weighed 70 kilograms, then 2,100 milliliters would be needed to equal 30 milliliters per kilogram volume. However, because 2,000 milliliters was ordered and it was within the acceptable range for this patient, it is the target ordered volume and the complete 2,000 milliliters should be infused. If the physician would have ordered 2,100 milliliters in this scenario, the complete 2,100 milliliters would be required. Next, we would like you to provide a response to a similar scenario.

Physician Order: Normal saline IV 2,500 milliliters over 2 hours for an 80-kilogram patient. Thirty milliliters per kilogram times 80 kilograms equals 2,400 milliliters. What fluid volume must be infused? A, 2,500 milliliters. B, 2,400 milliliters. C, 2,250 milliliters. D, 2,160 milliliters.

Noel Albritton: I will repeat the question for everyone. Physician Order: NS IV 2,500 milliliters over 2 hours for an 80-kilogram patient. That's 30 milliliters per kilogram multiplied by 80 kilograms equals 2,400 milliliters. What volume of fluid must be infused? A, 2,500 milliliters. B, 2,400 milliliters. C, 2,250 milliliters. D, 2,160 milliliters. If we could go ahead and close the polling please, the correct answer to this question is B.

Two thousand four hundred milliliters would be required for this patient. In this scenario, the physician ordered 2,500 milliliters of normal saline. However, the patient weighs 80 kilograms. So, the target ordered volume, which would be equivalent to 30 milliliters per kilogram, would be 2,400 milliliters. That's based on the patient's weight of 80 kilograms. As you can see, more than the 30 milliliters per kilogram volume or more than 2,400 milliliters was ordered in this case. However, the target ordered volume would continue to be based on the patient's weight of 80 kilograms. So, 2,400 milliliters remains the target ordered volume.

Jennifer Witt: Thank you, Noel. For manual version 5.6, the *Initial Hypotension* data element has also received updates. The first updated bullet point states, "Hypotensive blood pressures obtained within the operating room, interventional radiology, during active delivery, or procedural/conscious sedation should not be used." As many of you have asked about this in the past, this update allows for hypotensive blood pressures to not be used when documented in one of the areas listed because the procedure the patient is undergoing in those areas has a higher potential to cause the hypotensive blood pressure readings. Hypotensive blood pressure readings documented while the patient is in one of these areas would simply not be used. You would continue to review for hypotensive readings outside of these areas to determine if *Initial Hypotension* is present. I would like to point out, only hypotensive blood pressures documented while the patient is in one of these particular areas of the hospital would not be used. Hypotensive blood pressures documented in areas of the hospital not included in this list would still be acceptable to use for establishing the presence of *Initial Hypotension*.

Now, we would like you to respond to the following question. If the only hypotensive readings occurred while the patient was in the PACU, should the hypotensive readings be used to establish *Initial Hypotension*? A, yes. B, no.

Noel Albritton: I will repeat the question once again. If the only hypotensive readings occurred while the patient was in the PACU, should the hypotensive readings be used to establish *Initial Hypotension*? A, yes or B, no. If we could go ahead and close the polling, the correct answer for this question is A, yes.

The hypotensive readings documented while the patient is in the PACU would be acceptable for using to establish *Initial Hypotension*. Although patients may be recovering from sedation while in the PACU, the PACU is not typically an area in which the patient is undergoing procedural or conscious sedation. Therefore, the hypotensive readings documented while the patient is in the PACU can still be used to establish *Initial Hypotension*.

Jennifer Witt: Thank you, Noel. Also updated for the *Initial Hypotension* data element in version 5.6 is the guidance regarding documentation of a term that represents or is defined by a systolic blood pressure less than 90 or a MAP of less than 65. The update further clarifies that a term that represents or defines an abnormal blood pressure reading is acceptable when documented as normal for the patient due to a chronic condition, due to a medication, or due to an acute condition that has a non-infectious source or process. An example is provided on this slide as well as in the data element which includes hypotension. Hypotension is a term that represents or defines a systolic blood pressure that is less than 90 or a MAP reading that is less than 65. So, based on this guidance, if the physician, APN, or PA documented hypotension was due to Lasik, the systolic blood pressure is less than 90 and MAP reading is less than 65 would not be used to establish *Initial Hypotension*. Some of you may be questioning or thinking, wasn't that already the case? To clarify, yes, that was always the case or the intention of this guidance in previous manuals; however, the

previous guidance was not as clear. So, this updated guidance is primarily to clarify when the use of a term is acceptable.

