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# STD

# Employee Development Guide

# 1992

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES  
Public Health Service



**CDC**  
CENTERS FOR DISEASE CONTROL  
AND PREVENTION

# **STD Employee Development Guide**

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**U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES**

Public Health Service

Centers for Disease Control and Prevention

National Center for Prevention Services

Division of Sexually Transmitted Diseases/HIV Prevention



Reprinted 1994

## **Module 7**

### **Visual Case Analysis**

# MODULE 7

## VISUAL CASE ANALYSIS

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### Background

Understanding early syphilis case management will provide you with a solid foundation for managing patients who have other STDs. Efforts in syphilis control over the years have resulted in the evolution of a case management system that incorporates many principles and techniques. The disease can be managed, and the tools of management have been developed and proven by experience. The information used in case management relates to two or more persons—patients, their sex partners, and certain cluster suspects and associates. Thus, the part of the interview session that is addressed in the examples in this module comes from discussions on assuring the examination of sex partners and from the medical information about the patient that is important in determining the interview period, the source period, and the spread period.

Syphilis case management makes extensive use of visual case analysis. Visual case analysis allows the DIS to 1) systematically document medical and epidemiologic facts related to early syphilis cases, 2) analyze those facts, 3) determine the most likely hypothesis of disease spread, 4) identify where disease intervention could occur, and 5) develop a plan for action. The *Guide for the Use of Visual Case Analysis in Sexually Transmitted Disease Case Management* in this module provides you with details of visual case analysis.

### Objectives

1. Describe the importance of visual case analysis.
2. List the two axioms about STD patients.
3. Give three reasons why it is important to identify the source of an infection.
4. Describe the two components of the analysis chart.

5. Describe the charting of treatment, testing, symptoms, and exposure information.
6. Describe circumstances in which lesions are labeled DUR UNK. Why and how would DUR UNK lesions be charted?
7. Define *inoculation point*.
8. Define *incubation period*. How is it different from the inoculation point?
9. How is the interview period shown on the analysis chart?
10. Define *ghosting*.
11. What is the value of the primary lesion in ghosting?
12. List the methods of ghosting in order of preference.
13. List ghosting methods that lead to probable lesions.
14. List ghosting methods that lead to possible lesions.
15. Describe the steps necessary to ghost a source primary lesion.
16. Describe the steps necessary to ghost a spread primary lesion.

### Contents

- Source of Infection
- Disease Analysis
- Visual Case Analysis Guide
- Syphilis Case Example

## Source of Infection

In syphilis case management, you must be concerned with all the sex partners who may develop disease or who may have infectious lesions. Remember that each patient has at least one sex partner who has, or has had, the disease. The partner who gave the patient the infection is the patient's source of infection.

It is important to determine the source for three reasons. First, the source patient could be someone who needs treatment for syphilis. Also, as long as that person remains untreated, he or she will be able to spread the disease to others. Third, since we are certain the patient had sex with the source partner, identifying that person becomes crucial to our disease intervention efforts.

Suppose you analyze what the patient told you in the interview session and discover that you have no source candidate among the sex partners named by the patient. Not only do you know for sure that you have missed one sex partner but you should doubt that you have identified all others, especially those to whom the patient might have passed the infection. Of course, having a source candidate or actually identifying the source does not ensure that the patient has named all sex partners. For understandable reasons, patients may withhold the name of their most recent or current sex partner. The patient may want to shield that person from the embarrassment of being contacted by the health department or from the fact that the patient has an STD. Such avoidance may seriously risk the health of the sex partner and may expose the patient to reinfection. The patient must be motivated to cooperate so that everyone's needs are met. Effective disease intervention requires knowledge of precisely what information needs to be obtained from STD patients and the skills to elicit that information.

## Disease Analysis

Disease intervention analysis takes several forms. It starts with analyzing what the patient is saying directly, what the patient is saying between the lines, or what the patient is not saying because of a desire to conceal something. For example, a gay man fears his lifestyle, his heterosexual marriage, or his job will be jeopardized; therefore, he goes to great lengths to convince you that he is heterosexual.

In analysis, you will record findings and impressions on various standard work documents and then review them for gaps and inconsistencies. For example, a person may tell you that he is unemployed but later describe a lifestyle that requires considerable money or a steady source of income. The following axioms tend to be reliable in STD disease intervention:

- STD patients are like most of us: they typically do not discuss sensitive personal facts about themselves or persons they care about unless given valid and specific reasons for doing so. Thus, patients are likely to conceal part or all of the truth about themselves and their sexual activities unless their individual concerns and needs are met.
- If you can determine that an STD patient omitted or distorted personal information that is less sensitive than information about his or her sex life, you can safely assume that the patient omitted or distorted some or all of the information about sexual lifestyle and individual sex partners.

Although you will develop a gut-level sense about the patients you interview, always test your observations and the patient's candor through analysis. When you ask yourself, "*Where do I go from here?*" analyzing the available information can provide the answers, even answers that you might never obtain directly from the patient.

## Visual Case Analysis Guide

Read the entire *Guide for the Use of Visual Case Analysis in Sexually Transmitted Disease Case Management* beginning on the following page.

Review the example of syphilis case management that follows and then see your supervisor for the test on this module.

**A GUIDE FOR THE USE OF  
VISUAL CASE ANALYSIS IN SEXUALLY TRANSMITTED DISEASE  
CASE MANAGEMENT**

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HHS, PHS, CDC, NCPS, DSTD/HIVP  
11/91







Each frame contains a space labeled Medical History (->). All medical information on that person should be recorded there. Each box on the medical history line has four divisions, each representing 1 week of that month.

Patient Initial Reason for Exam											
		->Medical History									
Contact											
		->Medical History									

The line in the left margin (I) originates from the middle of the frame labeled Patient Initial Reason for Exam and connects with each of the frames that concern contacts. The line indicates that the contacts are related to the patient charted on the top line. Other indicators, such as lines or arrows connecting people, are not needed as long as each person in a contact frame relates to the patient named on the top line.

INFECTIOUS SYPHILIS  
EPIDEMIOLOGIC ANALYSIS CHART

↓	Patient Initial Reason for Exam											Screen Exam Analysis	
			Medical History										
	Contact												
			Medical History										
	Contact												
			Medical History										
	Contact												
			Medical History										
	Contact												
			Medical History										
	Contact												
			Medical History										

EXPOSURE INFORMATION

MEDICAL HISTORY

Each contact frame contains two sets of faint parallel lines (←). The top set of lines (↑) is used to record information given by the patient in the top frame about exposure to the person named in the contact frame. The lower set of lines (↓), which rests on top of the Medical History space, is used to record the information provided by the person in that contact frame about his or her exposure to the patient named in the top frame.

Patient Initial Reason for Exam					
Medical		History			
Contact					
Medical		History			
Contact					
Medical		History			
Contact					
Medical		History			
Contact					
Medical		History			

## Charting the Individual Case

After entering the current month in the third block from the right, enter the patient's name and reason for visit on the left side of the top frame.

9	10	11	12	1	2	3	4	5	6
Patient JACK DOE									
Initial Reason for Exam SELF-MOTIVATED									
Medical History									

### Treatment:

Find the date of treatment. Draw a straight line from the bottom up, halfway into the frame; this line makes it easy to see the ending date of the infection. Draw it freehand; you don't need the ruler at this point. Date the line and note at the right the patient's treatment, darkfield results, and STS results.

9	10	11	12	1	2	3	4	5	6
Patient JACK DOE									
Initial Reason for Exam SELF-MOTIVATED									
Medical History									

5/14  
2.4u BIC  
RPR: 8 DF  
FTA R

On the left side of the line, indicate the patient's diagnosis. Write EL if the diagnosis is early latent, PRI if primary, and SEC if secondary. The line is extended upward so that it can be seen easily on the analysis chart.

9	10	11	12	1	2	3	4	5	6
Patient MARY DOE									
Initial Reason for Exam G.C. VOL									
Medical History									

SEC 5/10  
30am TCN  
RPR: 64  
FTA R

### Incidentals: Treatment or Serology History

At the point of the incidental serology or treatment, draw an arrow down to the medical history line, date it, and write in what occurred and why.

