

State Case ID: _____

Lab ID: _____

NNDSS ID: _____

Mumps Outbreak Case/Contact Investigation Form

Patient Name (Last, First): _____

Date Reported to Health Department: ___/___/___

Date Investigation Began: ___/___/___

NNDSS Entry Date: _____

Interviewer Name: _____

Interviewer Phone/Email: _____

Interview/Call Log:

Date: _____ **Response:** Left Message Busy Wrong# Completed Other: _____ **Interviewer Initials:** __

Date: _____ **Response:** Left Message Busy Wrong# Completed Other: _____ **Interviewer Initials:** __

Date: _____ **Response:** Left Message Busy Wrong# Completed Other: _____ **Interviewer Initials:** __

Working Case Status:

a) **Date:** _____ **Status:** Suspected Probable Confirmed Ruled Out

Notes: _____

b) **Date:** _____ **Status:** Suspected Probable Confirmed Ruled Out

Notes: _____

c) **Date:** _____ **Status:** Suspected Probable Confirmed Ruled Out

Notes: _____

General Notes: _____

Final Investigative Findings

Final Patient Status: Ruled out Confirmed Probable Suspect Unknown

Case Outbreak Related? Yes No Unknown **If yes, outbreak ID:** _____

Import Status: International Importation U.S. Acquired

Note to Interviewer:

- Prior to beginning the interview, fill in the introductory script at the top of page #2 **and the questions/sections in blue/bold throughout the form.**
- The questions in **blue/bold** should not be asked during the interview.
- Say the scripted text that is in italics throughout the form to introduce the different sections.
- Use Mr., Mrs., or Ms. Last Name; preferable not to use their first name
- If they are still a suspect case pending results, do not say they have mumps when leaving a message or on the phone
- If the patient is not the interviewee, replace 'your' with the patient's name throughout the interview

Pre-Fill Questions

P1. Did the patient die?

Yes No Unknown

a. What was the date of death?

___/___/___

b. Notes to include: _____

P2. If source case of this patient is known (i.e., if there is a known direct epidemiological link), please add the specific source Case ID: _____

P3. Has the patient received the Measles/Mumps/Rubella (MMR) vaccine before the outbreak began?

Yes No Unknown

a. How many doses (If never received mumps-containing vaccine, put 0)? _____

a.1. If not vaccinated, reason: Religious exemption

Medical contraindication

Philosophical objection

Lab evidence of previous disease

MD diagnosis of previous disease

Underage for vaccination

Parental refusal

Other

Unknown

b. What is the last known date(s) the mumps-containing vaccine was given?

___/___/___

P4. Did the patient receive an outbreak (3rd) dose after the outbreak began?

Yes No Unknown

a. Date received

___/___/___

If vaccination information is unavailable, proceed with asking the vaccine questions to the patient. The patient will need to have documentation of mumps vaccination. Questions P3 and P4 would be asked in the vaccination section on page 7.

P5. Was mumps testing performed?

Yes No Unknown

If no, skip the laboratory information section on page 7.

Introductory Script: Mumps Investigation

Hello, my name is **[insert name]**, I am calling from the **[Insert Health Department]**. May I please speak to **[Insert name of patient or parent]**?

I am calling because **[PICK ONE: 1. you were identified as someone who may have had contact with mumps at [location]; 2. you are suspected of having mumps; or 3. you have tested positive for mumps]**. We would like to ask you a few questions about your recent whereabouts and contacts, recent symptoms, and medical history. We would also like to ask about people you have had contact with to better understand the possible spread of the virus to others in your family and community.

We hope that your answers will help identify those with mumps and stop the spread of the virus to keep everyone in the community safe. We estimate that these questions will take 20 minutes or less to answer. Your participation is voluntary. You do not have to answer any questions that make you uncomfortable, and you can stop at any time. The personal identifiable information you share with me today will be kept confidential and will not be shared outside of **[Insert Health Department]**.

Would you like to continue with the questions? Yes No

----- Investigation Begins -----

We will now begin the interview with some general questions.

Demographic Information

1. May I ask your name: _____
(If parent or guardian) What is your relationship to the patient? _____
2. What is your: Address: _____ City: _____ County: _____
State: _____ Zip: _____ Telephone: _____ Country of usual residence: _____
3. What is your sex? Female Male No Answer
4. With which sex do you most identify? Female Male
5. What is your age? _____ years
6. What is your date of birth? ____/____/____
7. How would you describe your race? Black/African American American Indian/Alaska Native Asian/Pacific Islander
 White Other _____ Unknown
8. Would you describe yourself as Hispanic/Latino? Yes No Unknown
9. What is your occupation? **(if student, ask for school/grade)** _____

Clinical Information

Next, I will ask you about any symptoms or recent illness you might have had.