One frequently asked question we have received related to the guidance on the previous slide states, "If the MD documented 'sepsis hypotension blood cultures ordered," can a documentation of hypotension be used to meet *Initial Hypotension*?" No, the inclusion of the term "hypotension" in this physician's documentation would not be used as one of the blood pressure readings to establish *Initial Hypotension*. First, to establish *Initial Hypotension*, an actual hypotensive systolic blood pressure reading, or MAP reading, must be documented within the specified timeframe. Secondly, as the updated guidance on the previous slide pointed out, a term such as "hypotension" that represents or defines the abnormal blood pressure value is only acceptable when documented as normal for the patient due to a chronic condition, due to a medication, or due to an acute condition that has a non-infectious source or process. When hypotension is documented as normal for the patient due to a chronic condition, due to a medication, or due to an acute condition that has a non-infectious source or process, then the hypotensive readings would not be used to establish *Initial Hypotension*.

Also, for the *Initial Hypotension* data element, we continue to receive questions related to the guidance stating *Initial Hypotension* is hypotension that is present prior to the target ordered volume of crystalloid fluids being completely infused. Most often, questions related to this guidance pertain to which allowable value should be selected for *Initial Hypotension* if we cannot determine if the target ordered volume was administered or completely infused. To clarify, this bullet point only pertains to this scenario where you can determine the target ordered volume has completely infused prior to *Initial Hypotension*. The example on this slide demonstrates this scenario. If the *Severe Sepsis Presentation Time* was at 12:00 and the potential *Initial Hypotension* readings were at 12:00 and 13:30, but we determined the target ordered volume completed at 13:00, the *Initial Hypotension* scenario would select value two "No"

because the target ordered volume was completely infused prior to the second hypotensive reading.

We see this question frequently asked. “If no crystalloid fluids were ordered or started would value two “No” be selected for *Initial Hypotension*?” The premise behind this question is that, since the completion time of the target ordered volume cannot be determined due to the patient not receiving crystalloid fluids, should value two “No” be selected for *Crystalloid Fluid Administration* ? The answer is no. In this scenario, the completion time would obviously not be prior to the time of the *Initial Hypotension* since no fluids were administered. Therefore, we would select value one “Yes” for *Initial Hypotension* if there were two hypotensive readings within the specified timeframe. Then, upon reaching the *Crystalloid Fluid Administration* data element, we would select the appropriate value. For the next part of the presentation, I’ll turn it over to Noel.

Noel Albritton: Thanks, Jennifer, and thanks again everyone for joining us today. For the *Persistent Hypotension* data element in manual version 5.6, this new bullet point has been added. If one or more blood pressures were documented within this timeframe and *Persistent Hypotension* is unable to be determined but a vassopressor was administered, select value one. As you may recall, if there are multiple blood pressure readings obtained but the hour ends with a single hypotensive blood pressure reading, value three “No: is selected for *Persistent Hypotension*. With the inclusion of this new bullet point, if there were multiple blood pressure readings documented in the hour and the hour ended with a single hypotensive reading, but the patient was receiving a vassopressor, then value one “Yes” would be selected for the *Persistent Hypotension* data element. Selecting value one “Yes” in this scenario allows the case to continue in the algorithm and proceed to the *Vassopressor Administration* data element. If the patient received the required fluids and is also receiving a vassopressor then, by measure definition, they have hypotension that is not responding to fluids and have *Persistent Hypotension*; therefore, value one “Yes” would be selected for *Persistent Hypotension* in this particular scenario.

With the updated guidance of the previous slide in mind, let's review this frequently asked question. Which value would be selected for *Persistent Hypotension* in this scenario? The hour to assess for *Persistent Hypotension* is from 14:00 to 15:00. The blood pressures documented during this time are 97 over 63 at 14:10; 92 over 59 at 14:30; and 85 over 51 at 14:45. On the MAR, we can see that Vasopressin was started at 14:50. In this scenario, the hour to assess for *Persistent Hypotension* ended with a single hypotensive blood pressure reading. However, a vassopressor was also administered. Based on the guidance in manual version 5.6, value one "Yes" would be selected for *Persistent Hypotension* in this case because the patient was given a vassopressor.

Before we move on, I would like to review one other point related to the same blood pressure readings from the last scenario. If we look at the same blood pressure readings documented within the hour to assess for *Persistent Hypotension* but this time we do not see a vassopressor was administered, the allowable value selected would be different for *Persistent Hypotension*. Without the administration of a vassopressor in this scenario, value three "No" would be selected for *Persistent Hypotension*. We frequently receive questions asking why is value three "No" selected in this case. As you can see, there was more than one blood pressure documented during the hour to asses for *Persistent Hypotension*. Per the guidance, when there are multiple blood pressures documented in the hour, review the last two blood pressure readings within the hour. In this case, the last two blood pressure readings in the hour include the blood pressure at 14:30 of 92 over 59 and the blood pressure at 14:45 which is 85 over 51. With the last blood pressure reading in the hour being a single hypotensive reading, we are not able to determine if hypotension persisted, which would be value one "Yes," nor are we able to determine if the blood pressure normalized by the end of the hour, which would be value two "No." Therefore, value three "No" is selected in this case since *Persistent Hypotension* is unable to be determined. To avoid selecting value three "No" in this scenario, the blood pressure would need to be rechecked following the last hypotensive reading to determine if hypotension persisted or not.

