MAJOR ARTICLE

Spectrum of Illness in International Migrants Seen at GeoSentinel Clinics in 1997–2009, Part 2: Migrants Resettled Internationally and Evaluated for Specific Health Concerns

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(See the Major Article by Barnett et al on pages 913–24.)

Background. Increasing international migration may challenge healthcare providers unfamiliar with acute and long latency infections and diseases common in this population. This study defines health conditions encountered in a large heterogenous group of migrants.

Methods. Migrants seen at GeoSentinel clinics for any reason, other than those seen at clinics only providing comprehensive protocol-based health screening soon after arrival, were included. Proportionate morbidity for syndromes and diagnoses by country or region of origin were determined and compared.

Results. A total of 7629 migrants from 153 countries were seen at 41 GeoSentinel clinics in 19 countries. Most (59%) were adults aged 19–39 years; 11% were children. Most (58%) were seen >1 year after arrival; 27% were seen after >5 years. The most common diagnoses were latent tuberculosis (22%), viral hepatitis (17%), active tuberculosis (10%), human immunodeficiency virus (HIV)/AIDS (7%), malaria (7%), schistosomiasis (6%), and strongyloidiasis (5%); 5% were reported healthy. Twenty percent were hospitalized (24% for active tuberculosis and 21% for febrile illness [83% due to malaria]), and 13 died. Tuberculosis diagnoses and HIV/AIDS were reported from all regions, strongyloidiasis from most regions, and chronic hepatitis B virus (HBV) particularly in Asian immigrants. Regional diagnoses included schistosomiasis (Africa) and Chagas disease (Americas).

Conclusions. Eliciting a migration history is important at every encounter; migrant patients may have acute illness or chronic conditions related to exposure in their country of origin. Early detection and treatment, particularly for diagnoses related to tuberculosis, HBV, *Strongyloides*, and schistosomiasis, may improve outcomes. Policy makers should consider expansion of refugee screening programs to include all migrants.

Keywords. migrant; tuberculosis; hepatitis; *Strongyloides*; schistosomiasis.

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The speed and magnitude of international human mobility results in changes in global disease patterns that pose challenges to migrants, who may carry diseases with them, and healthcare professionals, who may be unfamiliar with these diseases [1, 2]. Migrants are at higher risk for certain infectious diseases with long latency periods, many amenable to screening, and for which identification and treatment may reduce long-term morbidity and mortality [3–5]. Clinicians caring for migrants in developed countries note higher rates of latent tuberculosis, chronic hepatitis B virus (HBV) infection, intestinal parasites, and malaria [4, 6–9]. Therefore, healthcare professionals must be aware of issues pertaining to screening, diagnostics, and treatment for diseases that are not endemic. This can be challenging, particularly with shifting patterns of migration and resultant changes in disease epidemiology.

GeoSentinel sites are specialized travel or tropical medicine clinics that collect clinician-based surveillance data on travel–related diseases. This study analyzed the spectrum of infectious diseases and acute medical problems in migrants resettled internationally and evaluated for specific health concerns, comparing results by origin region. The data provide clinicians caring for heterogenous groups of migrants a snapshot of common acute and chronic conditions affecting migrants. Health issues of migrants seen for systematic, protocol-based health screening in 2 US-based GeoSentinel clinics that perform such screening are described in a companion paper [10]. Together, these studies inform public health professionals by adding data useful in developing policy that might reduce health disparities in migrants.

METHODS

Data Source

The GeoSentinel Surveillance Network (http://www.istm.org/geosentinel/main.html) currently consists of 54 member sites, in 24 countries over 6 continents. Patients are eligible for inclusion in the database if they crossed an international border and sought medical care at a GeoSentinel clinic. Sites use best reference diagnostic testing available and document inpatient or outpatient status, major complaint(s), and identify the country of acquisition of the illness based on itinerary, incubation period, and/or known epidemiology. GeoSentinel sites enter anonymous questionnaire-based information into a central structured query language database. The GeoSentinel data collection protocol was classified at the Centers for Disease Control and Prevention (CDC) as exempt public health surveillance after review by the institutional review board (IRB). At other sites, human studies approval was obtained if required by local IRBs.