Note for interviewer: To improve understanding, you can utilize the description of parotitis instead of using clinical terminology. *Parotitis is the inflammation/enlargement/swelling of the salivary glands which are located on the side of the face between the ear and jaw. Parotitis can be found on one or both sides of the face and depending on severity can appear as a protruding lump on the jawline.*

10. Did you have (a):

Parotitis or salivary gland swelling?

Yes No Unknown

When did you notice the swelling? ____/____/____

How many days did the swelling last? (days)

Or is it still ongoing? Yes, ongoing

Was the swelling on only one side or both sides? One-sided Two-sided Unknown

Fever?

Yes No Unknown

Jaw pain? (can be felt on the angle of jaw by neck and/or ear)

Yes No Unknown

As applicable:

Inflammation or swelling of testicles (Orchitis)? Yes No Unknown

Ovary inflammation or swelling (Oophoritis)? Yes No Unknown

Breast inflammation or swelling (Mastitis)? Yes No Unknown

Pancreas inflammation or swelling (Pancreatitis)?

Yes No Unknown

Inflammation of the tissue covering the brain and spinal cord (Meningitis)?

Yes No Unknown

Brain inflammation or swelling (Encephalitis)?

Yes No Unknown

Hearing loss?

Yes No Unknown

Did you have any other symptoms or complications?

Yes No Unknown

If yes, describe other symptoms or complications

For complications selected, other than parotitis, please include:

Date of complication onset: ____/____/____

Clinical notes: _____

11. Did you visit a healthcare provider because of your illness? Yes No Unknown
- a. If yes, where did you visit? (Check all that apply) Clinic Emergency Department School Nurse
 University Health Services Other, describe: _____
- b. If yes, what date did you visit a health care provider? ____/____/____
- c. If yes, what is the name of the facility? _____
12. Were you hospitalized because of your illness? Yes No Unknown
- a. If yes, what was the name of the hospital? _____
- b. If yes, what was the admission date? ____/____/____
- c. If yes, what was the discharge date? ____/____/____ Still hospitalized

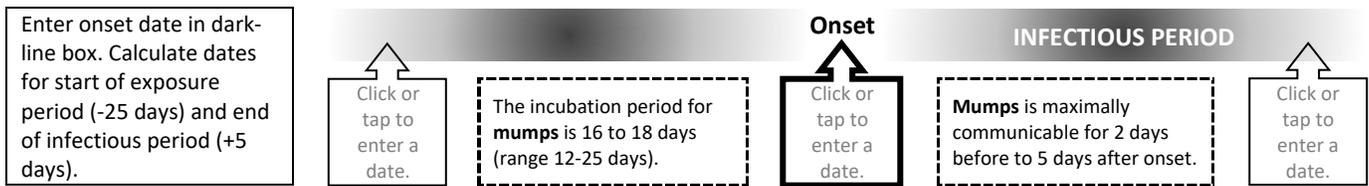
Next, I have a couple questions about your potential contact with mumps.

Epidemiologic Investigation

13. Have you traveled out of state/country in the past 25 days? Yes No Unknown
- a. If yes, what were the details of your travel (e.g., country(ies)/state(s), travel dates)?

14. Before your parotitis or salivary gland swelling appeared, were you in contact with someone known to have mumps or with similar symptoms to you? Yes No Unknown
- a. If yes:
- a.1 Where did the contact with this person occur?
- Day Care School College Doctor's Office/Outpatient Hospital Home Work
 Military Place of Worship Prison or Jail Immigration Detention Facility
 Unknown Other? If other, can you describe? _____
- a.2 What is the name of the location? _____
- a.3 When did the contact occur (list date(s): one time=first date only; multiple=first and last date)?
 ____/____/____ - ____/____/____
- a.4 Are there any other details that you want to share about this contact (e.g., relationship to contact)?

Note for Interviewer: Utilize the calculation chart below to help the patient determine their exposure period (when they might have been infected with mumps) and infectious period (when they may have spread mumps).



Next, to try to identify where you might have been infected with mumps, I would like to ask about locations/events where you may have had close contacts within the 25 days before your parotitis appeared.

