

Enhanced surveillance to monitor for cases of gonorrhea (GC) treatment failure is important as GC rates increase and resistance to Azithromycin and Ceftriaxone continue to be identified.

Enhanced Gonorrhea Surveillance in Illinois (excluding Chicago)

Lesli Choat, B.S., MT (ASCP), Lynette McKinney-Colman, B.A., Margie Smith, MS, MPH
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INTRO

Gonorrhea has developed resistance to nearly all the antibiotics used for its treatment and cephalosporins are the last class of antibiotics to treat this infection. IDPH established procedures to identify potential GC treatment failures to investigate and guide public health response.

METHODS

The data system identifies patients with two GC infections within the last 60 days of each event. The local health department where patient resides is notified to conduct a patient interview to establish if patient:

1. received inadequate treatment (mis-reported);
2. was re-infected; or
3. was a possible treatment failure which would then be referred for antibiotic susceptibility testing (AST)

RESULTS

In 2018, 134 interview records were sent for investigation

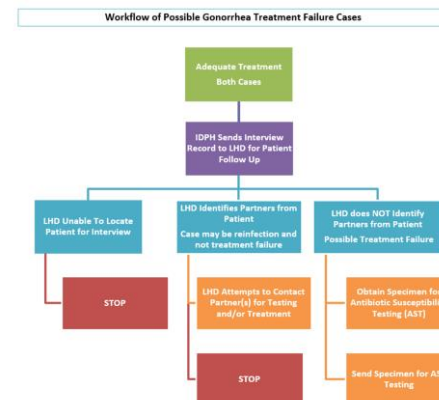
- 119 (88.9%) returned
- 81 (60.4%) interviewed
- 1 possible resistant case sent to CDC for AST

In 2019 (Jan to Jun), 78 interview records were sent for investigation

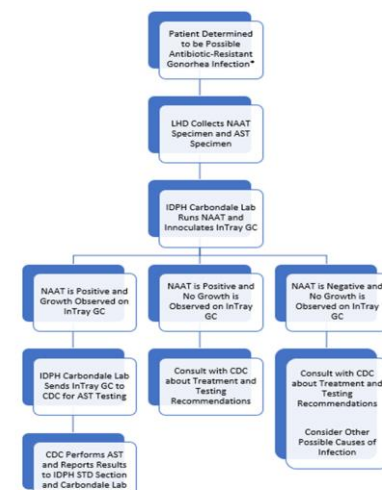
- 64 (82.1%) returned
- 51 (65.4%) interviewed
- No possible resistant cases identified

DISCUSSION

Having this procedure in place to respond to a treatment failure case or even an outbreak of antibiotic-resistant gonorrhea was the overarching goal and purpose of this enhanced surveillance process. This procedure may prove to be a model for other states.



Appendix E. Workflow for Submission of a Specimen for Antibiotic Susceptibility Testing



*Patient was treated with recommended dual therapy of ceftriaxone and azithromycin and re-infection is ruled out

INTERVIEW RECORD FOR POSSIBLE STD GONORRHEA TREATMENT FAILURE

PATIENT INFORMATION		LHD CASE NUMBERS											
Last Name	First Name												
Date of Birth	Phone												
Address													
STD TESTING													
Date Collected	Provider	Specimen Source											
STD TREATMENT													
Treatment Date	Provider	Treatment Code											
RISK FACTORS													
From the first diagnosis date to the second (see Date Collected), have you...													
Had sex with a male?	Yes	No	R	D	Anal	Vaginal	Oral	Unsp					
Had sex with a female?	Yes	No	R	D	Anal	Vaginal	Oral	Unsp					
Had sex with an anonymous partner?	Yes	No	R	D	Anal	Vaginal	Oral	Unsp					
In the last twelve months, have you...													
Had sex with someone while you were traveling outside the United States?	Yes	No	R	D	Anal	Vaginal	Oral	Unsp					
Had sex with someone who traveled outside the United States?	Yes	No	R	D	Anal	Vaginal	Oral	Unsp					
Patient's HIV Status													
Positive	Negative	Unknown	Did Not Ask										
SIGNS AND SYMPTOMS													
Signs/Symptoms	Earliest Observation Date	Anatomic Site	Duration (Days)										
PARTNER/SOCIAL CONTACT INFORMATION #1				PARTNER/SOCIAL CONTACT INFORMATION #2									
Last Name, First Name		Last Name, First Name											
Address		Address											
City	State	ZIP Code	City	State	ZIP Code								
Phone	DOB	Phone	DOB										
Current Gender	Age (Approx)	Current Gender	Age (Approx)										
M	F	MT	FTM	D	R	Link	M	F	MT	FTM	D	R	Link
First Exposure Date	Frequency	Last Exposure Date	Frequency	First Exposure Date	Frequency	Last Exposure Date	Frequency						
INTERVIEW/INVESTIGATOR COMMENTS													
Submitter													

