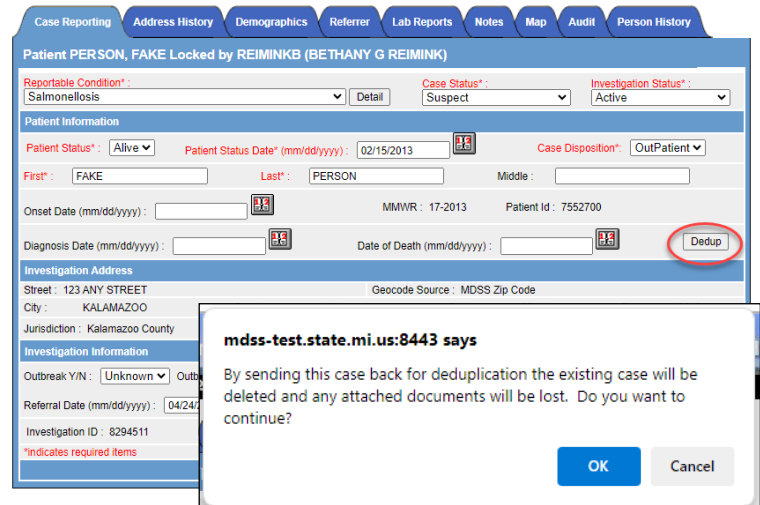# Instructions for Deduplication in MDSS

Deduplication is the process of merging new patient information coming into the Michigan Disease Surveillance System (MDSS) with existing patient information. Deduplication allows the user to determine 1) if the persons entered into the system with similar names and/or demographics are the same person or different, and 2) if two separate case reports from the same person are the same case or different. Deduplication is only available to users who have Administrator or Epi Staff/CD Nurse access in MDSS.

There are two ways to resolve deduplications – from the Case Reporting tab or the Administration menu:
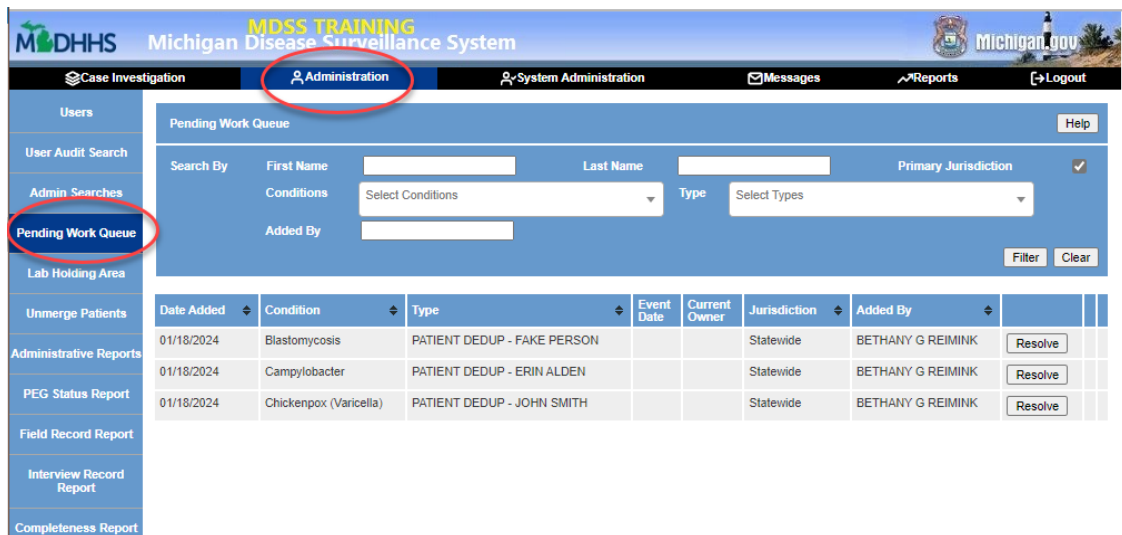
Case Reporting Tab Deduplication

1) Select the **Dedup** button. The case should have already gone through deduplication when it was entered so this method is sometimes referred to as *re*duplication.

Note: A warning box will appear stating that if the case is sent back to deduplication, the case and attached documents will be lost. Review the case details and notes tab for attachments and save anything that you need to keep with the case, then select **OK**.

Administration Menu Deduplication

1) Click the **Pending Work Queue** from the SideBar.