Inclusion and Exclusion Criteria

All individuals whose last or only purpose of travel was for migration and who visited a GeoSentinel clinic from March 1997 through November 2009 were included. Migrants seen at GeoSentinel clinics providing only comprehensive, protocol-based health screening soon after reaching their final destination country were excluded, but their data have been analyzed and presented separately [10].

Definitions

Migrants are individuals who crossed international borders for the purpose of resettlement. Children were defined as age ≤18 years. Country of origin was defined based on a combination of country of birth, country of residence for most of the first 10 years of life, and citizenship, with the goal of capturing the country in which the migrant was likely to have had the most prolonged exposures. Countries were grouped into 13 GeoSentinel-defined regions. Final diagnoses were assigned from a standardized list of >500 diagnoses, categorized into 29 broad syndrome groups [11]. The database requires at least 1 diagnosis, which may be "no morbidity reported," but allows all diagnoses identified in a single patient to be reported.

Statistical Analysis

Data were analyzed using SAS software, version 9.1 (SAS Institute). Proportionate morbidity was calculated as number of migrants with a specific diagnosis or group of diagnoses as a proportion of all migrants from a specific country or region of origin. Diagnoses were summarized using syndrome groupings, with details of the most common specific diagnoses. Differences between groups used χ^2 test or Fisher exact test as appropriate. To adjust for the large number of tests performed, $P < .01$ was considered statistically significant.

RESULTS

Patient Population

Of the 15 421 migrant records from GeoSentinel clinics identified, 7629 (49.5%) migrants who were not seen at clinics that provide systematic protocol-based screening were included in this analysis. These predominantly nonrefugee migrants were seen at 41 GeoSentinel clinics on 5 continents in 19 countries, including Canada (33% of migrants), Europe (32%), United States (15%), and Australia and New Zealand (13%) (see Supplementary Table 1). Migrants originated from 153 countries; an origin country could not be determined for 87 (1%). Almost one-third originated from 6 countries: Burma (Myanmar), Ethiopia, Somalia, Sudan, India, and Bolivia (Figure 1). East Africa, Southeast Asia, West Africa, and South Asia each accounted for ≥10% of the migrants.

