



### Background

Thank you for your participation in the Antimicrobial Stewardship Collaborative for Excellence in Nursing Home Drug Safety (AZ-ASCEND). This protocol is a grant-funded collaborative that takes a results-oriented approach to antibiotic stewardship. A community physician coach trains staff at participating facilities, and epidemiologists at the University of Arizona work to streamline monitoring and feedback of data for action. Facility benefits include a reduction of unnecessary antibiotic prescriptions, improved quality of life for residents, and compliance readiness with new CMS regulations. As a partnering SNF your role in this project will include data entry through REDCap, a secure web application designed for collection and storage of your facilities' clinical data.

### REDCap Manual

This document provides step-by-step instructions for this project's monthly screening form, which will collect data on total antibiotics prescribed for a suspected urinary tract infection, as well as clinical and urine culture records. Within this manual you will be given direction on all reporting expectations, including:

- Data necessary to complete your monthly REDCap survey
- How to save and return to your survey at a later time
- Where overall and specific patient data should be reported

Our team aims to make this process as efficient and smooth as possible for you. In addition to this manual is a video tutorial demonstrating the data entry process and other steps elaborated on in this document. If you or your team encounters any challenges please contact University of Arizona project managers for additional support:

Katherine Ellingson, PhD  
Assistant Professor  
[kellingson@email.arizona.edu](mailto:kellingson@email.arizona.edu)

Ferris Ramadan  
Research Specialist, Sr.  
[ferrisr@email.arizona.edu](mailto:ferrisr@email.arizona.edu)

## Survey Link

Each month Data Entry Technicians and other staff will receive a REDCap survey link to be completed for the previous month of data. Please ensure that all received directions are read completely. The collection month will further be specified along with the link:

<https://redcap.uahs.arizona.edu/surveys/index.samplelink>

Please complete the following survey for the month of **August, 2019**.

## Before Getting Started

You will need access to your facility's patient and aggregate urine culture details, including laboratory, pharmacy, and clinical care records. Ensure that all patient data is relevant to the specified month. For example, when answering the following question:

*Resident days: Cumulative total of all this month's resident's lengths of stay?*

RESIDENT	DAYS	DATE
MARTHA, M	21	AUG. 10 – SEP. 20
ROBERTS, R	31	AUG. 1 – SEP. 20
SILVERS, S	31	AUG. 1 – SEP. 20

**Reported data for September: 83**

Reason: Counted days (21 + 31 + 31)

When reporting individual patient data, you may have a patient who was cultured in a different month from the time they were prescribed an antibiotic. In this scenario, use the prescription date to decide the reporting month. If no prescription date is available, and a culture was recently ordered, wait to report your data until the following month. See the example below for the total number of patients to report upon:

*Total number of patients prescribed antibiotics?*

RESIDENT	CULTURE DATE	PRESC. DATE
MARTHA, M	SEP. 03	SEP. 04
ROBERTS, R	AUG. 28	SEP. 02
SILVERS, S	AUG. 20	AUG. 25

**Reported urine cultures for August: 1**

**Reported urine cultures for September: 2**

Reason: Prescription dates for MARTHA and ROBERTS are not present for the month of August, so will be reported in September.

## Data Entry

Once ready to report data for the previous month, ensure that aggregate data is exclusively reported in the 'Facility Overview' page, while patient-specific data is reported individually on subsequent 'Suspected UTI Resident' pages. Please ensure you are able to answer all of the following questions. These are detailed in the steps below:

- Total resident days
  - C. Difficile orders
  - ESBL producing isolates
  - Lab collection/reporting date
    - Total number of organisms
    - Organism name
    - Colony forming units (CFUs)
  - Antibiotics issued
    - Name
    - Dose
    - Method of administration
    - Start date
    - Days of therapy
  - Other
    - Catheter
    - McGeer Criteria
    - Next Suspected UTI
- Facility Overview (Reported once)  
Steps 1-7**
- Suspected UTI (Repeated)  
Steps 8-19**

## STEP 1

redcap.uahs.arizona.edu/surveys/?s=hUzvDXSRc4

**AZ-ASCEND**  
Arizona Antimicrobial Stewardship Collaborative

Thank you for participating in the Antibiotic Antimicrobial Stewardship Collaborative for Excellence in Nursing Home Drug Safety with Dr. Pete Patterson and the University of Arizona!

This is the project's monthly screening form. After being sent a survey, input data on any antibiotic prescribed for a suspected UTI along with urine culture and resident data from the **previous** month. You will need access to your facility's laboratory, pharmacy, and clinical care records for the previous month.