2) Deduplication is a two-step process. The first step is to determine if the new incoming person is new or different than an existing person in MDSS.

Person Level Deduplication Steps

   a. Locate the patient whose record you want to resolve and click **RESOLVE.**

   b. Review the newly entered case record (top row) with the existing record(s) (subsequent rows) and determine whether the records are for the same person. There may be multiple potential matches for a person - by default, the first potential match should be the most recently modified case, so this case should be chosen.

   c. If there is a potential match, select the radio button next to the person you would like to merge and click **CONTINUE.**

      i. If there is no potential match, click **NO MERGE** to create a new person.

      ii. **CANCEL** returns you to the previous window without making a decision on merging.

   d. The "Patient Record Merge" screen displays the detailed field values for the records that you have elected to merge. The **left column** displays the newly entered data, the **right column** displays the existing data.

Patient Record Merge

Source	New Data	Existing
Patient Record ID		13181053
Created Date	01/24/2024	11/02/2021
Last Modified Date	01/24/2024	06/02/2023
First Name	○ FREDDY	● FREDDY
Middle Name	○	●
Last Name	○ FLINTSTONE	● FLINTSTONE
Date of Birth	○ 12/12/1970	● 12/12/1970
Gender	○ MALE	● MALE
Race	○ CAUCASIAN	● CAUCASIAN
Ethnicity	○ NOT HISPANIC OR LATINO	● NOT HISPANIC OR LATINO
Arab Ethnicity	● NON-ARAB	○ UNKNOWN
Home Phone	○	● 517-555-1245
Other Phone	○	●
Email	○	●
Parent/Guardian First Name	○	●
Parent/Guardian Middle Name	○	●
Parent/Guardian Last Name	○	●
Parent/Guardian Phone	○	●
Patient Status	● ALIVE	○ ALIVE
Patient MDOC ID	○	●

Select information you want to keep

Patient Addresses

	New Data	Existing
Addresses	☐ MAKE CURRENT ADDRESS 1234 E NORTH ST LANSING, MI 48906 INGHAM COUNTY	MI INGHAM COUNTY 1234 E NORTH ST LANSING, MI 48906 INGHAM COUNTY

Uncheck if the address is already in the existing data

Patient Case Information

		Existing
Case Status		Confirmed
Investigation Status		New
Disease		Chlamydia (Genital)
Referral Date		06/23/2022
Investigator		WEINBERG, MEGHAN
Jurisdiction		Ingham County

Previously reported case investigations for the existing patient

Patient Case Information

		Existing
Case Status		Confirmed
Investigation Status		New
Disease		Chickenpox (Varicella)
Referral Date		11/02/2021
Investigator		HENDERSON, TIFFANY A
Jurisdiction		Ingham County

[Continue] [Back] [Defer] [No Merge] [Help]

e. Select the radio buttons next to the field values that you want to keep in the merged record. MDSS will automatically select completed fields over blank or unknown fields.

   i. **Name Fields** – select any new information such as a middle name.

   ii. **Demographic Information** – select race and ethnicity data, if they are known.

   iii. **Phone** - if there is a home phone in both new and existing data, MDSS will keep both phone numbers and drop the unselected number to the other in the following screen.

   iv. **Address** – if the new address is the same as the existing data, uncheck the box that is labeled "Make Current Address".

   v. **Patient Status** – review the patient status. If the new patient status is 'Died' ensure that it is selected.

f. After appropriate fields are selected and the person is a match, select **CONTINUE**.

   i.   **BACK** – returns you to the previous window without making a decision. Select BACK if the wrong person was selected to be merged.

   ii. **DEFER** – indicates you are not able to determine whether the new record pertains to the existing record. DEFER sends the record back to the Pending Work Queue for resolution.

   iii. **NO MERGE** – indicates the new record DOES NOT pertain to an existing record and a new person will be created.

g. The "Patient Record Merge Confirmation" screen will appear. Review the data that was selected on the previous screen and make the final determination to merge the records.