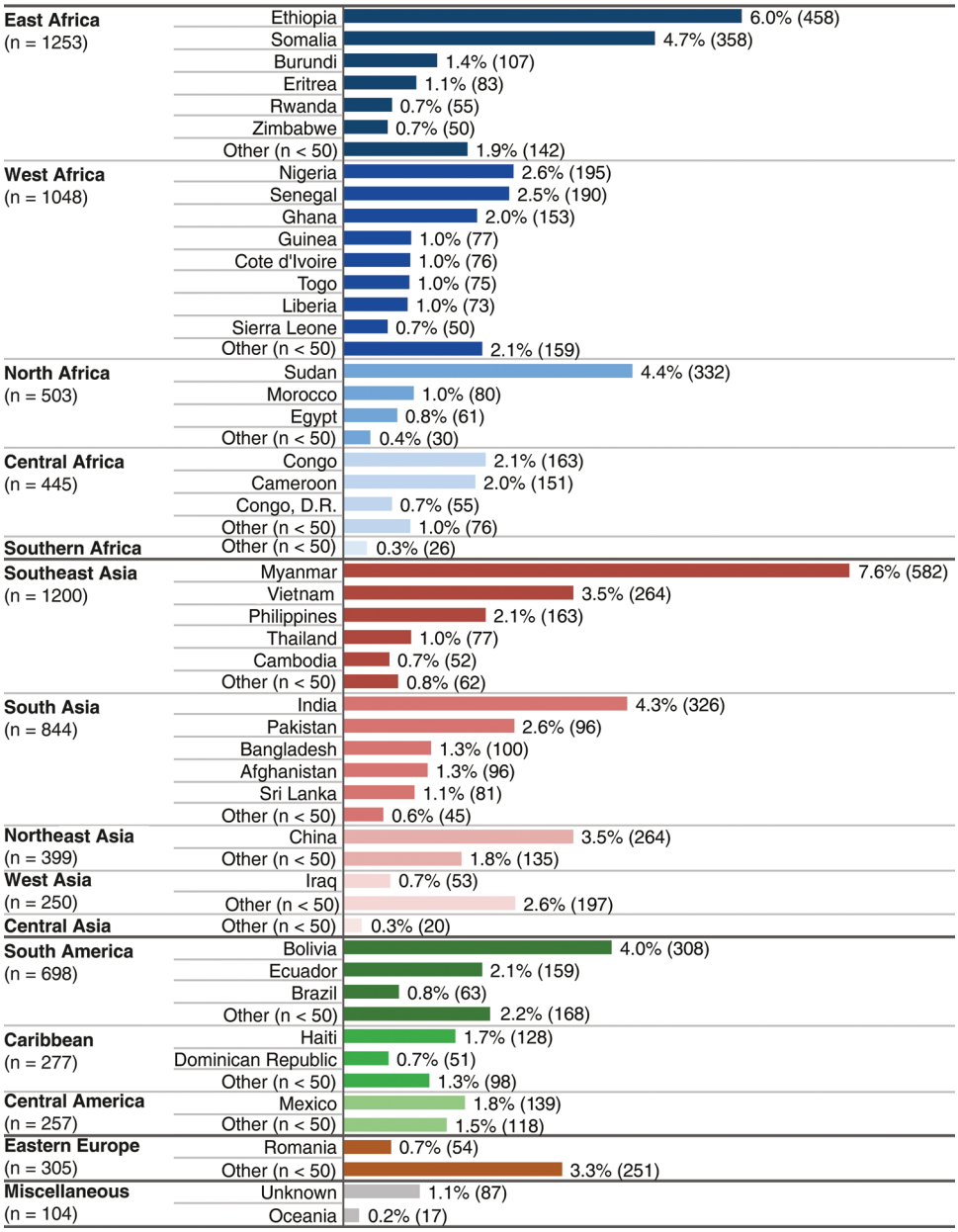

Figure 1. Top contributing countries of origin in referred migrants (N = 7629; percentage overall). Other = Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Barbados, Belarus, Benin, Bhutan, Bosnia, Bulgaria, Burkina Faso, Cape Verde, Central African Republic, Chad, Chile, Columbia, Comoros, Cook Islands, Costa Rica, Croatia, Cuba, Czech Republic, Djibouti, Dominica, El Salvador, Equatorial Guinea, Gabon, Gambia, Georgia, Grenada, Guatemala, Guinea Bissau, Guyana, Honduras, Hong Kong, Hungary, Indonesia, Iran, Israel, Jamaica, Jordan, Kazakhstan, Kenya, South Korea, North Korea, Kosovo, Kuwait, Kyrgyzstan, Laos, Lebanon, Libya, Lithuania, Macedonia, Madagascar, Malawi, Malaysia, Mali, Martinique, Mauritania, Mauritius, Micronesia, Moldova, Mongolia, Mozambique, Namibia, Nepal, New Caledonia, Nicaragua, Niger, Oman, Palestinian Territories, Papua New Guinea, Paragauy, Peru, Poland, Puerto Rico, Qatar, Reunion, Russia, St Kitts and Nevis, St Lucia, St Vincent and Grenadines, Samoa, Saudi Arabia, Serbia, Singpore, Slovakia, Solomon Islands, South Africa, Suriname, Swaziland, Syria, Taiwan, Tajikstan, Tanzania, Tibet, Timor-Leste, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, Uruguay, Uzbekistan, Venezuela, Yemen, Zambia.

Most (59%) were adults aged 19–39 years; 11% were children, and 7% were aged ≥60 years. Age and sex distribution varied by region (see Supplementary Figure 1). Southeast Asian migrants were older than those from many other regions. Females represented 46% of the overall study population; however, migrants from West Africa (34%) and North Africa (32%) were less likely, and those from South America more likely (54%), to be female.

Table 1. Ten Most Frequent Infectious Disease Diagnoses in Referred Migrants, Children and Adults

Diagnosis	Frequency	Percentage
Children (age ≤18 y; n = 854)		
Malaria	170	20.0
Latent tuberculosis	92	10.8
No health condition identified	82	10.0
Schistosomiasis	71	8.3
Giardiasis	67	7.8
Active tuberculosis	65	7.6
Hepatitis B, acute and chronic	41	4.8
Strongyloidiasis	40	4.7
Eosinophilia	25	2.9
Intestinal ascaris	19	2.2
Adults (age ≥19 y; n = 6751)		
Latent tuberculosis	1619	24.0
Hepatitis B, acute and chronic	864	12.8
Active tuberculosis	723	10.7
Human immunodeficiency virus/AIDS	510	7.6
Schistosomiasis	370	5.5
Hepatitis C	346	5.1
Strongyloidiasis	344	5.1
No health condition identified	326	4.8
Malaria	321	4.8
Eosinophilia	182	2.7

Medical Conditions of Migrants

The most common diagnoses were latent tuberculosis (22%), acute and chronic viral hepatitis (17%), active tuberculosis (10%), malaria (7%), HIV/AIDS (7%), schistosomiasis (6%), and strongyloidiasis (5%); 5% had no health condition reported.