Note to Interviewer: Consider the definition of close contact for mumps for the section below:

1. Having direct contact with a mumps patient's infectious respiratory secretions by droplet transmission (e.g., kissing, sharing saliva-contaminated objects like water bottles, or being coughed or sneezed on). Droplets generally travel ≤ 3 feet when an infected person talks, coughs, or sneezes; or
2. Being in close proximity for a prolonged period of time with a person infected with mumps during their infectious period (2 days prior, to 5 days after, onset of parotitis or other salivary gland swelling)

Examples of groups with likely close contact include:

- Students from the same study group, social group, theater or choir group, or fraternity or sorority as a mumps patient
- Coworkers on the same shift or who socialize after work with a mumps patient
- Athletes who practice together or share sports facilities or equipment with a mumps patient
- People in a prison or jail who are assigned to the same housing unit or cell with a mumps patient

Potential exposure notes (i.e., close contact group types, how many people in group)

Next, to help prevent further spread of the virus, I would like to ask about locations/events where you may have had close contacts during the time you may have been contagious (2 days before to 5 days after parotitis appeared).

Table of possible events where there could have been close contact infections

Days	Date Range	Locations/Events Visited
Up to 2 days before		
Day of Parotitis Onset	Click or tap to enter a date.	
Up to 5 days after		

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Note to Interviewer: If the vaccine information and laboratory information is known before the interview (e.g., from prior review of the immunization registry and laboratory results), this is the end of the interview. Skip to the end to thank the interviewee for participation. It may be helpful to collect provider information if follow up is needed regarding vaccination information or underlying medical history.

Vaccination Status

Treating provider name: _____

Treating provider contact number: _____

Reference pre-fill questions P3 and P4.

Laboratory Information

Reference pre-fill question P5.

Note to Interviewer: For newly identified patients, please ask if patient will give permission to have specimen collected to confirm mumps disease. All information will be strictly confidential.

Permission Granted: Yes No

15. Fill in testing information:

Note to Interviewer: For individuals presenting with symptoms of mumps without known epidemiologic-linkage, multiplex testing for other etiologies is recommended concurrent with mumps testing. (Refer to appendix B if other etiologies are tested)

Test Type	Test Result*	Date Specimen Collected	Performing Laboratory (e.g., commercial, state, APHL ref lab, CDC)
Preferred/Confirmatory tests			
PCR Specimen type: <input type="checkbox"/> Buccal <input type="checkbox"/> Oral <input type="checkbox"/> Urine <input type="checkbox"/> CSF	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend		
Genotype (if available, PCR+)		Click or tap to enter a date.	
Other/Supportive tests			
Igm	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend	Click or tap to enter a date.	
IgG acute	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend	Click or tap to enter a date.	
IgG conval	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend	Click or tap to enter a date.	
Culture	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend	Click or tap to enter a date.	

*Notes: Indet=Indeterminate; If health department is responsible for testing, report results back to provider/patient.

State Case ID:

Lab ID:

NNDSS ID:

----- **End of Investigation** -----

That concludes the questions we have for today, thank you for your participation. Do you have any questions? If you have any questions in the future, please contact [\[State Health Department\]](#) at [\[Phone Number\]](#). Any pending updates on lab results or mumps status will be communicated by [\[State Health Department\]](#) when they become available. Thank you again and have a nice day.

Appendix A: Identification of specific persons and spread

To identify the potential spread of the virus in your *[home/dormitory/prison/jail/immigration detention facility,]* I would like to ask you about those who live in your household/housing unit.

If multiple housing units were used it is encouraged to interview those at every housing unit with date ranges of stay specified for each location. DOB 1

Name	Relation to Patient	DOB	Age	Symptoms	MMR Vaccination Status	Number of Vaccine Doses (0 if none)
					<input type="checkbox"/> Vaccinated (Vac) <input type="checkbox"/> Unvaccinated (UnVac) <input type="checkbox"/> Unknown (Unk)	
					<input type="checkbox"/> Vac <input type="checkbox"/> UnVac <input type="checkbox"/> Unk	
					<input type="checkbox"/> Vac <input type="checkbox"/> UnVac <input type="checkbox"/> Unk	
					<input type="checkbox"/> Vac <input type="checkbox"/> UnVac <input type="checkbox"/> Unk	
					<input type="checkbox"/> Vac <input type="checkbox"/> UnVac <input type="checkbox"/> Unk	
					<input type="checkbox"/> Vac <input type="checkbox"/> UnVac <input type="checkbox"/> Unk	

Appendix B: Testing for other parotitis etiologies

For individuals presenting with symptoms of mumps without known epidemiologic-linkage, multiplex testing for other etiologies is recommended concurrent with mumps testing.

