

Date, June 6, 2011

Volume 15, Issue 14

International Law and the *E. coli* Outbreaks in Europe

By David P. Fidler



Introduction

Many European countries have experienced outbreaks caused by a dangerous strain of *Escherichia coli* (*E. coli*) bacteria, and two countries have, to date, reported deaths related to these outbreaks. Responses have involved actions that implement and affect international legal regimes on public

health and international trade. This *Insight* describes these *E. coli* outbreaks and the international legal issues the outbreaks have raised.

The European *E. coli* Outbreaks

On June 5, 2011, the World Health Organization (“WHO”) stated that twelve European countries had reported outbreaks of enterohaemorrhagic *E. coli* (“EHEC”) and *E. coli*-caused haemolytic uraemic syndrome (“HUS”).^[1] *E. coli*-related diseases are “transmitted to humans primarily through consumption of contaminated foods[.]”^[2] EHEC can cause bloody diarrhea and abdominal pain.^[3] HUS is a life-threatening disease caused by toxins produced by EHEC.^[4] HUS is characterized by acute renal failure, anaemia, and low platelet count.^[5] In prior outbreaks, HUS predominantly affected children, but the European outbreaks involve many adults.^[6]

As of June 5, 2011, twelve European countries had reported, cumulatively, 658 cases of HUS and 1608 cases of EHEC, for a total 2266 *E. coli*-related cases.^[7] The epicenter of the outbreaks is Germany, which (as of June 5, 2011) had reported 627 cases of HUS and 1536 cases of EHEC, with fifteen deaths from HUS and six from EHEC.^[8] One fatality from HUS has been reported outside Germany.^[9] The European outbreaks have become one of the biggest *E. coli* epidemics in history.

An unusual, “super toxic” strain—Shiga-toxin producing *E. coli* O104 (STEC O104:H4)^[10]—is thought to be the pathogenic cause.^[11] News reports indicate that European physicians have been alarmed that the strain appears resistant to antibiotics.^[12] As of June 6, 2011, the source of the outbreaks had not been determined,^[13] but is believed to

RELATED ASIL INSIGHTS

[The Swine Flu Outbreak and International Law](#)

[Global Outbreak of Avian Influenza A \(H5N1\) and International Law](#)

[The Continuing Global Spread of Avian Influenza A \(H5N1\) and Its Implications for International Law](#)

[International Health Regulations: New Mandate for Scientific Cooperation](#)

[SARS and International Law](#)

[Influenza Vaccine Supply and International Law](#)

[Revision of the World Health Organization’s International Health Regulations](#)

[Developments involving SARS, International Law, and Infectious Disease Control at the Fifty-Sixth Meeting of the World Health Assembly](#)

DOCUMENTS OF NOTE

[WHO International Health Regulations \(2005\)](#)

[Enterohaemorrhagic Escherichia coli \(EHEC\) WHO Fact Sheet](#)

[Recommended International Code of Practice General Principles of Food Hygiene](#)

[WHO Constitution](#)

[U.S. Centers for Disease Control and Prevention, Stages of a Pandemic](#)

[International Covenant on Economic, Social, and Cultural Rights](#)

[ASIL EISIL>>](#)

ORGANIZATIONS OF NOTE

[The World Health Organization](#)

[Robert Koch Institute](#)

[Statens Serum Institut](#)

be associated with consumption of raw vegetables perhaps grown with manure containing the deadly *E. coli* strain.[14]

Application of International Law to the *E. coli* Outbreaks

Obligations on disease reporting

The main international legal instrument applicable to the *E. coli* outbreaks is the WHO's International Health Regulations (2005) ("IHR (2005)").[15] The IHR (2005) is legally binding on all WHO member states.[16] The IHR (2005)'s purpose is "to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade." [17]

Under the IHR (2005), states parties must report to the WHO any disease event that may constitute a public health emergency of international concern ("PHEIC").[18] A PHEIC is an extraordinary event that constitutes a public health risk to other states through the international spread of disease that potentially requires a coordinated international response.[19] A disease event might constitute a PHEIC, and thus must be reported to the WHO, if a state party can answer any two of four questions affirmatively:

- Is the public health impact of the event serious?
- Is the event unusual or unexpected?
- Is there significant risk of international spread?
- Is there a significant risk of international travel or trade restrictions?[20]