Table 1 shows the top 10 infectious diagnoses for adults and children. Specific diagnoses by region of origin are shown in Table 2. Of the 1515 (20%) patients who were hospitalized, 364 (24%) had active tuberculosis and 264 (17%) had malaria. Diagnoses of noninfectious diseases were reported in 1144 migrants (15%). There were 13 deaths, related to AIDS (3), tuberculosis (3), AIDS and tuberculosis coinfection (1), cerebral malaria (1), *Strongyloides* hyperinfection (1), African trypanosomiasis (1), visceral leishmaniasis (1), pneumonia (1), and unknown causes (1).

The interval between migration and presentation varied by region of origin and diagnosis (Figure 2); most (58%) migrants were seen >1 year after resettlement, and 27% >5 years later. Few (9%) were seen within the first 3 months of arrival..

Those presenting within 90 days of arrival most often reported fever (41%), gastrointestinal symptoms (21%), or an abnormal laboratory test (20%), whereas those seen after 90 days most often presented with an abnormal lab test (39%) or gastrointestinal symptoms (26%). Respiratory symptoms were reported in 10%–13% of migrants at all time periods. Skin and genitourinary complaints were uncommon. Overall, 18%–25% of those seen in any time period beyond 30 days after arrival had no reported symptoms, while only 11% of those seen within 30 days had no reported symptom.

Figure 2 shows the top diagnoses in migrants from Africa, Latin America, Asia, and Eastern Europe by time to presentation at a GeoSentinel site. Latent tuberculosis was diagnosed in at least 10% of migrants from each of these regions at every time interval and active tuberculosis at every time interval; chronic hepatitis B was diagnosed in all time intervals with a striking increase in number of cases diagnosed in migrants from Asia ≥5 years after resettlement; and HIV/AIDS was diagnosed from all regions in all time intervals. Several conditions were prominent in a single region, including schistosomiasis (Africa), Chagas disease and neurocysticercosis (Latin America), and hepatitis C and echinococcus (Eastern Europe). Strongyloidiasis was frequent in all regions except Eastern Europe. The large proportion of "other" diagnoses in Latin American and Eastern European migrants reflects the diversity of diagnoses in migrants from these regions.

Tuberculosis

One-third of migrants had a tuberculosis diagnosis (latent or active disease). Latent tuberculosis (24% of adult and 11% of childhood diagnoses) was the most common diagnosis recorded from almost every region during almost all time periods. Active tuberculosis was reported in 11% of adults and 7% of children, with most (67%) detected >1 year after migration, and 29% after ≥5 years. Pulmonary tuberculosis was reported as frequently as extrapulmonary tuberculosis, except among migrants from South Asia and East Africa, in whom extrapulmonary tuberculosis was significantly more likely ($P = .014$).

Blood-borne Pathogens

Chronic HBV was the second most commonly reported diagnosis in adults (847 [11%]), with most cases (73%) diagnosed > 1 year after arrival, and 41% diagnosed after >5 years. Hepatitis C virus was diagnosed in 5% of all migrants but in 10% of adults aged >40 years. Although most cases were from Asia (140 [5%]) and Africa (140 [4%]), the region with the highest proportion of cases was Eastern Europe (37 [12%]). There were 34 cases of acute hepatitis (16 hepatitis A; 18 hepatitis B), without a relationship to country of origin. For 11 cases (5 hepatitis A, 6 hepatitis B), the reported time after resettlement exceeded the expected incubation periods, suggesting undisclosed travel or local transmission. Most hepatitis A cases (10/16 [63%]) occurred in children, whereas most acute HBV cases (15/18 [83%]) were found in those aged 19–29 years (median, 27 years).

