RT-PCR Kit (New England Biolabs). E gene and NS1 PCR products were sequenced at the University of Wisconsin–Madison Biotechnology Center (Madison, WI, USA).

Samples from all patients were negative by RT-PCR for DENV and CHIKV; samples from 9 (41%) patients were positive for Zika virus. Among those 9 patients, 7 (78%) were male; median age was 23; and none had a history of international travel. Zika virus was analyzed by sequencing the E gene and NS1 of 2 isolates. Phylogenetic analyses rooted with Spondweni virus showed that the Zika virus sequences (GenBank accession nos. KU646827 and KU646828) belonged to the Asian lineage (Figure) and were closely related to strains isolated during the 2015 outbreak in Brazil (*5*). The sequences also showed 99% identity with sequences from a Zika virus isolate from French Polynesia (GenBank accession no. KJ776791) (*9*). These data suggest that Zika virus circulating in Colombia could have been imported from Brazil, most likely as a result of tourism activities on Colombia's northern coast, where the first reported case was identified (the state of Bolivar).

We report Zika virus infection in Colombia in association with an ongoing outbreak of acute maculoexantematic illness. Since detection of Zika virus in Sincelejo, a total of 13,500 cases have been identified in 28 of the country's 32 territorial entities (*10*), all of which have abundant populations of *Ae. aegypti* mosquitoes and co-circulation of DENV and CHIKV. These circumstances highlight the need for accurate laboratory diagnostics and suggest that monitoring whether the virus spreads into neighboring countries (e.g., Ecuador, Peru, Venezuela, and Panama) is imperative.

We thank the University of Wisconsin–Madison for partially funding this study. E.C. was supported by the University of Wisconsin–Madison Global Health Institute.

References

1. Musso D, Cao-Lormeau VM, Gubler DJ. Zika virus: following the path of dengue and chikungunya? Lancet. 2015;386:243–4. http://dx.doi.org/10.1016/S0140-6736(15)61273-9
2. Dyer O. Zika virus spreads across Americas as concerns mount over birth defects. BMJ. 2015;351:h6983. http://dx.doi.org/10.1136/bmj.h6983
3. Duffy MR, Chen T-H, Hancock WT, Powers AM, Kool JL, Lanciotti RS, et al. Zika virus outbreak on Yap Island, Federated States of Micronesia. N Engl J Med. 2009;360:2536–43. http://dx.doi.org/10.1056/NEJMoa0805715
4. Cao-Lormeau V-M, Roche C, Teissier A, Robin E, Berry A-L, Mallet H-P, et al. Zika virus, French Polynesia, South Pacific, 2013. Emerg Infect Dis. 2014;20:1085–6. http://dx.doi.org/10.3201/eid2011.141380
5. Campos GS, Bandeira AC, Sardi SI. Zika virus outbreak, Bahia, Brazil. Emerg Infect Dis. 2015;21:1885–6. http://dx.doi.org/10.3201/eid2110.150847
6. Mattar S, Miranda J, Pinzon H, Tique V, Bolanos A, Aponte J, et al. Outbreak of Chikungunya virus in the north Caribbean area of Colombia: clinical presentation and phylogenetic analysis. J Infect Dev Ctries. 2015;9:1126–32. http://dx.doi.org/10.3855/jidc.6670
7. Harris E, Roberts TG, Smith L, Selle J, Kramer LD, Valle S, et al. Typing of dengue viruses in clinical specimens and mosquitoes by single-tube multiplex reverse transcriptase PCR. J Clin Microbiol. 1998;36:2634–9.
8. Faye O, Faye O, Dupressoir A, Weidmann M, Ndiaye M, Alpha Sall A. One-step RT-PCR for detection of Zika virus. J Clin Virol. 2008;43:96–101. http://dx.doi.org/10.1016/j.jcv.2008.05.005
9. Baronti C, Piorkowski G, Charrel RN, Boubis L, Leparc-Goffart I, de Lamballerie X. Complete coding sequence of Zika virus from a French Polynesia outbreak in 2013. Genome Announc. 2014;2:pii: e00500–13. http://dx.doi.org/10.1128/genomeA.00500-14
10. Instituto Nacional de Salud. Zika a semana epidemiológica 01 De 2016. 2016 Jan 1 [cited 2016 Jan 21]. http://www.ins.gov.co/noticias/siteassets/paginas/zika/conteo casos zika municipios se 01 2016.pdf

Address for correspondence: Matthew T. Aliota, Department of Pathobiological Sciences, University of Wisconsin–Madison, 1656 Linden Dr, Madison, WI 53706, USA; email: mtaliota@wisc.edu