9	10	11	12	1	2	3	4	5	6
Patient MARY DOE									
Initial Reason for Exam G.C. VOL									
Medical History									

11 BLOOD PLASMA DONOR  
RPR-NR

SEC 5/10  
30am TCN  
RPR: 64  
FTA R

### Symptoms

If symptoms are present at the time of treatment, find the date of onset; freehand again, draw a straight vertical line starting at the bottom of the medical history line. You need not go any farther up than the line that runs parallel to the medical history line. Box off symptom duration by connecting the onset and the treatment lines. Date the onset line.

9	10	11	12	1	2	3	4	5	6
Patient MARY DOE				BLOOD PLASMA DONOR				SEC 5/10	
Initial Reason for Exam G.C. VOL				RPR-NR		4/14		309m TCN RPR 1:64 FTA R	
Medical History									

Label the symptom box with the type of symptom appropriate to the stage of infection. Include the location of the lesion and all primary symptoms. For ease, readability, and consistency, use the abbreviations in Appendix I.

9	10	11	12	1	2	3	4	5	6
Patient MARY DOE				BLOOD PLASMA DONOR				SEC 5/10	
Initial Reason for Exam G.C. VOL				RPR-NR		4/14		309m TCN RPR 1:64 FTA R	
Medical History						P/P			

If the symptom was not present at the time of treatment, mark the ending date of the symptom by drawing a line similar to the onset line. Label it HX for historical symptom.

9	10	11	12	1	2	3	4	5	6
Contact FRANKLIN DOE				8/15		9/28		EL 11/30	
CT. EL.								5.4mu BIC RPR 1:128	
Medical History				Hx: Pri-Pen		Hx: Sec Gen R			

### Symptoms of Unknown Duration

On rare occasions, a primary syphilis patient will have no idea when the symptom first appeared. This happens in females with a cervical primary lesion or in persons with rectal lesions. Regardless, the primary lesion can still be charted.

To chart primary symptoms with an unknown duration, draw a 3-sided box that extends back 5 weeks\* from the date of treatment. The onset line that closes the box is not drawn because that date is unknown. Label the box PRI (primary) and note the location of the lesion. Write DUR UNK (duration unknown) inside the box as well. Date the line.

Contact	VALERIE				PRI		4/2	5.4muBIC
	PHY. SUSP.						RPR 1:16	
	Medical	History				Pri Cerv: Dur Unk	DFB	

\* maximum possible duration of primary symptoms

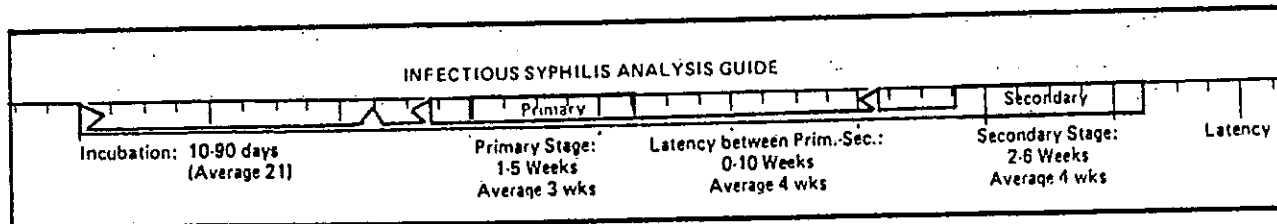
Occasionally this can occur in a patient who has a very faint secondary rash. A secondary rash of unknown duration is charted in much the same way as a primary symptom; however, extend the box back for 6 weeks,\*\* label it SEC, and indicate the type of secondary symptom. Write DUR UNK and date the line as well.

Contact	TOM				SEC		4/7	5.4muBIC
	SELF-MOTIVATED						RPR 1:64	
	Medical	History				Sec P/P: Dur Unk		

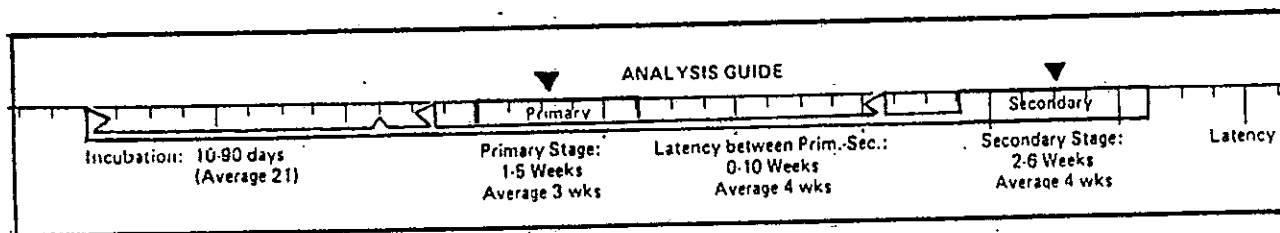
\*\* maximum possible duration of secondary symptoms

## The Infectious Syphilis Analysis Guide (RULER)

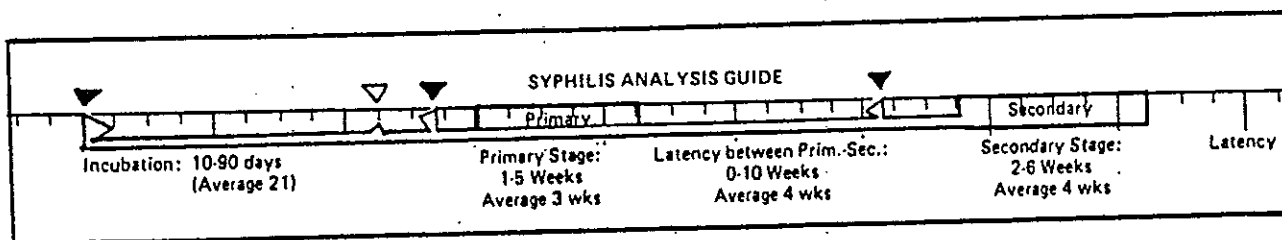
The ruler (reduced version below) is a transparent scale with divisions that match the divisions on the analysis chart. Printed on the ruler are the time frames that you will use in visual case analysis.



At specific points on the scale are red boxes denoting primary and secondary symptoms (▼). You will use these *reference boxes* to position the ruler correctly on the analysis chart by lining up the onset date or left border of the box with the date of the onset of symptoms marked on the chart. The onset of the charted symptom should match the onset line of the reference boxes on the ruler.



The ruler has cutout portions. Three notches (two to the left of the primary box and one to the left of the secondary box [▼]) and one small triangle represent *inoculation points*. The straight edges of the notch represent the minimum time and the maximum time from inoculation to the onset of primary or secondary symptoms. The average time from inoculation to the onset of primary symptoms is represented by the small triangle (▽).





### Charting primary symptoms

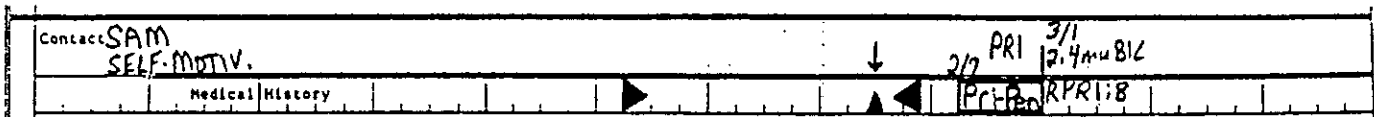
The straight edge of the far left notch marks the *90-day maximum point of inoculation* (↓). Since the primary stage is the first stage of syphilis, the period between this point and the onset of primary symptoms is the *maximum incubation period (90 days)*.



The straight edge of the notch closest to the primary box is the *10-day minimum point of inoculation* (↓). The period between this point and the onset of primary symptoms is the *minimum incubation period*.



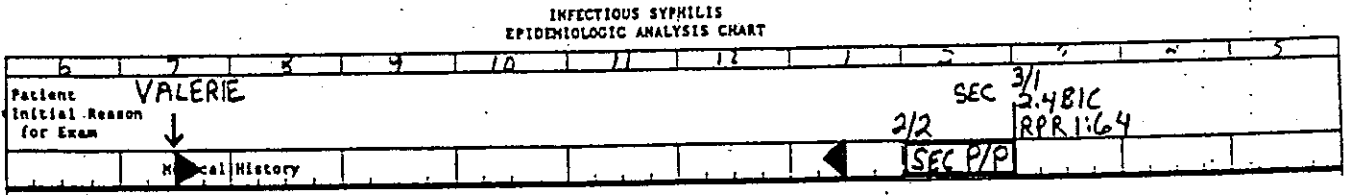
The center of the small triangle is the *21-day average point of inoculation* (↓). The period between this point and the onset of symptoms is the *average incubation period*.