Table 2. Specific Infectious Diagnoses by Region of Origin[a]

Diagnosis	All Regions (N = 7629)		East Africa (n = 1253)		Southeast Asia (n = 1200)		West Africa (n = 1048)		South Asia (n = 844)		South America (n = 698)		North Africa (n = 503)		*P* Value
Tuberculosis	2503	(33)	472	(38)	388	(32)	252	(24)	350	(41)	163	(23)	210	(42)	<.0001
PPD+ (latent tuberculosis)	1715	(22)	273	(22)	302	(25)	162	(5)	168	(20)	125	(18)	173	(34)	<.0001
Active tuberculosis[b]	790	(10)	199	(16)	86	(7)	90	(9)	183	(22)	38	(5)	37	(7)	<.0001
Tuberculosis, extrapulmonary	434	(6)	123	(10)	45	(4)	49	(5)	122	(14)	18	(3)	15	(3)	<.0001
Tuberculosis, pulmonary	397	(5)	91	(7)	45	(4)	48	(5)	68	(8)	21	(3)	24	(5)	<.0001
Viral hepatitis	1266	(17)	215	(17)	267	(22)	159	(15)	90	(11)	20	(3)	111	(22)	<.0001
Hepatitis B (acute, chronic, or asymptomatic carrier)	906	(12)	148	(12)	196	(16)	143	(14)	43	(5)	16	(2)	80	(16)	<.0001
Hepatitis C (acute or chronic)	357	(5)	75	(6)	73	(6)	15	(1)	39	(5)	5	(1)	25	(5)	<.0001
Systemic febrile	786	(10)	50	(4)	294	(25)	204	(19)	74	(9)	27	(4)	11	(2)	<.0001
Malaria	496	(7)	26	(2)	241	(20)	126	(12)	38	(5)	5	(1)	6	(1)	<.0001
Gastrointestinal–other	965	(12)	163	(13)	148	(12)	134	(13)	75	(9)	90	(13)	72	(14)	<.0001
Strongyloidiasis	384	(5)	49	(4)	91	(7)	52	(5)	24	(3)	36	(5)	29	(6)	<.0001
HIV/AIDS	526	(7)	184	(15)	53	(4)	102	(10)	9	(1)	31	(4)	12	(2)	<.0001
Schistosomiasis	442	(6)	133	(11)	12	(1)	123	(12)	2	(0)	3	(0)	114	(23)	<.0001
Misc. tissue parasite[c]	350	(5)	24	(2)	6	(1)	18	(2)	19	(2)	185	(26)	26	(5)	<.0001
No health conditions identified	409	(5)	44	(4)	43	(4)	51	(5)	42	(5)	117	(17)	11	(2)	<.0001
Inpatient care	1515	(20)	233	(19)	223	(19)	336	(32)	241	(29)	70	(10)	92	(18)	<.0001

Data are presented as No. of migrants (%) in each region. $P < .01$ was considered statistically significant.

Abbreviations: HIV, human immunodeficiency virus; Misc., miscellaneous; PPD, purified protein derivative.

[a] Origin regions not shown (n = 2087) include Caribbean, Central America, Central Asia, Eastern Europe, Central Africa, Northeast Asia, Oceania, southern Africa, Western Asia, and unknown origin.

[b] Includes 42 patients with both pulmonary and extrapulmonary tuberculosis.

[c] Includes filariasis, Chagas disease, extraintestinal ascaris, cysticercosis, nonhepatic echinococcosis, trichinella, visceral larva migrans, and visceral leishmaniasis.

There were 526 cases of HIV/AIDS reported, primarily in adults aged <40 years. The highest proportions of cases were in migrants from Africa (370 [11%]); 329 were asymptomatic, 24 presented with acute febrile illness, and 176 met the definition for AIDS.

Malaria

Malaria was reported in 7% of migrants, with the greatest proportion in migrants from Southeast Asia (20%) and West Africa (12%). Malaria was the most frequent diagnosis in children (20%) and was reported less commonly in adults aged >39 years (47/2230 [2%]). The majority of malaria cases (85%; *Plasmodium falciparum* [58%] and *Plasmodium vivax* [36%]) were seen within 3 months of arrival. Of the 98 cases seen >3 months after arrival, 45 were *P. vivax* (46%) and 30 were *P. falciparum* (31%). Nine individuals were diagnosed with malaria >5 years after migration (3 *P. falciparum*, 2 *P. vivax*, 2 *Plasmodium ovale*, 2 *Plasmodium malariae*, and 1 unknown).