Patient Record Merge Confirmation	
Patient Record #13181053 will be replaced with the merged Patient Record. A new patient record will be created with the following merged patient data.	
Merged Record Details	
Status	ALIVE
First Name	FREDDY
Middle Name	
Last Name	FLINTSTONE
Date of Birth	12/12/1970
Gender	MALE
Race	CAUCASIAN
Ethnicity	NOT HISPANIC OR LATINO
Arab Ethnicity	NON-ARAB
Home Phone	517-555-1245
Other Phone	517-335-1234
Email	
Parent/Guardian First Name	
Parent/Guardian Middle Name	
Parent/Guardian Last Name	
Parent/Guardian Phone	
MDOC ID	
Address(es)	MI INGHAM COUNTY 1234 E NORTH ST LANSING, MI 48906 INGHAM COUNTY

Complete Merge | Back | Defer | No Merge | Help

h. When you are finished verifying that each field contains the correct value and the person is a match, select **COMPLETE MERGE**.

   i.   **BACK** – Returns you to the previous window (the "Patient Record Merge" screen) so that you can select the appropriate fields to keep with the record.

   ii. **DEFER** – indicates you are not able to determine whether the new record pertains to the existing record. DEFER sends the record back to the Pending Work Queue for resolution.

   iii. **NO MERGE** – indicates the new record DOES NOT pertain to an existing record and a new person will be created.

3) The second step in deduplication is to determine if a new case (or new condition) should be created.

Case Level Deduplication Steps

a. Review the existing cases and click one of the available buttons:

Investigation Status	Case Status	Disease	Referral Date	Onset Date	Investigator	Jurisdiction	
New		Campylobacter	01/23/2024		TBD	TBD	Create
Completed	Confirmed	Gonorrhea	08/15/2013		WILSON, NICOLE	Kalamazoo County	Matches Existing
Completed	Probable	Hepatitis C, Chronic	08/15/2013		WILSON, NICOLE	Kalamazoo County	Matches Existing
Active	Suspect	Salmonellosis	04/24/2013		WILSON, NICOLE	Kalamazoo County	Matches Existing
Completed	Probable	Hepatitis C, Acute	02/15/2013		PATRICK, ROSEMARIE	Kalamazoo County	Matches Existing

i. **CREATE** – indicates that the new case <u>does not</u> refer to an existing case. A new case, with the merged patient information, will be created.

ii. **MATCHES EXISTING** – indicates that the new case <u>does</u> match an existing case and was previously reported for this disease. The existing case will be changed to reflect the new information that was entered for the case.

iii. **PLACE IN QUEUE**– sends case back to pending queue without making a decision.

Note: Some conditions have specific criteria to determine when a new case should be created. Refer to instructions for specific diseases below.
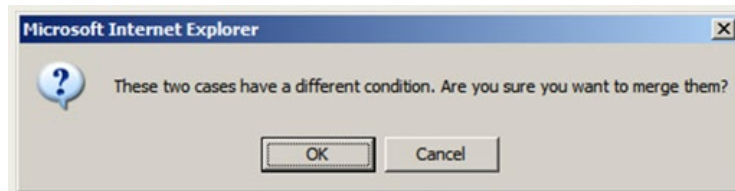
b. If **MATCHES EXISTING** was selected and the case was manually entered (i.e., *not* an electronic lab record), you will need to review the Case Report Forms for the 'New Data' and the 'Existing' cases. Select 'View PDF' to review information and then select the radio button of the Case Report Form you want to keep.

i. **MERGE** – completes the case merging process and saves the details form that was selected. All data from the form that was not chosen will be lost.

ii. **BACK** – sends you back to the previous screen to choose whether to create a new case or match to the existing case.

iii. **DEFER** – indicates you are not able to determine whether the new record pertains to the existing record. DEFER sends the record to back to the Pending Work Queue for resolution.

Case	New Data	Existing
Investigation Status	New	New
Case Status		Suspect
Condition	Salmonellosis	Salmonellosis
Referral Date	04/24/2013	04/24/2013
Onset Date		
Investigator	TBD	NICOLE,WILSON
Jurisdiction	TBD	Kalamazoo County
Case Details	View PDF	View PDF
Case to Keep	○	⊙

5

c. If you choose to merge two cases with different conditions, a popup screen will appear, select OK if you are sure you want to merge the records

Notes:

1) When in doubt about whether a case should be merged, defer or create a new case – you can always go back and reduplicate the case manually (refer to Page 1, Step 1).

2) Only information selected in the patient deduplication portion of the process will be merged into the form you select. Only information in the detail form that you select will be saved. Information from one form will NOT be merged into the other during a merge.

