

Severe Group A Streptococcal Infection: 2014 Supplemental Form Instruction Sheet

Revised June 16, 2014

General Guidelines

For what cases should this form be completed?

Questions 1-4 should be completed for all invasive GAS cases. If the answer to question 4 (hypotension) is ‘yes’, then the remainder of the supplemental form should be completed. The answers to questions 1, 4-10 will be later used to determine if the case meets the clinical definition for streptococcal toxic shock syndrome (STSS). This decision will happen either at the state or at CDC, following review of the collected information. The clinical STSS case definition is at the end of these instructions.

All questions concerning the acute GAS illness should be answered by looking for clinical findings or laboratory information that were documented or collected **within 48 hours (or 2 days) of admission or culture**.

The only situation in which data would be collected from outside this time frame is if a patient has chronic renal and/or liver disease. In that instance, BASELINE LAB values should preferentially be collected from the ‘Past Medical History’, ‘History of Present Illness’ or older charts, if available.

HOWEVER, if Past Medical History or old charts are NOT available, the LOWEST lab values from the entire, current hospitalization for the GAS infection should be collected as baseline values. (*Why? The initial lab tests obtained when the patient is first admitted might be close to his/her baseline....OR...if the patient is in the hospital for a long period of time, the initial high lab values may trend back down to baseline by the end of the hospital stay*). DATES for baseline values should be collected ONLY if baseline values are collected from the current hospitalization for invasive GAS.

**Note on STSS clinical case definition. The information collected on this form to determine the clinical definition of STSS should NOT be used to modify the response to STSS as an infection type on the ABCs core CRF. Similarly, responses for soft tissue necrosis (Q1) on this form should not be used to modify the response to necrotizing fasciitis as an infection type on the core ABCs CRF.

Where to look for information necessary for completion of this form:

Similar to instructions for the ABCs case report form, the minimum sources of information that should be used to complete the “Severe GAS Infection Supplemental Form” are: 1) the admission history and physical, 2) the discharge summary, and 3) the face sheet. Other sources are necessary to complete this supplemental form, however. Laboratory values are typically found in the “Laboratory” or “Clinical Chemistries” section of the chart. Other portions of the medical chart nursing, physician, progress, order or consultant notes will often have useful information and may be necessary to review to complete some fields on the GAS Supplemental Form.

Check “DK” if the section of the chart pertinent to the question was not available. If all parts of the chart are available but the condition is not indicated, check “no”.

Specific Guidelines

Question	Definition	Special Instructions/Notes
I. Soft tissue necrosis	Check yes if necrotizing fasciitis, necrotizing myositis, or gangrene noted in chart. 1a-1d: Indicate if surgery, amputation or	The soft tissue infection must be specified as “necrotizing”. A diagnosis of “myositis” alone is not sufficient to check ‘yes’ for this question.

Question	Definition	Special Instructions/Notes
	<p>debridement occurred due to the soft-tissue necrosis.</p> <p>OPTIONAL: 1e-1f. Indicate presence/absence of pathology reports, surgical reports, and CT/MRI results</p>	<p>Optional questions are for sites participating in enhanced NF detection only. Triggers for pulling pathology reports, surgical reports or CT/MRI scans should include at least ONE of the following:</p> <ol style="list-style-type: none"> 1. Clinical diagnosis of necrotizing fasciitis, necrotizing myositis and/or gangrene 2. ICD9/10 codes for NF which have been cross-matched with positive GAS culture results <p>Collect either an electronic or Xerox of a hard copy report. Remove any personal identifying information (name, address, phone) and label the top of the report and/or scan with the corresponding ABCs STATEID. Batch and send to CDC-Atlanta each month.</p>
2. Sequelae	Indicate if case had dialysis, impaired renal function, or needed rehabilitative services as a result of the GAS infection.	Dialysis, impaired renal function, and rehabilitation services must have occurred as a result of and/or after infection. Do not check "yes" if these conditions were present prior to GAS illness. If the patient was not transferred to a rehab facility, but they also were not discharged to home, please check "d. Other" and write where they went post-hospitalization in the specify field.
3. Case Death	If case died and was not hospitalized, please indicate date of death.	Date of death for hospitalized cases is the same as the date of discharge and would be available on the main ABCs CRF. For cases not hospitalized, this information is needed because it is not collected on the main ABCs CRF and may not be the same as the date of culture collection.
4. Hypotension	<p>Indicate "Y" if lowest recorded value of systolic blood pressure (SBP) ≤ 90 mmHg in adults and record lowest value.</p> <p>NOTE: Because hypotension is required to meet the STSS definition, if the patient does not have hypotension, the remainder of the form need not be completed.</p>	<p>For hypotension in children refer to the Pediatric Advanced Life Support (PALS) guidelines. Note that these blood pressure thresholds will overlap with normal values, including the 5% of normal children who have an SBP lower than the 5th percentile for age. According to PALS guidelines, hypotension is characterized by the following:</p> <ul style="list-style-type: none"> • For term neonates (0 to 28 days of age), SBP < 60 mm Hg • For infants from 1 month to 12 months, SBP < 70 mm Hg • For children > 1 year to 10 years, SBP $< 70 + (2 \times \text{age in years})$ • Beyond 10 years, hypotension is defined as an SBP < 90 mm Hg
5. Renal impairment	<p>a. Indicate "Y" if creatinine $\geq 177 \mu\text{mol/L}$ ($\geq 2 \text{ mg/dL}$) for adults or greater than or equal to twice the upper limit of normal for age. (See "Normal Kidney and Liver Lab Value for Children" below)</p> <p>b. Indicate if the patient has pre-existing <u>chronic</u> kidney (renal) disease.</p>	<p>Record the highest value within 48 hours (or 2 days) of admission or culture during this admission or in the outpatient or ED chart if the patient was not admitted. Actual laboratory values are preferred to clinical findings.</p> <p>Examples of chronic kidney disease include: chronic renal insufficiency, chronic renal failure, or on chronic dialysis. Indicate 'yes' only if the condition existed prior to the current GAS infection.</p>