**SURVEY INSTRUCTIONS:**

- Complete this first page with aggregate data from your facility (i.e. total patient days)
- Fill in subsequent pages with data for any residents prescribed an antibiotic for a suspected urinary tract infection (UTI)
- Ensure that patient data is reported completely and correctly before submitting each page

If you encounter any challenges or concerns, please contact Ferris Ramadan at ferrisr@email.arizona.edu.

**Entry Details**

Infection Preventionist (individual entering data into this system)  
\* must provide value

Enter your first and last name. This will only be used if reviewers have questions about what has been submitted.

Open the survey link sent to you by one of the University of Arizona project managers. This will open a new tab on your browser.

You must keep this page open and click on 'Submit' following each page, otherwise no data input will be saved.

Begin by submitting your first and last name. This is done for survey matching purposes.

## STEP 2

**Reporting Month**  
\* must provide value

Which month of data are you reporting on?

**Reporting Year**  
\* must provide value

2019 2020 2021

Which year of data are you reporting on?

reset

Select the 'Reporting Month' and 'Reporting Year'. This must match the month specified to you with the survey link.

## STEP 3

Have you completed the **Entry Details** questions for this last month? (note: select YES only if you are returning to this survey after having already completed this page)

\* must provide value

Yes (Skip Entry Details questions)

No (Open Entry Details questions)

reset

YES



Click **submit** and  
Proceed to Step 8

NO



Proceed to Step 4

Select **No** in the following dialog box if this is the *first time you are completing this survey for this month*.

Select **Yes** if you are either *returning* to this survey to complete additional entries, or if you *accidentally submitted early*.

## STEP 4

Have you completed the [Entry Details](#) questions for this last month? (note: select YES only if you are returning to this survey after having already completed this page)  
\* must provide value

Yes (Skip Entry Details questions)  
No (Open Entry Details questions)

reset

↓

Infection Preventionist's Email Address  
\* must provide value

Enter your email address. This will only be used if reviewers have questions about what has been submitted.

Monthly Totals

Selecting 'No' will prompt you to answer several questions specific to your facility.

Begin by submitting your email. Note this will only be used for matching purposes.

## STEP 5

Monthly Totals

Facility Name  
\* must provide value

What facility are you reporting for?

Resident days  
\* must provide value

Cumulative total of all this month's resident's lengths of stay, in days.

Total suspected number of resident urinary tract infections (UTIs)  
\* must provide value

Total number of urine culture and sensitivity tests.

Report your facility's name and the total number of resident days for the specified month.

Next, report the total number of suspect resident UTIs. This includes patients with an ordered urine culture and/or an antibiotic prescribed for a UTI.

## STEP 6

Clostridium difficile orders  
\* must provide value

Total number of culture orders for C. Difficile.

↓

Clostridium difficile orders  
\* must provide value

5  
Total number of culture orders for C. Difficile.

Positive Clostridium difficile cultures  
\* must provide value

2  
Total number of positive C. diff cultures.

For the first C. diff positive culture, was the resident admitted to the facility within 72 hours, 3 days, prior to the culture being collected?

Yes  
No

reset

From where was this resident transferred?

Home  
Hospital  
Other facility

reset

For the second C. diff positive culture, was the resident admitted to the facility within 72 hours, 3 days, prior to the culture being collected?

Yes  
No

reset

Report the numeric total number of *C. Diff* orders. If zero cultures were ordered, report 0 and go to Step 7.

If *C. Diff* was ordered, report the total number of orders for the month.

This will open the 'Positive *Clostridium difficile* cultures' drop-down menu, where you will report the total number of **positive cultures**.

A maximum of three positive cultures can be selected. This will prompt questions on if admission occurred within 72 hours of culture collection.



## STEP 7

**Total cultures containing positive ESBL-producing isolates**  
\* must provide value

2

Total number of positive extended-spectrum beta-lactamase producing isolate cultures.

**Urine cultures containing positive ESBL-producing isolates**  
\* must provide value

1

Total number of positive extended-spectrum beta-lactamase producing isolate urine cultures.

Submit

Report the **total** number of positive ESBL-producing isolates, **and** the **urine cultures** containing ESBL isolates (if different).

Click on 'Submit' once all data in steps 1-9 are complete.

## STEP 8

### Suspected UTI Resident 1

The following data are to be entered below for a **single resident with a suspected urinary tract infection (UTI)**. This includes a resident with a urine culture and/or antibiotic(s) prescribed for a suspected UTI.