3) For incoming ELR messages, MDSS will automatically deduplicate patients for whom there is a 100% match for an existing patient record, following a standardized algorithm. A banner message will appear for patients for whom automatic patient record de-duplication has occurred.

4) Some conditions may generate multiple labs. If cases have the same serotype of an organism and only a certain amount of time has passed, cases may be merged (refer to disease specific instructions for additional information). If you can't see the serotype information during the deduplication process, you may need to create a new case and then view the new lab result – if needed, you can reduplicate the case manually or mark the case superceded.

5) The final screen that allows you to view each Case Report Form (from step 3b above) will not be available when merging an Electronic Lab Record (ELR) to an existing case in MDSS. This is because ELRs only include lab data and nothing else.

6) When merging two cases together, notes entered into the Notes tab (i.e., the date/time- and user-stamped notes) will be added to the merged case regardless of which Case Report Form is selected as the "Case to Keep". Notes entered into the 'Other Information Section' within the Case Report Form will only be added to the merged case if that Case Report Form is selected as the "Case to Keep".

7) When sending an existing case back into the deduplication queue, or reduplication, please note that any attachments on that case will be lost. Those attachments should be saved locally and then uploaded after the redup.

8) If a case has a 6-digit number as part of their first name, the case was initially reported as part of the Michigan Department of Corrections (MDOC) Prisoner system prior to when MDSS had a field for the MDOC ID. The 6-digit prisoner ID should be kept with the first name only if the State Prison ID is blank. If the number is populated in the State Prison ID, keep the name without the ID.

Deduplication Instructions for Specific Diseases

Some conditions have specific criteria to distinguish when a new case should be created. These instructions should be used when a person has been previously reported for a condition and is being reporting again for the same condition.

After appropriately merging a person in MDSS, use the information below to determine if a new case should be created or matched to an existing case.

Note: If a person was never reported for the condition of the new case, always create new.

COVID-19

Note: MDSS has algorithms that may automatically merge the person and/or the case depending on the type of data that was referred (e.g., ELR, direct manual entry), the quality of existing and new data, and the timing of the match. If automatic deduplication is not done for person or case, follow instructions below:

a) If a case is previously reported as Confirmed or Probable and <90 days have passed since the initial referral date, choose **MATCHES EXISTING.** If a case was previously reported as Confirmed or Probable and >90 days have passed since referral date, choose **CREATE.**

b) If a case was previously reported as Suspect, Probable, or Confirmed and a new EDRS record is received, choose **MATCHES EXISTING**, even if >90 days since referral date (if condition matches).

c) If a case is previously reported as Suspect or Unknown and the investigation status is new or active, choose **CREATE.** Note the case name so that it can be searched and reviewed for correct case status.

d) If a case does not have a history of being a Confirmed or Probable case and a new result is received, choose **CREATE.** If a case was created and is a duplicate report of a Confirmed or Probable case that was reported <90 days prior, then the Dedup button can be selected in the Case Reporting tab to merge the two cases.

Gonorrhea and Chlamydia

a) If the new case/lab report is greater than 30 days from a previous report, choose **CREATE NEW**

b) If it is less than 30 days, choose **MATCHES EXISITING**

Syphilis

a) On the case deduplication, or 'Create Investigation Screen,' **DEFER** and MDHHS staff will merge or create new, as appropriate

b) Do not close new investigations, MDHHS Syphilis staff will merge, re-assign, investigate, and completed, as appropriate
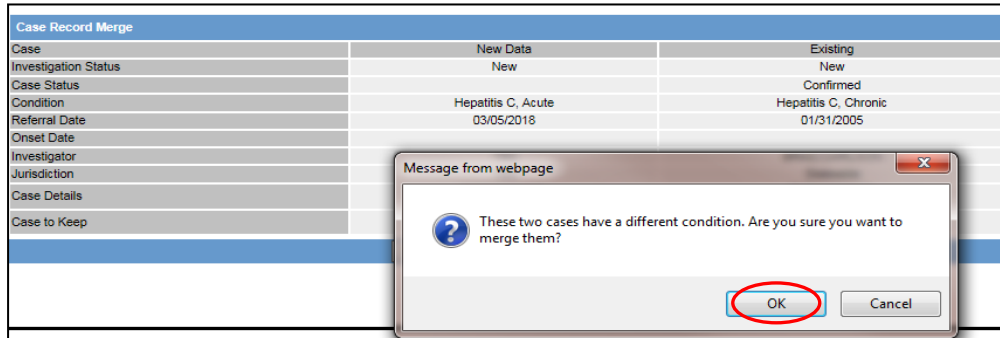
Hepatitis B

a) If the case is not a female of childbearing age (10 to 60 years of age) look at the previous report date and disease.