As we have done in the past, we've also included some calculation examples for determining the hour to assess for *Persistent Hypotension* as we continue to receive questions about these calculations. As I've previously said, there are likely multiple ways these calculations can be performed. The primary concern is determining the accurate completion time of the target ordered volume. We realize these calculations can sometimes be overwhelming as well. So, I wanted to remind you the presentation and slides will be posted online. So, you can refer to these examples at a later time. This first calculation is somewhat less overwhelming than some but, again, it's also often asked about. In this example, the target ordered volume is 2,100 milliliters. We have three orders that were all ordered and started within the specified timeframe for the *Crystalloid Fluid Administration* data element. The fluid orders include: The first order is 1,000 milliliters, started at 08:00 and ended at 09:00. The second order is antibiotics mixed with normal saline and 250 milliliters than ran over one hour, and the third order is another 1,000 milliliters of normal saline over one hour. The first step is to determine the infusion rates per minute of each infusion. For the first order, we will divide the volume of 1,000 milliliters by 60 minutes to get 16.67 milliliters per minute. For the second order, we will divide 250 milliliters by 60 minutes to get 4.17 milliliters per minute, and for the third order, we'll divide 1,000 milliliters by 60 minutes to get 16.67 milliliters per minute.

The next step is to break down when the infusions were running alone and simultaneously. Here, you can see infusion one was running along from 08:00 to 08:15. We multiplied these 15 minutes by the milliliters per minute which we determine on the previous slide for Infusion 1. So, 15 minutes times 16.67 milliliters per minute equals 250.05 milliliters infused between 08:00 and 08:15.

Next from 08:15 to 08:30, both Infusions 1 and 2 were running. So, we will multiple those 15 minutes by the milliliters per minute of both Infusion 1 and 2. In this case, it would be 15 minutes multiplied by 16.7 plus 4.17 milliliters per minute which equals 312.6 milliliters infused during that time.

Next, at 08:00 to 09:00, Infusions 1, 2, and 3 were now infusing simultaneously. So, we will take the milliliters per minute of Infusions 1, 2, and 3 and multiply those by 30 minutes. In this case, 30 minutes times 16.67 plus 4.17 plus 16.67 milliliters per minute equals 1,125.3 milliliters infused during those 30 minutes. When there are multiple infusions ordered this way, you just continue to work through each timeframe where the infusions were running together. You can see that, next, Infusions 2 and 3 were running at the same time from 09:00 to 09:15. So, we will multiple 15 minutes by the milliliters per minute for each of those infusions. In this case, it'll be 15 minutes times 4.17 plus 16.67 milliliters per minute which equals 312.6.

At this point, we can add up all of the calculations we preformed thus far. We can see that by 09:15, 2,000.55 milliliters were infused. Then, subtract 2,000.55 milliliters from the target ordered volume, which is 2,100 milliliters, and get 99.45 milliliters are still needed. At this point, Infusion 3 is running alone. So, we can divide 99.45 milliliters by the milliliters per minute of Infusion 3, which was 16.67 milliliters per minute. In this case, we will get approximately six minutes to infuse 99.45 milliliters from Infusion 3. Now, we can add six minutes to 09:15 because 09:15 is where we left off on our calculations. So, the target ordered volume of 2,100 milliliters was completed at 09:21. Therefore, we would assess for *Persistent Hypotension* between 09:21 to 10:21.

Here's an example of a calculation when the target ordered volume is based on the ideal body weight. As we can see, the patient's documented weight is 155 kilograms. The physician ordered 30 milliliters per kilogram of normal saline based on the ideal body weight to be infused at 1,000 milliliters per hour. The physician also included a comment with the order stating the patient's BMI is 46.2 and the ideal body weight is 77 kilograms. The target ordered volume based on the ideal body weight is 2,310 milliliters. There are four fluid orders. The first is for a 500-milliliter bolus, which is infused over 30 minutes. The second is for 1,000 milliliters over two hours. The third is another 1,000 milliliters over six hours, and the fourth is another 500-milliliter bolus that infused over 30 minutes.