Note: If mumps testing is negative and there is a more likely alternative diagnosis with a positive laboratory result, individuals should be classified as not a mumps case.

Other parotitis etiologies	Test result*
Parainfluenza virus types 1-3	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Epstein Barr virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Influenza A virus (H3N2)	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Human herpes virus 6A and 6B	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Herpes simplex viruses 1 and 2	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Coxsackie A virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Echovirus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Adenoviruses	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Lymphocytic choriomeningitis virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
Human immunodeficiency virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done
COVID-19	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Indet <input type="checkbox"/> Pend <input type="checkbox"/> NA - test not done

*Note: Indet=Indeterminate

The below appendix includes applicable questions to an outbreak in a university setting. Questions can be tailored or added that are specific to the university's needs or the nature of the outbreak.

Appendix C: Additional information for location-specific outbreak settings - University

Note to Interviewer: It can be helpful to collect university ID or email for contact tracing and/or vaccination records.

University ID/email: _____

Demographic Information

1. Are you a student, faculty, or staff? Student Faculty Staff

If student, complete the questions below:

2. What class are you in? Freshman Sophomore Junior Senior Grad student Other

3. How would you describe your housing type? On campus Off campus

a. If off campus, indicate the type of housing: Apartment Shared house/fraternity/sorority

Own home Living with parents Other

b. If on campus, can you describe your dormitory/floor? _____

4. Who do you live with (check all that apply)?

Live alone (skip to Q5) Roommate (shared bedroom) Housemate (not shared bedroom)

a. How many people do you share a room with? _____

b. How many people do you share a house, but not room, with? _____

5. Do you work on campus/have a job? Yes, full-time Yes, part-time No (skip to Q6)

a. What type of work are you doing? Athletics Food Service Healthcare provider Other

b. If healthcare provider or other, specify: _____

6. Do you participate in any of the following (check all that apply and specify):

Sports, collegiate: _____

Sports, intra-mural: _____

Fraternity/sorority: _____

Place of worship: _____

Volunteer organization: _____

Other clubs/organizations: _____

Epidemiologic Investigation

This section provides opportunity to investigate timing and location of potential exposure. For example, was there a large university event (e.g., rush week, spring break, football game) in which the case had attendance? In which case, contact tracing can begin here for infection determination. Questions can be created/included to reflect these circumstances.

Note to Interviewer: In addition to the basic questions asked in the main outbreak investigation, use this section to determine potential infection contacts and location.

7. Did this include travel to another university/college? Yes No Unknown

If yes, specify: _____ Dates: ___/___/___ - ___/___/___

Note to Interviewer: As a supplement to the main investigation of infectious period, use the section below to help identify other locations visited by the patient while infectious. .

8. Thinking up to 2 days before you developed parotitis, did you:

Stay home from any classes or required activities?

Yes No

If yes, how long?

___ (days) **OR** ___ # of classes

Stay home from sports or other activities?

Yes No

If yes, how long?

___ (days)

Stay away from other people, including roommates or others in your household?

Yes No Sometimes

If yes or sometimes, how long did you stay away from others?

___ (days)

9. Thinking up to 2 days before you developed parotitis, did your medical provider recommend any of the following precautions to you:

Isolation from other people?

Yes No Don't Know

If yes, for how long?

___ (days)

Wearing a mask while out in public?

Yes No Don't Know

If yes, for how long?

___ (days)

If yes, did you wear a mask when out in public?

Yes No Sometimes

N/A (did not go out)

10. Feel free to provide any other information on your illness that may be helpful for us to understand.

State Case ID:

Lab ID:

NNDSS ID:

The below appendix includes applicable questions to an outbreak in a correctional/detention facility. Questions can be tailored or added that are specific to the facility's needs or the nature of the outbreak.

Appendix D: Additional information for location-specific outbreak settings – Correctional/Detention Facility

Note to Interviewer: Begin the investigation by speaking with the facility operator first. If possible, you can then continue investigation of patient detained.

Questions for Facility Operator

Facility Name: _____

Facility ID: _____

Facility Type: Jail State Prison Federal Prison Immigration Detention Facility Other: _____

Patient is under the custody of which entity while in this facility:

Local law enforcement State law enforcement Federal Bureau of Prisons

U.S. Immigration and Customs Enforcement U.S. Marshals Service Other: _____

Government entity with authority over the facility: _____

Is this facility privately run? Yes No

If yes, name of the company operating the facility: _____

The first series of questions will allow us to get a better understanding of your facility.