You will need your facility's prescription history, clinical records, and associated urine cultures from the **previous month**. After completing this page please select "Yes" to the final question "Do you have another suspected UTI to report?" to be taken to the next resident form. Please ensure that resident data are reported completely and correctly before submitting each page

If you have any questions or concerns, please contact Ferris Ramadan at ferrisr@email.arizona.edu.

### Urine Culture Details

The following pages will gather data on a **single resident suspected with a UTI**, including urine culture and clinical data.

Note that it may include a patient with a urine culture, antibiotic prescription, or both. Instructions are to be reviewed at the top.

## STEP 9

Reporting Month \_\_\_\_\_

Urine Culture	Last Name	First Name	MRN
1			
2			
3			
-			

**Pull up the physical copy or word version of the patient data tracking sheet.** Begin tracking identifiable patient information (in the event that UA researchers need to follow up with you).

## STEP 10

**Is there a urine culture available for this patient?**  
\* must provide value

Yes

No

reset

**Lab Specimen Collection Date**  
\* must provide value

Today M-D-Y

**Lab Report Date**  
\* must provide value

Today M-D-Y

**Number of organisms found in culture**  
\* must provide value

1

2

3

4

reset

If a urine culture is **not** available for the resident proceed to step 12.

If a urine culture is **available** select yes and fill in the lab collection date and report date, available in lab forms.

Select the number of organisms in the culture.

**STEP 11**

Number of organisms found in culture  
\* must provide value

1  
2  
3  
4

reset

Organism 1 Name  
Campylobacter  
If the organism does not appear select 'Unlisted' and fill in the organism below.

Organism 1 Count  
< 50,000  
>50,000, < 100,000  
>100,000

reset

Organism 2 Name  
If the organism does not appear select 'Unlisted' and fill in the organism below.

Organism 2 Count  
< 50,000  
>50,000, < 100,000  
>100,000

reset

Based on the number of organisms selected (1-4), an 'Organism Name' and 'Organism Count' questions will appear for each organism.

Organism names will **auto-populate** as you begin typing in the field. Once the organism appears it can be selected.

Report the total colony forming units for the specific organism

Continue entering organism names and colony counts for the each organism found in the patient's lab culture.

**STEP 12**

Organism 2 Name  
Unlisted  
If the organism does not appear select 'Unlisted' and fill in the organism below.

Unlisted organism 2 name  
Campylobacter Coli

Organism 2 Count  
< 50,000  
>50,000, < 100,000  
>100,000

reset

If an organism does not appear from the auto-generated list, search and select 'Unlisted'.

A blank text box will appear where you will manually type in the unlisted organism.

Select the organism count as in Step 10.

**STEP 13**

Clinical Patterns

Number of Antibiotics Issued  
\* must provide value

0  
1  
2  
3

reset

For this same record, select the total number of antibiotics prescribed for their (potential) infection. If zero, continue to Step 15. **This should not include any recurring antibiotics the patient was prescribed.**

## STEP 14

Antibiotic 1 Name  Cefepime  
If the antibiotic does not appear select 'Unlisted' and fill in the organism below.

...

Antibiotic 2 Name

...

If >0 antibiotics were reported, fields will appear for each antibiotic. Begin by searching for the antibiotic from an auto-populated list. 'Unlisted' antibiotics can be typed in (as in Step 11).

## STEP 15

Antibiotic 1 Dose 1 (mg)  Antibiotic 1 Dose 2 (mg)

Antibiotic 1 method of administration

☒ Per Oral (PO)

☐ Intravenous (IV)

☐ Intramuscular (IM)

☐ Subcutaneous (SC)

☐ Gastrointestinal (G Tube)

reset

Antibiotic 1 Start Date  Today M-D-Y

Antibiotic 1 Days of Therapy

Report the dose of each antibiotic prescribed. If a second dose was used, fill in 'Antibiotic # Dose 2', otherwise, leave it blank.

Select the method of administration.

Select the start date of the treatment, and report the total days of therapy.