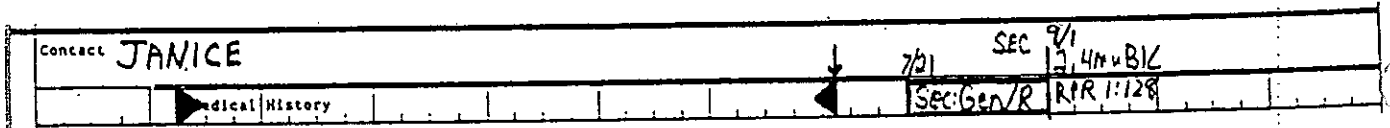
Match the onset line of the primary reference box with the onset of the primary symptom charted. Draw and shade the three inoculation points on the analysis chart.

### Charting secondary symptoms

The far left notch marks the *6-1/2 month maximum point of inoculation* before the onset of secondary symptoms (4). Between this point and the onset of secondary symptoms is the maximum incubation period (90 days), the maximum possible duration of primary (5 weeks), and the maximum period of latency (10 weeks) between primary and secondary symptoms.



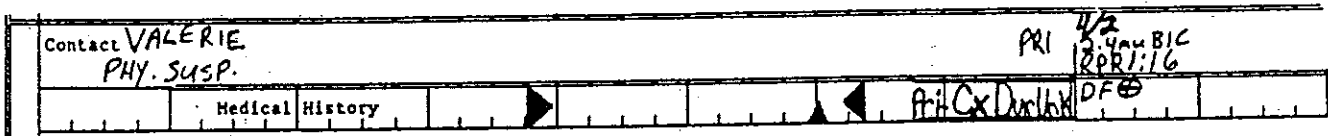
The notch closest to the secondary box is the *17-day minimum point of inoculation* (4). Included in the period between this point and the onset of secondary symptoms are the minimum incubation period (10 days), the minimum duration of primary symptoms (1 week), and the minimum period of latency (zero time) between primary and secondary symptoms.



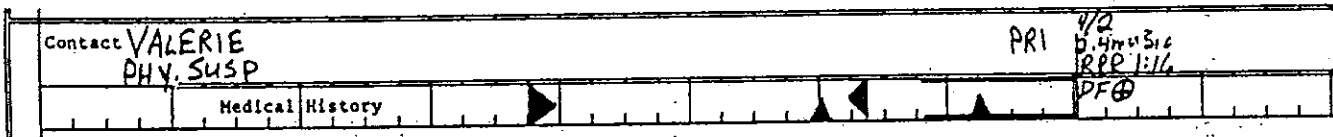
Although the *average point of inoculation* for secondary symptoms can be found, it has no practical value.

### Charting symptoms of unknown duration

The onset line of the symptom is represented by the far left side of the symptom box. Draw and shade the inoculation points appropriate for the patient's symptoms to account for the possibility that the symptoms may have lasted for the entire maximum possible duration.



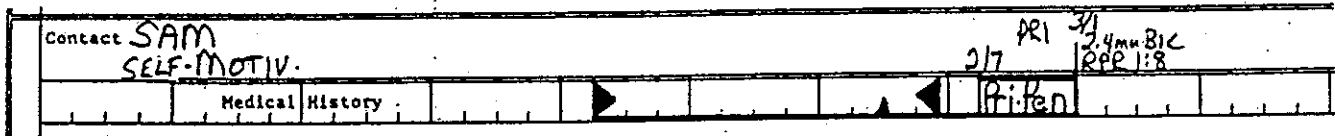
If the symptom is primary, draw an additional average inoculation point to account for the possibility that the examination date may be the onset date of the primary symptom. This would place it exactly 21 days before the examination date.



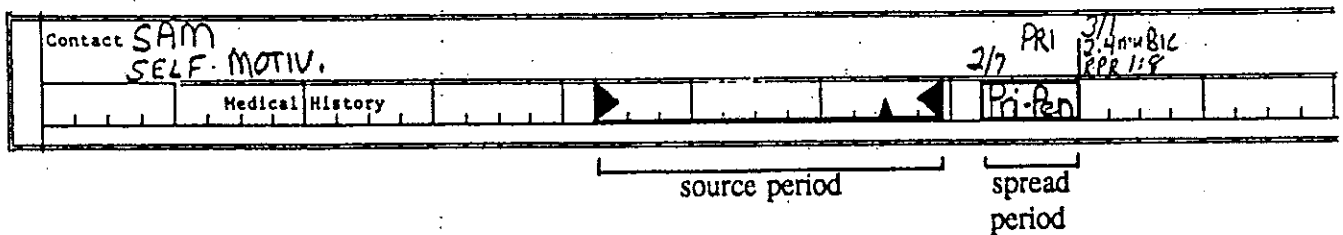
By drawing two possible inoculation points, you establish a range within which inoculation probably occurred. This 5-week period between the inoculation points is the period within which the source of infection will probably be found.

## Charting the Interview Period

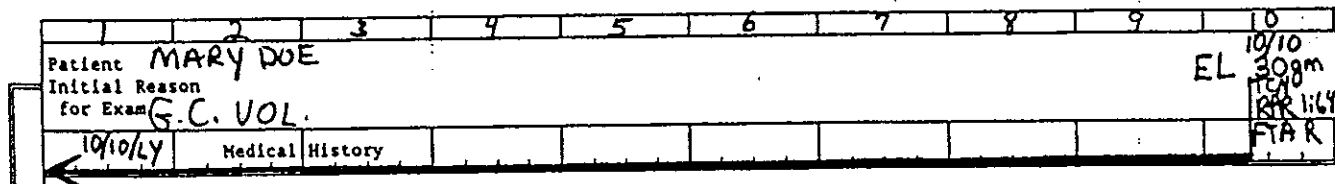
At the bottom of the medical history area, draw a line that extends from the maximum point of inoculation to the date of adequate treatment. The interval between these two points is the patient's *interview period*, which includes both the source and the spread periods.



For a correctly plotted case, the time between the maximum and the minimum inoculation points is the *source period*. This is the period during which the patient most likely became infected. The time from onset of symptoms to the date of treatment is the *spread period*. During this period, the patient may have spread the infection to others.



For early latent cases with no symptom history, extend the bottom line back for 1 year from the treatment date. If the interview period predates the chart, draw an arrow pointing off the sheet. Date the arrow.



## Charting Sexual Exposure Information

Any sexual exposure information provided by the original patient is recorded on the exposure line above the sex partner's name. Record the sexual exposure by:

- locating the sex partner's frame and appropriate exposure line on the chart;

3	4	5	6	7	8	9	10	11	12
Patient VALERIE								EL 11/1	
Initial Reason for Exam OTHER SURVEY								2.4muBIC RPR 1:128 FTA R	
11/1/LY		Medical	History						
Contact JOHN								PRI 11/2	
Ct. EL								10/21 2.4muBIC RPR 1:16	
		Medical	History						

- finding the date(s) of first and last exposure (using the divisions on this line that represent weeks) and drawing very short downward arrows (date all arrows);

3	4	5	6	7	8	9	10	11	12
Patient VALERIE								EL 11/1	
Initial Reason for Exam OTHER SURVEY								2.4muBIC RPR 1:128 FTA R	
11/1/LY		Medical	History						
Contact JOHN								PRI 11/2	
Ct. EL								10/21 2.4muBIC RPR 1:16	
		Medical	History						

