WNV, 87.9% knew it was transmitted by infected mosquitoes. More than 75% of respondents described their level of concern regarding WNV as "not at all" or "somewhat."

Among the 149 respondents who were aware of WNV, 62 (41.6%) adopted PPBs to protect themselves or their families; more women than men adopted PPBs (Table). The most frequent PPB cited was the removal of standing water around the home (58.1%), followed by use of repellent with DEET (48.4%), and repairing broken windows or screens (43.5%).

We found lower awareness of WNV among San Diego County Hispanics (66.2%) than previously reported for predominantly non-Hispanic populations (range 77.2%–99.0%) (*7*–*9*). One survey reported that 41% of 17 Spanish-speaking respondents were aware of WNV (*9*). We also identified women as the primary source of PPB adoption among Hispanic households and a potential target population for interventions. Previous studies examining KAPs regarding WNV included small numbers of Hispanics and thus were unable to identify this subgroup for targeted interventions.

The finding of low awareness, concern, and PPB adoption may have 2 possible explanations. First, the observations may be appropriate given the low incidence of WNV in San Diego County and Mexico. At the time the survey was conducted, only 1 locally acquired case of WNV infection among humans had been reported in San Diego County; through 2006, WNV was rarely reported among humans in Mexico (*10*). Second, the low levels of awareness, concern, and PPB adoption may simply reflect the priority of WNV prevention compared with other basic necessities and health risks among the largely immigrant survey population.

Differences in awareness, concern, and practices among Hispanics by age, education, gender, language, years living in United States, and region of San Diego County indicate that varied educational tactics are needed to inform this population. Most educational efforts for Hispanics are simple translations of material into Spanish, which are likely not sufficient to reach this heterogeneous population.

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Crimean-Congo Hemorrhagic Fever in Man, Republic of Georgia, 2009

To the Editor: Crimean-Congo hemorrhagic fever (CCHF) virus is widely distributed in the southwestern regions of the former Soviet Union, the Balkans, the Middle East, western People's Republic of China, and Africa (*1*). Public health officials in the Republic of Georgia have long suspected that CCHF occurs in this country, but laboratory confirmation by using molecular diagnostic techniques has not been possible there until recently.

CCHF virus is primarily transmitted by ticks, but other modes of transmission have been described (*2*). This virus infects humans mainly by the bite of adult *Hyalomma* spp. ticks. Infected sheep and cattle have also been implicated in transmission (*3*).

Contact with highly infectious blood from patients has also led to several nosocomial hospital outbreaks, which resulted in the deaths of medical personnel (*4*,*5*). It is estimated that exposure to CCHF virus leads to symptoms in 1 of 5 patients exposed to this virus (*6*). Mortality rates up to 30% have been reported (*7*).

Virus can be isolated from blood of acutely ill patients by cell cultures or by passage through suckling mice. Antigen-detection ELISA is useful for diagnosis, particularly for severe cases (*2*). PCRs may provide additional sensitivity with no loss of specificity. Antibodies are detectable by a variety of methods and generally appear within 5–14 days of disease onset and coincide with clinical improvement. ELISA detection of immunoglobulin M is an established diagnostic method (*2*,*3*). Ribavirin may be effective for treatment of patients with severe CCHF; in vitro, animal, and clinical experience with this drug support its use (*8*). No human or veterinary vaccines against CCHF are currently recommended (none are licensed in the United States). We report a patient in Georgia with CCHF.

The patient was a 30-year-old man who lived in suburban Tbilisi, Georgia. Fever and sore throat without distinguishing characteristics developed in the patient. After 7 days of symptoms, gastrointestinal bleeding, melena, and hematemesis developed. He was admitted to the First City Hospital in Tbilisi, Georgia, on August 25, 2009. He reported frequent fishing in rural areas. The patient lived in a private house on the outskirts of the city that had a yard and vegetation. No specific rodent exposures were noted, and no other travel was reported.

Because his symptoms increased in severity, the patient was transferred to the Ghudushauri National Medical Center in Tbilisi on August 28, 2009. At this time, the patient had a temperature of 38.0°C–38.5°C, decreased consciousness, and hemorrhages primarily on the chest and medial surfaces of the upper extremities (Figure). Prominent hepatomegaly and moderate splenomegaly were observed. Laboratory tests showed pancytopenia with severe thrombocytopenia (thrombocyte count 4.0×10^9 cells/L, erythrocyte count 3.34×10^{12} cells/L, leukocyte count 2.92×10^9 cells/L). Neutropenia was also observed (neutrophil count 788 cells/mm^3), but hematuria was not observed. Creatinine level was within the reference range. Levels of liver transaminases were increased (alanine aminotransferase 3 U/L, aspartate aminotransferase 1,550 U/L). His bilirubin level was 80 mmol/L (direct bilirubin 41 mmol/L). Chest radiograph showed hemorrhagic alveolitis, and gastroduodenoscopy showed erosive duodenitis. The patient began receiving mechanical ventilation at the time of transfer. CCHF was suspected by the infectious diseases physician who was initially consulted on September 3, 2009.

