**AHRQ Safety Program for Improving Antibiotic Use**

# Learning From Antibiotic-Associated Adverse Events

An antibiotic-associated adverse event is any event or situation that you would not want to happen again because it either caused your patient harm or had the potential to cause harm. The purpose of this tool is to provide a structured approach to help providers identify the steps that led to the adverse event. This approach will reduce the likelihood that another patient will be harmed in the same way. It is strongly encouraged that this tool be completed by a multidisciplinary team.

We use a simple four-step approach with the goal of turning a problem, near-miss, or adverse event into an opportunity to improve the system.

**Step 1. Identify the antibiotic-associated adverse event. (What happened?)**

**Step 2. Describe the moment(s) of the Four Moments of Antibiotic Decision Making that contributed to this adverse event. (Why did it happen?)**

**Step 3. Focus on two or three of the contributing factors from above and discuss how you will prevent these factors from occurring again. (What could you do to reduce risk?)**

**Step 4. Describe plans to measure the impact of the interventions. (How will you know risk was reduced?)**

This first table provides an example of what a response to Step 2 might look like for Moment 1 of our Four Moments of Antibiotic Decision Making. It may be reasonable to enter “N/A” for some categories. Mark if each factor was a negative contributing factor or a positive contributing factor. Negative contributing factors increase the risk of harm. We want to change these. Positive contributing factors limit the impact of harm. We want to keep these.

| **Factors** | ***EXAMPLE TABLE – Moment 1****:* Does my resident have symptoms that suggest an infection? Did we try symptomatic treatment and active monitoring? | **Negative Factor** | **Positive Factor** |
| --- | --- | --- | --- |
| **Patient****Factors** | *Example: Family preferred antibiotics.* | *X* |  |
|  |  |  |
|  |  |  |
| **Technical Factors** | *Example: Culture results reported as “likely contaminant” in electronic health record.* |  | *X* |
|  |  |  |
|  |  |  |
| **Health Care Worker****Factors** | *Example: Provider didn’t know whom to contact for additional antibiotic decision-making guidance.*  | *X* |  |
|  |  |  |
|  |  |  |
| **Team****Factors** | *Example: Team discussion about need to start antibiotics occurred.* |  | *X* |
|  |  |  |
|  |  |  |
| **Institutional Factors** | *Example: No antibiotic use protocol to address this type of infection.*  | *X* |  |
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|  |  |  |

# Learning From Antibiotic-Associated Adverse Events Form

1. **Identify the antibiotic-associated adverse event. (What happened?)**
2. **Use these tables to describe the moment(s) of the Four Moments of Antibiotic Decision Making that contributed to this adverse event. (Why did it happen?)**

| **Factors** | **Moment 1**: Does the resident have symptoms that suggest an infection? Can we try symptomatic treatment and active monitoring? | **Negative Factor** | **Positive Factor** |
| --- | --- | --- | --- |
| **Patient** **Factors** |  |  |  |
|  |  |  |
| **Technical Factors**  |  |  |  |
|  |  |  |
| **Health Care Worker** **Factors** |  |  |  |
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| **Team** **Factors** |  |  |  |
|  |  |  |
| **Institutional Factors**  |  |  |  |
|  |  |  |

|  **Factors** | **Moment 2**: What type of infection is it? Have we collected appropriate cultures and diagnostic tests before starting antibiotics? What empiric therapy should we initiate? | **Negative Factor** | **Positive Factor** |
| --- | --- | --- | --- |
| **Patient** **Factors** |  |  |  |
|  |  |  |
| **Technical Factors**  |  |  |  |
|  |  |  |
| **Health Care Worker Factors** |  |  |  |
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| **Team** **Factors** |  |  |  |
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| **Institutional Factors**  |  |  |  |
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| **Factors** | **Moment 3:** What duration of antibiotic therapy is needed for the resident’s diagnosis? | **Negative Factor** | **Positive Factor** |
| --- | --- | --- | --- |
| **Patient** **Factors** |  |  |  |
|  |  |  |
| **Technical Factors**  |  |  |  |
|  |  |  |
| **Health Care Worker** **Factors** |  |  |  |
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| **Team** **Factors** |  |  |  |
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| **Institutional Factors**  |  |  |  |
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| **Factors** | **Moment 4**: It’s been 2–3 days since we started antibiotics. Re-evaluate the resident and review the results of diagnostic tests. Can we stop antibiotics? Can we narrow therapy? | **Negative Factor** | **Positive Factor** |
| --- | --- | --- | --- |
| **Patient** **Factors** |  |  |  |
|  |  |  |
| **Technical Factors**  |  |  |  |
|  |  |  |
| **Health Care Worker** **Factors** |  |  |  |
|  |  |  |
| **Team** **Factors** |  |  |  |
|  |  |  |
| **Institutional Factors**  |  |  |  |
|  |  |  |

**3. Focus on two or three of the contributing factors from above and discuss how you will prevent these factors from occurring again. (What could you do to reduce risk?)**

| **Contributing Factor** | **Intervention** | **Person(s) Assigned To Lead Efforts** | **Followup Date** |
| --- | --- | --- | --- |
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**4. Describe plans to measure the impact of the interventions. (How will you know risk was reduced?)**

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