The next thing we would do is determine the milliliters infusing per minute for each infusion. Since these infusions run simultaneously at times, we will use the milliliters per minute to determine how much volume infused over a specific time period. So, we take the first infusion, which is 500 milliliters over 30 minutes, and divide 500 milliliters by 30 minutes to get 16.67 milliliters per minute. Next, we will do the same thing for all of the infusions. We divide 1,000 milliliters by 120 minutes, which equals 8.33 milliliters per minute. The third infusion is another 1,000 milliliters over six hours, which is 1,000 milliliters divided by 360 minutes, which equals 2.78 milliliters per minute, and the last infusion is 500 milliliters divided by 30 minutes, which also gives us 16.67 milliliters per minute.

The next step is to breakdown when the infusions were running alone and simultaneously. Here, we can see Infusions 1 and 2 were running simultaneously from 14:00 to 14:30. We will multiply the 30 minutes at milliliters per minute of Infusions 1 and 2, which we determined on the previous slide. Both 16.67 plus 8.33 milliliters per minute multiplied by 30 minutes equals 750 milliliters between 14:00 to 14:30. Next, from 14:30 to 15:30, both Infusions 2 and 3 were running. So, we multiply those 60 minutes by the milliliter per minute of both Infusions 2 and 3. In this case, it would be 60 minutes multiplied by 8.33 plus 2.78 milliliters per minute, which equals 666.6 milliliters. From 15:30 to 16:00, Infusions 2, 3, and 4 are now infusing simultaneously. So, we will take the milliliters per minute of Infusions 2, 3, and 4 and multiply by 30 minutes. In this case, it’s 30 minutes times 8.33 plus 2.78 plus 8.33 milliliters per minute, which equals 583.2 milliliters. Again, when there are multiple infusions ordered this way, you just continue to work through each timeframe where infusions are running together.

At this point, we can add up all the calculations we preformed thus far. We can see that, by 16:00, 1,999.8 milliliters were infused. We will subtract 1,999.8 milliliters from the target ordered volume, which is 2,310 milliliters and get 310.2 milliliters are still needed. At this point, Infusion 3 is still infusing. So, divide 310.2 milliliters by the milliliters per minute

of Infusion 3. In this case, we will get approximately 112 minutes. This means, that it took approximately 112 minutes to infuse 310.2 milliliters from Infusion 3. Now, add 112 minutes to 16:00 because 16:00 is where we left off on our calculations. So, the target ordered volume was completed, in this case, at 17:52. Therefore, we would assess for *Persistent Hypotension* between 17:52 to 18:52. Hopefully, these examples are helpful and you can use them as a reference during your future abstraction.

The guidance for the *Repeat Volume Status and Tissue Perfusion Assessment Performed* data element was not updated in manual version 5.6; however, we are still receiving a number of questions related to physician, APN, or PA documentation attesting to completing or performing an exam. To clarify, this guidance allows specifically for physician, APN, or PA attestation documentation to suffice the data element. This guidance is not referring to documentation of the findings of a physical exam or review of systems but rather physician, APN, or PA documentation stating they performed an exam. Documentation sufficing this particular bullet point must be similar to the examples provided on this slide and in the data element. As you can see by the examples, all include physician, APN, or PA documentation attesting to performing an exam, review of systems, or reassessment, or a re-evaluation of the patient.

Now, we would like your response for the following question. “MD notes, ‘Review of systems negative except as noted in the H&P.’” Is this physician, APN, or PA documentation acceptable? A, yes or B, no.

Jennifer Witt: I will reread the question. “MD notes, ‘Review a systems negative except as noted in H&P.’” Is this physician, APN, or PA documentation acceptable? A, yes. B, no. The answers are slowing down. Let’s go ahead and close the poll. The answer is A, yes.

The physician documentation is acceptable, as the physician documentation reflects an attestation statement which indicates a review of systems was performed. Before we move on, I would like to mention another scenario we received questions about. If the physician, APN, or

PA documentation states “unable to perform review of systems” or similar documentation indicating the exam was not performed, this documentation would not be acceptable for the *Repeat Volume Status and Tissue Perfusion Assessment Performed* data element. As I previously mentioned, the physician, APN, or PA attestation documentation must reflect the exam was completed or performed.

Noel Albritton: Thanks, Jennifer, for answering that question. We will now move onto the *Severe Sepsis Present* data element and review the guidance related to the use of the INR or aPTT as organ dysfunction. The update for manual version 5.6 provides clarification that, if only a heparin flush was given, then an elevated INR or aPTT should be used. As you may recall, the guidance on this slide allows the elevated INR or aPTT value to not be used as evidence of organ disfunction if an anticoagulant from Table 5.3 was given to the patient. Heparin is included on Table 5.3; however, if heparin is only documented as given as a flush, based on this updated guidance, the elevated INR or aPTT value would still be used. The elevated INR or aPTT is still used when a heparin flush is administered because this will have minimal impact to no impact on the INR or aPTT value.

