642. Improving Patient and Employee Safety through Implementation of an Infection Risk Screening Process for International Patients at Boston Children's Hospital—The "AIRSHIP" Protocol
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Session: 73. Outbreaks and Public Health Across the Globe
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Background. Vaccine-preventable diseases and multi-drug-resistant organisms (MDROs) are common outside of the US, and multiple infectious outbreaks have been linked to travelers. Boston Children's Hospital cared for 2796 international patients in 2016 but lacked an infection risk screening process for these patients, placing patients and staff at risk. We developed the Assessing Infection Risks for Safe Healthcare of International Patients (AIRSHIP) protocol to identify risks to guide infection prevention and control (IPC) measures.

Methods. A multidisciplinary team of IPC, infectious diseases, and International Health Services (IHS) experts assessed current IHS intake procedures and stakeholder engagement. We then developed AIRSHIP, devising standardized processes and forms to (1) assess underimmunization, MDRO and tuberculosis history, recent exposures, current symptoms and (2) triage cases for catch-up immunization, urgent health-care evaluation, and/or IPC intervention (Figure 1). We piloted incorporation of AIRSHIP into existing intake procedures. We tracked process, outcome, and balancing measures to evaluate feasibility, effectiveness, and acceptability to families (Figure 2) and made iterative improvements through Plan-Do-Study-Act (PDSA) cycles.

Results. For our first 13 cases, we completed pre-arrival family and referring provider interviews in 5 cases and on-arrival family interviews in 8 cases (in no cases were both pre-arrival and on-arrival interviews feasible). We were able to assign a risk category in all cases, identifying 5 patients Hospital, Boston, MA

Conclusion. International patients often present with active infections and are commonly undervaccinated. A feasible and effective strategy for infection risk screening of international patients is review of records pre-arrival, together with on-arrival interview to gather additional data and identify acute symptoms and exposures.

Disclosures. All authors: No reported disclosures.

643. Infectious Complications of Intravenous Drug Use: A Single-Center Review of International Patients at Beth Israel Deaconess Medical Center
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Background. Infectious complications of intravenous drug use (IDU) are common in international patients, who are often undervaccinated. We developed the Assessing Infection Risks for Safe Healthcare of International Patients (AIRSHIP) protocol to identify risks to guide infection prevention and control (IPC) measures.

Methods. A multidisciplinary team of IPC, infectious diseases, and International Health Services (IHS) experts assessed current IHS intake procedures and stakeholder engagement. We then developed AIRSHIP, devising standardized processes and forms to (1) assess underimmunization, MDRO and tuberculosis history, recent exposures, current symptoms and (2) triage cases for catch-up immunization, urgent health-care evaluation, and/or IPC intervention (Figure 1). We piloted incorporation of AIRSHIP into existing intake procedures. We tracked process, outcome, and balancing measures to evaluate feasibility, effectiveness, and acceptability to families (Figure 2) and made iterative improvements through Plan-Do-Study-Act (PDSA) cycles.

Results. For our first 13 cases, we completed pre-arrival family and referring provider interviews in 5 cases and on-arrival family interviews in 8 cases (in no cases were both pre-arrival and on-arrival interviews feasible). We were able to assign a risk category in all cases, identifying 5 patients Hospital, Boston, MA

Conclusion. International patients often present with active infections and are commonly undervaccinated. A feasible and effective strategy for infection risk screening of international patients is review of records pre-arrival, together with on-arrival interview to gather additional data and identify acute symptoms and exposures.

Disclosures. All authors: No reported disclosures.

644. A Cloud Based Epidemiology Network to Investigate Geographical Dynamics of Respiratory Disease
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Background. Real-time data collection of respiratory disease is important for understanding the spatiotemporal dynamics of disease transmission in the US. Healthcare professionals use tools such as FluView to help identify local pathogen circulation; however, these tools are limited to syndromic surveillance, and track a limited set of pathogens. Understanding respiratory disease dynamics requires 1) a large, pathogen-rich data set 2) geographically dispersed data sources, and 3) fine temporal resolution. Here we utilize FilmArray® Trend, a research epidemiology system containing exported data from FilmArray® Respiratory Panel (RP) tests, to investigate geographic patterns of 20 common pathogens.

Methods. Over 6,000,000 individual pathogen assays from 19 clinical sites were exported to the Trend database from 2013 to present. Trend data were smoothed and normalized to produce the time series of pathogen incidence. A cross-correlation analysis was performed to compare sites to one another and determine offset of pathogen incidence. The results were plotted on a map of the US with visual indicators of correlation strength and directional movement as defined by cross-correlation lag values.

Results. The respiratory pathogens detected by the FilmArray RP test show a diverse set of spatial and temporal behaviors. Most striking was the spread of the virus Coronavirus OC43, and Respiratory Syncytial Virus (RSV), with RSV traveling from east coast sites to west coast sites across the US over 20 days. In contrast Parainfluenza virus 3 (PIV3) shows a small cross-correlation lag across all of the Trend sites during the regular summer season, indicating near simultaneous onset of detection nationwide. A localized cluster of PIV3 in the winter of 2016 was observed in the midwest and west, identifying the significance of localized regional trends.

Conclusion. FilmArray Trend shows great promise in deciphering spatiotemporal dynamics of these common respiratory pathogens. This system can identify localized outbreaks and directional movement of pathogens over time. Future work with finer geographic distribution of contributing sites will aide in making conclusions regarding spatial dynamics of all 20 RP pathogens. Other pathogen transmission models may also be explored using this data set.

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645. Stumps Outbreak—Colorado, 2017
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