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ISDS INTERNATIONAL SOCIETY FOR DISEASE SURVEILLANCE

Timeliness of Chlamydia Laboratory and Provider Reports: A Modern Perspective

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Objective

To analyze the time delay between a chlamydia positive test diagnosis and when a laboratory and/or a provider sends a report to a local public health department.

Introduction

Timeliness of reports sent by laboratories and providers is a continuous challenge for disease surveillance and management. Public health organizations often collect communicable disease reports with various degrees of timeliness raising the concern about the delay in patient information received (1). Timely reports are beneficial to accurately evaluate community health needs and investigate disease outbreaks (2). According to Indiana state law, chlamydia reports are required to be sent to public health within 3 days after a positive test result confirmation (3). Therefore, laboratories and providers must be accountable and comply with regulation to ensure accurate data quality of disease assessment.

Methods

A sample of 2,428 chlamydia laboratory and provider reports were collected during the period from May 2012 through July 2012 from a local health department serving the Indianapolis area. Due to absence of test confirmation dates, dates that a report is sent to public health, and other missing data, only 1,752 reports were included in this study. The time delay was calculated by determining the difference between when the initial report is sent to public health following positive confirmatory test by the laboratory. Reports were differentiated as either a laboratory report or a provider report coming directly from a clinician or a hospital setting. Statistical analyses and frequency tables were conducted using SAS 9.4.

Results

Table 1 displays the counts of chlamydia laboratory and provider reports according to the time delay in days, the percentage of reports sent to public health within 3 days, and the summary statistics for the two types of reports with a graphical representation shown in Figure 1. There is a clear lag between a lab test and when a provider report is sent to public health. Negative binomial regression result was highly significant with p < 0.001.

Conclusions

This study shows the importance of continued examination of timeliness of disease reporting from both laboratory and provider settings. Most lab reports are received electronically and comply with state law. However, reports from providers tend to be fax-based and received later than the 72 hours desired by health officials. With the greater adoption of electronic health records (EHR), it might be possible to further enhance disease surveillance through more timely provider-based reporting which could also reduce the volume of missing data from provider reports like those observed with electronic lab reporting (2). Future research should examine EHR capacity and clinical workflows to improve provider-based reporting processes.

Table 1 Timeliness of chlamydia reports between positive test confirmation and report sent to public health from May 2012 to July 2012

Time Differential	Laboratory Report	Provider Report	Total
Same Day	5 (0.89%)	119 (9.97%)	124 (7.08%)
1 Day	72 (12.88%)	89 (7.46%)	161 (9.19%)
2 Days	224 (40.07%)	151 (12.66%)	375 (21.40%)
3 Days	139 (24.87%)	112 (9.39%)	251 (14.33%)
4-7 Days	108 (19.32%)	277 (23.22%)	385 (21.97%)
8-14 Days	7 (1.25%)	200 (16.76%)	207 (11.82%)
15-21 Days	4 (0.72%)	83 (6.96%)	87 (4.97%)
22-28 Days		50 (4.19%)	50 (2.85%)
29-35 Days		35 (2.93%)	35 (2.00%)
Over 35 Days		77 (6.45%)	77 (4.39%)
Total	559 (100%)	1193 (100%)	1752 (100%)

Percentage of laboratory and provider reports that are reported within 3 days		
Report Type	Reported Within 3 Days	Not Reported Within 3 Days
Laboratory Report	440 (78.71%)	119 (21.29%)
Provider Report	471 (39.48%)	722 (60.52%)

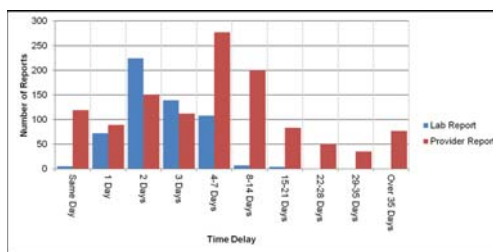| Statistical analyses of time differential for laboratory and provider reporting			
Report Type	Sample Size	Std Dev (days)	Median (days)	Mean with Lower and Upper 95% Confidence Interval (days)
Laboratory Report	559	1.947	2	2.789 [2.627, 2.951]
Provider Report	1193	14.813	5	10.262 [9.42, 11.103]

Figure 1 Frequency count and time delay of chlamydia reporting for laboratory and provider reports

Keywords

Public Health Reporting; Timeliness; Chlamydia; Data Quality; Communicable Disease Control

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