Other Selected Infections

Schistosomiasis was diagnosed in 370 of 2804 migrants from Africa (13%); although 48% were diagnosed in the first year, cases continued to be diagnosed up to 10 years after arrival. Strongyloidiasis, reported in approximately 5% of both adults and children, was one of the most common diagnoses in all regions. Nine migrants had *Strongyloides* hyperinfection syndrome (2% of reported cases); 5 were from Asia. Of note, 4 were seen >10 years after resettlement, including one reported 50 years after arrival. There were 137 cases (2 children) of neurocysticercosis; most were from the Americas (107); with

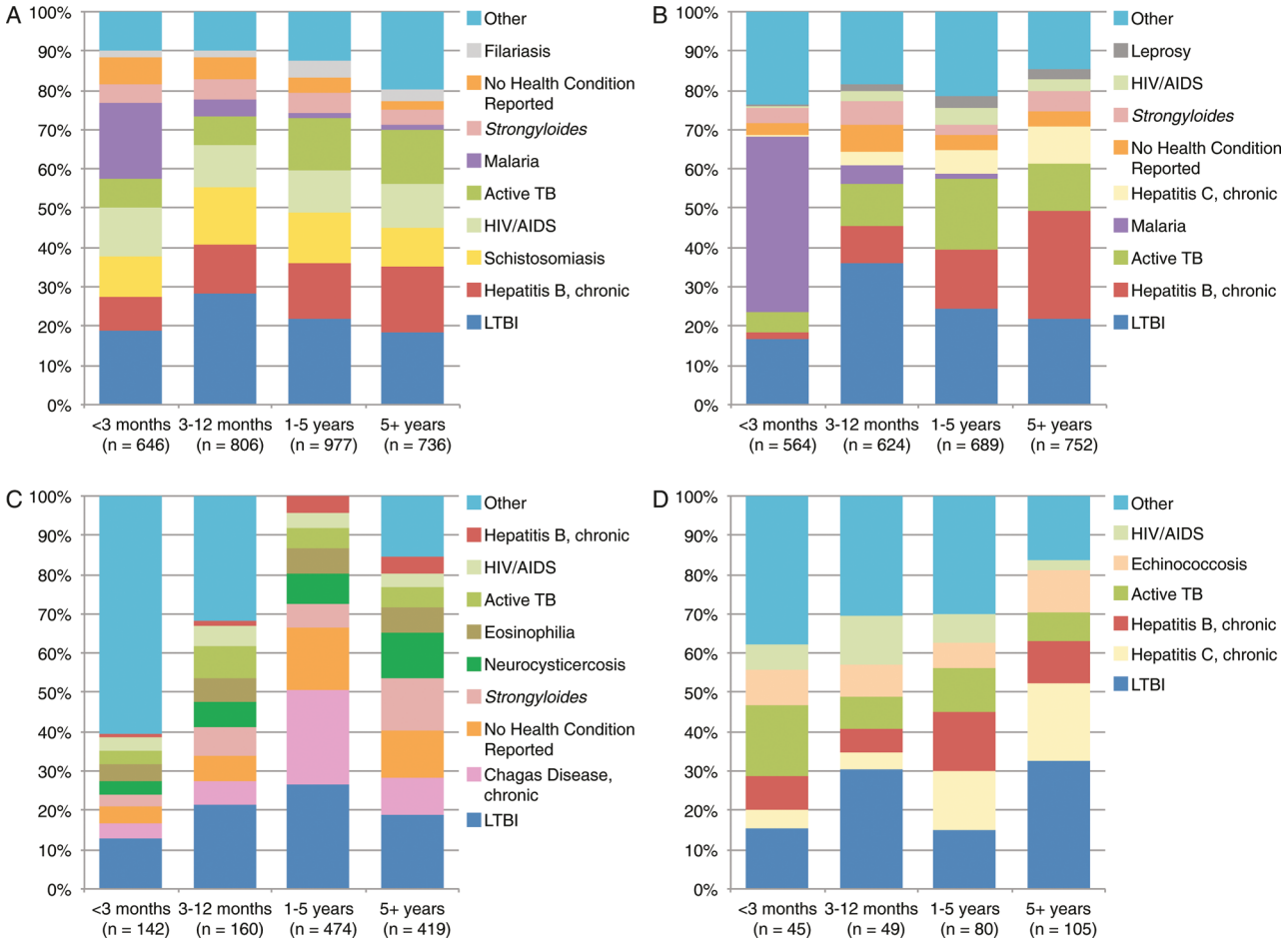

Figure 2. Top diagnoses by region of origin shown by time from arrival. *A*, Africa (n = 3275). *B*, Asia (n = 2713). *C*, Latin America (n = 1232*). *D*, Eastern Europe (n = 305). Sixty percent of the patients seen within 3 months were reported with a wide variety of diagnoses. Abbreviations: HIV, human immunodeficiency virus; LTBI, latent tuberculosis; TB, tuberculosis.

the rest from Asia (17), Africa (10), and Eastern Europe (3); 46% were reported >5 years after migration. Other infections seen predominantly more than a year after arrival included Chagas disease (170 cases) in migrants from Bolivia; filariasis (145 cases) primarily in adults from Africa; echincoccosus (99 cases) primarily in adults from South Asia, Eastern Europe and West Asia; and leprosy (81 cases), primarily in older patients from South Asia. Acute diarrhea, dermatological illness, and respiratory illness were infrequent diagnoses.

DISCUSSION

The top infectious diagnoses in this heterogeneous group of migrants to 41 countries included tuberculosis (both latent and active disease), chronic hepatitis (B and C), strongyloidiasis, and regionally important infectious diseases such as schistosomiasis (Africa) and chronic Chagas disease. These data emphasize the need for health professionals to consider migration-related diagnoses and to take the opportunity during any medical encounter to screen migrants for infections with potential for long-term and even life-threatening sequelae. The same health problems for which screening is currently recommended among refugee populations continue to be of concern for nonrefugee migrants many years after resettlement [12, 13].

The results emphasize the important of reactivation and of complications from initially asymptomatic infections, including active tuberculosis, *Strongyloides* hyperinfection syndrome, and sequelae of hepatitis B and C. These might have been prevented if addressed early in the resettlement period. The data suggest and the authors support expanding current refugee-centric preventive medical approaches to include additional migrants. Unlike the US-bound migrants [10] receiving systematic protocol-based evaluation, the vast majority of these migrants did not undergo routine predeparture screening or public health interventions, nor did they have comprehensive