Health Precautions Taken by Travelers to Countries with Ebola Virus Disease

Ifeoma Ezeoke, Alhaji Saffa, Seth Guthartz, Anna Tate, Jay K. Varma, Neil M. Vora

Author affiliations: New York City Department of Health and Mental Hygiene, New York, New York, USA (I. Ezeoke, A. Saffa, S. Guthartz, A. Tate, J.K. Varma, N.M. Vora); Centers for Disease Control and Prevention, Atlanta, Georgia, USA (N.M. Vora)

DOI: http://dx.doi.org/10.3201/eid2205.160041

To the Editor: To facilitate early recognition of Ebola virus disease (EVD), the New York City Department of Health and Mental Hygiene (DOHMH) actively monitored persons who had recently traveled from an EVD-affected country (*1*,*2*). Clinical manifestations of EVD are nonspecific and can resemble common travel-associated illnesses, such as malaria and influenza, both of which are potentially preventable through use of certain health precautions (*3*,*4*). Given the consequences of missing an EVD diagnosis, symptomatic persons under active monitoring who actually have non-EVD illnesses are often first isolated and tested for Ebola virus, which can delay appropriate care for the true cause of their illness and consume substantial resources. We evaluated the health precautions taken by persons traveling to EVD-affected countries.

During March 16, 2015–December 29, 2015 (the last day of EVD active monitoring by DOHMH), persons who underwent active EVD monitoring by DOHMH and who reported living in the United States for most of the previous

year were asked about health precautions taken when traveling to an EVD-affected country, regardless of whether they had symptoms. Health precautions assessed were whether a healthcare provider was visited for pretravel medical advice, whether malaria prophylaxis was used during the previous 7 days (if the date of departure from the EVD-affected country was within the previous 7 days), and whether influenza vaccination was received within the past year. Health precautions were examined by country visited, sex, age, reason for travel, and citizenship. Relative risks (RRs) and 95% CIs were calculated.

During the evaluation period, DOHMH actively monitored 4,230 persons, of whom 2,032 (48.0%) reported living in the United States. Among these 2,032 persons, only 1,265 (62.3%) received pretravel medical advice and 1,198 (59.0%) received influenza vaccination. Among the 1,992 persons whose date of departure from the EVD-affected country was within the previous 7 days of the date of data collection, 822 (41.3%) used malaria prophylaxis (Table).

The most common reason for travel to an EVD-affected country was to visit friends or relatives, which was reported by 1,655 (81.4%) of 2,032 persons. Female travelers were more likely than male travelers to use each of the health precautions. Persons who traveled for business reasons (RR 1.54, 95% CI 1.37–1.75) or for service-related reasons (humanitarian aid, missionary, volunteer, research, or military reasons; RR 2.07, 95% CI 1.78–2.40) were more likely to use malaria prophylaxis than those who traveled to visit friends or relatives, although there were no differences for receiving pretravel medical advice. US citizens were more likely to receive pretravel medical advice than citizens of the 3 EVD-affected countries and more likely to use malaria prophylaxis than citizens of Guinea (RR 0.76, 95% CI 0.65–0.89) or Sierra Leone (RR 0.65, 95% CI 0.48–0.88).

In summary, persons traveling to EVD-affected countries frequently did not use major health precautions, despite federal travel warnings for EVD-affected countries and the consequences of a febrile illness developing (*5*). Our findings are notable because New York City represents >20% of all persons actively monitored for EVD in the United States (more than any other jurisdiction) (*1*). Most persons reported in this study traveled to visit friends or relatives and were less likely to use malaria prophylaxis than those who traveled for business or

Table. Health precautions taken by 2,032 travelers to countries with Ebola virus disease who underwent active monitoring by the New York City Department of Health and Mental Hygiene after returning to the United States, March 16–December 29,2015*

