the pharynx is not an ideal site for *N. gonorrhoeae* growth. From the routine examinations of commercial sex workers during January–March 2009, 40 *N. gonorrhoeae* were isolated in the clinic, but no other ceftriaxone-resistant strains were isolated. There is no evidence of dissemination of this strain in Kyoto.

Three independent molecular subtyping methods indicated that the ceftriaxone-resistant H041 strain was *N. gonorrhoeae*, and it might originate from an ST7363 cefixime-resistant *N. gonorrhoeae* clone. There are several possible mechanisms for the acquisition of resistance, including formation of a new mosaic type *penA* allele as *penA*-X cefixime resistance and acquisition of an extended-spectrum β-lactamase gene. The H041 strain did not produce β-lactamase in a nitrocephin test. Further molecular analysis is needed to elucidate the precise mechanism of the ceftriaxone resistance of the H041 strain.

The emergence of ceftriaxone-resistant *N. gonorrhoeae* raises concerns for controlling gonorrhea because ceftriaxone is widely recommended and the first-line treatment for gonorrhea around the world. *N. gonorrhoeae* has a potential to gain an extraordinarily high MIC to ceftriaxone. Surveillance for ceftriaxone-resistant *N. gonorrhoeae* should be strengthened.

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Makoto Ohnishi, Takeshi Saika, Shinji Hoshina, Kazuhiro Iwasaku, Shu-ichi Nakayama, Haruo Watanabe, and Jo Kitawaki

Author affiliations: National Institute of Infectious Diseases, Tokyo, Japan (M. Ohnishi, S. Nakayama, H. Watanabe); Mitsubishi Chemical Medience Corporation, Tokyo (T. Saika); Hoshina Clinic, Kyoto, Japan (S. Hoshina); and Kyoto Prefectural University of Medicine, Kyoto (K. Iwasaku, J. Kitawaki)

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References

1. Tapsall JW, Ndowa F, Lewis DA, Unemo M. Meeting the public health challenge of multidrug- and extensively drug-resistant *Neisseria gonorrhoeae*. Expert Rev Anti Infect Ther. 2009;7:821–34. DOI: 10.1586/eri.09.63

2. Workowski KA, Berman SM, Douglas JM Jr. Emerging antimicrobial resistance in *Neisseria gonorrhoeae*: urgent need to strengthen prevention strategies. Ann Intern Med. 2008;148:606–13.

3. Tapsall J. Antibiotic resistance in *Neisseria gonorrhoeae* is diminishing available treatment options for gonorrhea: some possible remedies. Expert Rev Anti Infect Ther. 2006;4:619–28. DOI: 10.1586/14787210.4.4.619

4. Clinical Laboratory Standards Institute. Performance standards for antimicrobial susceptibility testing, 19th informational supplement. CLSI document M100–S19. Wayne (PA): The Institute; 2001.

5. Jolley KA. Multi-locus sequence typing. In: Pollard AJ Maiden MCJ, editors. Meningococcal disease: methods and protocols. Totowa (NJ): Humana Press; 2001. p. 173–86.

6. Ohnishi M, Watanabe Y, Ono E, Takashashi C, Oya H, Kuroki T, et al. Spreading of a chromosomal cefixime resistant *penA* gene among different *Neisseria gonorrhoeae* lineages. Antimicrob Agents Chemother. 2010;54:1060–7. DOI: 10.1128/AAC.01010-09

7. Martin IM, Ison CA, Aanensen DM, Fenton KA, Spratt BG. Rapid sequence-based identification of gonococcal transmission clusters in a large metropolitan area. J Infect Dis. 2004;189:1497–505. DOI: 10.1086/383047

8. Ito M, Yasuda M, Yokoi S, Ito S, Takashashi Y, Ishihara S, et al. Remarkable increase in central Japan in 2001–2002 of *Neisseria gonorrhoeae* isolates with decreased susceptibility to penicillin, tetracycline, oral cephalosporins, and fluoroquinolones. Antimicrob Agents Chemother. 2004;48:3185–7. DOI: 10.1128/AAC.48.8.3185-3187.2004