Also, for the *Severe Sepsis Present* data element, the guidance related to the documentation of a term that represents or is defined by a SIRS criteria or sign of organ dysfunction has been updated. The updated guidance now includes documentation of a term that represents or is defined by a SIRS criteria or sign of organ disfunction is acceptable in place of an abnormal value when documented as normal for the patient due to a chronic condition, due to a medication, or due to an acute condition that has a non-infectious source or process. This guidance continues to include examples of terms that represent or define abnormal SIRS criteria or organ dysfunction. Again, similar to our earlier discussion for the *Initial Hypotension* data element, the update on this slide is primarily to clarify the original direction of this guidance. This guidance is meant to allow SIRS criteria or a sign of organ disfunction to not be used when a term such as “tachycardia” or “thrombocytopenia” is documented as normal for

the patient due to a chronic condition, due to a medication, or due to an acute condition that has a non-infectious source or process.

Next, we would like your response to this question. The PA notes "history of A-fib with tachycardia." Which heart rates would be used as SIRS criteria? A, heartrate of 127. B, heartrate of 149. C, heartrate of 99. D, none.

Jennifer Witt: I will reread the question. The PA notes "history of A-fib with tachycardia." Which heart rates would be used as SIRS criteria? A, heartrate of 127. B, a heartrate of 149. C, a heartrate of 99. D, none. Let's go ahead and close the poll. So, the answer is D, none. In this scenario, we can see that the elevated heart rates identified by the term "tachycardia" are documented by the PA as due to the chronic condition, which is A-fib in this case. With the reference to tachycardia in general, none of the elevated heart rates would be used to meet SIRS criteria.

Noel Albritton: Thanks, Jennifer. To continue with the *Severe Sepsis Present* data element updates in manual version 5.6, this bullet point states SIRS criteria or sign of organ disfunction obtained within the operating room, interventional radiology during active delivery, or procedural or conscious sedation should not be used. This update allows for SIRS criteria or evidence of organ disfunction to not be used when it is obtained in one of these areas listed because the procedure the patient is undergoing in those areas has a higher potential to cause abnormal values. SIRS criteria or evidence organ disfunction documented while the patient is in one of these areas would simply not be used. You would continue to review for SIRS criteria for evidence of organ disfunction outside of these areas to establish the presence of Severe Sepsis. I would like to point out, only SIRS criteria or evidence of organ disfunction documented while the patient is in one of these specific areas of the hospital or documented when the patient is in active delivery or under sedation would not be used. SIRS criteria or evidence of organ disfunction documented outside of these contexts would still be acceptable to use for establishing the presence of Severe Sepsis.

Next, we would like your response to this question. “Patient hypotensive during cardioversion under conscious sedation.” Should the hypotensive blood pressure be used as evidence of organ disfunction? A, yes or B, no.

Jennifer Witt: I will reread the question. “Patient hypotensive during cardioversion under conscious sedation.” Should the hypotensive blood pressures be used as evidence of organ disfunction? A, yes or B, no. Let’s go ahead and close the poll. The correct answer is B, no.

The hypotensive blood pressure documented while the patient was receiving conscious sedation would not be used as a sign of organ disfunction. As we mentioned earlier, a hypotensive blood pressure reading obtained while the patient is under conscious sedation would not be used because the procedure the patient is undergoing has a higher potential to cause abnormal values. Therefore, we disregard this hypotensive reading and continue reviewing for further evidence of organ disfunction when the patient was not undergoing conscious sedation.

Noel Albritton: Thanks again, Jennifer. The guidance on this slide from the *Severe Sepsis Present* data element in manual version 5.6, states an infection, Severe Sepsis, or Septic Shock documented after the time of discharge should not be used. This guidance did not receive any additional updates for manual version 5.6; however, we continue to see questions related to this guidance. The questions related to this guidance, in particular, typically involve physician, APN, or PA documentation after discharge that states Severe Sepsis occurred at an earlier time during the hospital stay. However, regardless of whether the documentation of an infection, Severe Sepsis, or Septic Shock after discharge refers to an earlier time, the documentation would not be used, since it occurred after the time of discharge.

We frequently see scenarios similar to this question related to physician, APN, or PA documentation after discharge on the query. This question states, “Patient discharged 07-03-2019. Coding query 07-10-2019 states ‘*Severe Sepsis Present* on admission and the physician selected Yes on 07-10-2019.’ Should Severe Sepsis be considered present on admission?” As we can see in this scenario, the patient was discharged on 07-03-2019, and

the physician's documentation on the query refers to *Severe Sepsis Present* on admission documented on 07-10-2019. Based on the guidance we previously discussed, this documentation of *Severe Sepsis Present* on admission would not be used. The documentation would simply be disregarded since it occurred after the patient discharged from the hospital.

