

## Assessment of Appropriateness of ICU Antibiotics (Patient Level Sheet)

For this assessment, **inappropriate antibiotic use is defined as receiving antibiotics when it is not necessary, not making timely adjustments in the regimen, choosing the wrong regimen due to unsuitable spectrum of activity for the targeted infection, wrong duration, wrong dose, wrong route and wrong interval.** This assessment by the frontline provider with support from their ASP is based on national guidelines and/or your facility's guidelines, formulary and local microbiology. This assessment has been tested in multiple hospitals across the US.

Begin by obtaining the census from participating ICUs on \_\_\_\_\_ [date]. Then determine which patients received antibiotics on this date. Fill out this form for each individual patient receiving antibiotics in the ICU on \_\_\_\_\_ (date). This is the worksheet for a frontline provider to abstract clinical information and may be filled out by a clinician or pharmacist. Together with a member of the Antibiotic Stewardship Program (ASP), pharmacy or an Infectious Diseases consultant, your team will then assess the appropriateness of the antibiotics and identify possible opportunities for ASP intervention utilizing data available by \_\_\_\_\_ [date] only. Please obtain the clinical information as close to \_\_\_\_\_ [date] as possible, as additional information (culture results and laboratory data after \_\_\_\_\_ [date]) may bias your assessment.

### DATA COLLECTION SECTION BY FRONTLINE TEAM

Patient Identifier/ Medical Record number (for facility use only) \_\_\_\_\_

#### 1. Patient Information and Risk Stratification:

Date of data collection: \_\_\_\_\_

Gender:  Male  Female

Age: \_\_\_\_\_

ICU Type (check all that apply; based on NHSN ICU definitions)

- Medical ICU
- Surgical ICU
- Medical/ Surgical ICU (MSICU)
- Cardiac/ surgical ICU
- Tele/ cardiac ICU
- Neuro ICU
- Neonatal ICU
- Pediatric ICU
- Other ICU – please specify

Patient Epidemiology (check all that apply)

- Community resident
- Long term care resident
- Hemodialysis
- Solid organ Transplant recipient
- Immune suppressive condition (including Diabetes) or therapy

- BMT
- Recent admission w/in 30 days of current admission
- Current hospitalization at least 5 days
- Active malignancy

2. Current ICU Antibiotic Selection (for antibiotic regimen on \_\_\_\_\_ [date]):

A. What is the suspected source of infection?

Check all that apply:

- Head/ Neck
- Respiratory
- Abdominal/ GI
- Neuro/ CNS
- Cardiac
- Urinary
- Reproductive
- Catheter Associated bloodstream infection
- Bacteremia, non-catheter related
- Neutropenic fever
- Skin and soft tissue
- Septic joint
- Sepsis, known focus \_\_\_\_\_
- Sepsis, unknown focus
- Other, please specify \_\_\_\_\_
- Prophylaxis
- Unable to tell

B. Indicate the antibiotic regimen given on \_\_\_\_\_ [date]?

- Drug 1 \_\_\_\_\_
- Drug 2 \_\_\_\_\_
- Drug 3 \_\_\_\_\_
- Drug 4 \_\_\_\_\_

3. Microbiology:

A. Were the following cultures collected before or within 24 hours of the initiation of the antibiotics?

- |                      |                            |                            |
|----------------------|----------------------------|----------------------------|
| a. Blood             | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| b. Urine             | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| c. Sputum            | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| d. CSF               | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| e. Pleural fluid     | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| f. Pericardial fluid | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| g. Peritoneal fluid  | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| h. Synovial Fluid    | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| i. Wound             | <input type="checkbox"/> Y | <input type="checkbox"/> N |
| j. Other _____       | <input type="checkbox"/> Y | <input type="checkbox"/> N |

B. Was an organism isolated by the culture indicated in **3A**?

Y N (check one)

a. If yes, which organism and body site? \_\_\_\_\_

**4. Current Antibiotic Management (Antibiotic Regimen on \_\_\_\_\_ [date]):**

A. Is the antibiotic regimen

a. Empiric (i.e, antibiotics chosen as an educated guess to cover an infectious syndrome or presentation; if any drugs in antibiotic regimen are empiric, then choose empiric)

Y N (check one)

b. Directed (i.e, antibiotics based on an identified culture or other microbiological result)