9. Tanaka M, Nakayama H, Huruya K, Konomi I, Irie S, Kanayama A, et al. Analysis of mutations within multiple genes associated with resistance in a clinical isolate of Neisseria gonorrhoeae with reduced ceftriaxone susceptibility that shows a multidrug-resistant phenotype. Int J Antimicrob Agents. 2006;27:20–6. DOI: 10.1016/j.ijantimicag.2005.08.021

Address for correspondence: Makoto Ohnishi, Department of Bacteriology I, National Institute of Infectious Diseases, 1-23-1 Toyama, Shinjuku, Tokyo 162-8640, Japan, email: ohnishi7@nih.go.jp

Role of National Travel Health Network and Centre Website during Pandemic (H1N1) 2009

To the Editor: The National Travel Health Network and Centre (NaTHNaC) was created in 2002 by the Department of Health in England to provide authoritative guidance in travel medicine. The open-access NaTHNaC website (www.nathnac.org) is a key mode of communication, with both health professionals’ and travelers’ areas. Website country information pages (CIP) provide specific guidance for travel to each country of the world, and an outbreak surveillance database (OSD) detailing global outbreaks of disease is updated daily.

In late April 2009, influenza A virus (H1N1) of swine origin was identified in 2 children from California, USA (1). These cases were traced to travel to Mexico, and a widespread outbreak of influenza A (H1N1) in Mexico subsequently was recognized. On June 11, 2009, the World Health
Organization declared a global influenza pandemic (2). We reviewed use of the NaTHNaC website during the early recognition of pandemic (H1N1) 2009. During this phase, before widespread community transmission in the United Kingdom, assessing the international situation was necessary because travel abroad represented the highest risk for infection (3).

NaTHNaC, the national authority for travel health advice, posted multiple information resources on pandemic (H1N1) 2009. A daily table of internationally reported cases and deaths was compiled from official sources. A more detailed report of confirmed and suspected cases was circulated to key NaTHNaC stakeholders, including the Health Protection Agency (HPA) and the Foreign and Commonwealth Office (FCO). The OSD listed progression of the pandemic by date, country, and region. Reports of the pandemic and advice on preventive measures for travelers, termed Clinical Updates, were written daily, posted, and circulated to stakeholders.

NaTHNaC website statistics were obtained from Google Analytics. Use for the first 8 weeks of the pandemic period (April 24–June 18, 2009) was extracted, analyzed by using STATA version 9.1 (StataCorp LP, College Station, TX, USA), and compared with use for the 8 weeks preceding the start of the pandemic influenza (prepandemic period, February 27–April 23, 2009).

During the pandemic period, the daily number of visits to the website increased 28.1% over the prepandemic period (Table; online Technical Appendix Figure 1, www.cdc.gov/EID/content/17/1/149-Techapp.pdf). More new visitors accessed the website (63.6% vs. 61.7%), particularly through the Health Professionals portal (50.7% vs. 46.1%; p<0.001).

The number of website visitors from Mexico and the number of visits to the Mexico CIP also increased; Mexico was the most frequently searched country on the OSD (Table). Visits to the Mexico CIP (633 visits) and the Mexico OSD (129 visits) pages peaked on April 27, the Monday after pandemic (H1N1) 2009 was recognized. The pandemic (H1N1) 2009 home page that hosted clinical updates, news items, and an information sheet about subtype H1N1 became the seventh most viewed page (11,009 views). Visits for advice on seasonal influenza also increased markedly.

During the pandemic period, the website was accessed more often through referring websites (46.3%) than it was during the prepandemic period (39.9%; p<0.001). The most frequent referral website was the FCO (Table), accounting for 56.4% of all referrals during the pandemic period, with a peak on April 27 (online Technical Appendix, Figure 2). A large increase also occurred in referrals from the HPA.