	Health precaution†					
	Pretravel medical advice		Malaria prophylaxis‡		Influenza vaccine in past 12 mo	
Characteristic	No. (%)	RR (95% CI)	No. (%)	RR (95% CI)	No. (%)	RR (95% CI)
Country visited						
Guinea	960 (62.3)	0.91 (0.73–1.13)	**567 (37.4)**	**0.51 (0.41–0.62)**	932 (60.5)	0.89 (0.72–1.11)
Liberia	85 (57.8)	0.84 (0.65–1.09)	**71 (50.0)**	**0.67 (0.52–0.87)**	79 (53.7)	0.79 (0.61–1.02)
Sierra Leone	194 (63.4)	0.93 (0.74–1.17)	**158 (53.0)**	**0.71 (0.57–0.89)**	**161 (52.6)**	**0.77 (0.61–0.98)**
Multiple countries	26 (68.4)	Reference	26 (74.3)	Reference	26 (68.4)	Reference
Sex						
F	**574 (71.5)**	**1.27 (1.19–1.35)**	**409 (52.3)**	**1.55 (1.40–1.71)**	**561 (69.9)**	**1.35 (1.26–1.44)**
M	691 (56.2)	Reference	413 (34.1)	Reference	637 (51.8)	Reference
Age, y						
<5	**106 (82.2)**	**1.37 (1.24–1.51)**	**74 (57.4)**	**1.54 (1.30–1.83)**	**100 (77.5)**	**1.44 (1.29–1.61)**
5–14	**144 (80.5)**	**1.34 (1.22–1.47)**	**103 (57.9)**	**1.59 (1.36–1.84)**	**127 (71.0)**	**1.34 (1.20–1.50)**
15–24	82 (60.7)	1.01 (0.87–1.17)	58 (43.6)	1.16 (0.94–1.43)	75 (55.6)	1.08 (0.92–1.27)
25–44	509 (59.9)	Reference	312 (37.6)	Reference	454 (53.4)	Reference
45–64	384 (56.3)	0.94 (0.86–1.02)	254 (38.0)	1.01 (0.88–1.15)	**404 (59.2)**	**1.11 (1.02–1.21)**
≥65	40 (70.2)	1.17 (0.98–1.39)	21 (38.9)	1.05 (0.74–1.48)	**38 (66.7)**	**1.24 (1.02–1.51)**
Reason for travel						
Business	161 (61.9)	1.00 (0.91–1.11)	**140 (58.1)**	**1.54 (1.37–1.75)**	**135 (51.9)**	**0.86 (0.76–0.97)**
Education	12 (70.6)	1.13 (0.83–1.54)	7 (41.2)	1.09 (0.61–1.93)	7 (41.2)	0.68 (0.38–1.19)
Service-related§	45 (70.3)	1.13 (0.96–1.33)	**46 (78.0)**	**2.07 (1.78–2.40)**	37 (57.8)	0.96 (0.78–1.19)
Tourism	6 (33.3)	0.53 (0.28–1.03)	10 (55.6)	1.47 (0.97–2.24)	9 (50.0)	0.82 (0.52–1.30)
Visiting friends/relatives	1,030 (62.2)	Reference	613 (37.4)	Reference	1,001 (60.5)	Reference
Refused/unknown	11 (61.1)	1.10 (0.79–1.54)	6 (35.3)	0.99 (0.53–1.88)	9 (50.0)	0.92 (0.60–1.42)
Country of citizenship						
Guinea	**217 (57.6)**	**0.89 (0.82–0.98)**	**123 (33.0)**	**0.76 (0.65–0.89)**	220 (58.4)	0.96 (0.87–1.06)
Liberia	**19 (45.2)**	**0.71 (0.50–0.99)**	12 (29.3)	0.67 (0.41–1.08)	18 (42.9)	0.70 (0.50–1.00)
Sierra Leone	**59 (52.7)**	**0.82 (0.69–0.98)**	**31 (28.2)**	**0.65 (0.48–0.88)**	58 (51.8)	0.85 (0.71–1.02)
United States	865 (64.0)	Reference	574 (43.3)	Reference	813 (60.1)	Reference
Other/unknown	105 (70.5)	1.11 (0.99–1.24)	**82 (57.8)**	**1.34 (1.15–1.56)**	89 (59.8)	0.99 (0.87–1.14)
Total	1,265 (62.3)	NA	822 (41.3)	NA	1,198 (59.0)	NA

*RR, relative risk; NA, not applicable.
†Persons with health precautions reported as unknown are not shown. Percentages are calculated for each row. Bold indicates statistically significant associations in which the CI does not include 1.
‡Data were included only if the date of data collection was within 7 d of the date of departure from an Ebola virus disease–affected country.
§Persons who traveled for humanitarian aid, missionary, volunteer, research, or military reasons.

service-related reasons, which is consistent with previously reported data and of concern given that malaria can be a life-threatening illness (*4*). Nonetheless, a surprisingly low proportion of persons who traveled for business or service-related reasons received pretravel medical advice, used malaria prophylaxis, and received influenza vaccination. Public health agencies should work closely with organizations sending personnel abroad to improve their use of health precautions during travel. Furthermore, although most persons who traveled to visit friends or relatives received pretravel medical advice, few used malaria prophylaxis. The reason for this discrepancy deserves further evaluation.

Public health agencies should also work closely with communities whose members are likely to visit friends or relatives abroad and with medical providers caring for these communities to increase the use of travel health precautions, particularly when exceptional circumstances apply as during the EVD outbreak. Increasing the use of health precautions among persons traveling to an area for which active monitoring is recommended could directly benefit the travelers and improve the specificity of active monitoring by reducing the occurrence of malaria, influenza, and other preventable travel-associated illnesses.