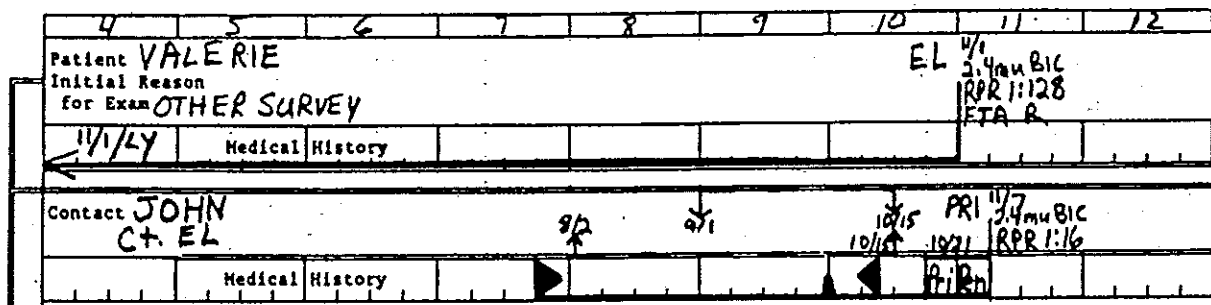
- connecting the bases of the arrows with a broken line and noting the frequency in the open space between the exposure lines (when there are multiple exposures); and

3	4	5	6	7	8	9	10	11	12
Patient VALERIE								EL 11/1	
Initial Reason for Exam OTHER SURVEY								2.4muBIC RPR 1:128 FTA R	
11/1/LY		Medical	History						
Contact JOHN								PRI 11/2	
Ct. EL								10/21 2.4muBIC RPR 1:16	
		Medical	History						

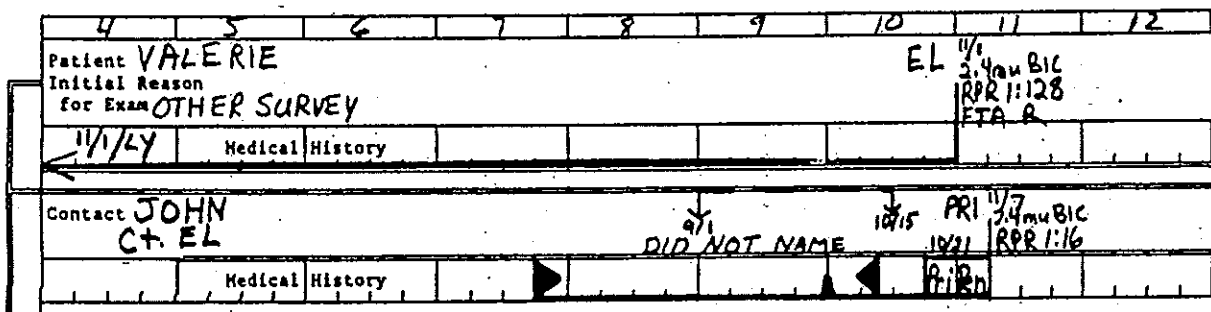
- using an arrow pointing off the sheet if the first exposure predates the first month on the calendar.

Record the sexual exposure information provided by the sex partner about the original patient on the exposure line below the sex partner's name. Record the sexual exposure as follows:

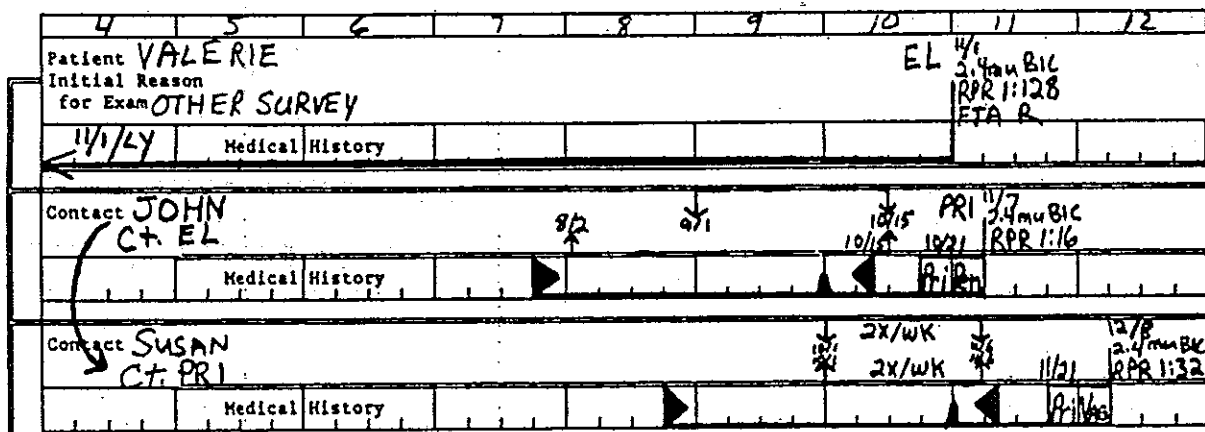
- Find the date(s) of the first and last exposure and draw short arrows upward at appropriate dates.
- Connect the bases of the arrows with a broken line and, as before, note the frequency of exposure.



To chart a relationship in which one or both patients did not acknowledge exposure, write on the appropriate exposure line Did Not Name.



On occasion, contacts shown on the analysis chart are related to someone other than the patient named at the top. In this instance, draw an arrow to connect the two persons that are related. Chart first the person that is related to the patient named at the top.



## Basic Assumptions in Disease Intervention Analysis

A logical, obvious assumption in determining the relationship between persons with syphilis is that

- their primary lesions are sexually compatible.

Two people, regardless of how they had sex, could not have exchanged the syphilis organism if their primary lesions appeared on parts of their bodies that would preclude nearly all possibility of transmission between them. Two people with incompatible lesions (e.g., penis-penis, rectum-rectum, cervix-lip or mouth, rectum-vagina) are probably not related.

Four other equally reliable assumptions relate to the typical transmission and course of infection. These assumptions are that every patient, unless proven otherwise, is assumed to have:

- acquired the infection from someone who was in the primary stage of syphilis at the time of sexual exposure;
- had a 3-week incubation period;
- developed a 3-week primary lesion at the site of inoculation;
- had no more than a 4-week latency period between primary and secondary stages.

Using these assumptions to develop solid hypotheses about the relationship among cases is fundamental to disease intervention. You must allow these assumptions to guide your analysis and decision making. Accurately deducing who gave the disease to whom and who most likely has sex partners who haven't been discussed can be the difference between preventing disease and *allowing* cases to develop.

Hypotheses based on the preceding five assumptions can effectively target most of your later actions; most activities not based on a reliable hypothesis are ineffectual. Before accepting a deviation that allows one patient to be epidemiologically related to another, explore alternative explanations (e.g., an unidentified source) or missing information (e.g., incidental treatment).

## Ghosting

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The primary lesion is the absolute key to syphilis visual case analysis. The primary lesion or the valid history of a primary lesion of a single patient can be used to sort out most, if not all, relationships in a chain of disease.

A visual aid to your development of hypotheses is *ghosting*. Quite simply, *ghosting* is recording on the chart where, when, and how long a primary lesion probably occurred on a secondary or an early latent patient. Again, you make such deductions by applying the five basic assumptions and the information about sex partners. When information is limited, we resort to ghosting possible primary lesions until new and sufficient information is available.

### Hierarchy

There are four methods of ghosting. Three methods produce probable lesions; the other produces possible lesions. The methods are shown below in order of preference.

#### Probable primary lesions are ghosted

- from the existing primary lesion of a sex partner (direct),
- from a known historical primary lesion (direct),
- from a ghosted primary lesion (indirect—derived from an actual or a historical primary of a sex partner).

#### Possible lesions are ghosted

- when you ghost a primary lesion from the secondary symptoms of the patient.

#### Probable Lesions

Ghosted probable lesions are always, whether directly or indirectly, derived from an actual or a historical primary lesion of a sex partner. A primary ghosted from an actual or a historical primary is labeled PROB-PRI for probable primary. Always label the lesion location of the probable primary; you can do that because you know the anatomical location of the known primary. The location of your PROB-PRI may reflect more than one possibility (e.g., oral/anal), but it must be compatible with the location of the known primary lesion.

