

**Vancomycin-Intermediate and Vancomycin-Resistant *Staphylococcus aureus* (VISA/VRSA)
Investigation Form
Arizona Department of Health Services**

MEDSIS Case No: _____ County: _____ <input type="checkbox"/> Confirmed <input type="checkbox"/> Suspect <input type="checkbox"/> Not a case <input type="checkbox"/> Lost to follow up Outbreak Name: _____ Part of National Outbreak <input type="checkbox"/> Yes	REPORT SOURCE
	Initial report date: _____ Reporter: _____ Reporter phone: _____ Reporter organization: _____ Provider name: _____ Provider phone: _____ Provider organization: _____

PATIENT DEMOGRAPHICS

Name (last, first) _____	Birthdate ___/___/___	or age _____	Sex: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> UK
Street address _____	City _____	State _____	Zip _____
Occupation/school grade: _____	Employer/school/other: _____		
Ethnicity: <input type="checkbox"/> Hispanic <input type="checkbox"/> Non-Hispanic	Race: <input type="checkbox"/> White <input type="checkbox"/> African American		
<input type="checkbox"/> Unknown	<input type="checkbox"/> Native Hawaiian/Pac Islander <input type="checkbox"/> Asian		
Country of birth: _____	<input type="checkbox"/> American Indian/ AK Native <input type="checkbox"/> Other _____		

CLINICAL INFORMATION

Date of Onset of symptoms: ___/___/___	Diagnosis Date: ___/___/___
Is the patient currently hospitalized <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> UK	
If yes, complete information below for current hospitalization:	
Name of hospital or healthcare facility _____	Name of Physician treating _____
Physician Telephone number _____	Admit date ___/___/___ Discharge date ___/___/___
Clinical Diagnosis _____	

Outcome of illness

<input type="checkbox"/> Survived	<input type="checkbox"/> Died Date of death: ___/___/___	<input type="checkbox"/> Unknown
If patient is deceased: Death Certificate Number: _____ Cause of death _____		

Past Medical History and Underlying Conditions (check all that apply)

<input type="checkbox"/> Current Smoker	<input type="checkbox"/> Cerebrovascular disease	<input type="checkbox"/> Immunosuppressive therapy/Immunosuppressive condition
<input type="checkbox"/> Other tobacco use	<input type="checkbox"/> Liver disease	<input type="checkbox"/> HIV/AIDS
<input type="checkbox"/> Alcohol abuse	<input type="checkbox"/> Diabetes mellitus	<input type="checkbox"/> Emphysema/COPD
<input type="checkbox"/> IVDU	<input type="checkbox"/> Neoplastic disease	<input type="checkbox"/> Renal disease
<input type="checkbox"/> Other drug use	<input type="checkbox"/> Cystic fibrosis	<input type="checkbox"/> Neurologic/neuromuscular disease
	<input type="checkbox"/> Asthma	<input type="checkbox"/> Rheumatoid arthritis
	<input type="checkbox"/> Congestive heart failure	<input type="checkbox"/> Other (specify) _____

Y=Yes

N=No

UK=Unknown

EXPOSURE HISTORY

In the past year did the patient have:

- Surgery Dialysis Invasive device or catheter in place at least 1 day before *Staphylococcus aureus* collected
 Residence in a nursing home or other long-term care facility _____ Date of stay _____
 Prior hospitalization _____ Date of stay _____

Has patient received vancomycin in the past year? Y N UK

If yes, Dates received: ___/___/___ to ___/___/___ ___/___/___ to ___/___/___

Does patient have prior history of methicillin-resistant *Staphylococcus aureus* (MRSA)? Y N UK

If yes, Date of most recent MRSA Positive culture ___/___/___ Culture Site _____

Does patient have prior history of vancomycin-resistant enterococci (VRE)? Y N UK

If yes, Date of most recent VRE Positive culture ___/___/___ Culture Site _____

Is the patient a healthcare worker? Y N UK

LABORATORY INFORMATION

Laboratory Name _____ Specimen ID _____ Specimen Type _____

Collection Date ___/___/___ Result Date ___/___/___ Organism isolated VISA VRSA

Susceptibility method used and MIC value:

- Automated susceptibility method (specify) _____ MIC (µg/ml) _____
 Non-automated MIC MIC (µg/ml) _____
 Kirby-Bauer MIC (µg/ml) _____
 E-test MIC (µg/ml) _____
 Vancomycin-screen plate MIC (µg/ml) _____
 Broth micro dilution MIC (µg/ml) _____

Was the MIC result repeated? Y N UK

Were the lab results confirmed by the Arizona State Laboratory? Y N UK

If yes, Specimen ID# _____ Specimen Type _____

Collection Date ___/___/___ Result Date ___/___/___ Organism isolated VISA VRSA

Susceptibility method used and MIC value:

- Automated susceptibility method (specify) _____ MIC (µg/ml) _____
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 Vancomycin-screen plate MIC (µg/ml) _____
 Broth micro dilution MIC (µg/ml) _____

Was the MIC result repeated? Y N UK

Were the lab results confirmed by the Centers for Disease Control and Prevention? Y N UK

If yes, Specimen ID# _____ Specimen Type _____

Collection Date ___/___/___ Result Date ___/___/___ Organism isolated VISA VRSA

Susceptibility method used and MIC value:

- Automated susceptibility method (specify) _____ MIC (µg/ml) _____
 Non-automated MIC MIC (µg/ml) _____
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 E-test MIC (µg/ml) _____
 Vancomycin-screen plate MIC (µg/ml) _____
 Broth micro dilution MIC (µg/ml) _____

Was the MIC result repeated? Y N UK

TREATMENT

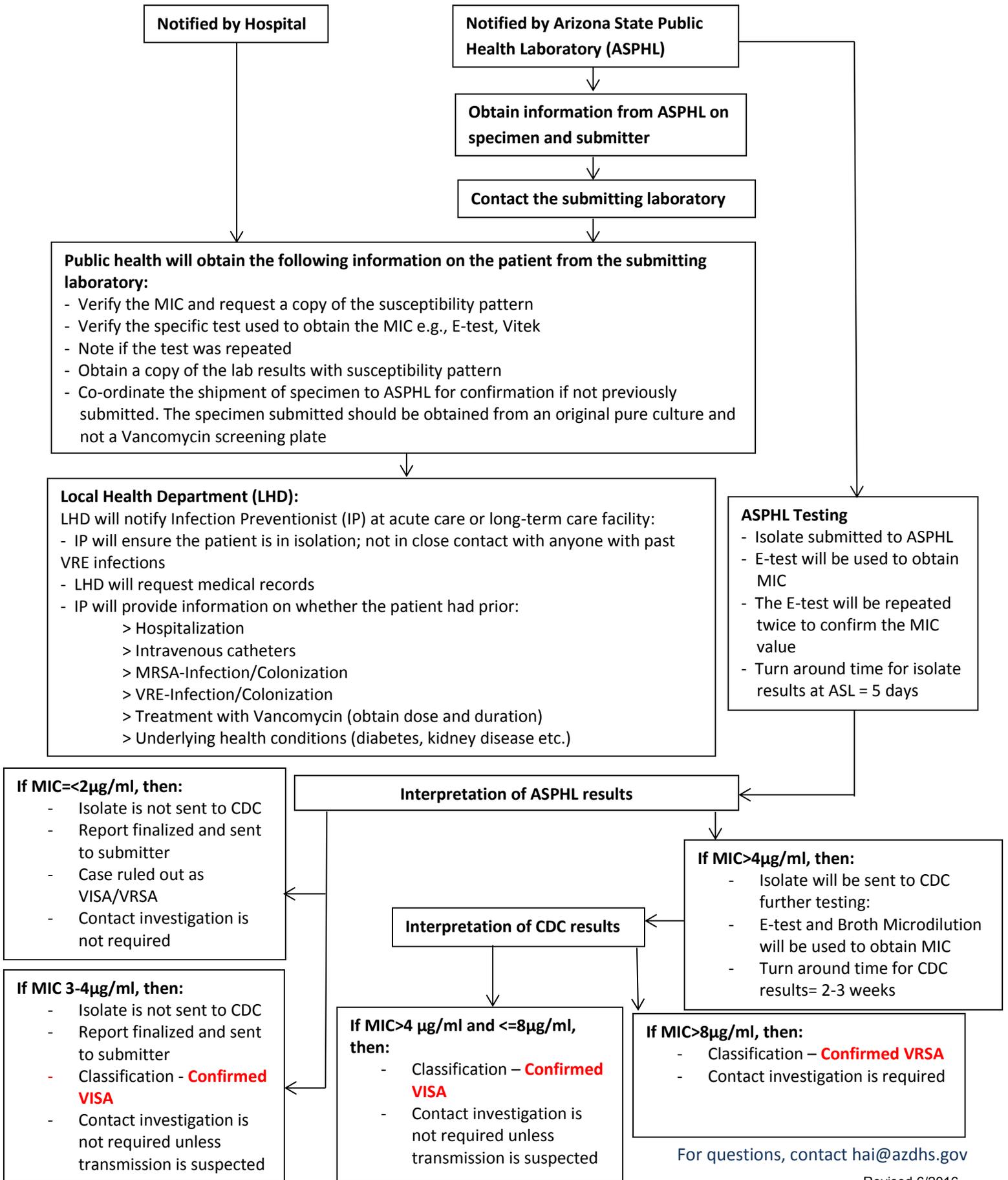
Were antibiotics prescribed?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> UK
List antibiotics prescribed before VISA/VRSA culture results known	List antibiotics prescribed after VISA/VRSA culture results known		
Were other treatment modalities used (e.g. surgical intervention)?	<input type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> UK
If yes, specify _____			