Affected European countries have reported their outbreaks to the WHO as disease events that may constitute a PHEIC. The outbreaks have had serious public health impact, are unusual because of the "super toxic" strain, have spread to numerous countries, and have triggered trade restrictions. WHO is sharing information on the outbreaks and offering technical assistance to affected countries.[21] The WHO Director-General has not convened the IHR (2005)'s Emergency Committee to advise whether she should declare an actual PHEIC and issue temporary recommendations to guide how countries should respond.[22]

So far, problems that in the past plagued compliance with international legal obligations to report disease events have not appeared with the *E. coli* outbreaks. Affected countries have not tried to conceal the outbreaks, and news reports do not contain concerns that European governments lack capacities to identify and respond to the threat. The outbreak is, however, stressing health capacities in northern Germany.[23]

Obligations related to responses to disease outbreaks

The IHR (2005) requires states parties to avoid responses to disease events that lack a scientific and public health basis and that impose unnecessary restrictions on international trade and travel.[24] These obligations also exist under EU rules on freedom of movement of goods[25] and in the World Trade Organization ("WTO") Agreement on the Application of Sanitary and Phytosanitary Measures ("SPS Agreement").[26] With outbreaks, states often impose trade and travel restrictions that are not informed by science or that go beyond what public health principles support. For example, during the pandemic influenza A (H1N1) or "swine flu" outbreak in 2009, some countries imposed import bans on pork products that had no scientific or public health justification.[27]

Smittskyddsinstitutet (Swedish Institute for Communicable Disease Control)

European Centre for Disease Prevention and Control

Copyright 2011 by The American Society of International Law ASIL

The purpose of ASIL Insights is to provide concise and informed background for developments of interest to the international community. The American Society of International Law does not take positions on substantive issues, including the ones discussed in this Insight. Educational and news media copying is permitted with due acknowledgement.

The Insights Editorial Board includes: [Cymie Payne](#), UC Berkeley School of Law; [Amelia Porges](#); and [David Kaye](#), UCLA School of Law. [Djurdja Lazic](#) serves as the managing editor.

The European *E. coli* outbreaks have damaged trade and triggered trade restrictions. Early suggestions by German government authorities that the outbreak source was cucumbers from Spain^[28] caused damage to Spanish exports as European countries pulled Spanish produce from shelves, leading the Spanish government to assert that it would seek “compensation for its farmers, who say lost sales are costing them 200 million euros (\$287 million) a week and could put 70,000 people out of work.”^[29] The EU Commissioner on Health and Consumer Policy has stated that the EU would “consider any ban on any product as disproportionate” and is working “to address the hardship faced by this group of our citizens that has also been hit hard by the *E. coli* outbreak.”^[30] Outside the EU, Russia imposed a ban on June 2, 2011, on raw vegetables from all EU countries, prompting complaints from EU members that such a ban was not justified and was disproportionate.^[31]

The *E. coli* outbreaks have, thus, triggered trade responses that might violate EU law, the IHR (2005), and the SPS Agreement. WHO has stated that it does not recommend trade or travel restrictions as responses to the *E. coli* outbreaks,^[32] indicating that such measures have no scientific or public health justification. This position means that the Russian ban on raw vegetable imports is a disproportionate and unnecessary response. EU law might help Spain remove trade barriers within the EU,^[33] but it will not help EU members affected by Russia’s trade restrictions. However, neither the IHR (2005) nor the SPS Agreement offers harmed exporting states effective remedy options.

Russia is a state party to the IHR (2005), but this agreement contains no mechanisms that could deliver timely relief to states parties harmed by unjustified trade restrictions. This problem was highlighted in April 2011 by the IHR Review Committee in its assessment of the IHR (2005)’s implementation during the 2009 pandemic influenza A (H1N1) outbreak. The IHR Review Committee stated: “The most important structural shortcoming of the IHR is the lack of enforceable sanctions. For example, if a country fails to explain why it has adopted more restrictive traffic and trade measures than those recommended by WHO, no legal consequences follow.”^[34]

However, the IHR Review Committee’s recommendation merely advised WHO to be more energetic in obtaining “the public-health rationale and relevant scientific information, share it with other States Parties, and, where appropriate, request reconsideration” from the state imposing the restriction.^[35] The recommendation’s weakness reflects the lack of any process in the IHR (2005) to sanction states parties for violating obligations not to impose unjustified and unnecessary trade restrictions in responding to disease outbreaks.