Our analysis documents increased use of a national resource during the emergence of pandemic (H1N1) 2009. Information accessed included specific country information for Mexico and the United States, the countries first reporting cases, and information about and guidance for the prevention of pandemic (H1N1) 2009. The 28% increase in access to the website most likely reflected widespread interest in the pandemic, new links to the NaTHNaC website from UK authorities (e.g., FCO and HPA), and daily communication with stakeholders within the United Kingdom. In addition, NaTHNaC collaborated with these stakeholders and public health agencies to report progression of the outbreak and to help set policy on travel to influenza-affected countries.

The internet is a major resource for travel health information for health professionals and travelers. In 2008, ≈83% of internet users and 61% of all US adults used the Internet to acquire health information; 9% searched for travel health information (4). Public health agencies also use the Internet to assess global disease threats. Many use informal Internet sources, such as news articles and media outlets, to monitor potential threats in a more timely fashion than through the often delayed public health reporting mechanisms (5–7).

During a rapidly evolving global health situation, such as pandemic influenza, timely, accurate information is needed. The World Health Organization provided daily, and often twice daily, information (8); the US Centers for Disease Control and Prevention and the European Centre for Disease Prevention and Control used new and existing reporting systems (9,10). The

| Table. Number of visits to or searches on the National Travel Health Network and Centre website during the 8 weeks before and after recognition of pandemic (H1N1) 2009 |
|---------------------------------|
| Visits or searches | No. before* | No. after† | % Change |
| Daily website visits | 1,664 ± 655 | 2,132 ± 885 | +28.1 |
| Website access from Mexico | 55 | 210 | +281.8 |
| Visits to Mexico Country Information Page | 2,040 | 4,090 | +100.5 |
| Mexico searches on the Outbreak Surveillance Database | 50 | 459 | +818.0 |
| Visits to US country information page | 654 | 2003 | +206.3 |
| Visits to seasonal influenza information sheet | 34 | 1,572 | +4,523.5 |
| Visits to Outbreak Surveillance Database home page | 2,050 | 5,110 | +149.3 |
| Referral traffic from Foreign and Commonwealth Office | 21,604 | 31,200 | +44.4 |
| Referral traffic from Health Protection Agency | 1,399 | 7,247 | +418.0 |

*Data from before the beginning of the pandemic (February 27–April 23, 2009).
†Data from the first 8 weeks of the pandemic (April 24–June 18, 2009).
experience of NaTHNaC indicates that acquisition and coordination of information with health authorities, rapid and direct communication of findings and recommendations to stakeholders, and posting of this information for access by travelers and health professionals can increase communication about global health events.

Nicola Boddington, Naomi Bryant,1 and David R. Hill
Author affiliations: National Travel Health Network and Centre, London UK (N. Boddington, N. Bryant, D.R. Hill); and London School of Hygiene and Tropical Medicine, London (D.R. Hill)

References

1. Centers for Disease Control and Prevention. Swine influenza A (H1N1) infection in two children—southern California, March–April, 2009. MMWR Morb Mortal Wkly Rep. 2009;58:400-2.

2. World Health Organization. 11 June 2009: DG statement following the meeting of the Emergency Committee [cited 2010 Sep 3]. http://www.who.int/csr/disease/swineflu/4th_meeting_ihr/en/index.html

3. Health Protection Agency. Update on confirmed swine flu cases in England. 30 April 2009 [cited 2010 Sep 3]. http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/121048759904

4. Fox S, Jones S. The social life of health information. Americans’ pursuit of health takes place within a widening network of both online and offline resources [cited 2010 Sep 3]. http://www.pewinternet.org/-/media/Files/Reports/2009/PIP_CrystolHealth_2009

5. Marano C, Freedman DO. Global health surveillance and travelers’ health. Curr Opin Infect Dis. 2009;22:423–9.

6. Linge JP, Steinberger R, Weber TP, Yangarber R, van der Goot E, Al Khudhairy N. Internet surveillance systems for early alerting of health threats. Euro Surveill. 2009;14:pii:19162.