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DIAGNOSTIC CRITERIA	ACTIONS TAKEN																														
<p>Laboratory Criteria for Diagnosis</p> <ul style="list-style-type: none"> • Isolation of <i>Staphylococcus aureus</i> from any body site AND • Intermediate or resistance of <i>S. aureus</i> isolate to vancomycin, detected and defined according to Clinical and Laboratory Standards Institute approved standard and recommendations <p>Case Classification</p> <p>CONFIRMED: A case of vancomycin-intermediate or vancomycin-resistant <i>S. aureus</i> that is laboratory confirmed</p> <p style="margin-left: 20px;">MIC ≤ 2 µg/ml for VSSA MIC = 4 – 8 µg/ml for VISA MIC ≥ 16 µg/ml for VRSA</p>	<ul style="list-style-type: none"> <input type="checkbox"/> No risk factors/exposures could be identified <input type="checkbox"/> Patient could not be interviewed/LTF <input type="checkbox"/> Infection control recommendations provided <input type="checkbox"/> Epi-linked to confirmed case? MEDSIS ID of confirmed case: _____ <input type="checkbox"/> Education provided to case/contacts/facilities <input type="checkbox"/> Follow-up to ensure compliance with treatments <input type="checkbox"/> Follow-up to contacts who may have been exposed <input type="checkbox"/> Contact investigation conducted according to CDC guidelines http://www.cdc.gov/hai/pdfs/VRSA-Investigation-Guide-05_12_2015.pdf <input type="checkbox"/> Laboratory results obtained from testing laboratory <input type="checkbox"/> Medical records obtained on case(s) <input type="checkbox"/> Other _____ 																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Observed MIC</th> <th style="width: 20%;">Interpreted MIC</th> <th style="width: 60%;">VISA/VRSA</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">1.5 µg/ml</td><td style="text-align: center;">2 µg/ml</td><td style="text-align: center;">VSSA</td></tr> <tr><td style="text-align: center;">2 µg/ml</td><td style="text-align: center;">2 µg/ml</td><td style="text-align: center;">VSSA</td></tr> <tr><td style="text-align: center;">3 µg/ml</td><td style="text-align: center;">4 µg/ml</td><td style="text-align: center;">VISA</td></tr> <tr><td style="text-align: center;">4 µg/ml</td><td style="text-align: center;">4 µg/ml</td><td style="text-align: center;">VISA</td></tr> <tr><td style="text-align: center;">5 µg/ml</td><td style="text-align: center;">8 µg/ml</td><td style="text-align: center;">VISA</td></tr> <tr><td style="text-align: center;">6 µg/ml</td><td style="text-align: center;">8 µg/ml</td><td style="text-align: center;">VISA</td></tr> <tr><td style="text-align: center;">7 µg/ml</td><td style="text-align: center;">8 µg/ml</td><td style="text-align: center;">VISA</td></tr> <tr><td style="text-align: center;">8 µg/ml</td><td style="text-align: center;">8 µg/ml</td><td style="text-align: center;">VISA</td></tr> <tr><td style="text-align: center;">9 – 15 µg/ml</td><td style="text-align: center;">16 µg/ml</td><td style="text-align: center;">VRSA</td></tr> </tbody> </table>	Observed MIC	Interpreted MIC	VISA/VRSA	1.5 µg/ml	2 µg/ml	VSSA	2 µg/ml	2 µg/ml	VSSA	3 µg/ml	4 µg/ml	VISA	4 µg/ml	4 µg/ml	VISA	5 µg/ml	8 µg/ml	VISA	6 µg/ml	8 µg/ml	VISA	7 µg/ml	8 µg/ml	VISA	8 µg/ml	8 µg/ml	VISA	9 – 15 µg/ml	16 µg/ml	VRSA	
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<p>Organisms Identified:</p> <ul style="list-style-type: none"> <input type="checkbox"/> MRSA: If isolate is determined to have a MIC value ≤2, was obtained from a sterile site, and susceptibility pattern determined resistance to methicillin/oxacillin <input type="checkbox"/> VISA: If isolate is determined to have a MIC value of 4-8 µg/ml <input type="checkbox"/> VRSA: If isolate is determined to have a MIC value of 16 µg/ml from CDC 																															
<p>INVESTIGATOR(S): _____ DATE: ___/___/___ DATE CLOSED: ___/___/___</p>																															