Question	Definition	Special Instructions/Notes
	<p>If yes, indicate baseline creatinine value. If baseline value obtained from current hospitalization, indicate date of baseline value.</p>	<p>Individuals with chronic renal disease, often have normal (“baseline”) creatinine levels that are high. For these cases a baseline creatinine level is needed in order to determine if the current GAS infection has further impaired renal function. A 2-fold or greater increase in baseline creatinine would indicate renal impairment as a component of the STSS clinical definition. If the patient does NOT have pre-existing chronic renal disease, baseline creatinine levels are <u>not</u> needed.</p> <p><i>Baseline values</i>”: Baseline values for a patient are typically found in the “Past Medical History” or “History of Present Illness” or in old charts. If the baseline is not known for patients with pre-existing chronic kidney disease and the laboratory value for the current GAS illness is abnormal, please record the LOWEST value in the medical chart at any time during the current illness or current hospitalization, even if the lowest value is obtained <i>after</i> the acute GAS illness. This may also be used as a “baseline” in some situations. If a chart for a <i>previous</i> healthcare encounter that occurred in the preceding 6 months is easily attainable or available, reviewing this prior chart would most likely provide a <u>more</u> accurate baseline value.</p>
6. Coagulopathy	<p>a. Indicate “Y” if platelets $\leq 100 \times 10^9/L$ ($\leq 100,000/mm^3$) and record the lowest value.</p> <p>b. Disseminated intravascular coagulation (DIC) listed in the chart</p>	<p>Record the lowest value within 48 hours (or 2 days) of admission or culture during this admission or in the outpatient or ED chart if the patient was not admitted. Actual laboratory values are preferred to clinical findings.</p> <p>Disseminated intravascular coagulation, or DIC, is a condition in which blood clots form throughout the body’s small blood vessels. Check ‘Y’ only if DIC specifically noted in chart.</p>
7. Liver Involvement	<p>a. Indicate “Y” if either alanine aminotransferase (ALT or SGPT) $>70U/L$, or aspartate aminotransferase (AST or SGOT) $>70U/L$, or total bilirubin levels $>2mg/dL$ for adults; OR greater than or equal to twice the upper limit of normal for the case’s age. (See “Normal Kidney and Liver Lab Value for Children” below)</p> <p>b. Indicate if the patient has pre-existing <u>chronic</u> liver disease.</p> <p>If yes, indicate baseline liver function values. If baseline values obtained from</p>	<p>Record the highest values within 48 hours (or 2 days) of admission or culture during this admission or in the outpatient or ED chart if the patient was not admitted. Actual laboratory values are preferred to clinical findings.</p> <p>Examples of chronic liver disease include: chronic hepatitis B or C; hemochromatosis, Wilson’s disease—in addition to cirrhosis and liver failure (as noted in ABCs CRF). “Chronic” hepatitis C must be noted in the chart to indicate ‘yes’ for this question as patients can also have acute or asymptomatic hepatitis C infections which would not change baseline liver function levels.</p> <p>Individuals with chronic liver disease, often have normal (or “baseline”) liver tests that are high. For these cases baseline liver tests are needed in order to determine if the current GAS infection has further</p>

