



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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Background

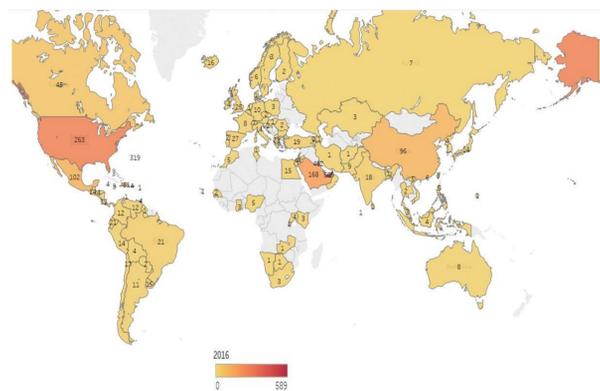
Vaccine-preventable diseases and multi-drug-resistant organisms (MDROs) are common outside of the US, and multiple infectious outbreaks have been linked to travelers. Boston Children's Hospital (BCH) cared for 2,796 international patients in 2016 [Figure 1] but lacked an infection risk screening process for these patients, placing patients and staff at risk.

We developed the Assessing Infection Risks for the Safety and Health of International Patients (AIRSHIP) protocol to identify risks to guide urgent care referrals and infection prevention and control measures.

Specific Aim

By July 2018, we propose to develop and pilot a screening process that achieves infection risk stratification and management for 100% of screened international patients prior to establishment of care at BCH with at least 80% patient and family satisfaction.

Figure 1: Countries of Origin of International Patients Presenting to Boston Children's Hospital in 2016



Methods

A multidisciplinary team of Infectious Diseases, Infection Prevention and Control (IPC), and International Health Services (IHS) experts assessed current IHS intake procedures. We defined our aim, identified drivers for improvement, and engaged key stakeholders [Figure 2]. We then developed the AIRSHIP protocol, devising standardized processes and forms to:

1. Assess under-immunization, MDRO colonization/infection history, tuberculosis risk, communicable disease exposures, and symptoms of potential infections on arrival.
2. Triage cases for catch-up immunizations, urgent healthcare evaluation, and/or IPC intervention [Figure 3].

We piloted the AIRSHIP protocol with the existing intake procedures. We tracked process, outcome, and balancing measures to evaluate feasibility, effectiveness, and acceptability to families [Figure 4]. Through Plan-Do-Study-Act (PDSA) cycles, we iteratively improved the efficiency of the protocol.

Figure 3: AIRSHIP Protocol

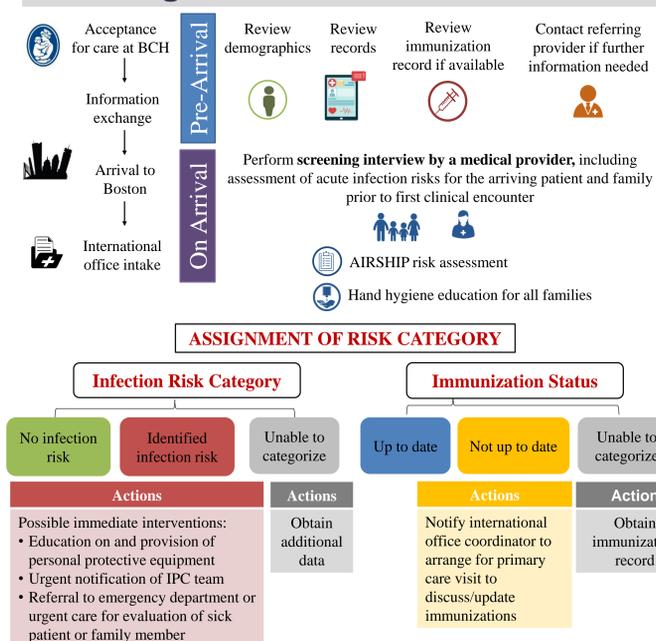
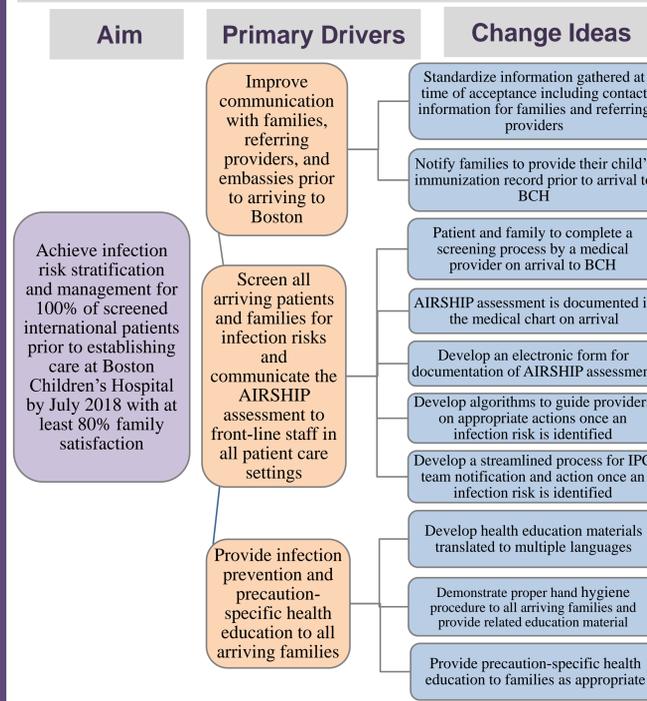