Also, due to receiving questions related to the guidance on this slide, I would like to review the priority order provided in the *Severe Sepsis Present* data element that is used to determine which time to use for lab results when multiple times are documented for a particular lab result. The primary source for determining the time is the laboratory result time documented by the lab. I want to point out that, regardless of whether this is the earliest time for the particular lab value, if there is a documented time for the lab result from the laboratory, that time would be used. There are multiple times for a lab result and if the priority source is not available, then the supporting sources would be used in order to determine the time of the lab results.

Now, we would like your response for this question. If the following INR result times are documented, which should be used for the time of the elevated INR? A, sepsis flowsheet INR 1.9 at 19:15. B, a PA note INR 1.9 18:20. C, lab results INR 1.9 at 18:30. D, INR drawn at 17:30.

Jennifer Witt: I'll go ahead and reread the question. If the following INR result times are documented, which should be used for the time of the elevated INR? A, sepsis flowsheet INR 1.9 at 19:15. B, PA notes INR 1.9 at 18:20. C, lab results INR 1.9 at 18:30. D, INR drawn at 17:30. Let's go ahead and close the poll. The answer is C.

It's lab results INR 1.9 at 18:30. The correct answer is the lab result time of 18:30 because this is the primary source. As we can see, there are multiple times available for the INR result of 1.9. So, in this scenario, we follow the priority order and use the primary source to determine the time of the elevated INR. I also want to comment on another scenario we're frequently are asked about. Often, there is a result time available from the lab and the physicians note has the lab results pulled into their note. We

will continue to follow the guidance in this scenario and use the time of the lab result documented by the lab.

Noel Albritton: Thanks, Jennifer. Again, the guidance related to the use of SIRS criteria or a sign of organ disfunction was not updated in version 5.6; however, we continue to receive questions related to this guidance. So, let's review. As you may recall, guidance within the *Severe Sepsis Present* data element continues to allow for SIRS criteria or evidence of organ disfunction to be disregarded when documentation by the physician, APN, or PA prior to, or within 24 hours after, the *Severe Sepsis Presentation Time* considers the SIRS criteria or evidence of organ disfunction to be normal for the patient or due to a chronic condition or medication. There's a couple of important pieces to this guidance I would like to point out. First, the physician, APN, or PA documentation must include the abnormal SIRS criteria, or evidence of organ disfunction, or include a reference to the abnormal criteria, and documentation must include abnormal criteria is normal for the patient due to a chronic condition or medication. This means to not use SIRS criteria for a sign of organ disfunction. The physician, APN, or PA documentation must include the criteria, such as a platelet count of 75 and the chronic condition, for example. Or, it can include a reference to the abnormal criterion, such as thrombocytopenia and the chronic condition. If the physician, APN, or PA documentation only included the abnormal criteria, such as a platelet count of 75 or a thrombocytopenia, or if it only included a chronic condition such as leukemia, the abnormal criteria would not be disregarded. Also, another important point, we would not infer or assume the SIRS criteria or sign of organ disfunction is normal for the patient or due to a chronic condition or medication. If the physician, APN, or PA documentation does not consider the SIRS criteria or sign of organ disfunction to be normal for the patient due to a chronic condition or medication, the criteria would be used. For example, if the physician listed a chronic condition under the pass medical history section and the lab section of the H&P includes a low platelet count, we would not infer that the chronic condition under the pass medical history section is the cause of the abnormal lab in the lab section of the H&P. Next, we will take a look at some frequently asked questions and examples.

We often see questions presenting this scenario. The MD documented chronic kidney disease. There's also a creatinine of 3.25 documented elsewhere in the medical record and the question is, "Should the elevated creatinine be used as a sign of organ disfunction?" As you can see by the scenario in this question, it does not appear the physician documentation includes a sign of organ disfunction and chronic condition in the same documentation but, rather, it only states the chronic condition. Therefore, in this scenario, we would continue to use the elevated creatinine. If we were to not use the elevated creatinine based on the documentation provided, we would need to infer that the elevated creatinine is due to the chronic condition. If the physician documentation stated, "chronic kidney disease, stage 3 with creatinine of 3.25," then we could exclude the elevated creatinine based on the physician documentation.