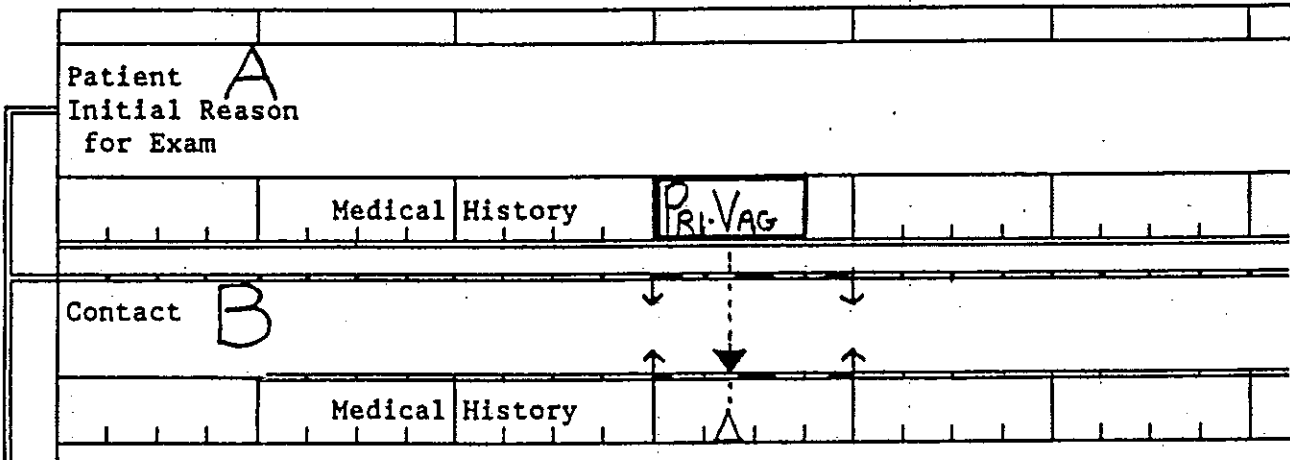
Before ghosting, determine the epidemiologic relationship between the patient and the sex partner. To be epi-related means the partner is either source to or spread from the patient.



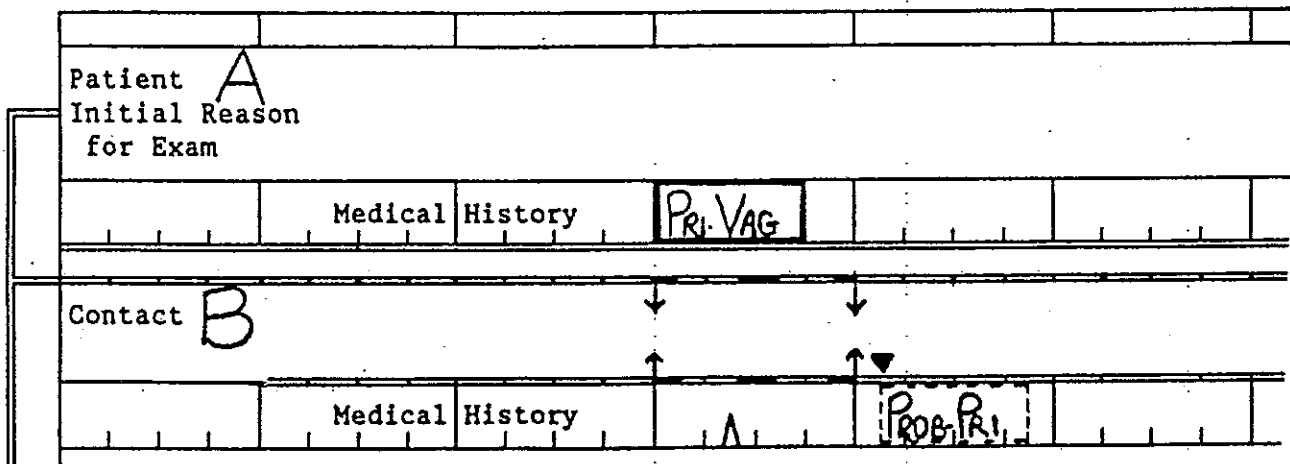
**Ghosting a spread primary (probable)**

Patient B could only be called a spread from Patient A's infection because of the sexual exposure history. The other conditions for epidemiologic relationship have also been met.

- Ghost by locating the midpoint of Patient A's primary (♥) and then assume that date is the average inoculation point for Patient B (△).



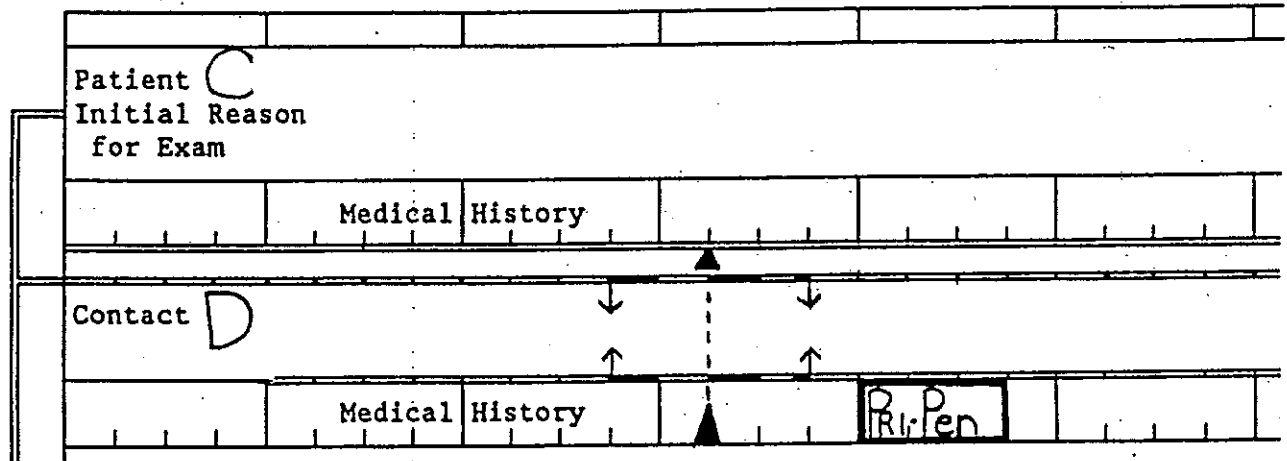
- Ghost Patient B's primary lesion (duration of 3 weeks) after a 3-week incubation period, by drawing broken lines (♥).



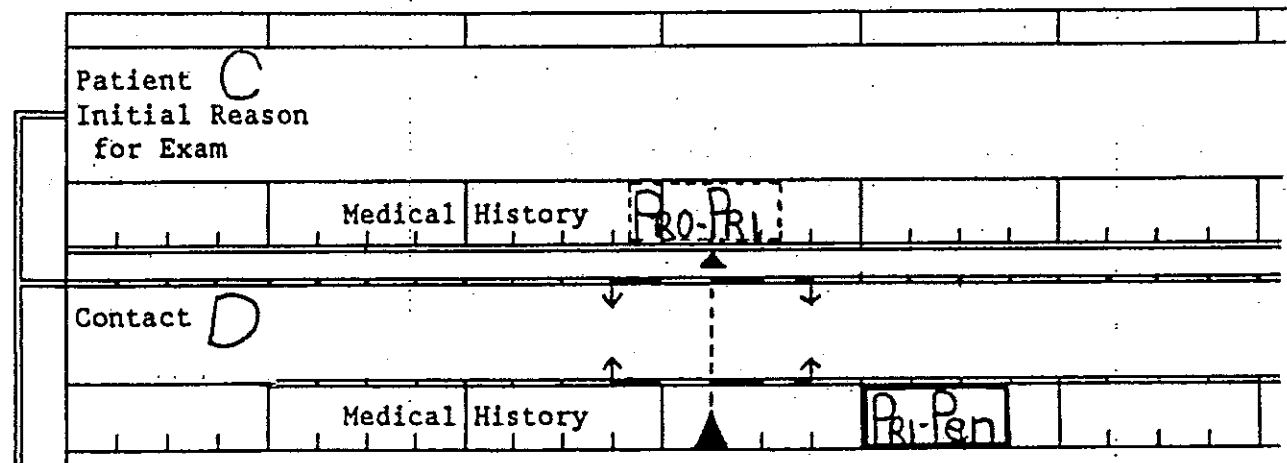
**Ghosting a source primary (probable)**

Patient C could only be a source to Patient D's infection, again because of exposure. (Note that this could also be deduced if Patient C has a source reliably identified. Not to overly complicate matters, however, we'll stay with exposure only.)

- Locate the average inoculation point for Patient D and assume that it represents the midpoint of Patient C's primary lesion (▲).