APPENDIX I

ADHS: Algorithm for Suspected Case of Vancomycin Intermediate *Staphylococcus aureus* (VISA) or Vancomycin Resistant *Staphylococcus aureus* (VRSA)



APPENDIX II

ADHS: Steps on a Contact Investigation for a Confirmed Vancomycin Resistant Staphylococcus aureus (VRSA) case

STEP 1: DEVELOP A PLAN FOR VRSA COLONIZED OR INFECTED INDIVIDUALS

- Treatment protocol e.g. decolonization
- Follow up cultures
- Determine when individual will be considered free from colonization e.g. 3 negative cultures post therapy
- Work issues e.g. work plan if a healthcare worker is positive for VISA/VRSA
- Identify VRSA patients at readmission

STEP 2: IDENTIFY AND CATEGORIZE CONTACTS

- Categorization will be based on levels of interaction with colonized and infected VISA/VRSA patient
- Identification of contacts with extensive interaction with the patient during a defined time period before the VRSA culture date
- Levels of interaction are defined below:

Interaction Scale	Patients	Nursing or patient-care providers	Physicians	Ancillary staff	Family members or household contacts
Extensive	Sharing rooms with the VISA/VRSA patient	Involved in direct care	Conducting physical exams or wound care	Prolonged patient contact e.g. dialysis, rehabilitation or physical therapy	Providing primary care or close contact with patient
Moderate	Sharing patient care areas and healthcare providers for extended periods with the VRSA patient	Deliver medications and have cross coverage of patients	Attend to patients on daily rounds. Perform surgical or invasive procedures using sterile barriers	Monitor patient-care equipment, Limited interaction	-
Minimal	On same ward for short periods of time	Work on the same floor with no cross-coverage of patient	Consult without extensive examination	Provide dietary or maintenance services	-

STEP 3: SPECIMEN COLLECTION

- Patient colonized or infected with VRSA
 - Culture-anterior nares, wounds, drains, other clinically relevant sites
 - May consider rectal or perirectal sites to determine VRE carriage status
- Contacts with extensive interaction with the colonized/infected patient
 - Culture – anterior nares and skin lesions

STEP 4: EVALUATE THE EFFICACY OF INFECTION CONTROL PRECAUTIONS

- Infection control practices should be assessed at facilities that are caring for VRSA patients
- Hospitalized patients with VRSA should be put on standard and contact precautions