OLB16
2-hour Oral Session
Late breaker session: Refugee and migrant health

Surveillance of tuberculosis among immigrant workers following pre-entry screening in Taiwan, 2011-2014

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Background:
Taiwan's criterion for admissions of new immigrant workers from tuberculosis (TB) highly endemic countries is a normal chest X-ray (CXR). All immigrant workers were mandatorily screened for TB, requiring of an approval of TB free by an overseas pre entry screening and by the post entry screenings within 3 days for reconfirmation, at 6th month, 18th month and 30rd month for following-up. This study aimed to estimate the TB incidence among these immigrant workers following pre-entry screening during 2011-2014 and to assess the effectiveness of conducting post-entry mandatory TB screenings for respective entry cohorts.
Material/methods:
The TB prevalence based on post-entry screening was calculated from the Taiwan TB archive database, which was linked with a foreign worker physical exam screening database.
Results:
In 2011-2014, 2,080 TB-positive cases were identified among 1,911,966 immigrant workers from Southeast Asia (Vietnam: 16.0%, Indonesia: 48.1%, Philippines: 22.9%, Thailand: 12.0%, and Malaysia: 0.1%) following their pre-entry screening and partial repatriating. In total, the respective gender- and age (20-49 yrs)- specific TB incidence rate of 65.8-175.6 per 100,000/year was 2.1-5.5-fold greater than that of the corresponding Taiwanese individuals. In term of the diagnostics, 89.3% of all TB cases among immigrant workers were abnormal CXRs, 33.3% smear negative/culture positive and 15.9% smear positive/culture positive. Overall, these cases were comprised of 14.2% (298/2,080) smear-positive TB of high infectivity, 74.3% (1,544/2,080) smear- negative TB of less infectivity and 7.8% (163/2,080) extra-pulmonary TB. In total, 58% of immigrant workers with TB were passively identified and 41% were actively identified via post-entry screenings; moreover, the former i.e., passively identified vs. actively screened TB cases had a higher proportion of smear-positive samples (189/1,223 vs. 108/857; odds ratio (OR) 1.56, 95% confidence interval (CI): 1.2-2.0). In terms of effectiveness, the TB yield of the mandatory screening at 6 to 30 months post-entry among immigrant workers from highly endemic countries was 61.1-180.5 cases per 100,000 screenings in Taiwan.
Conclusions:
Immigrant workers from highly endemic Southeast-Asia countries remained a higher (2.2-2.5 fold) TB risk than domestic residents following pre-entry screening. These screening intervened to reduce the TB burden and resulted in a total of 74.3% (1,544/2,080) smear- negative TB cases of less infectivity in an early pathogenesis. The proportion of smear positive pulmonary TB cases was significantly higher in illness identified ones than in actively screened ones (189/1,223 vs. 108/857; OR 1.56, 95% CI: 1.2-2.0).

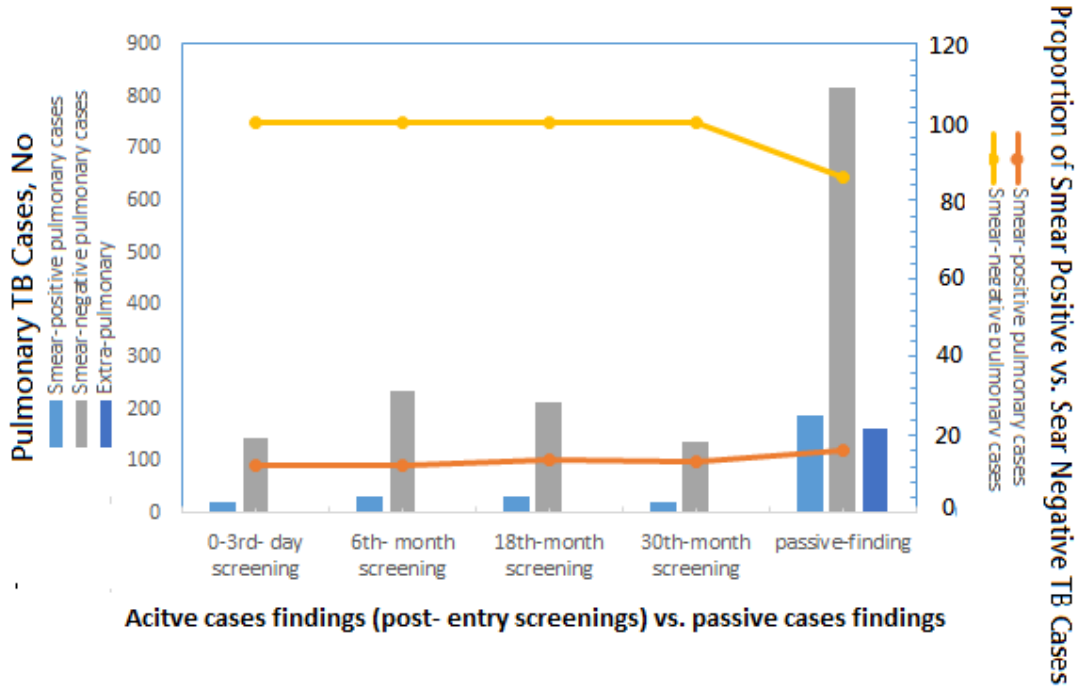

Fig 1. The proportion of smear-positive pulmonary TB cases was significantly higher in passively identified ill cases than in actively identified cases (189/ 1,223 vs. 108/ 856, OR:1.56, 95% Confidence Interval: 1.21-2.03).

Table 1 The demographic/clinical characteristics of foreign immigrant workers with TB detected by active and passive surveillance

Variables		Total cases	(%)	[1]Passive Surveillance	[2]Active Surveillance	[3]P	Odds Ratio ,(95% CI): Passive vs. Active Surveillance
Total		2080		1223	857		
National						<0.05	
	Indonesia	1001	48.1	600	401		1.45(1.1-1.92)
	Mongolia	2	0.1	2	0		
	Thailand	250	12.0	127	123		Ref
	Malaysia	2	0.1	2	0		
	Philippine	476	22.9	265	211		1.21(0.89-1.65)
	Vietnam	333	16.0	211	122		1.67(1.2-2.33)
	Unknown	16	0.8	16	0		
Pulmonary						<0.0001	
	Smear Positive	297	14.3	189	108		1.56 (1.21-2.03)
	Smear Negative	1544	74.3	817	727		Ref
	Extra pulmonary	163	7.8	163	0		
	unknown	76	3.6	54	22		

1.Passive surveillance: TB cases finding in case of other clinical treatment or hospitalization
2. Active surveillance: TB cases findings via post-entry screenings
3. chi-square of independent