Conclusion. Experienced travel medicine providers overestimated risk of several vaccine preventable illnesses, though risk estimates for others were close to published estimates. Most providers do not use quantitative risk in pre-travel consultations. Improved quantitative risk understanding may improve the quality of pre-travel consultations.

Table 1. Provider's Risk Estimates for Selected Travel-Associated Illnesses

	Median	Interquartile Range
Traveler's diarrhea (India)	1:3	1:2 – 1:5
Malaria (W. Africa)	1:10	1:5 – 1:85
Hepatitis A (Kenya)	1:100	1:25 – 1:1,000
Influenza (Indonesia)	1:100	1:20 – 1:500
Cholera (Uganda)	1:10,000	1:500 – 1:100,000
Japanese encephalitis (Vietnam)	1:10,000	1:500 – 1:200,000
Tick borne encephalitis (Austria)	1:1,000	1:100 – 1:10,000
Yellow fever (W. Africa)	1:2,000	1:100 – 1:10,000
Yellow fever (Brazil)	1:5,000	1:200 – 1:25,000

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454. Barriers and Facilitators to Control of Hospital Acquired Infections in Jimma, Ethiopia

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Background. Given the complex, interdisciplinary nature of infection prevention, a systems approach may be useful to promote and sustain effective infection prevention practices. The Systems Engineering Initiative for Patient Safety (SEIPS) model provides a framework that can be used to identify barriers and facilitators of infection control practices and evaluate interactions between structures, processes, and outcomes.

Methods. A qualitative study was done to evaluate barriers and facilitators to implementation of effective infection control practices at Jimma University Hospital in Jimma, Ethiopia. Twenty-two semi-structured interviews of hospital employees, selected by convenience sampling, were conducted to assess the five components of SEIPS framework: person, physical environment, tasks, organization and tools. The interviews were transcribed, coded for themes, and analyzed using the software Dedoose.

Results. The primary facilitators to effective infection control were identified at the task, organization, and person level. Prominent themes included a manageable workload, a management system supportive of institutional feedback, sufficient budget, and positive individual attitude toward improving infection control. The primary barriers to effective infection control were found to be at the technology and tools, person, and organization levels. The major themes within these levels include poor supply chain management leading to personal protective equipment (PPE) shortages, an inconsistent and incomplete training program for employees, a lack of infection control policies, a lack of involvement of environmental services, and a nurse rotation program that increases unit staff turnover

Conclusion. To address the identified barriers, possible interventions to consider should include: developing infection control policies and protocols, using these to implement a regular staff training program, incorporation of environmental services to the healthcare team, identify and train infection control team member to manage the PPE supply chain, and establishing an HAI surveillance program to better identify current risk areas as well as track progress.

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455. Epidemiological Surveillance in Points of Care for Refugees/Migrants: The 2016–2017 Experience in Greece

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Background. In 2016 and 2017, 535,000 refugees/migrants crossed the Mediterranean Sea to reach Europe, with 203,000 arriving in Greece. To address enhanced epidemiological surveillance needs, in May 2016 Greece established an ad hoc surveillance system in points of care for refugees/migrants in hosting centers, complementary to routine surveillance.

Methods. Data on number of cases per age group for 14 syndromes of public health (PH) interest were collected daily from primary healthcare units of refugee/migrant hosting centers in the country, along with the number of consultations from any cause. Additional information enabling case-finding was collected for syndromes representing diseases that require PH measures at an individual level. Observed daily proportional morbidity (PM) was compared with expected PM using a quasi-Poisson regression model. PM ≥2 standard deviations from expected was defined as a "warning signal." "Warning signals" appearing for ≥2 consecutive days were considered "alert signals." Signals were evaluated daily and public health measures were implemented as necessary.

Results. The number of centers participating in the system ranged between 27 and 51. Mean weekly reporting rate reached 96%. From 16 May 2016 to 31 December 2017, 500,166 consultations from any cause were reported, with 28,300 cases of the syndromes under surveillance (5.6%). Syndromes with the higher PM were respiratory infections with fever (3.3%), gastroenteritis (1.3%), suspected scabies (0.6%), and rash with fever (0.3%, of whom 95.1% were varicella cases, with no measles or rubella identified). Two hundred fifteen cases of suspected tuberculosis were referred to hospitals for further diagnostic testing and treatment. Of 92 cases of jaundice with acute onset, 85% were verified as hepatitis A, triggering interventions such as vaccination. None of the produced signals corresponded to a major PH incident, all being of low severity and duration.

Conclusion. Infections represented a small proportion of refugees' health problems. Syndromic surveillance in hosting centers guided PH action and confirmed no major PH event.

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456. Discrepant Trip Experiences Among Travelers Attending a Tertiary Care Center Family Travel Medicine Clinic

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Background. International travel can expose travelers to a number of health risks. Pre-travel consultation helps prepare travelers for health concerns that might arise. The assessment of risk, mitigation strategies, and relevance of pre-travel advice is dependent on whether travelers adhere to their planned travel itinerary and activities.

Objectives. We aimed to determine the proportion of returned travelers whose actual travel itineraries differed from their planned travel plans (defined as discrepant trip experiences). We also aimed to identify traveler or trip characteristics associated with discrepant trip experiences.

Methods. We conducted a prospective cohort study at the Hospital for Sick Children's Family Travel Medicine Clinic between September 2014 and December 2015. Pre- and post-trip questionnaires were compared with identify discrepant trip experiences.

Results. Among 186 participants, 121 (65%) reported their actual travel itineraries upon their return. A preliminary analysis of 53 participants revealed a median participant age of 37 years. Most common reasons for travel were vacation (*n* = 29, 55%) and visiting friends and/or relatives (*n* = 12, 23%). Median trip duration was 17 days (IQR 13 days); most commonly visited regions were Central America (*n* = 19, 36%), Asia (*n* = 18, 34%), and South America (*n* = 5, 9%). In total, 51 actual travel itineraries (96.2%, 95% CI 91–100) were discrepant from the pre-travel plans that were used to make pre-travel health recommendations. Additional activities (e.g., hiking, caving) (*n* = 42, 82.3%) and unplanned environments visited (e.g., altitude, jungle) (*n* = 32, 62.7%) during travel were the trip characteristics most likely to be discrepant. We did not identify any traveler demographic features or planned trip characteristics that predicted either discrepant trip experiences.

Conclusion. Based on our preliminary analysis, the majority of travelers reported discrepant trip experiences. We plan to complete the analysis of the full cohort (*N* = 121) and also to quantify if the discrepant features meaningfully altered health risks during travel. This study informs practitioners providing pre-travel consultation to consider broader counseling as discrepancies from planned travel are common.

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457. Relationship Between Healthcare Worker (HCW) Perception of Safety and Rates of Healthcare-Associated Infections (HAI) and Hand Hygiene (HH) Compliance

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Background. Many facilities complete the Agency for Healthcare Research and Quality (AHRQ) patient safety culture survey. Our goal was to evaluate associations between healthcare worker (HCW) responses to AHRQ patient safety culture survey questions and unit performance on healthcare-associated infections (HAI) and hand hygiene compliance.

Methods. 11,257 HCW across 10 acute care hospitals and four rehabilitation facilities completed the 2016 AHRQ patient safety survey. Unit-level standardized