

occurred sporadically or endemically but to have been undiagnosed since the 1960s, maybe because it was thought to have been eradicated and thus widely forgotten. This case was the first imported into Japan since the 1940s, when many Japanese soldiers and residents who returned from abroad had the disease.

#### Acknowledgments

We thank A. Adachi and I. Kurane for their valuable suggestions.

**Momoyo Azuma,\*  
Yasuhiko Nishioka,\*  
Motohiko Ogawa,†  
Tomohiko Takasaki,†  
Saburo Sone,\*  
and Tsuneo Uchiyama\***

\*University of Tokushima Graduate School, Tokushima, Japan; and †National Institute for Infectious Diseases, Tokyo, Japan

#### References

1. Sureau P, Rousillon JP, Capponi M. Le typhus murin à Dalat: état actuel de la question. Isolement d'une souche. Bull Soc Pathol Exot. Fileales. 1955;48:599-602. PMID 13329703
2. Beytout D. Rickettsioses diagnostiquées par microagglutination de Janvier 1962 a Juin 1963 a Saigon. Bull Soc Pathol Exot Filiales. 1964;57:257-63.
3. Deaton JG. Febrile illnesses in the tropics (Vietnam). Mil Med. 1969;134:1403-8.
4. Cavanaugh DC, Elisburg BL, Llewellyn CH, Marshall JD Jr, Rust JH Jr, Williams JE, et al. Plague immunization. V. Indirect evidence for the efficacy of plague vaccine. J Infect Dis. 1974;129:S37-40.
5. Miller MB, Bratton JL, Hunt J. Murine typhus in Vietnam. Mil Med. 1974;139:184-6.
6. Uchiyama T, Zhao L, Yan Y, Uchida T. Cross-reactivity of *Rickettsia japonica* and *Rickettsia typhi* demonstrated by immunofluorescence and Western immunoblotting. Microbiol Immunol. 1995;39:951-7.
7. Vishwanath S. Antigenic relationships among the rickettsiae of the spotted fever and typhus groups. FEMS Microbiol Lett. 1991;65:341-4.
8. La Scola B, Rydkina L, Ndiokubwayo JB, Vene S, Raoult D. Serological differentiation of murine typhus and epidemic typhus using cross-adsorption and Western blotting. Clin Diagn Lab Immunol. 2000;7:612-6.
9. Sakaguchi S, Sato I, Muguruma H, Kawano H, Kusuhara Y, Yano S, et al. Reemerging murine typhus, Japan. Emerg Infect Dis. 2004;10:964-5.

Address for correspondence: Tsuneo Uchiyama, Department of Virology, Institute of Health Biosciences, The University of Tokushima Graduate School, 3-18-15 Kuramoto-cho, Tokushima 770-8503, Japan; email: uchiyama@basic.med.tokushima-u.ac.jp

## Epidemic Risk after Disasters

**To the Editor:** We conduct communicable disease risk assessments after humanitarian emergencies, including natural disasters, and would like to clarify the findings of Floret et al. (1) regarding the risk for epidemics in certain disaster settings. Natural disasters that do not result in population displacement, regardless of type of disaster, are rarely associated with increased risk for epidemics. However, large-scale population displacement, with consequent overcrowding in temporary settlements and disruption of water supply and sanitation, are indeed associated with increased risks for communicable disease transmission. This distinction is well documented (2-4). Increased communicable disease incidence after flooding and cyclones has been particularly well described (5,6). In addition, after a disaster of any type, epidemics may go undetected because of poor surveillance or because baseline surveillance data for diseases (such as dengue fever or malaria) are unavailable.

Although we agree with the authors that media reports are often exaggerated and that the risk for epidemics after certain types of natural

disasters (e.g., volcanic eruption) is low, we believe the findings are somewhat misleading. Postdisaster communicable disease incidence is related more closely to the characteristics of the displaced population (size, health status, living conditions) than to the precipitating event.

**John Watson,\* Michelle Gayer,\*  
and Maire A. Connolly\***

\*World Health Organization, Geneva, Switzerland

#### References

1. Floret N, Viel JF, Hoen B, Piarroux R. Negligible risk for epidemics after geophysical disasters. Emerg Infect Dis. 2006;12:543-8.
2. Toole MJ. Communicable diseases and disease control. In: Noji ED, editor. Public health consequences of disasters. Oxford: Oxford University Press; 1997.
3. The Sphere project. Humanitarian charter and minimum standards in disaster response. Steering Committee for Humanitarian Response. Oxford: Oxford Publishing; 2004.
4. World Health Organization. Flooding and communicable diseases fact sheet: risk assessment and preventive measures. [cited 2006 Jun 15]. [http://www.who.int/hac/techguidance/ems/flood\\_cds/en/](http://www.who.int/hac/techguidance/ems/flood_cds/en/)
5. Ahern M, Kovats RS, Wilkinson P, Few R, Matthies F. Global health impacts of floods: epidemiologic evidence. Epidemiol Rev. 2005;27:36-46.
6. Shultz JM, Russell J, Espinel Z. Epidemiology of tropical cyclones: the dynamics of disaster, disease, and development. Epidemiol Rev. 2005;27:21-35.