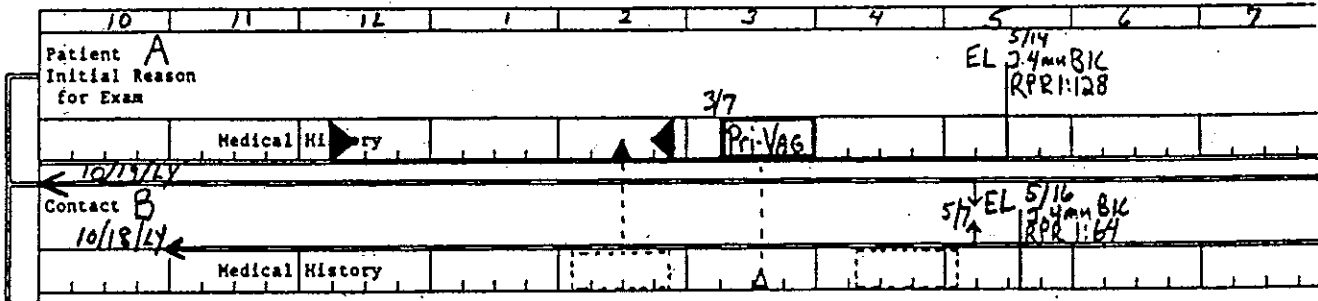


- Ghost by boxing off a 3-week primary lesion with dashes, marking 1½ weeks on either side of the midpoint (▲).



**Ghosting a primary that could be either source or spread (probable)**

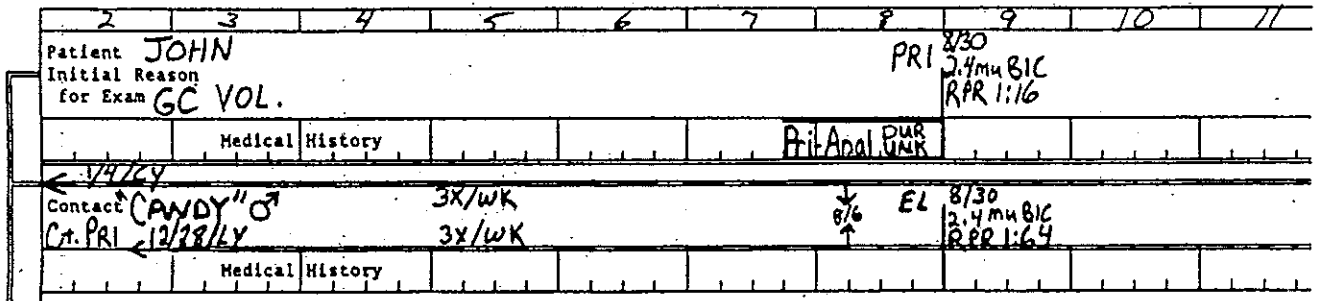
On occasion, the exposure acknowledged by both patients spans the entire source and the entire spread period of the partner who has the primary lesion or the history of a primary lesion. When this occurs, and you have no information with which to be more precise, ghost both the source and the spread primary lesions. As in the example, the exposure information indicates that Patient A could be either spread from or source to Patient B.



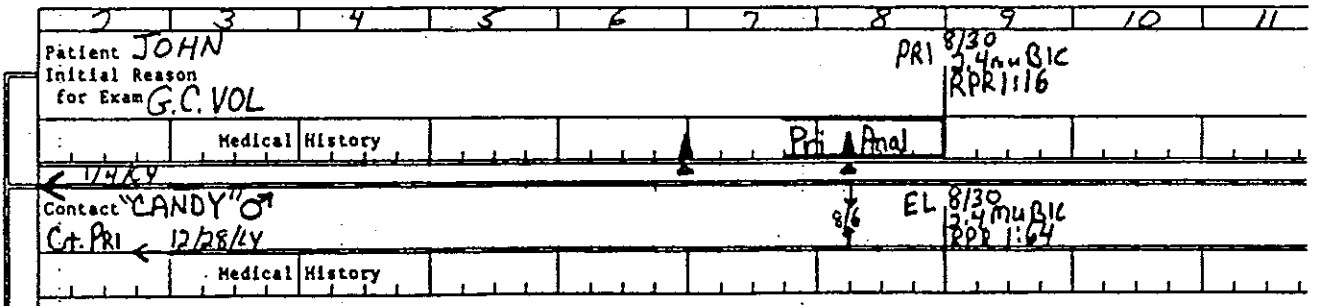
**Ghosting from a lesion of unknown duration**

A primary lesion that does not have a definite onset can still be used to ghost probable primary lesions for other patients in a related chain of infections.

- Chart the primary lesion as described in the section on charting symptoms of unknown duration.



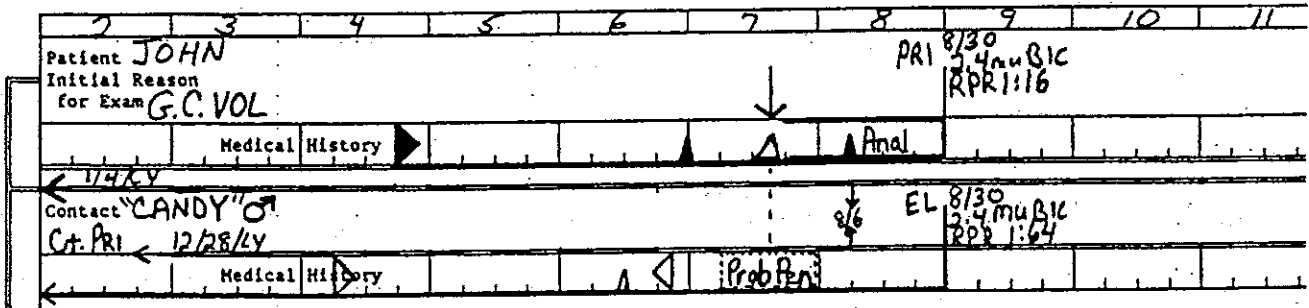
- Draw and shade the appropriate inoculation points using the ruler as described earlier.



Between the two average inoculation points (▲) is a 5-week range in which the probable source will be found. In this period, the patient with the primary lesion of unknown duration was probably inoculated.

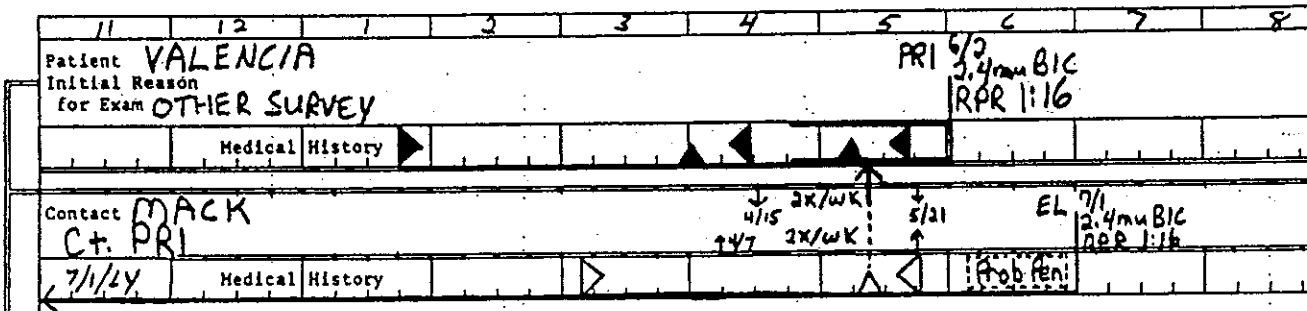
### Ghosting a source lesion

- Use the midpoint of the 5-week range (indicated by a small unshaded triangle [↓]) as you would the average inoculation point to ghost a source primary lesion. Complete the ghosting as described in the section on ghosting probable source lesions.



### Ghosting a spread lesion

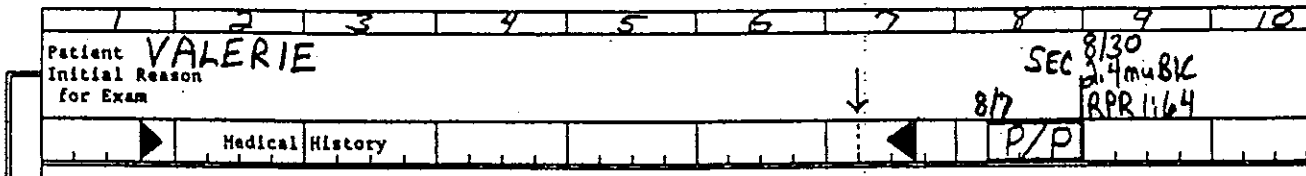
- Use the midpoint (↑) of the 5-week primary (the maximum possible lesion). Complete the ghosting as described in the section on ghosting probable spread primary lesions.



