Screening vs empirical treatment of migrants for parasitic infections

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Plan

- Key issues
- Examples of data
- Proposal

Why screen?

- Treat patient now
- Prevent late disease
- Public health
  - Direct transmission to others
  - Food handlers
  - Protect blood supply

Screening issues

- Identify migrant groups
- When?
  - Pre departure
  - On arrival
- Framework for reception and screening
- Number and types of test
- Needs geographic knowledge
- Retention and treatment
- Cost

Treatment issues

- Mass drug treatment more effective
  - Eg albendaziole gfor helminths
  - Or ivermectin?
- Praziquantel for schistosomiasis
- Primaquine or other for malaria
- etc

Balance

- Cost and complexity of screening

Vs

- Cost, effectiveness and side effects of treatment

- NB special groups eg
  - Children
  - Pregnancy
  - HIV

Muennig et al NEJM 1998

- Empiricial treatment

Infectious Disease Screening for Refugees Resettled in the United States

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Refugees resettling in the United States carry a significant burden of infectious diseases as a result of exposures in their countries of origin and the circumstances of their migration. Overseas screening is required before entry, but it incompletely assesses infectious diseases in refugees. Domestic health assessment has the potential to provide more comprehensive assessment for infectious diseases. Screening protocols ideally should test for tuberculosis, hepatitis B, and intestinal and other parasites and should include mechanisms for providing or updating immunizations. Testing for other infectious diseases, including malaria, hepatitis C, human immunodeficiency virus, and sexually transmitted diseases, can be performed on the basis of clinical signs and symptoms. This article reviews the current status of overseas and domestic health screening for refugees, infectious disease burdens, and future goals for health assessment of refugees and other immigrants.

CID 2004

Table 1. Screening tests for infectious diseases recommended for all refugees.

Test, finding	Associated disease/condition
Tuberculin skin test: positive skin test result	TB; nontuberculous mycobacteria
Hepatitis B screening	
HBsAb	Immune
HBsAg	Carrier state, current, or chronic infection
HBcAb	Current or past infection
Complete blood cell count	
Low WBC count	HIV infection
Low hemoglobin level or hematocrit	Malaria
Lymphopenia	HIV infection
Eosinophilia	Parasitic diseases (e.g., schistosomiasis, filariasis, and strongyloidiasis)
Thrombocytopenia	Malaria; HIV infection
Urinalysis	
Hematuria	Schistosomiasis
Pyuria	Urinary tract infection; renal TB
Microscopic evaluation of stool specimens: ova or parasites	See table 2

NOTE. HBcAb, antibody to hepatitis B core antigen; HBsAb, antibody to hepatitis B surface antigen; HBsAg, hepatitis B surface antigen; TB, tuberculosis.

Table 2. Common parasites in refugees.

Pathogens
Ascaris lumbricoides (roundworm)
Entamoeba histolytica
Giardia lamblia
Hookworm
Hymenolepis nana (dwarf tapeworm)
Schistosoma species
Schistosoma haematobium
Schistosoma mansoni
Schistosoma japonicum
Trichuris trichiura (whipworm)
Possible pathogens in symptomatic individuals
Blastocystis hominis
Dientamoeba fragilis
Nonpathogens
Blastocystis hominis (see above)
Chilomastix mesnilii
Endolimax nana
Entamoeba coli
Entamoeba hartmanni
Iodamoeba butschlii

AJOR ARTICLE

High Prevalence and Presumptive Treatment of Schistosomiasis and Strongyloidiasis among African Refugees

Drew L. Posey,[1,3,a] Brian G. Blackburn,[2,3,a,b] Michelle Weinberg,[1] Elaine W. Flagg,[1] Luis Ortega,[1] Marianna Wilson,[2] W. Evan Secor,[2] Kolby Sanders-Lewis,[2] Kimberly Won,[2] and James H. Maguire[2]