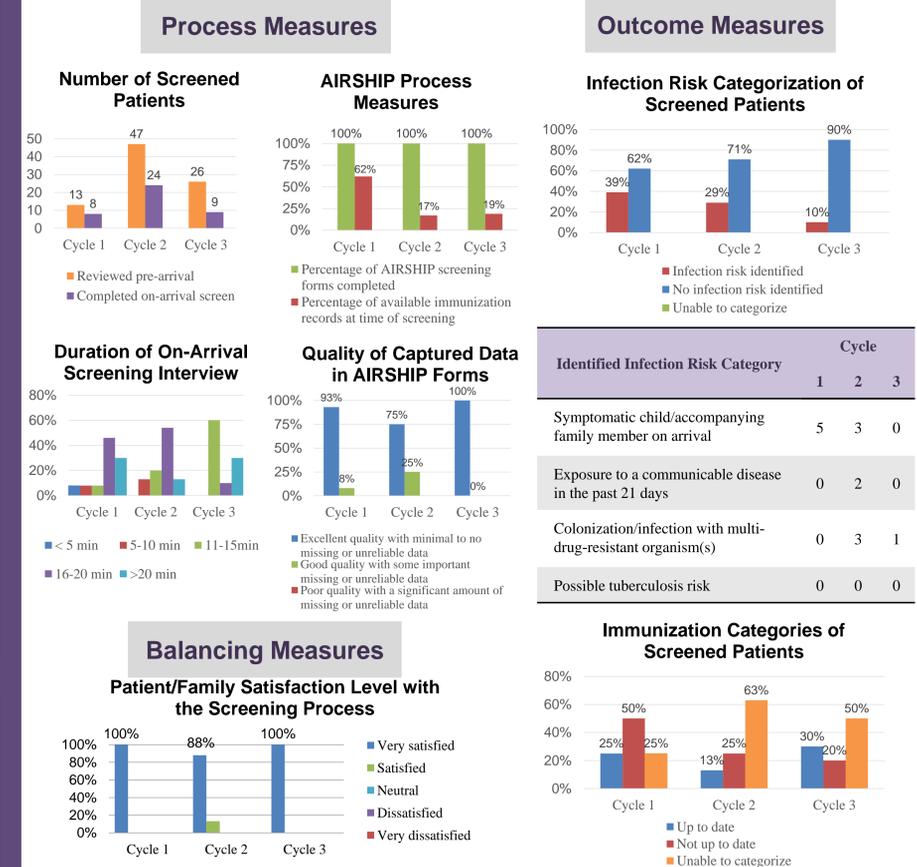
Figure 2: Driver Diagram



Lessons Learned

- On-arrival screening interview is more efficient and yields more valuable and accurate information compared with pre-arrival screening.
- The on-arrival interview is a great opportunity for infection prevention health education.
- To ensure availability of immunization history, families must be asked to obtain their child's record prior to leaving their home country.
- The majority of international patients are not up to date with immunizations.
- Infection risk screening of international patients is feasible and often identifies active infection risks.
- The screening interview should be done by a medical provider with adequate training to implement actions based on identified infection risk in consultation with IPC.
- Implementation of AIRSHIP protocol requires leadership engagement and resources to provide immunizations and urgent care.

Figure 4: Process, Outcome & Balancing Measures for the AIRSHIP Protocol



Next Steps

- After iterative modifications of AIRSHIP and improvements in implementation, we are piloting a model in which data are gathered from both a family questionnaire and an interview.
- We are developing AIRSHIP education materials and detailed algorithms for providers to guide actions once an infection risk is identified.

Conclusion

International patients often present with active infections and are commonly under-vaccinated. A feasible, effective, and acceptable strategy for screening international patients is a pre-arrival records review, followed by an on-arrival family interview to identify acute infection risks and to provide relevant health education.