postarrival evaluations. These comprehensive programs, currently reserved for groups such as US resettling refugees, can significantly reduce health impact of infectious disease in migrant populations [13]. Expansion of such programs internationally should be strongly considered on health grounds; however, we recognize the policy challenges posed to individual receiving nations, including up-front screening costs and regulatory changes.

Tuberculosis is an important health concern [14, 15], and many nonendemic countries report a disproportionate burden of active tuberculosis among foreign-born residents, particularly within the first 2–5 years of arrival but extending for their lifetime [16–21]. The frequent diagnosis of latent tuberculosis (22%) is consistent with other studies reporting high proportions of migrants with latent tuberculosis (20%–70%) [8, 22]. However, our data may be an underestimate, as these migrants did not all undergo systematic latent tuberculosis screening.

Screening for chronic hepatitis is important to reduce morbidity and mortality in individual migrants, but is also an opportunity to prevent transmission by, for example, providing hepatitis B vaccination to close contacts. Recent reviews have documented increased risk of chronic hepatitis morbidity in immigrants and refugees, as well as the cost-effectiveness of screening and treating chronic HBV infections in migrants [23]. The CDC recommends HBV screening for all migrants from countries with >2% hepatitis B prevalence.

The proportion of migrants with intestinal parasites, 11% overall, was less than in other publications [24, 25], possibly reflecting detection or referral bias, asymptomatic nature of some infections, lack of systematic screening, time since migration, and/or socioeconomic heterogeneity of the study population. Three parasitic infections, however, were found in specific migrant groups and these data suggest that migrants from these groups should be assessed for these infections at any health encounter. Schistosomiasis may result in chronic hepatic, renal, and genitourinary disease. *Strongyloides* infection is particularly important to diagnose and treat owing to the potential for life-threatening dissemination, with risk persisting even decades after migration, especially if the infected migrant develops comorbidities requiring or resulting in immunosuppression [7, 26, 27]. Chagas disease can result in cardiac and gastrointestinal disease years after migration, and may be passed from infected women to their infants.