[1]Division of Global Migration and Quarantine, National Center for Preparedness, Detection, and Control of Infectious Diseases, [2]Division of Parasitic Diseases, National Center for Zoonotic, Vector-borne, and Enteric Diseases, Coordinating Center for Infectious Diseases, and [3]Epidemic Intelligence Service Program, Office of Workforce and Career Development, Centers for Disease Control and Prevention, Atlanta, Georgia

CID 2007

MAJOR ARTICLE

Spectrum of Illness in International Migrants Seen at GeoSentinel Clinics in 1997–2009, Part 1: US-Bound Migrants Evaluated by Comprehensive Protocol-Based Health Assessment

Elizabeth D. Barnett,[1] Leisa H. Weld,[2] Anne E. McCarthy,[3] Heidi So,[4] Patricia F. Walker,[5] William Stauffer,[5,6] and Martin Cetron[6]; for the GeoSentinel Surveillance Network

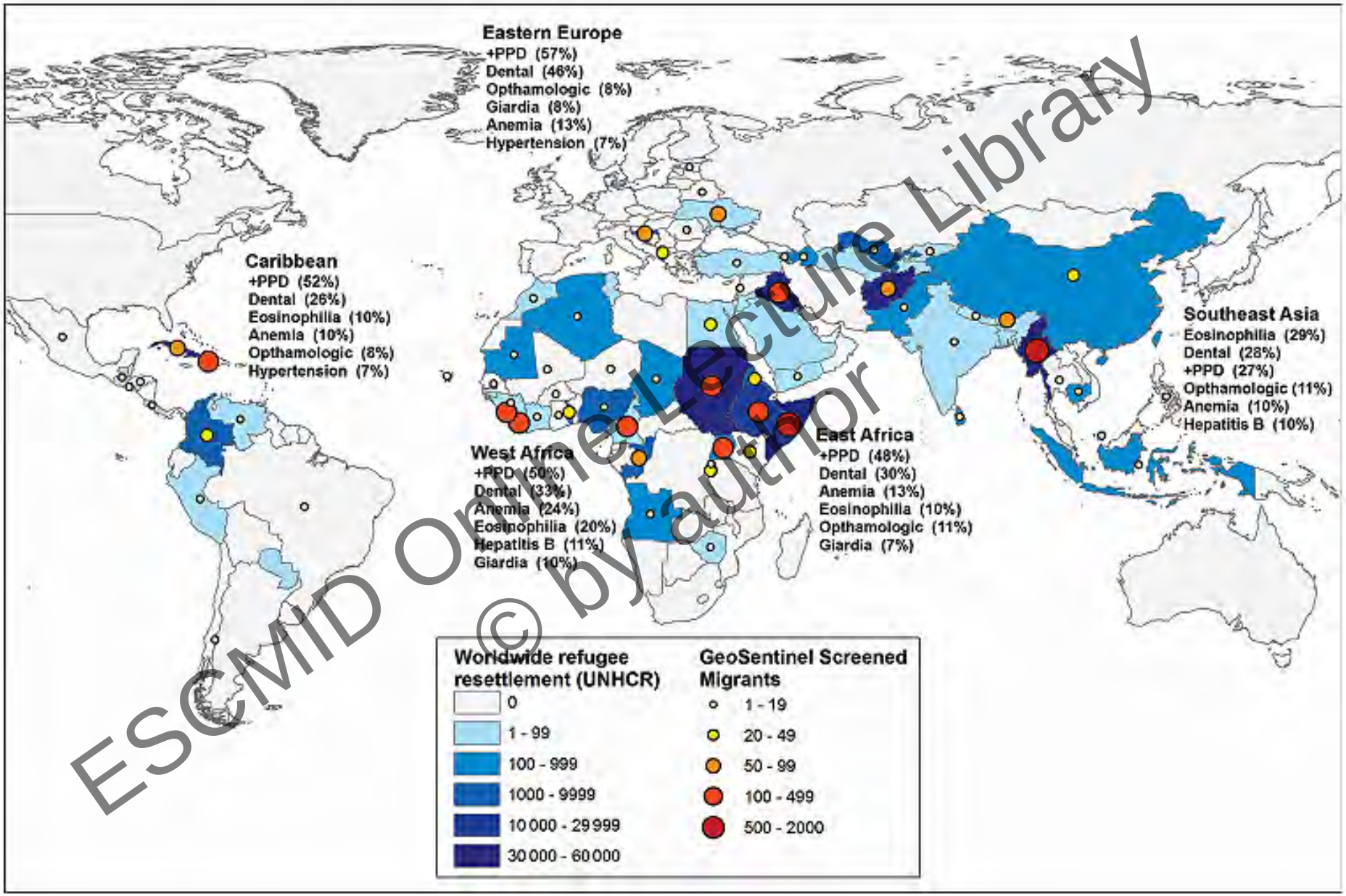
CID 2013

Table 3. Frequent Diagnoses in Migrants Evaluated by Protocol-Based Health Assessment

Most Frequent Diagnoses	All Regions (N = 7792)	%
+PPD (latent tuberculosis)	3367	43
Dental	2485	32
Eosinophilia	1191	15
Anemia	861	11
Ophthalmologic	768	10
No health condition identified	707	9
Giardia	545	7
Hepatitis B	497	6