1. What is the number of incarcerated/detained people in your facility?

2. The following questions are related to people transferred to or from other correctional/detention facilities to your facility.

Frequency of transfers (# persons transferred by week) _____

Where do most transfers come from or go to? _____

Do transfers come in as: Large Groups Individually

Are there opportunities to house groups together when they are transferred in? Yes No

If yes, describe:

3. Describe the housing unit structure of the facility? (select all that apply) Dorms Private Rooms Shared Room

Note: If the facility is larger in size, only describe where the patient was housed.

If housing unit structure are **dorms:**

How many dorms are in your facility? _____

How many beds are in each dorm? _____

If housing unit structure are **private rooms:**

How many private rooms are in your facility? _____

If housing unit structure are **shared rooms:**

How many shared rooms are in your facility? _____

How many beds are in each shared room? _____

4. The following questions are regarding your staff.

Is there a vaccination policy for MMR in place for staff? Yes No

Do you provide a way for staff to get vaccinated? Yes No

Can you describe the movement of staff?

5. The following questions are regarding the healthcare model in your facility.

Is healthcare provided on-site? Yes No

What is the healthcare model used in your facility? County/State/Federal Employees Contract Providers

Do healthcare providers have access to patient detainee's previous medical/vaccination records before they were held in this facility? Yes No Unknown

Are medical records transferred? Yes No

If yes, what is the method of transfer of medical records between facilities? Electronic Paper

Describe the nature of pharmacy/vaccine procurement for the facility:

6. Have you provided any MMR vaccines or held any MMR vaccine-specific events? Yes No

a. If yes, please describe:

b. If no, are you able to have vaccination at intake or have a clinic or event? Yes No

c. Please describe any successes or challenges you may have regarding vaccination in your facility.

7. The following are high-level details needed regarding the mumps cases.

How many mumps cases in total have there been? _____ cases

What was the date of the first case? ____/____/____

What was the date of first case isolation? ____/____/____

What was the date of cohorted isolation? (if applicable) ____/____/____

What was the date of last recorded/known case? ____/____/____

Have cases been cohorted to certain housing units or areas? Yes No

Number contained: _____

Location contained: _____

8. To understand the potential spread, we'd like to gather more information about the first case.

Was the person detained within the last 25 days? Yes No

If yes, when? ____/____/____

Which community (e.g., county, state) did they come from? _____

Did someone visit them recently? Yes No

If yes, when was the date of the visit? ____/____/____

Did the visit allow for close contact (within 6 feet for more than 10 minutes)? Yes No

Has the person been recently transferred in or out of your facility? Yes, into facility Yes, out of facility No

If yes into facility, from where? _____

If yes out of facility, to where? _____

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Did the person leave the facility during their infectious period?
(refer to infectious period table dates in investigation above)

Yes No

If yes, where? Work release Trial/legal proceedings Other: _____
 Medical visit at hospital, hospital name: _____

Was this person in vehicles with other detained people during transfers or transportation? Yes No

Is the person involved in any additional activities such as programming or job duties within the facility? Yes No

If yes, describe: _____

9. Were there any opportunities for the patient to have high levels of contact with other people during his/her their infectious period? (e.g., using the gym, playing sports, any programming or job duties)

10. Describe how the patient has access to hand hygiene supplies in the facility.

- a. Are these supplies available: Free of Cost
- Purchased on Commissary
- Supplemental amounts purchased beyond issued amount

Questions for Patient

Note to Interviewer: Collect the questions for facility operators before conducting the investigation with the patient.

Preliminary Question: What is the detainee/working status of the patient? If staff, then do not use appendix questions below.

Patient detained Patient incarcerated Staff Unaccompanied Minor

1. How many people do you share a room/dorm with? _____
(refer to infectious period table dates in investigation above)

2. Are you involved in any activities where you may have had contact with others while feeling ill (indicate dates of infectious period)? Describe.

3. Do you have access to hand hygiene products (e.g., soap)?

Yes No

a. How do you get these products? Free of Cost Purchased on Commissary

b. Can you describe the types of products you use (e.g., soap, hand sanitizer)

4. What date were you moved into a separate housing space because you had mumps?

___/___/___

Note to Interviewer: Questions 5 and 6 are very specific for patient detained.

5. What countries were you in during the month before you acquired mumps?

6. Have you had a previous mumps infection?

Yes No