Submit by faxing this report to: Illinois Department of Public Health STD Section
Questions? Contact the STD Section at 217-782-2747

FAX (217)-524-5443

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Background:

Gonorrhea has developed resistance to nearly all the antibiotics used for its treatment and continues to be skilled at outsmarting antibiotics used to treat it. Currently, cephalosporins are the last recommended and effective class of antibiotics to treat this common infection. In Illinois, gonorrhea cases have risen rapidly with a 59.2% increase between 2014-2018. Due to growing concern over antibiotic-resistant strains of gonorrhea and rising rates of infection, the Illinois Department of Public Health (IDPH) STD Section established a procedure to identify possible gonorrhea treatment failures to guide the response by IDPH and local health department (LHD) staff.

Methods:

In 2018, IDPH piloted a procedure to monitor possible treatment failure in gonorrhea infections. Surveillance began with a few LHDs, then expanded to a state-wide initiative (excluding Chicago and two other jurisdictions) in 2019. This procedure identifies patients who have been reported in the Illinois National Electronic Disease Surveillance System (INEDSS) with two gonorrhea infections within the last 60 days of each event and were treated with the Centers for Disease Control and Prevention (CDC) recommended dual therapy of ceftriaxone and azithromycin.

Quarterly, an interview record is sent to the LHD where the patient resides to determine if the case was inadequately treated (mis-reported), re-infected, or a possible treatment failure case. If adequate treatment was confirmed and reinfection was ruled out, treatment failure may have occurred. These cases are then referred for antimicrobial susceptibility testing (AST) performed by CDC. IDPH sends the necessary supplies and instructions to the LHD for specimen collection from all exposed anatomic sites for Nucleic Acid Amplification Testing (NAAT) and AST. Specimens are then sent to the IDPH lab for testing and incubation before being sent to CDC for AST. IDPH works with the LHD and CDC to recommend proper treatment for a patient and case management based on test results.



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Results:

In 2018, 134 interview records were sent for investigation.

- Of those, 119 (88.9%) were returned to IDPH, and 81 (60.4%) patients were contacted by LHD staff. One possible resistant case was identified, and a sample was sent to CDC for AST.

In 2019 (January to June), 78 interview records were sent for investigation.

- Of those, 64 (82.1%) returned to IDPH, and 51 (65.4%) patients contacted by LHD staff. No possible resistant cases have been identified. The majority of patients indicated re-exposure as the cause of their second infection.

Conclusion:

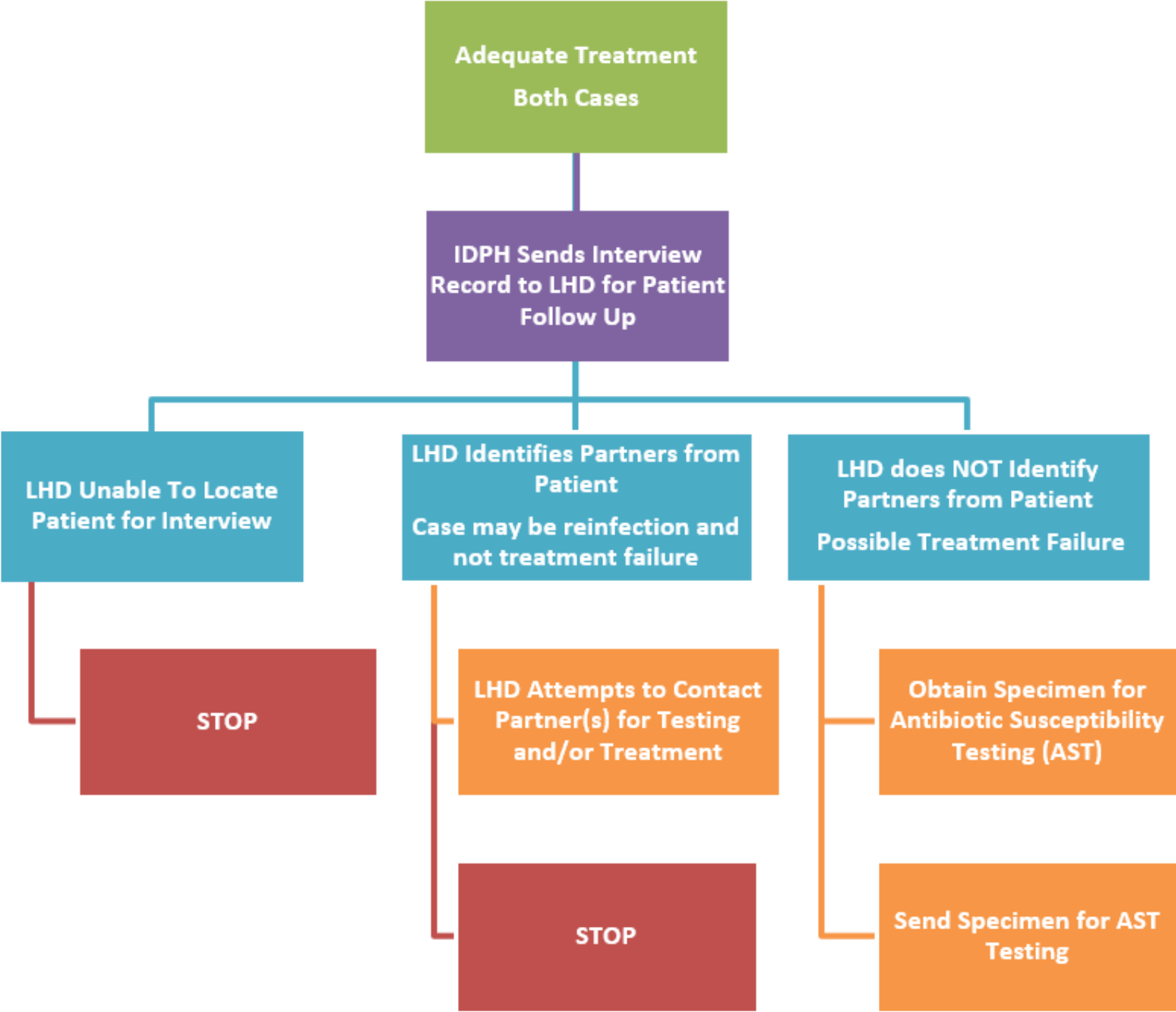
Resistant gonorrhea could occur in the United States or Illinois at any time as other countries have reported resistant cases. Actively monitoring for resistant gonorrhea infections is a proactive and necessary action as gonorrhea cases continue to increase and antibiotic resistance continues to be reported in the CDC Gonococcal Isolate Surveillance Project (GISP).

Since gonorrhea is difficult to culture outside a host, creating a procedure to get viable organism from the patient to CDC has been challenging and is still being perfected. Exploration is ongoing to establish AST (E-test) within the IDPH laboratory. Having this procedure in place to respond to a treatment failure case or even an outbreak of antibiotic-resistant gonorrhea is the over-arching goal. This procedure in Illinois may prove to be a model for other states.