Question	Definition	Special Instructions/Notes
	current hospitalization, indicate date of baseline value.	<p>impaired liver function. A 2-fold or greater increase in baseline liver function tests would indicate liver involvement as a component of the STSS clinical definition. If the patient does NOT have pre-existing chronic liver disease, baseline liver tests are <u>not</u> needed.</p> <p><i>Baseline values</i>”: Baseline values for a patient are typically found in the “Past Medical History” or “History of Present Illness” or in old charts. If the baseline is not known for patients with pre-existing chronic liver disease and the laboratory value for the current GAS illness is abnormal, please record the LOWEST value in the medical chart at any time during the current illness or current hospitalization, even if the lowest value is obtained <i>after</i> the acute GAS illness. This may also be used as a “baseline” in some situations. If a chart for a <i>previous</i> healthcare encounter that occurred in the preceding 6 months is easily attainable or available, reviewing this prior chart would most likely provide a <u>more</u> accurate baseline value.</p>
8. Acute Respiratory Distress Syndrome (ARDS)	<p>a. Indicate ‘Y’ if ARDS noted in the chart</p> <p>b. Indicate ‘Y’ if acute onset of generalized edema noted in chart.</p> <p>c. Indicate ‘Y’ if chart notes pleural or peritoneal effusions AND serum albumin <3g/dL or <30g/L.</p>	<p>Note if ARDS stated in chart or as defined by acute onset of diffuse pulmonary infiltrates and hypoxemia in the absence of cardiac failure.</p> <p>Diffuse capillary leak as manifested by acute onset of generalized edema. This typically manifests as edema (i.e., swelling) of all extremities, face, etc.</p> <p>Please record the lowest albumin value within 48 hours (or 2 days) of admission or culture during this admission or, in the outpatient or ED chart if the patient was not admitted. Actual laboratory values are preferred to clinical findings. Review of xrays is not necessary, just indicate if pleural or peritoneal effusions were indicated in chart.</p>
9. Erythematous rash	Indicate ‘Y’ if noted in the chart.	The rash associated with STSS is typically a “generalized erythematous macular rash” but this complete description may not be present in the chart. Please indicate if a rash is noted in the chart. The “rash” does not need to be described as “erythematous”.

Case definition of streptococcal toxic shock syndrome (STSS)

JAMA 1993;269:390-91

I. Isolation of group A *Streptococcus*

- A. From a sterile site
- B. From a non-sterile body site

II. Clinical signs of severity

- A. Hypotension
and
- B. Two or more of the following:
 1. Renal impairment
 2. Coagulopathy
 3. Liver involvement
 4. Acute respiratory distress syndrome
 5. Soft tissue necrosis, including necrotizing fasciitis or myositis, or gangrene
 6. Generalized erythematous rash

Definite STSS case = IA and II (A and B)
 Probable STSS case = IB and II (A and B)

Normal kidney and liver lab values for children

16 June 2014

The following are taken from Mayo clinic website: <http://www.mayomedicallaboratories.com/test-info/pediatric/refvalues/reference.php>. Local laboratories may have slightly different reference values.

****For the following laboratory tests, reference values have not been established for patients who are <12 months of age****

Alanine Aminotransferase (ALT) or SGPT		Aspartate Aminotransferase (AST) or SGOT	
Males	Females	Males	Females
>=1 year: 7-55 U/L	>=1 year: 7-45 U/L	1-13 years: 8-60 U/L >=14 years: 8-48 U/L	1-13 years: 8-50 U/L >=14 years: 8-43 U/L
Total Bilirubin			
Males	Females		
12 mos: 0.1-0.9 mg/dL	1-11 yrs: 0.1-0.9 mg/dL		
>=24 mos: 0.1-1.0 mg/dL	>=12 yrs: 0.1-1.0 mg/dL		
Creatinine			
Males		Females	
1-2 years	0.1-0.4 mg/dL	1-3 years	0.1-0.4 mg/dL
3-4 years	0.1-0.5 mg/dL	4-5 years	0.2-0.5 mg/dL
5-9 years	0.2-0.6 mg/dL	6-8 years	0.3-0.6 mg/dL
10-11 years	0.3-0.7 mg/dL	9-15 years	0.4-0.7 mg/dL
12-13 years	0.4-0.8 mg/dL	> or =16 years	0.6-1.1 mg/dL
14-15 years	0.5-0.9 mg/dL		
> or =16 years	0.8-1.3 mg/dL		