7. Brownstein JS, Clark C, Freifeld BS, Madow LC. Digital disease detection—harnessing the web for public health surveillance. N Engl J Med. 2009;360:2153–5. DOI: 10.1056/NEJMmp0900702

8. World Health Organization. Outbreak communication: best practice for communication with the public during an outbreak. Report of the WHO Expert Consultation on Outbreak Communications held in Singapore, 21–23 September 2004 [cited 2010 Sep 3]. http://www.who.int/csr/resources/publications/WHO_CDS_2005_32web.pdf

9. Centers for Disease Control and Prevention. Novel H1N1 flu: CDC response. 2009 Aug 19 [cited 2010 Sep 3]. http://www.cdc.gov/h1n1flu/cdcresponse.htm

10. European Centre for Disease Prevention and Control. 2009 Pandemic influenza A(H1N1) [cited 2010 Sep 3]. http://www.ecdc.europa.eu/en/healthtopics/Pages/Influenza_A(H1N1)_Outbreak.aspx

Address for correspondence: David R. Hill, National Travel Health Network and Centre, 250 Euston Rd, London NW1 2PG, UK; email: david.hill@uclh.org

Zoonotic Cryptosporidiosis from Petting Farms, England and Wales, 1992–2009

To the Editor: Visits to petting farms in England and Wales recently have increased in popularity. Petting farms are commercial operations at which visitors, mainly families and organized groups, are encouraged to have hands-on contact with animals. The ≈1,000 petting farms in the United Kingdom collectively receive >1,000 petting farm visitors. Most pets are children, but are mainly a veterinary problem in neonatal ruminants. C. parvum, for example, is a common agent in the etiology of the neonatal diarrhea syndrome of calves, lambs, and goat kids. Widespread asymptomatic carriage of this parasite exists in livestock in the United Kingdom (2). In humans, cryptosporidiosis occurs most commonly in children <5 years of age, can be life threatening in immunocompromised persons, and is caused predominantly by C. hominis and C. parvum parasites. Fecal–oral transmission can occur directly from animal to person and from person to person or indirectly through contaminated food or water (2).

Typing of Cryptosporidium spp. has been undertaken by the UK Cryptosporidium Reference Unit since 1999. C. parvum was identified from
Role of National Travel Health Network and Centre Website during Pandemic (H1N1) 2009

Technical Appendix Figure 1. Visits to the National Travel Health Network and Centre (NaTHNaC) website 8 weeks before and 8 weeks after recognition of pandemic (H1N1) 2009 (prepandemic and pandemic periods, respectively), United Kingdom. Noteworthy dates during the first 8 weeks of pandemic influenza are highlighted. Weeks refer to the dates during 2009 before recognition of the pandemic and weeks during it.
Prepandemic period: week 1, 27 Feb–5 Mar; week 2, 6–12 Mar; week 3, 13–19 Mar; week 4, 20–26 Mar; week 5: 27 Mar–2 Apr; week 6, 3–9 Apr; week 7, 10–16 Apr; week 8, 17–23 Apr. Pandemic period: Week 1, 24–30 Apr; week 2, 1–7 May; week 3, 8–14 May; week 4, 15–21 May; week 5, 22–28 May; week 6, 29 May–4 Jun; week 7, 5–11 Jun; week 8, 12–18 Jun. *First situation update from the World Health Organization: April 24; †first clinical update post on the NaTHNaC website: April 27; ‡clinical updates posted on the NaTHNaC website; §worldwide influenza pandemic alert level raised to phase 6 by the World Health Organization: June 11.

Technical Appendix Figure 2. Websites referring traffic to the National Travel Health Network and Centre website before and during recognition of pandemic (H1N1) 2009 (prepandemic and pandemic periods, respectively), United Kingdom. Prepandemic period, February 27–April 23, 2009; pandemic period, April 24–June 18, 2009; FCO, Foreign and Commonwealth Office; HPA, Health Protection Agency.