The National Center for Disease Control and Public Health of Georgia investigated the case by obtaining and testing clinical samples. Serum samples obtained on September 4, 2009, were analyzed by using a CCHF IgM ELISA Kit (Vector-Best, Novosibirsk, Russia) and found to be positive for antibodies against CCHF virus (optical density 0.760, cutoff value 0.457). Virus RNA was extracted by using a Mini RNA Extraction Kit (QIAGEN, Hilden, Germany). Samples were positive for CCHF virus by real-time PCR (Roche Diagnostics, Basel, Switzerland) with specific primers (Invitrogen, Carlsbad, CA, USA). The patient was then treated with oral ribavirin (600 mg 3×/d for 14 days), gradually recovered from the infection, and was discharged from the hospital on October 26.

The National Center for Disease Control and Public Health also conducted environmental sampling as part of their case investigation. Rodent brain and lung tissue homogenates were collected from 2 mice captured in the backyard of the patient. Samples were tested by using an antigen detection kit (#97, D-1154; Vector-Best) to confirm the diagnosis. Optical density values were 0.833 and 0.890, respectively (cutoff value 0.334).

This case has serious public health implications for Georgia. For example, laboratory capability to safely detect this virus should be evaluated. Also, healthcare personnel should receive additional education about this disease, particularly so that appropriate precautions can be implemented during initial evaluations. The case was typical of CCHF and showed the pattern of prehemorrhagic, hemorrhagic, and convalescent phases. Hematemesis, melena, and somnolence have been predictors of death in previous investigations (*2*). Frequency of patients with asymptomatic or mildly symptomatic disease should also be determined. Recognition and testing of mild-to-moderate cases may also increase in Georgia as a result of in-

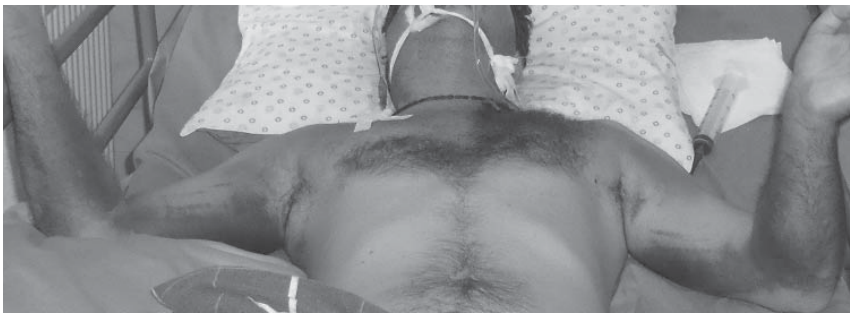

Figure. Intubated patient with Crimean-Congo hemorrhagic fever, Republic of Georgia, 2009, showing massive ecchymoses on the upper extremities that extend to the chest. A color version of this figure is available online (www.cdc.gov/EID/content/16/8/1326-F.htm).

creased awareness in the healthcare community.

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Mycobacterium avium subsp. *hominissuis* Infection in Horses

To the Editor: *Mycobacterium avium* subsp. *hominissuis* infection is often detected in pigs and humans (*1*–*3*). In most cases, the main sources of this agent are environmental (*4*,*5*). During the past few years, 2 hosts infected by this agent, dogs (*6*) and pet parrots (*7*), were identified as a possible source of infection for immunocompromised humans who may have close contact with animals. We report massive *M. avium* subsp. *hominissuis* infection in 2 sibling riding-type Fjord horses from an amateur-run horse-breeding farm.

The first horse, a 2-year-old colt, was admitted to a veterinary clinic in the Czech Republic in February 2009 with diarrhea and progressive weight loss of 3 weeks' duration. Multiple diagnostic procedures produced inconclusive results. Cyathostomosis was suspected, so moxidectin was administered twice, and prednisolone was given for 10 consecutive days. The clinical status of the horse initially improved but worsened after 3 weeks. Ultrasonographic examination of the peritoneal cavity showed a nodular mass and a nonperistaltic, thickened portion of the small intestine wall in the left ventrocranial region. Exploratory celiotomy showed enlargement of the mesenteric and colonic lymph nodes and multiple local thickenings of the small intestine wall, large colon, and cecum. The horse was euthanized. Specimens of enlarged lymph nodes and intestinal content were taken during necropsy for histopathologic and microbiologic examination. Microscopically, acid-fast rods (AFR) after Ziehl-Neelsen staining were observed, and quantitative real-time PCR (qPCR) showed 2.89×10^5 and 1.47×10^4 *M. avium* subsp. *hominissuis* cells per 1 g of intestinal content and mesenteric lymph node, respectively (*8*).

The second case, a 1-year-old full sister to the colt described above, was admitted in July 2009 after 1 month of lethargy, weight loss, diarrhea, and nasal discharge. Ultrasonographic examination of the abdominal cavity showed an increased amount of peritoneal fluid and nonperistaltic, corrugated, and thickened parts of the small intestine in the left caudal region. Local thickening of the jejunum and ileum were found during exploratory celiotomy; no lesions on the cecum or colon were observed macroscopically. Mesenteric lymph nodes were enlarged. Microscopically, AFR were observed, and qPCR showed 3.36×10^6 *M. avium* subsp. *hominissuis* cells per 1 g of mesenteric lymph node (*8*). Treatment with clarithromycin and rifampin was begun, but the condition of the filly improved only temporarily. She was euthanized after 4 months because of progressively worsening condition. Postmortem examination showed enlarged colonic lymph nodes with small nodular lesions, hyperemia of the colon mucosa, and corrugation and thickening of the colonic wall. For further examination, samples