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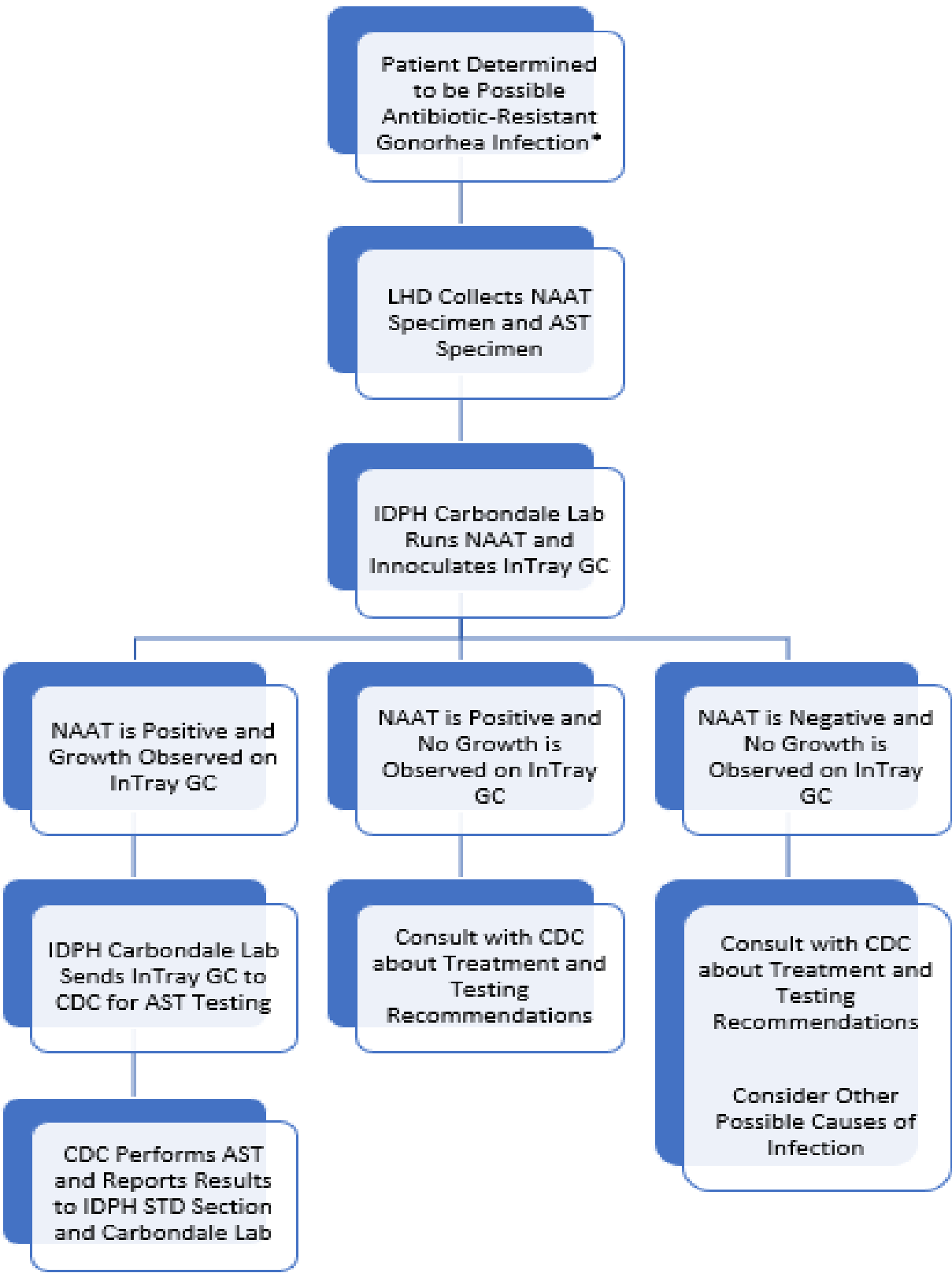
Workflow of Possible Gonorrhea Treatment Failure Cases



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Workflow for Submission of a Specimen for Antibiotic Susceptibility Testing



*Patient was treated with recommended dual therapy of ceftriaxone and azithromycin and re-infection was ruled out

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Last Name:				First Name:									
Date of Birth:				Phone:									
Address:													
STD TESTING													
Date Collected		Provider				Specimen Source							
STD TREATMENT													
Treatment Date		Provider				Treatment Code							
RISK FACTORS													
From the first diagnosis date to the second (see Date Collected), have you...						If yes, select all that apply							
Had sex with a male?		Yes	No	R	D	Anal	Vaginal	Oral	Unsp				
Had sex with a female?		Yes	No	R	D	Anal	Vaginal	Oral	Unsp				
Had sex with an anonymous partner?		Yes	No	R	D	Anal	Vaginal	Oral	Unsp				
In the last twelve months, have you...													
Had sex with someone while you were traveling outside the United States?		Yes	No	R	D	Anal	Vaginal	Oral	Unsp				
If yes, where did you travel?													
Had sex with someone who traveled outside the United States?		Yes	No	R	D	Anal	Vaginal	Oral	Unsp				
If yes, where did they travel?													
Patient's HIV Status		Positive		Negative		Unknown		Did Not Ask					
SIGNS AND SYMPTOMS													
Signs/Symptoms		Earliest Observation Date		Anatomic Site		Duration (Days)							
PARTNER/SOCIAL CONTACT INFORMATION #1					PARTNER/SOCIAL CONTACT INFORMATION #2								
Last Name, First Name					Last Name, First Name								
Address					Address								
City		State	ZIP Code		City		State	ZIP Code					
Phone		DOB		Phone		DOB							
Current Gender		Age (Approx)		Current Gender		Age (Approx)							
M	F	MTF	FTM	O	R	Unk	M	F	MTF	FTM	O	R	Unk
First Exposure Date		Frequency		Last Exposure Date		First Exposure Date		Frequency		Last Exposure Date			
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