Complaints under the SPS Agreement are subject to the compulsory WTO dispute settlement process.^[36] However, Russia is not a WTO member, which means the WTO members affected by the Russian ban have no WTO recourse. Even if Russia were a WTO member, past episodes involving unjustified and unnecessary trade restrictions in response to disease outbreaks indicate that the WTO dispute settlement process (1) does not move quickly enough for a binding decision to be made before the trade restrictions in question are lifted, and (2) does not provide compensation as a remedy for economic losses incurred while the restrictions were in force.

Thus, the European *E. coli* outbreaks underscore a long-standing problem with international legal obligations under the WHO and WTO regimes that seek to regulate trade-related responses to disease outbreaks.

A similar problem has also existed with international legal obligations not to apply unjustified and unnecessary restrictions to, or health measures against, travelers, as evidenced by concerns that quarantine of travelers during the pandemic influenza A (H1N1) outbreaks violated the IHR (2005).[37] These obligations seek to minimize the impact of disease events on international travel and to support human rights. So far, the European *E. coli* outbreaks do not appear to have resulted in restrictive or intrusive measures on individuals leaving countries suffering outbreaks, even though the strain's spread has been associated with persons traveling from Germany.[38] Persons traveling to affected areas have been advised to avoid consuming raw vegetables.[39] However, as has happened in past disease events, if the outbreaks spread and/or worsen, governments might feel compelled to enact measures against persons traveling from affected countries, if for no other reason than demonstrating that they are “doing something” about the threat.

Conclusion

The *E. coli* outbreaks in Europe have proved dangerous and deadly and serve as yet another reminder of the mayhem the microbial world can cause. In deciphering the *E. coli* strain responsible for the outbreaks, concerns have arisen that its antibiotic resistance might derive from widespread use of antibiotics in raising livestock[40] —an increasing global health concern[41] that neither the IHR (2005) nor any other international legal regime specifically addresses.

More broadly, these outbreaks happened in affluent countries that have capacity to identify and respond to pathogenic threats. In all likelihood, these capacities will allow European countries to bring the outbreaks under control. Other countries, especially low-income countries, are not in the same position. The IHR (2005) requires states parties to have minimum surveillance and response capacities to handle serious disease events by June 2012.[42] However, the IHR Review Committee observed in April 2011 that “many States Parties lack core capacities to detect, assess and report potential health threats and are not on a path to complete their obligations for plans and infrastructure by the 2012 deadline specified in the IHR.”[43] Europe will recover from these *E. coli* outbreaks, but the global problem of inadequate public health capacity remains unaddressed despite international law directed at that very problem.

About the Author:

David P. Fidler, an ASIL member, is the James Louis Calamaras Professor of Law at the Indiana University Maurer School of Law and an Associate Fellow with the Chatham House Centre on Global Health Security.

Endnotes:

[1] WHO Regional Office for Europe, *EHEC Outbreak: Update 8*, available at <http://www.euro.who.int/en/what-we-do/health-topics/emergencies/international-health-regulations/news2/news/2011/06/ehec-outbreak-update-8>.

[2] WHO, *Enterohaemorrhagic Escherichia coli (EHEC)*, Fact Sheet No. 125 (May 2005 (revised)), available at <http://www.who.int/mediacentre/factsheets/fs125/en/>.

[3] *Id.*

[4] *Id.*

[5] *Id.*

[6] WHO, *Outbreak of Haemolytic Uraemic Syndrome in Germany*, May 27, 2011, available at http://www.who.int/csr/don/2011_05_27/en/index.html.

[7] WHO Regional Office for Europe, *EHEC Outbreak*, *supra* note 1.

[8] *Id.*

[9] *Id.*

[10] U.S. Centers for Disease Control and Prevention, *Investigation Announcement: Outbreak of Shiga Toxin-Producing E. coli O104 (STEC O104:H4) Infections Associated with Travel to Germany*, June 2, 2011, available at <http://www.cdc.gov/ecoli/2011/ecoliO104/>.

[11] Kate Kelland, *Europe E. coli is Toxic New Strain, Trade Row Grows*, Reuters, June 2, 2011, available at http://news.yahoo.com/s/nm/20110602/hl_nm/us_ecoli.

[12] Gardiner Harris, *U.S. Calls Antibiotics Wrong Step on E. Coli*, N.Y. Times, June 2, 2011, available at <http://www.nytimes.com/2011/06/03/health/03treatment.html?hpw>.