Acknowledgments

We thank all persons who underwent active monitoring for their cooperation, DOHMH staff involved with Ebola active monitoring, and Douglas H. Esposito and Emily S. Jentes for providing recommendations.

References

1. Stehling-Ariza T, Fisher E, Vagi S, Fechter-Leggett E, Prudent N, Dott M, et al. Monitoring of persons with risk for exposure to Ebola virus disease—United States, November 3, 2014–March 8, 2015. MMWR Morb Mortal Wkly Rep. 2015;64:685–9.
2. Yacisin K, Balter S, Fine A, Weiss D, Ackelsburg J, Prezant D, et al. Ebola virus disease in a humanitarian aid worker—New York City, October 2014. MMWR Morb Mortal Wkly Rep. 2015;64:321–3.
3. Matheron S, Baize S, Lerat I, Houhou N, Yazdanpanah Y. Ebola: should we consider influenza vaccination? Lancet. 2014;384:2023–4. http://dx.doi.org/10.1016/S0140-6736(14)62226-1
4. Boggild AK, Esposito DH, Kozarsky PE, Ansdell V, Beeching NJ, Campion D, et al. Differential diagnosis of illness in travelers arriving from Sierra Leone, Liberia, or Guinea: a cross-sectional study from the GeoSentinel Surveillance Network. Ann Intern Med. 2015;162:757–64. http://dx.doi.org/10.7326/M15-0074
5. Centers for Disease Control and Prevention. Traveler's health: Ebola, 2015 [cited 2015 Oct 15]. http://wwwnc.cdc.gov/travel/diseases/ebola.

Address for correspondence: Neil M. Vora, New York City Department of Health and Mental Hygiene, 42-09 28th St, WS 5-105, Queens, NY 11101-4132, USA: email: nvora@cdc.gov

Cutaneous Leishmaniasis and Conflict in Syria

Waleed S. Al-Salem,[1] David M. Pigott,[1] Krishanthi Subramaniam,[1] Lee Rafuse Haines, Louise Kelly-Hope, David H. Molyneux, Simon I. Hay, Alvaro Acosta-Serrano

Author affiliations: Liverpool School of Tropical Medicine, Liverpool, UK (W.S. Al-Salem, K. Subramaniam, L.R. Haines, L. Kelly-Hope, D.H. Molyneux, A. Acosta-Serrano); University of Oxford, Oxford, UK (D.M. Pigott, S.I. Hay); University of Washington, Seattle, Washington, USA (S.I. Hay)

DOI: http://dx.doi.org/10.3201/eid2205.160042

To the Editor: War, infection, and disease have always made intimate bedfellows, with disease recrudescence characterizing most conflict zones (*1*). Recently, increasing violence from civil war and terrorist activity in the Middle East has caused the largest human displacement in decades. A neglected consequence of this tragedy has been the reemergence of a cutaneous leishmaniasis epidemic.

Old World cutaneous leishmaniasis is one of the most prevalent insectborne diseases within the World Health Organization's Eastern Mediterranean Region (*2*). Zoonotic cutaneous leishmaniasis is caused by the protozoan parasite *Leishmania major*, which is transmitted through the infectious bite of the female *Phlebotomus papatasi* sand fly; the animal reservoirs are the rodent genera *Rhombomys, Psammomys*, and *Meriones*. Anthroponotic cutaneous leishmaniasis is caused by *L. tropica* and transmitted between humans by the *Ph. sergenti* sand fly.

Until 1960, cutaneous leishmaniasis prevalence in Syria was restricted to 2 areas to which it is endemic (Aleppo and Damascus); preconflict (c. 2010) incidence was 23,000 cases/year (*3*). However, in early 2013, an alarming increase to 41,000 cutaneous leishmaniasis cases was reported (*3*,*4*). The regions most affected are under Islamic State control; 6,500 cases occurred in Ar-Raqqah, Diyar Al-Zour, and Hasakah. Because these places are not historical hotspots of cutaneous leishmaniasis, this change might be attributed to the massive human displacement within Syria and the ecologic disruption of sand fly (*Ph. papatasi*) habitats. According to the United Nations High Commissioner for Refugees, >4.2 million Syrians have been displaced into neighboring countries; Turkey, Lebanon, and Jordan have accepted most of these refugees. As a result, cutaneous leishmaniasis has begun to emerge in areas where displaced Syrians and disease reservoirs coexist (*5*).

According to the Lebanese Ministry of Health, during 2000–2012, only 6 cutaneous leishmaniasis cases were

[1]These authors contributed equally to this article.