Another scenario we frequently see pertains to a physician, APN, or PA documentation or a list provided under a chronic condition, such as documentation included in this APN's documentation. Here, the APN documented the chronic condition and then lists several items possibly pertaining to the chronic condition, which include ordering a CT of the abdomen, ordering blood cultures due to the patients fever, and lastly, documentation of pancytopenia. So the question is, "Should the low platelet count and low WBCs be used as Severe Sepsis clinical criteria?" With the inclusion of pancytopenia listed under this chronic condition, the low platelet count and low white blood cells would not be used to meet Severe Sepsis clinical criteria. Pancytopenia is a term that references or defines the abnormal platelet and white blood cell values. So, the inclusion of this term documented under the chronic condition allows the platelets and the white blood cells to be attributed to the chronic condition and, therefore, not used to meet Severe Sepsis clinical criteria. Next, we would like you to participate and respond to the following question. "PA note: 'Patient with ABD pain, history of cirrhosis, ETOH abuse. Currently bilirubin is 6.0, recheck in AM." Would the elevated bilirubin be used? A, yes or B, no.

Jennifer Witt: I'll restate the question. "PA note: Patient with abdominal pain, history of cirrhosis, alcohol (ETOH) abuse. Currently bilirubin is 6.0, recheck in AM." Would the elevated bilirubin be used? A, yes. B, no. Let's go ahead and close the poll. The answer is B, no.

In this scenario, the elevated bilirubin would not be used as a sign of organ disfunction. The PA documentation reflects the elevated bilirubin is attributed to the chronic condition. As you can see in this documentation, the elevated bilirubin is not specifically stated as due to the chronic condition nor is the elevated bilirubin included in the same sentence. However, it's obvious, based on the format of this documentation, that the elevated bilirubin in this sentence that follows the chronic condition is associated with the chronic condition.

Noel Albritton: Thanks again, Jennifer. For the *Septic Shock Present* data element in manual version 5.6, the guidance related to establishing Septic Shock based on *Severe Sepsis* and *Persistent Hypotension* was slightly updated. You may recall in previous versions of the *Septic Shock Present* data element, under criteria A *Persistent Hypotension,* the guidance included the specific hypotensive blood pressure values that would suffice for a *Persistent Hypotension,* such as the systolic blood pressure less than 90. For manual version 5.6, the guidance refers you to the *Persistent Hypotension* data element and includes a short description of what *Persistent Hypotension* is. Due to the specific guidance provided in the *Persistent Hypotension* data element for determining the presence of *Persistent Hypotension,* this update in version 5.6 refers you to that specific data element rather than providing the blood pressure criteria as the manual previously did. The same guidance applies as far as determining the presence of *Persistent Hypotension,* which is specified by referring to the *Persistent Hypotension* data element. I would also like to point out, to select value one for *Septic Shock Present* based on *Severe Sepsis* with *Persistent Hypotension,* value one "Yes" must be selected for *Persistent Hypotension* and you must be able to select value one "Yes" upon reaching the *Persistent Hypotension* data element. Next, we'll review a scenario that we frequently receive questions on.

This frequently asked question relates to determining if Septic Shock may still be present if the *Initial Lactate (Level) Result* is less than 4 and there is no physician, APN, or PA documentation of Septic Shock. The question is, "If the *Initial Lactate Level Result* is less than or equal to 2 and there is no physician, APN, or PA documentation of Septic Shock, can Septic Shock still be met by Severe Sepsis with *Persistent Hypotension*? The answer is yes. If *Persistent Hypotension* is present in the hour following the completion of the target ordered volume of crystalloid fluids, value one "Yes" may be selected for the *Septic Shock Present* data element. Let's review a scenario on how Septic Shock may be determined if the *Initial Lactate Level Result* is less than 4 and there is not physician, APN, or PA documentation of Septic Shock.

Based on the selections made during abstraction, we can see Severe Sepsis was present at 18:00. The *Initial Lactate Level Result* was less than 2 and there is no *Initial Hypotension*. Per the algorithm flow, the case now proceeds to the *Septic Shock Present* data element of abstraction. However, without an *Initial Lactate Level Result* greater than or equal to 4, or physician, APN, or PA documentation of Septic Shock, how do we determine whether value one "Yes" or value two "No" should be selected for *Septic Shock Present*? Since meeting the *Septic Shock Present* data element by Severe Sepsis and an *Initial Lactate Level Result* greater than or equal to 4 and physician, APN, or PA documentation of Septic Shock are only two of the three ways this data element can be met, we need to look further to determine if *Septic Shock Present* is met by Severe Sepsis with *Persistent Hypotension*.