Y N (check one)

c. Prophylactic (i.e, antibiotics given to prevent infection)

Y N (check one)

B. How long has this antibiotic regimen been in place? *(In this question please consider the drug selection and not the dosing; timing should be based on the longest drug, if a multidrug regimen prescribed)*

a. 0-24 hours

b. 25-72 hours

c. >72 hours

C. Within the 72 hours prior to \_\_\_\_\_ [date], was there a positive culture pertinent to syndrome in question?

Y N N/A (check one)

D. If yes to **4C**, were antibiotics modified based on results?

Stopped De-escalated IV to PO Switch Continued Escalated N/A

▪ Please indicate rationale for treatment decision: \_\_\_\_\_

E. Was a member of the ASP consulted for assistance with antibiotic management? Y N  
N/A (check one)

F. Was a formal ID consult obtained for subsequent antibiotic management? Y N  
N/A (check one)

G. Is the total duration of empiric, prophylactic or directed antibiotic therapy (inpatient and/or outpatient) indicated in the chart? Y N Insufficient information to determine (check one)

a. If yes, what is the duration? \_\_\_\_\_

**ASSESSMENT OF PRESCRIBING APPROPRIATENESS** (frontline team member working with ASP, pharmacy or ID consultant)

5. In the opinion of the reviewers, were antibiotics appropriate (regimen in question **2B**) on \_\_\_\_\_ [date]? Y N  
(check one)

6. If “inappropriate”, please indicate your reason (s) below (**check all** that apply and then choose the one that is the most salient of the reasons for inappropriateness in your opinion):

a) No antibiotics indicated:

- Non-infectious syndrome
- Non-bacterial syndrome
- Treatment of colonization or contamination

b)  Adjustment in regimen not made in a timely manner

c) Antibiotics indicated but, wrong regimen:

Coverage:

- Regimen does not cover all pathogens required (under coverage)
- Spectrum of activity too broad (over coverage)
- Redundant antimicrobial coverage (over coverage)

Duration:

- Duration longer than necessary for treatment regimen
- Duration longer than necessary for empiric regimen
- Duration longer than necessary for prophylactic regimen
- Duration shorter than necessary

d) Dosing, route or interval inappropriate for infection or renal function

- Dosing not correct for infection or renal function
- Route not correct (such as IV rather than PO conversion)
- Interval not correct for infection or renal function

7. From the reasons identified in 6 above, please check **the single most important** reason:

a) No antibiotics indicated:

- Non-infectious syndrome
- Non-bacterial syndrome
- Treatment of colonization or contamination

b)  Adjustment in regimen not made in a timely manner

c) Antibiotics indicated but, wrong regimen:

Coverage:

- Regimen does not cover all pathogens required (under coverage)
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Duration:

- Duration longer than necessary for treatment regimen
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8. Please indicate the number of people involved with collecting data for this patient assessment: \_\_\_\_\_

9. Please indicate the total amount of time this assessment took (for all of the participating healthcare providers): \_\_\_\_\_

**Appendix:** Patients are considered inappropriate for IV to PO conversion if any of the following are present:

- A. Mucositis
- B. Malabsorption syndrome or gastrointestinal motility disorder
- C. Severe nausea, vomiting or diarrhea
- D. Continuous nasogastric suctioning
- E. Continuous enteral feeds are contraindicated with oral ciprofloxacin, levofloxacin or moxifloxacin
- F. Gastrointestinal obstruction
- H. Need for complete bowel rest
- I. Patient receiving vasopressors (e.g., Dopamine, Epinephrine, Norepinephrine, Phenylephrine, Vasopressin)

References:

1. This form is adapted from CDC Assessment of Appropriateness of Inpatient Antibiotics available at: [www.cdc.gov/getsmart/healthcare/pdfs/Gen-Assessment.docx](http://www.cdc.gov/getsmart/healthcare/pdfs/Gen-Assessment.docx)
2. Hecker MT, Aron DC, Patel NP, et al. Unnecessary use of antimicrobials in hospitalized patients. Arch Intern Med. 2003. 163:972-978
3. Singer M, Deutschman CS, Seymour CW, et al. The third international consensus definitions for sepsis and septic shock (sepsis-3). JAMA. 2016;315(8):801-810
4. Bhar S, Nori P, Ostrowsky B. Improving Antimicrobial Use Starts with Our Trainees. IDWeek 2015 Abstract 625