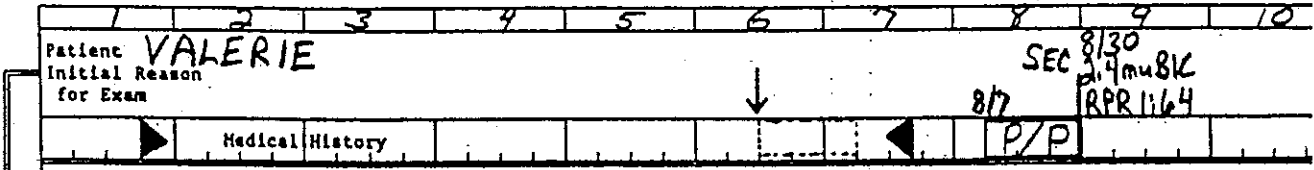
### Possible Lesions

When a patient has secondary symptoms or a history of secondary symptoms, we may ghost a possible primary lesion for that patient; however, we may only do so when that patient's sex partners have not been examined or do not have primary lesions. The last three basic assumptions are used to estimate when the patient may have had a primary lesion. The ghosted possible primary lesion is derived from secondary symptoms.

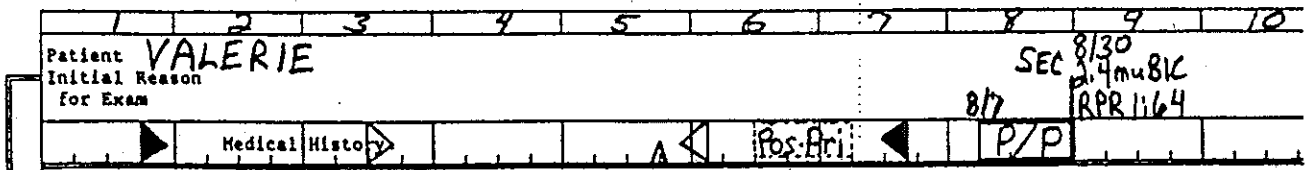
- Establish the 4-week average latency period between primary and secondary symptoms by counting backward 4 weeks from the date of onset of secondary symptoms (↓); draw a vertical line with dashes.



- Count back 3 more weeks (↓) and box off a 3-week ghosted primary lesion.



- Label the box POS-PRI for possible primary. At this point, recording the location of this lesion on the person's body is pure speculation. Do not write the lesion location in the box at this time.

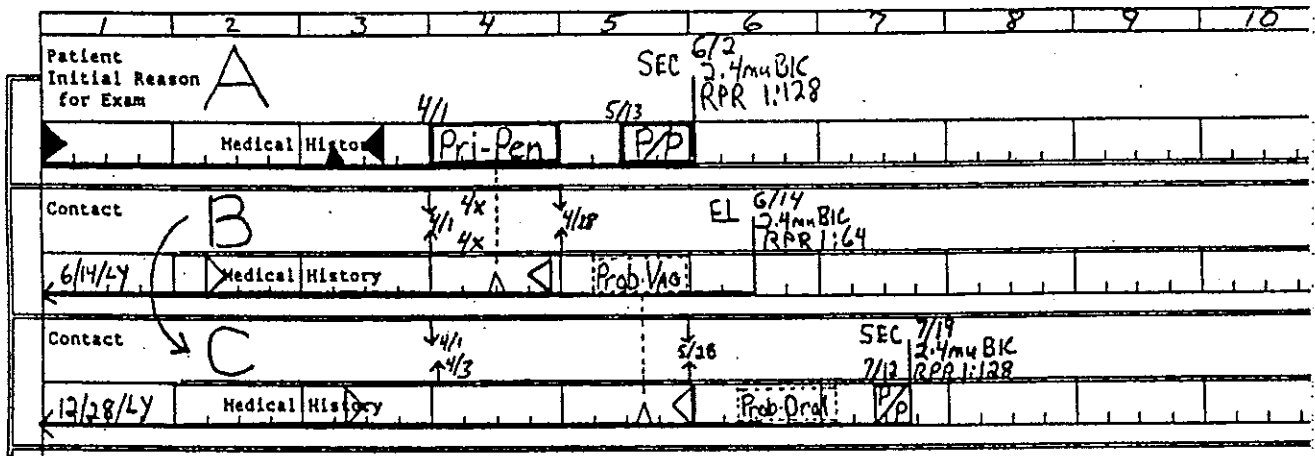


As you obtain more information about the medical histories of sex partners, you can use the presence of a primary lesion on a sex partner to ghost in a probable primary lesion on the original patient. This method is more likely to accurately reflect a probable primary than is the method just described. In other words, if you have ghosted a possible lesion using the patient's secondary symptoms, and you then find a sex partner with a primary lesion, *change your ghosting* to reflect the probable primary lesion based on the sex partner's primary lesion.

Interview periods should never be changed because of ghosted lesions. The hypothesis about the case and the ghosted lesions could be altered with new information. Therefore, the interview period should be based only on actual symptoms and medical information. Because the location, time, and duration of a ghosted primary lesion strongly indicates the most likely source and spread periods, this information should be considered when determining probable source/spread relationships and when prioritizing field referrals.

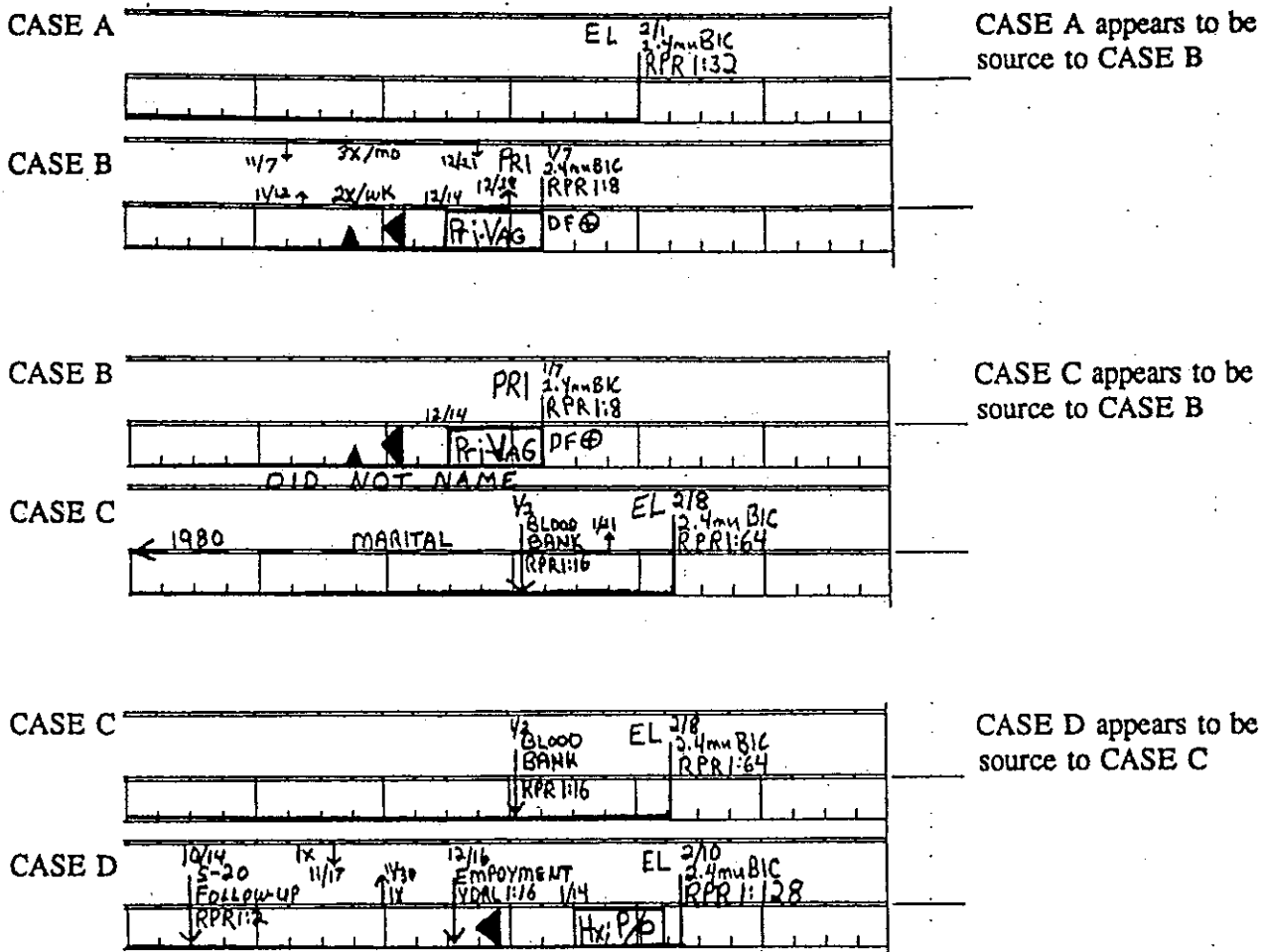
In any case, draw all minimum inoculation points; however, when the points are based on ghosted symptoms, leave the notches and triangles unshaded.