Address for correspondence: John Watson, Communicable Diseases, World Health Organization, 20 Ave Appia, 1211 Geneva, Switzerland; email: WatsonJ@who.int



**In response:** Watson et al. stressed some points that may be important determinants in assessing the risk for epidemics following natural disasters (1). We agree that large-scale population displacement, with overcrowding and water disruption, is clearly a risk factor for disease transmission. This factor was probably the main cause of the measles and diarrhea outbreaks that occurred in the temporary settlements created after the eruption of Mount Pinatubo in the Philippines, as mentioned in our previous article (2). However, by studying >600 geophysical disasters (earthquakes, volcano eruptions, and tsunamis) that occurred in the last 20 years, we found that deleterious conditions such as large-scale population displacement with overcrowding and water disruption were uncommon and that epidemics were the exception, not the rule. We agree that some epidemics, especially if they are limited and develop well after the disaster, may remain undetected, as was discussed in our paper (1).

However, we do not concur with the opinion expressed by Watson et al. that the incidence of postdisaster infectious diseases is more related to the characteristics of the displaced population than to the precipitating event. Our findings are just the opposite. In contrast to the situation seen with flooding and cyclones, which are sometimes followed by outbreaks of waterborne diseases, such as cholera or leptospirosis, and vectorborne diseases (3–6), the study we carried out on geophysical disasters did not detect any notable outbreak except for the above-mentioned measles outbreak. Watson et al. illustrated their statement by referring to outbreaks following floods and hurricanes, and not earthquakes, tsunamis, or volcano eruptions. Further work must be carried out on epidemics after floods provoked by heavy rains and hurricanes.

**Renaud Piarroux,\*†  
Nathalie Floret,\*†  
Jean-François Viel,\*†  
Frédéric Mauny,\*†  
and Bruno Hoen\*†**

\*University Hospital of Besançon, Besançon, France; and †University of Franche-Comté, Besançon, France

#### References

1. Watson J, Gayer M, Connolly MA. Epidemic risk after disasters. *Emerg Infect Dis.* 2006;12:1468.
2. Floret N, Viel JF, Mauny F, Hoen B, Piarroux R. Negligible risk of epidemics after geophysical disasters. *Emerg Infect Dis.* 2006;12:543–7.
3. Beach M. China's problems persist after the flood. *Lancet.* 1998;352:1203.
4. Siddique AK, Islam Q, Akram K, Mazumder Y, Mitra A, Eusof A. Cholera epidemic and natural disasters; where is the link. *Trop Geogr Med.* 1989;41:377–82.
5. Sehgal SC, Sugunan AP, Vijayachari P. Outbreak of leptospirosis after the cyclone in Orissa. *Natl Med J India.* 2002;15:22–3.
6. Githeko AK, Lindsay SW, Confalonieri UE, Patz JA. Climate change and vector-borne diseases: a regional analysis. *Bull World Health Organ.* 2000;78:1136–47.

Address for correspondence: Renaud Piarroux, Service de Parasitologie, Hôpital Jean Minjoz, 25000 Besançon, France; email: renaud.piarroux@ufc-chu.univ-fcomte.fr

## Community-associated Methicillin-resistant *Staphylococcus aureus*

**To the Editor:** Community-associated (CA) methicillin-resistant *Staphylococcus aureus* (CA-MRSA) is a global emerging threat (1–7). Accurate measures of the extent of CA-MRSA are critical to allocate resources, guide control measures,

and inform prescribing practices (8). We assessed the utility of administrative databases, a computerized clinical data repository, and an electronic rule to enhance surveillance for CA-MRSA at Stroger (Cook County) Hospital, a 464-bed public safety net hospital in Chicago, and its associated clinics—all part of the Cook County Bureau of Health Services (CCBHS).

Using data collected within the Chicago Antimicrobial Resistance Project computerized clinical data repository (9) from September 1, 2001, to August 31, 2004, we developed an electronic rule to define persons with CA infection with *S. aureus*. This rule used the electronic records of all persons from whom MRSA or methicillin-susceptible *S. aureus* (MSSA) had been identified in cultures of soft tissue, pus, bone, or joints. Infections from patients who met the following electronic case definition were designated CA: 1) culture obtained as an outpatient or within the first 3 days of hospitalization, 2) no clinical culture with MRSA in the last 6 months, 3) no hospitalization or surgeries within 1 year, and 4) no hemodialysis. All other infections were defined as healthcare associated. Data for microbiology results, demographics, and recent surgery or hospitalization were linked by a unique patient identification number. Dialysis use was detected by the use of biochemical tests obtained around the time of dialysis or of hemodialysis-related ICD-9 procedure codes (39.27, 90945, 39.95, 90935, 54.98, 39.43, 39.42, or 38.95). Because the electronic data sources were complete for the period specified, absence of data for a patient was considered to be due to the absence of exposure, not missing data.

Using the electronic case definition and data repository, we randomly selected 100 patients with putative CA- and 100 with putative healthcare-associated *S. aureus* infections. The paper charts for these 200 patients were reviewed to validate the designa-