

Automating Communicable Disease Exposure Follow-up

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Background

A thirteen hospital healthcare system in central Texas evaluated the feasibility of performing electronic healthcare worker (HCW) communicable disease exposure (CDE) notification, evaluation and follow-up.

Methods

For this study, an electronic process was developed to notify and evaluate potential CDE. Following Infection Prevention (IP) confirmation of an exposure event, potentially exposed HCW email addresses are loaded into a database connecting potentially exposed HCWs to the source patient, possible dates of exposure, and disease-specific CDE criteria.

Individual email notifications are automatically generated from the database directing HCWs to conduct an electronic disease-specific exposure self-assessment. HCWs whose self-assessment indicates no exposure are notified at the time of assessment completion that no further action is required. HCWs that report an occupational exposure are routed to a dashboard monitored by Associate Occupational Health (AOH) for post-exposure follow-up. HCWs receive a daily email reminder to complete the exposure self-assessment for 5 days or until the assessment is completed.

Results

From January - November 2023 there were 104 exposure events with a total of 1634 HCWs with a potential CDE. A total of 865 (52.9%) HCWs completed their exposure self assessment and 620 (70.3%) of HCWs who completed their exposure self-assessment met criteria for CDE. Response rates were higher among HCWs with an organization-affiliated email address (58.4%) than HCWs without (37.9%) ($p < 0.001$). IP and AOH staff informally reported less time spent conducting investigation into CDE during the study period.

Figure 2: Exposure Self-assessment

Figure 1: Sample email

Dear PIPED DATA
 You have been identified as having a potential _____ exposure at _____ between 00:00:0000 DATA and 00:00:0000 DATA. Please complete the exposure assessment form by clicking on the link below. Your responses will be shared with Infection Prevention and Control and Associate and Occupational Health to determine whether additional follow-up is required.
 You may open the survey in your web browser by clicking the link below:
[Sample Survey Title](#)
 If the link above does not work, try copying the link below into your web browser:
https://redcap.ascension.org/txaus/surveys/?s=SAMPLE_LINK
 This link is unique to you and should not be forwarded to others.
 Thank you,
 Your Infection Prevention and Control Team

Table 1: Summary of Communicable Disease Exposures

Communicable Disease	Exposure Events	Personnel notified of possible CDE	Personnel Completed Exposure Self-assessment		Personnel Reporting Exposure	
			N	%	N	%
Brucella	1	5	5	100.0%	2	40.0%
Chickenpox	2	27	19	70.4%	15	78.9%
COVID-19	89	1403	731	52.1%	541	74.0%
M-pox	1	10	6	60.0%	3	50.0%
Tuberculosis	11	179	104	58.1%	47	45.2%
Overall	104	1634	865	52.9%	608	70.3%

Conclusion

CDEs are a high-volume occurrence within healthcare organizations and require significant resources to investigate and provide follow-up. Efforts to streamline and automate processes around exposure notification and follow-up are necessary to create efficiencies within IP and AOH departments. Use of automated email notifications to individual HCWs is one approach that can be considered.

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"This tool helps IP and AOH complete our shared work in a clear and succinct way. This is the simplest [exposure tool] I have ever used"

"When an exposure survey is submitted it appears as a report for AOH to review and includes pertinent disease-specific data"



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