**Repeat Step 14 for each antibiotic issued (1 - 3)**

## STEP 16

Does this resident have an in-dwelling catheter?  
\* must provide value

☐ Yes ☐ No reset

**Yes Path:**

- ☒ Acute dysuria
- ☒ Acute pain, swelling, or tenderness of the testes, epididymis, or prostate
- ☒ Fever or leukocytosis
- ☒ Acute costovertebral angle pain or tenderness
- ☒ Suprapubic pain
- ☒ Gross hematuria
- ☒ New or marked increase of incontinence
- ☒ New or marked increase of urgency
- ☒ New or marked increase of frequency
- ☒ Foul-smelling urine
- ☒ Dark urine
- ☒ Elevated leukocytes
- ☐ Other
- ☐ None

Check all that apply

**No Path:**

- ☒ Fever, rigors, or new onset hypertension, with no alternate site of infection
- ☒ Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis
- ☒ New onset suprapubic pain or costovertebral angle pain or tenderness
- ☒ Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate
- ☒ Foul-smelling urine
- ☒ Dark urine
- ☒ Elevated leukocytes
- ☐ Other
- ☐ None

Check all that apply

Select whether the patient had an in-dwelling catheter at the time of prescription.

If selecting **Yes**, a drop-down menu will appear. Select all observed symptoms and 'Other' if other unlisted symptoms were reported. Select 'None' if no symptoms were available.

If selecting **No**, similarly select the associated symptoms or submit an 'Other' options observed in the patient's chart.



## STEP 17

**Clinical Notes**

Expand

**Did this patient meet the McGeer criteria?**  
\* must provide value

Yes

No

Unknown

reset

In the 'Clinical Notes' field, report any additional data found in the lab charts or physician's notes.

Given the patient's constitutional symptoms and lab results, report on whether the patient met the McGeer criteria.

## STEP 18

**Do you have another patient to report data for this month (urine culture or prescription only)?**  
\* must provide value

Yes

No

reset

WARNING: Selecting 'No' and submitting will close this survey completely

Submit

Save & Return Later

Select YES and SUBMIT to report additional patient data

Select NO and SUBMIT to finish data entry

Once steps 8-16 are complete, you may **CONTINUE** reporting individual patient data by selecting **Yes** to the question 'Do you have another patient to report data for this month?'

If all patient data has been reported for the month you may **STOP** the survey by selecting **No** to this question.

Click on 'Submit' to complete the patient page. Note you will not be able to return to this page once submitted.

## STEP 19

**AZ-ASCEND**

Reporting Month \_\_\_\_\_

Urine Culture	Last Name	First Name	MRN
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

Remember to check that you have filled in **each** patient name and/or MRN for tracking purposes as you go through each "Suspected UTI" page.

## RETURNING TO YOUR SURVEY

**Your survey responses were saved!**

You have chosen to stop the survey for now and return at a later time to complete it. To return to this survey, you will need both the *survey link* and your *return code*. See the instructions below.

**1.) Return Code**  
A return code is **\*required\*** in order to continue the survey where you left off. Please write down the value listed below.

Return Code

\* The return code will NOT be included in the email below.

**2.) Survey link for returning**  
You may bookmark this page to return to the survey, OR you can have the survey link emailed to you by providing your email address below. For security purposes, **the return code will NOT be included in the email**. If you do not receive the email soon afterward, please check your Junk Email folder.

\* Your email address will not be stored

Or if you wish, you may continue with this survey again now.

If you need to return to your survey at a later time you may click 'Save & Return Later' on any of the Suspected Resident UTI pages.

You will need to copy the return code, which will be required when you reopen the survey link. Enter your email to resend the URL.

When ready, you will be able to reopen the link sent to your email. Enter the return code, and continue from your last saved position.

## CONNECTIVITY ISSUE/EARLY SUBMISSION

Do you have another patient to report data for this month (urine culture or prescription)?

\* must provide value

WARNING: Selecting 'No' and submitting will close this survey completely

Selected 'No' and 'Submit' by mistake  
OR  
Submission failed



- 1) Contact REDCap administrator to be resent a survey link and code  
OR
- 2) Inform REDCap manager of issue, and begin a second survey without 'Facility Overview' (Skip steps 4-7)

If you accidentally submit your survey, experience connectivity issues, or lose your return survey code you may contact the REDCap project manager for support.

You will be resent your survey and access code, where you will be able to pick up from the last place you saved.

You may alternatively inform the REDCap project managers that you are restarting your survey. You will be able to skip the 'Facility Overview' page, and continue entering records, skipping steps 4-7 from above.

## Closing Comments

Thank you for participating in AZ-ASCEND. Without your diligence this project would not be possible. In recognition of the burden associated with infections, our joint efforts seek to prolong the efficacy of our antimicrobial toolkit, and consequently improve the lives of patients both today and tomorrow.