Symptomatic malaria was a concern early after migration, with most cases presenting within 3 months [28, 29]. The 9 cases reported >5 years after arrival are unusual, though delayed symptomatic malaria, including *P. falciparum*, has been reported [30]. We could not rule out unreported travel in these cases. It is important to note the disproportionate burden of malaria in migrant children, particularly from Africa.

A number of hospital admissions may have been preventable if there had been earlier diagnosis and management of conditions such as tuberculosis, HIV, and strongyloidiasis; most deaths were from potentially preventable or treatable conditions.

This study has a number of limitations, including both detection and referral bias. GeoSentinel clinics are selected because of expertise in travel and immigrant medicine, and their clinicians may be more likely to perform additional testing on at-risk migrants. An example is Bolivian migrants in Spain who are tested for Chagas disease. In some clinics, patients with latent tuberculosis may be tested routinely for HIV infection. There is potential for testing bias based on site- or region-specific factors dictating where and how migrants find their way to a particular clinic. It is not possible from our dataset to separate the conditions diagnosed by selective screening from those diagnosed as a result of clinical presentation or referral.

GeoSentinel clinics see a small fraction of migrants worldwide, and therefore the data may not be generalizable to all migrant groups worldwide. The results reflect proportionate morbidity of a population of migrants presenting to GeoSentinel clinics, rather than prevalence data. These are surveillance data and are limited by lack of detailed diagnostic information; for example, it is not possible to determine how many of those with HBV experienced complications of the infection. Most GeoSentinel clinics report infectious diseases; noninfectious health problems are not sought or reported systematically and have not been included in this analysis. Another limitation is inability to identify time of acquisition of the reported diseases or conditions. For some conditions, such as strongyloidiasis, hepatitis, and tuberculosis, we cannot completely eliminate the possibility of transmission after migration, but given the epidemiology in receiving countries, it is unlikely and would have limited impact on the findings. Finally, some migrants may have undisclosed postmigration travel and so time to presentation may be misleading.

Despite these limitations, these data expand on and differ from previous publications for several reasons: data are from many countries and migrant groups (not just refugees), and many migrants were seen more than a year after resettlement. Most publications related to immigrant health focus on the immediate postmigration period [4, 6, 7]. Although refugees generally make up <10% of migrants, they are overrepresented in published data because they have an organized migration, including medical screening and presumptive treatment programs [12–14, 31].

Migration will likely continue at the same or a greater rate, challenging healthcare providers, medical educators, and

policy makers to adapt to the evolving epidemiology. Most immigration entry criteria concentrate on immediate public health risk of migrants on the receiving country and not long-term health risk to the migrant. In this study, many of the public health diseases of concern could have been detected and addressed earlier in the migration process, perhaps reducing both the impact on the healthcare system and the burden of disease in individual migrants. Addressing health needs of migrants requires policies that are responsive to changing epidemiology and that take into account regions of origin. Mapping of areas of settlement within receiving countries may help to tailor support and recommendations, and provide improved education for the receiving medical community.

CONCLUSIONS

These results suggest important steps for policy makers and healthcare professionals. Policy makers should advocate for evidence-based, standardized approaches to comprehensive predeparture and postarrival health programs for all migrants at risk. Greater integration of migration health in medical school curricula is needed. Providers should utilize the opportunity to screen for latent infections that have a higher prevalence in globally mobile patients, including latent tuberculosis, HBV, and *Strongyloides*, and, where appropriate, schistosomiasis and Chagas. In addition, they must be aware of existing large numbers of foreign-born individuals well established in host countries, for whom migration-related health risks must be considered. A medical encounter for any reason is a chance to address possible exposures by asking "Where were you born, where have you lived, and where have you traveled?" Unless medical care is approached consistently through the lens of globally mobile populations, migrants will continue to experience health disparities as they present with unaddressed migration-related conditions.

Supplementary Data

Supplementary materials are available at *Clinical Infectious Diseases* online (http://cid.oxfordjournals.org/). Supplementary materials consist of data provided by the author that are published to benefit the reader. The posted materials are not copyedited. The contents of all supplementary data are the sole responsibility of the authors. Questions or messages regarding errors should be addressed to the author.

Notes

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