Hypertension	379	5
Dermatologic	396	5
Hematuria	284	4

Nonpathogenic protozoa were found in 1055 (14%) of screened migrants.

Abbreviation: PPD, purified protein derivative.



MAJOR A

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

Anne E. McCarthy,[1] Leisa H. Weld,[3] Elizabeth D. Barnett,[5] Heidi So,[2] Christina Coyle,[6] Christina Greenaway,[4] William Stauffer,[8,9] Karin Leder,[10] Rogelio Lopez-Velez,[11] Phillipe Gautret,[12] Francesco Castelli,[13] Nancy Jenks,[7] Patricia F. Walker,[8] Louis Loutan,[14,15] and Martin Cetron[9]; for the GeoSentinel Surveillance Network[a]

CID 2013

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

ORIGINAL ARTICLE

NEJM 2012

Albendazole Therapy and Enteric Parasites in United States–Bound Refugees

Stephen J. Swanson, M.D., Christina R. Phares, Ph.D., Blain Mamo, M.P.H., Kirk E. Smith, D.V.M., Ph.D., Martin S. Cetron, M.D., and William M. Stauffer, M.D.

CONCLUSIONS

Presumptive albendazole therapy administered overseas before departure for the United States was associated with a decrease in the prevalence of intestinal nematodes among newly arrived African and Southeast Asian refugees.