    I.   If the case was previously reported with *Acute* infection within the last 6 months chose to **MATCHES EXISTING** (merge)

    II.   If the case was previously reported with *Acute* infection and a reasonable time period has passed since this new report (≥ 6 months) **CREATE NEW**

Note: In this situation, the condition may need to be changed to Hepatitis B *Chronic* if it was reported as *Acute* (this would be done after completing the deduplication process and then searching for the new case and editing the newly created case)

b) If the case is a female of childbearing age (10 to 60 years of age) **CREATE NEW**

    I.   After completing the deduplication process, search for the new case and click edit to open the case investigation; write a note that indicates the new case was created to assess for pregnancy status

    II.   Refer to [Entering and De-duplicating Chronic Hepatitis Reports in the MDSS](#) or the [Hepatitis B Reporting Flowchart](#) for more details

c) Refer to the [Hepatitis B Serology Interpretation for MDSS Entry/Closure of Cases](#) for more information about lab results

Hepatitis C

a) If the case was previously reported as a Probable or Confirmed Hepatitis C, *Acute* case within the last 6 months, choose **MATCHES EXISTING** to merge the case into the existing Hepatitis C, Acute case

b) If the case was previously reported as a Probable or Confirmed Hepatitis C, *Acute* case and it has been 6 months or greater since the past report, choose **CREATE NEW**; the new case condition should be Hepatitis C, *Chronic* (which may have to be changed by searching for the newly created case after deduplicating and editing the new case investigation), as *Acute* Hepatitis C cases cannot have any previous history of Hepatitis C infection in MDSS

c) If the case was previously closed out as Not a Case, choose **CREATE NEW**

d) If the case was previously reported with a Probable or Confirmed *Chronic* Hepatitis C infection, choose **MATCHES EXISTING** (i.e., new Hepatitis C, *Chronic* cases should be merged with the previous case). New Hepatits C, *Acute* cases should also be merged with the previously reported *Chronic* case, when the message box warning of different diseases pops up, click 'OK' to merge the case (screenshot below)

Case Record Merge

Case	New Data	Existing
Investigation Status	New	New
Case Status		Confirmed
Condition	Hepatitis C, Acute	Hepatitis C, Chronic
Referral Date	03/05/2018	01/31/2005
Onset Date		
Investigator		
Jurisdiction		
Case Details		
Case to Keep		

Message from webpage

These two cases have a different condition. Are you sure you want to merge them?

OK   Cancel

e) If the case was previously reported with *Perinatal* Hepatitis C infection and the patient is now over 36 months of age, choose **CREATE NEW**. The new case should be changed to *Chronic* Hepatitis C case. If the patient is 36 months of age or younger, choose **MATCHES EXISTING**.

f) If the case was previously reported as Superceded, Not a Case, Unknown, or reported with the condition, "Hepatitis C, unknown," create a new case and determine whether the new case is *Acute* or *Chronic* Hepatitis C. The condition name may need to be changed to Hepatitis C *Chronic* if it was reported as *Acute* (this would be done after completed in the deduplication process and searching for the newly created case and editing the new case investigation)

g) Refer to the [Hepatitis C Case Reporting Flowchart](#) for more details

Mycobacterium

Nontuberculous Mycobacterium

a) If the case was previously reported with the same Mycobacterium species and less than 24 months have passed, choose **MATCHES EXISTING**

b) If the case was previously reported with the same Mycobacterium species and 24 or more months have passed, choose **CREATE NEW**

c) If the case was ever previously reported with a different Mycobacterium species, choose **CREATE NEW**

Tuberculosis

d) If the case was previously reported with active Tuberculosis within the past 12 months, choose **MATCHES EXISTING**

e) If the case was previously reported with active Tuberculosis with the investigation status **COMPLETED** and 12 or more months have passed, choose **CREATE NEW**