INFECTIOUS SYPHILIS  
EPIDEMIOLOGIC ANALYSIS CHART

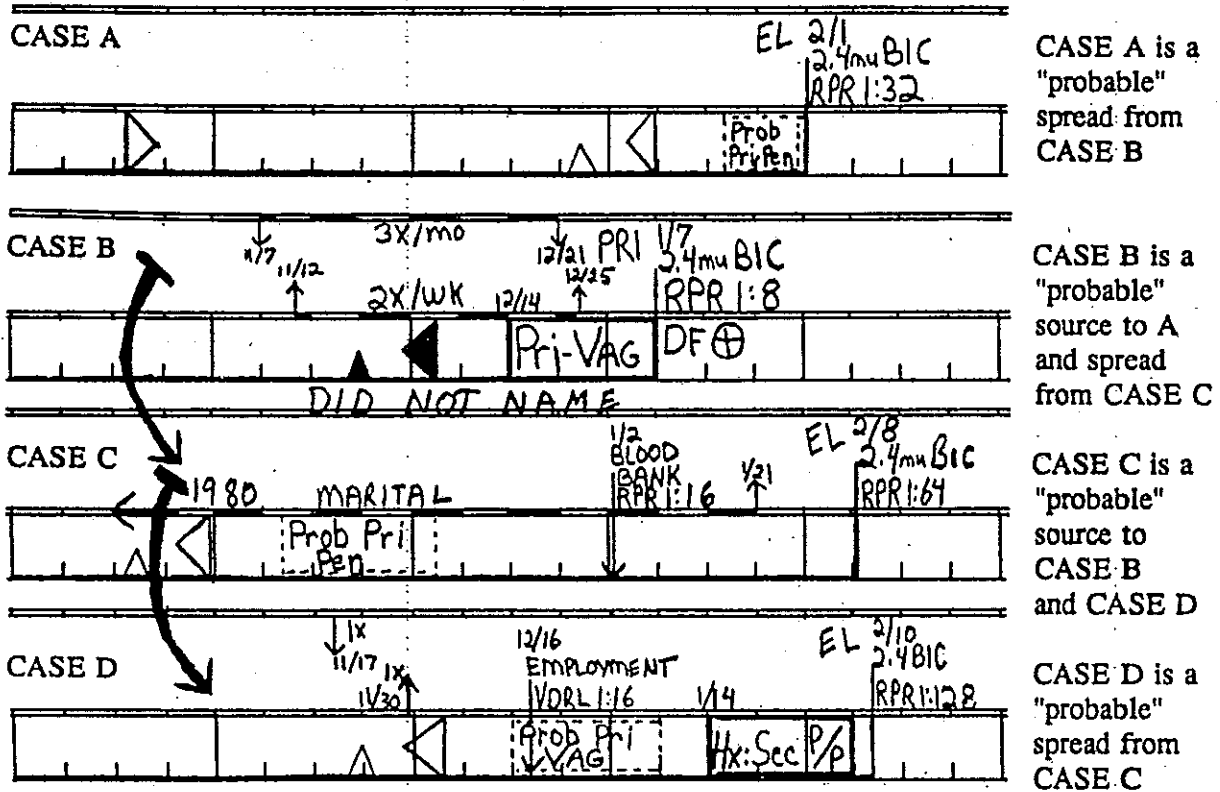


## Analyzing Related Infections

Learn the fundamentals of visual case analysis and you can establish likely relationships and priorities among named sex partners. As you become able to process this information in your head, your use of the chart and ruler will be enhanced. The more cases involved, the more critical it is to perform visual case analysis. However, charting is not enough. How you organize your charting can be just as critical. Wrong decisions can result from analyzing a chain in pieces, or case by case. For accuracy, analyze all cases in a series, or a chain of cases, by organizing them visually on the same analysis chart. To demonstrate the validity of this recommendation, look over the 4 cases that follow. They are visually analyzed as case pairs, perhaps as might usually occur as DIS individually manage their disease intervention efforts. Review the source/spread determinations to see whether you agree. Then, look at the following page to see what happens when the same 4 cases are analyzed together.



Analyzing all cases on the same chart allows you to determine case relationships more accurately and to develop hypotheses that result in targeted disease intervention activities. Since this is a dynamic process, the value of this type of analysis is simply the development and the refinement of later activities. As you can see, the conclusions that may have been drawn from charting case pairs on the preceding page are different from those suggested by this chart.

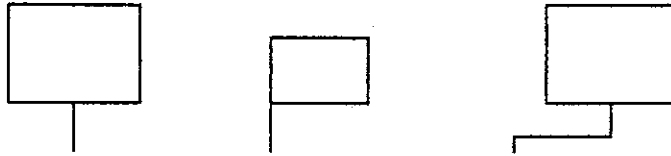




## Visual Analysis of Resistant Gonorrhea

The visual analysis of antibiotic-resistant gonorrhea involves some of the concepts you learned in analyzing syphilis. For instance, you will use the same chart and develop a calendar format. Also, you will use the medical history area and exposure date lines the same way you did for syphilis. One change—you won't use the ruler because it relates exclusively to syphilis. As in syphilis analysis, the use of standard symbols and abbreviations is very important to ensure that everyone can easily understand what you've charted and how you reached your conclusions. See Appendix II for a list of suggested abbreviations.

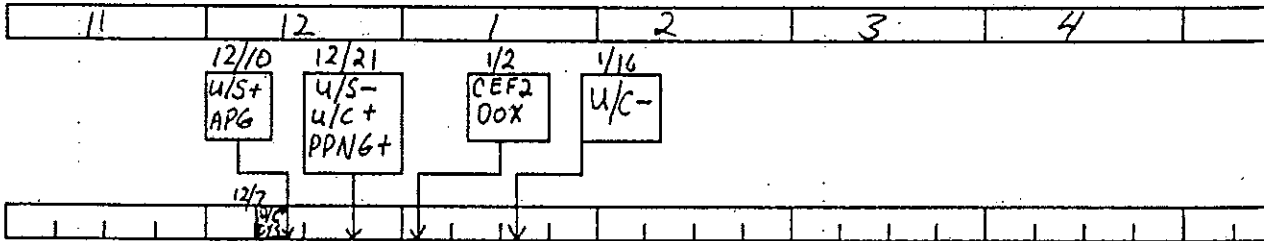
### Methods for Indicating Medical Action



This structure is based on the assumption that what the medical events consisted of is more important than when they occurred. The boxes are different sizes merely to permit the recording of necessary information. The optional configuration of the arrows allows you to squeeze in complete information about medical events that occur close together.

### Examples of Visual Analysis of Resistant Gonorrhea

In the first example, the chart is the same as for syphilis. Each major division at the top is a separate month, and the four divisions that appear in each box in the medical history area represent the 4 weeks of each month.



In one way, the second example uses the chart differently. Most of the activity in gonorrhea is compressed into approximately 2 months. Further, you will often find that the last date of exposure is the most important in making decisions. You can gain space in which to visualize all this recent information by formatting the box for each month as a week.