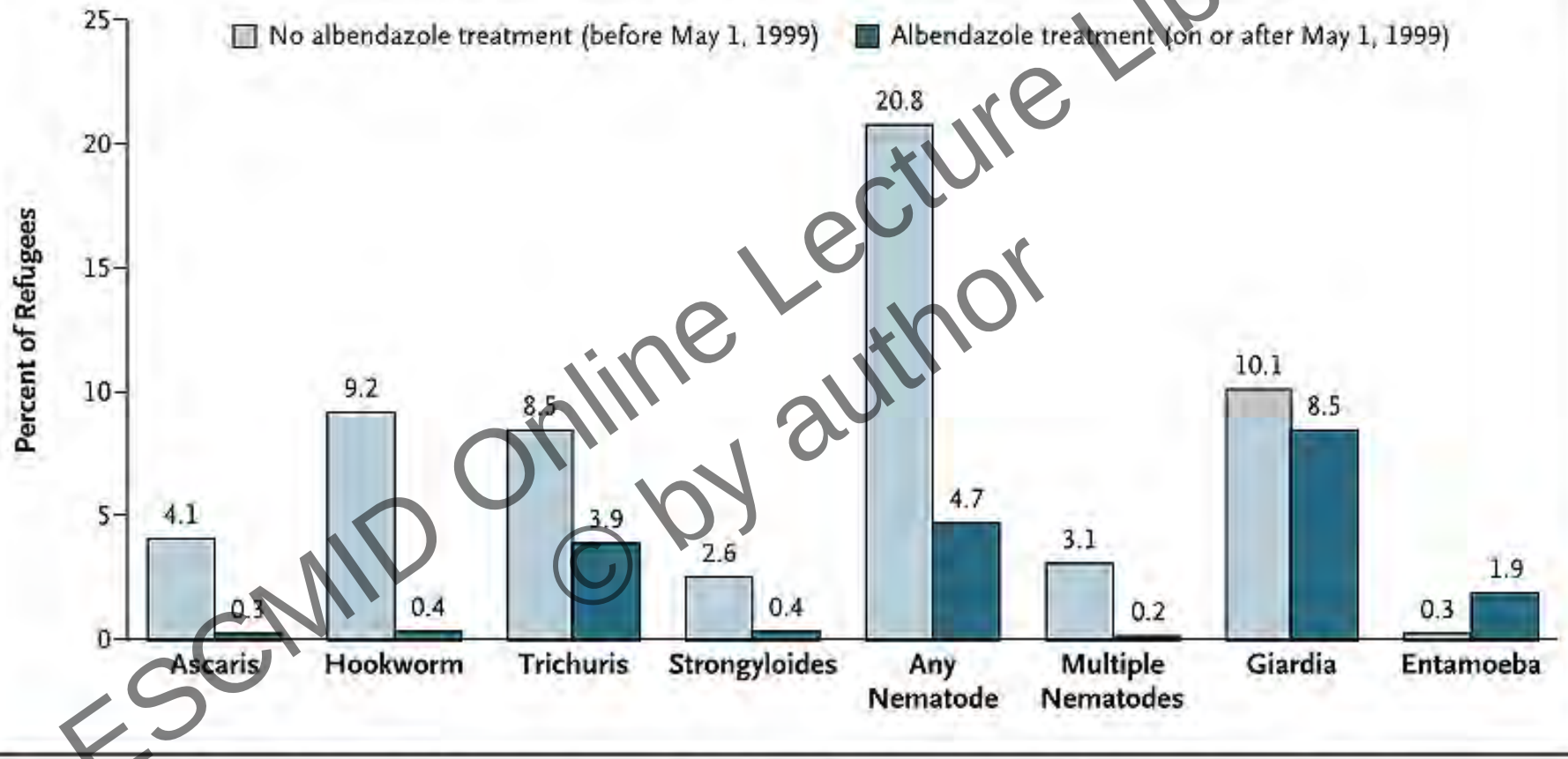


Figure 1. Prevalence of Intestinal Parasites among 26,956 Refugees Arriving in Minnesota, According to Status with Respect to Albendazole Treatment before Departure for the United States.

Proposal

- ESGITM and partners
- Literature review on European migrant parasitic infection profiles
- Identify sites with screening programmes
- Prospective & retrospective data modelling for effectiveness and cost
- Design and test appropriate screening and treatment strategies

ECCMID

ESCMID Conferences

Study Groups

- Anaerobic Infections
- Antibiotic Policies
- Biofilms
- Bloodstream Infections and Sepsis
- Brain Infections
- Clinical Parasitology
- Clostridium difficile
- Critically Ill Patients
- Elderly Infections
- Epidemiological Markers
- Food/Water Infections
- Fungal Infection
- Helicobacter
- Immunocompromised Hosts
- Implant Infections
- Intracellular Bacteria
- Legionella Infections
- Lyme Borreliosis

ESCMID Study Group for Infections in Travellers and Migrants - ESGITM

News & Activities

24th ECCMID Barcelona, Spain 10 - 13 May 2014 ESCMID

ESGITM @ ECCMID 2014 in Barcelona, ES

- *Saturday, 10 May 2014*
  11.00 - 13.00 (Hall D)
  Educational Workshop 13: Basics of infections in travellers.
- *Sunday, 11 May 2014*
  7.45 - 8.45 (Hall H)
  ESGITM Meet-the-Expert Session: Controversies in treatment of malaria and crimean-congo haemorrhagic fever.
  18.15 - 19.15 (Room 125)
  ESGITM Business Meeting: All interested persons are cordially invited to join the meeting and plan future Study Group activities.

For more details, please check the ECCMID programme.

ECCMID programme

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