CPO

a) A **specific organism/carbapenemase combination** in a person should be counted as a separate case from other organism/carbapenemase combinations in the same person (e.g., KPC+ K. pneumoniae vs. NDM+ E. coli). A specific organism/carbapenemase combination can include a carbapenemase gene(s) without an organism detected (e.g., NDM+ no organism vs. NDM+ E. coli). **CREATE NEW**

b) A **person** first classified as a clinical case should not be counted as a screening case thereafter for the same organism/carbapenemase combination (e.g., patient with known NDM+ E. coli

positive clinical culture who later has NDM+ E. coli colonization should not be counted as a separate case). **MATCHES EXISTING**

c) A **person** first classified as a screening case can be later counted as a clinical case with the same organism/carbapenemase combination (e.g., patient with NDM+ E. coli peri-rectal screening swab who later develops NDM+ E. coli blood stream infection would be counted twice, once in each category). **This is the only way that the same organism/carbapenemase combination can be counted twice for the same person**. **CREATE NEW**

d) A case with a known carbapenemase but unknown organism should only be counted once for that carbapenemase (e.g., an NDM+ screening case is later screened at a different facility and tests NDM+ positive and no organism is identified again). **MATCHES EXISTING**

e) If unsure about the type of the current or previous case, **CREATE NEW** as these cases can be later merged or marked superceded if necessary following additional investigation.

f) For more information, go to: [CPO-Reporting-and-Investigation-Guide-2024-01-16-2024.pdf (michigan.gov)](CPO-Reporting-and-Investigation-Guide-2024-01-16-2024.pdf)

C. auris

---

a) Each person can only have a maximum of two cases of *C. auris* in MDSS: (1) a case that is colonized and identified due to screening and (2) a case that is identified from a positive clinical culture (e.g., blood, urine, wound, respiratory). If the 1st case was identified through screening (i.e., is colonized), then a 2nd case should be created (**CREATE NEW)** if the patient is later diagnosed with *C. auris* from a positive clinical culture. If the 1st case in MDSS is a clinical case, any additional cases in the future should be merged to the 1st case (i.e., no additional cases should be created).

b) If unsure about the type of the current or previous case, **CREATE NEW** as these cases can be later merged or marked superceded if necessary following additional investigation.

c) PCR results often are indicative of screening/colonization; culture often indicates a clinical case (e.g., blood, urine, wound, or respiratory source), but could be a screening test (typical screening sites include skin sites like axilla/groin, or nares).

d) For more information, see: [Candida-auris-Case-Reporting-and-Investigation-Guidance-22323.pdf (michigan.gov)](Candida-auris-Case-Reporting-and-Investigation-Guidance-22323.pdf)

Gastrointestinal Illnesses

---

1) Criteria to distinguish a new case from an existing case:

Campylobacteriosis

a) A case should be merged with the existing campylobacter case if the new laboratory results were reported within 30 days of a previously reported infection in the same individual.

Salmonellosis

a) A case should be merged with the existing salmonella case if the new laboratory results were reported within 365 days of a previously reported infection in the same individual

b) When two or more different serotypes are identified from one or more specimens from the same individual, each should be reported as a separate case

Shiga toxin-producing *E. coli* (STEC)

a) A new case should be created when a positive laboratory result is received more than 180 days after the most recent positive laboratory result associated with a previously reported case in the same individual

b) When two or more different serogroups/serotypes are identified in one or more specimens from the same individual, each serogroup/serotype should be reported as a separate case

Shigellosis

a) A case should be merged with the existing shigellosis case if laboratory results were reported within 90 days of a previously reported infection in the same individual

b) When two or more different serotypes are identified in one or more specimens from the same individual, each should be reported as a separate case

Vibriosis-non cholera

a) A case should be merged with the existing vibriosis-non cholera case if laboratory results were reported within 30 days of a previously reported infection in the same individual

b) When two or more different species of the family *Vibrionaceae* are identified in one or more specimens from the same individual, each should be reported as a separate case

Lyme Disease

a) A new case should be created if it has not been reported withing the same calendar year (January through December) (using the calendar year allows case counting which more closely corresponds with the seasonality of Lyme disease than using a number of months between case reports).

Blastomycosis

a) A person should be counted only **once** as a probable or confirmed case despite repeated testing over time.

Histoplasmosis

a) A person should be counted no more than once every 24 months.