As we pointed out on the previous slide, value one "Yes" may still be selected for the *Septic Shock Present* data element if Septic Shock is met by Severe Sepsis with *Persistent Hypotension*. On this slide, we'll address how to determine *Persistent Hypotension* or new onset hypotension upon reaching the *Septic Shock Present* data element when there is no *Initial Hypotension*, no physician, APN, or PA documentation of Septic Shock and no *Initial Lactate Level Result* greater than or equal to 4. I want to first point out, per the algorithm, if value two "No" was selected for the *Initial*

Hypotension data element the case proceeds directly to the *Septic Shock Present* data element prior to selecting the appropriate level values for the *Crystalloid Fluid Administration* and *Persistent Hypotension* data elements. Therefore, when we are determining if Septic Shock was met by *Persistent Hypotension* we will need to review the crystalloid fluids administered. If we determine Septic Shock was present based on *Persistent Hypotension,* then the case will proceed to the *Crystalloid Fluid Administration* and *Persistent Hypotension* data elements to select the appropriate allowable values. Also, in this scenario where we are determining if Septic Shock was met by *Persistent Hypotension*, if we determine the target volume of crystalloid fluids was not administered, value two "No" would then be selected for *Septic Shock Present* data element without any need to look further. This is because, to determine if *Persistent Hypotension* was present, the target ordered volume of crystalloid fluids must be completed. If we can see the patient received the target ordered volume of crystalloid fluids, then we typically follow the logic on this slide or the next slide to determine if *Persistent Hypotension* was present and which value should be selected for the *Septic Shock Present* data element. As a reminder, in this scenario we are determining if Septic Shock is met by Severe Sepsis with *Persistent Hypotension* and there is no *Initial Hypotension*, no physician, APN, or PA documentation of Septic Shock and the initial lactate level result is less than 4. First, we will look for two consecutive hypotensive blood pressure readings in the six hours following the *Severe Sepsis Presentation* time. If there are not two consecutive hypotensive blood pressure readings within the six hours, value two "No" would be selected for the *Septic Shock Present* data element because *Septic Shock Presentation* time could not be greater than six hours after the *Severe Sepsis Present*ation time. If there was only one or no hypotensive blood pressure readings, then value two "No" would be selected for the *Septic Shock Present* data element because *Persistent Hypotension* requires two consecutive hypotensive readings.

Continuing from the previous slide, if there were two consecutive hypotensive blood pressure readings present in the six hours after the *Severe Sepsis Presentation* time, we need to determine if the two

consecutive hypotensive readings truly reflect *Persistent Hypotension*. First, we need to determine when the target ordered volume of crystalloid fluids completed. In this scenario, acceptable crystalloid fluids would be fluids ordered and started within the six hours prior to three hours after the potential *Septic Shock Presentation Time*, which would be the time of the second consecutive hypotensive blood pressure potentially reflecting *Persistent Hypotension*. Once we determine the completion time of the target ordered volume, we can determine if the two consecutive hypotensive readings occurred in the hour following the completion of the target ordered volume. Next, we will determine whether the two hypotensive blood pressure readings accurately represent *Persistent Hypotension* by insuring the two consecutive hypotensive readings occurred at the end of the hour to assess for *Persistent Hypotension*. If so, then value one "Yes" would be selected for *Septic Shock Present* because Septic Shock would be met by Severe Sepsis with *Persistent Hypotension*.

That concludes our review of version 5.6 measure updates and frequently asked questions. We hope this has been helpful. Thanks again for everyone for joining us today and, Candace, I'll turn it back over to you.

Candace Jackson: Thank you, Noel, and thank you, Noel and Jennifer, for providing this information to us today. Before we move on, we would like to go back and provide a little bit further clarification regarding the crystalloid fluids as specifically related to the polling question which I believe was around question 24 and I will turn it back over to Noel to provide that clarification.

Noel Albritton: Thank you, Candace. Just to clarify, for the purposes of the measure, we need to identify when the 2,400 milliliters completely infused. That's because 2,400 milliliters, in this example, is equivalent to 30 milliliters per kilogram. That does not mean that the volume of fluid ordered by the physician would not need to be infused. The 2,500 milliliters ordered by the physician should be infused per the order but, for determining the completion time of the target ordered volume and which hour to identify or assess for *Persistent Hypotension*, we would use the target ordered volume which would be 2,400 milliliters in this case. Also, for the 10% rule for *Crystalloid Fluid Administration* , a volume within 10% of 30

milliliters per kilogram is acceptable when that is the only ordered volume of crystalloid fluids. So, in this example, if the physician ordered 2,500 milliliters but, based on the patient's weight, 30 milliliters per kilogram would equally 2,700 milliliters, then ordering 2,500 milliliters would be acceptable because that would be within the 2,700-milliliter target ordered volume based on the 30 milliliters per kilogram range. So, a volume within 10% of 30 milliliters per kilogram is only acceptable when that is the only ordered volume.

Candace Jackson: Thank you, Noel. At this time, unfortunately, due to time constraints and the number of questions that have been submitted through the chat feature, we will not be able to have a live Q&A session. Again, we thank you for joining today and, if we could go to the CE slide, this presentation has been approved for 1.5 CEU. You can find information on how to obtain your CEUs and additional guidance on the link that is provided on this slide. Again, we thank you for joining us today and we hope that you have a great rest of your day. Thank you.