[13] Judy Dempsey, *E. Coli Not Found in Initial Tests on Sprouts*, N.Y. Times, June 6, 2011, available at <http://www.nytimes.com/2011/06/07/world/europe/07germany.html?hp>.

[14] WHO, *EHEC Outbreak: Increase in Cases in Germany*, June 2, 2011, available at http://www.who.int/csr/don/2011_06_02/en/index.html; and WHO, *Enterohaemorrhagic Escherichia coli (EHEC)*, *supra* note 2.

[15] WHO, *International Health Regulations (2005) (2nd ed., 2008)* [hereinafter IHR (2005)].

[16] WHO Const., arts. 21 & 22.

[17] IHR (2005), art. 2, *supra* note 15.

[18] *Id.* art. 6.

[19] *Id.* art. 1.

[20] *Id.* Annex 2.

[21] *Id.* art. 11.

[22] *Id.* arts. 12 & 15.

[23] *Veggie Sprouts from Germany Blamed in E. Coli Outbreak; Toll at 22 Dead, Over 2200 Sick*, Wash. Post, June 5, 2011, available at http://www.washingtonpost.com/world/qatar-bans-imports-of-cucumber-tomato-lettuce-from-germany-and-spain-over-e-coli-outbreak/2011/06/05/AGXI0QJH_story.html.

[24] IHR (2005), art. 43, *supra* note 15.

[25] See generally Europa, *Freedom of Movement of Goods: General Framework*, available at http://europa.eu/legislation_summaries/internal_market/single_market_for_goods/free_movement_goods_general_framework/index_en.htm.

[26] Agreement on the Application of Sanitary and Phytosanitary Measures, in WTO, *The Legal Texts: The Results of the Uruguay Round of Multilateral Trade Negotiations 59-72* (1999) [hereinafter SPS Agreement].

[27] Kumanan Wilson, John Brownstein & David P. Fidler, *Strengthening the International Health Regulations: Lessons from the H1N1 Pandemic*, Health Policy and Planning (July 1, 2010), doi:10.1093/heapol/czq026, available at <http://heapol.oxfordjournals.org/content/early/2010/07/01/heapol.czq026.full.pdf+html>.

[28] Dempsey, *supra* note 13.

[29] Kelland, *supra* note 11.

[30] John Dalli, European Union Press Release, EU Commissioner for Health and Consumer Policy, Statement on the E. coli Outbreak, June 1, 2011, available at <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/404&format=HTML&aged=0&language=EN&guiLanguage=en>.

[31] Kelland, *supra* note 11. The United Arab Emirates and Qatar imposed bans on imports of cucumbers, tomatoes, and lettuce from Germany and Spain. *Qatar Bans Importing Cucumbers in Fear of E. Coli*, MEANAFN.com, June 5, 2011, available at http://www.menafn.com/qn_news_story_s.asp?storyid=1093418825.

[32] WHO, *EHEC Outbreak*, *supra* note 14; and WHO, *Enterohaemorrhagic Escherichia coli (EHEC)*, *supra* note 2.

[33] See, e.g., Council Regulation (EC) No. 2679/98 of 7 December 1998 on the Functioning of the Internal Market in relation to the Free Movement of Goods Among the Member States, available at http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Regulation&an_doc=1998&nu_doc=2679 (establishing a rapid intervention mechanism for addressing breaches of the principle of the free movement of goods).

[34] WHO, *Implementation of the International Health Regulations (2005): Report of the Review Committee on the Functioning of the International Health Regulations (2005) in relation to Pandemic (H1N1) 2009*, WHO Doc. A64/10, May 5, 2011, §24, available at http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf.

[35] *Id.* § 28.

[36] SPS Agreement, art.11, *supra* note 26.

[37] Wilson, Brownstein & Fidler, *supra* note 27.

[38] U.S. Centers for Disease Control and Prevention, *supra* note 10.

[39] U.S. Centers for Disease Control and Prevention, *Outbreak Notice: Shiga Toxin-Producing E. coli O104:H4 Infections in Germany*, June 3, 2011, available at <http://wwwnc.cdc.gov/travel/notices/outbreak-notice/2011-germany-europe-e-coli.htm>

[40] Harris, *supra* note 12.

[41] WHO, *Reduce Use of Antimicrobials in Food-Producing Animals* (World Health Day 2011), available at http://www.who.int/world-health-day/2011/presskit/whd2011_fs4d_subanimal.pdf.

[42] IHR (2005), arts. 5 & 13, *supra* note 15.

[43] WHO, *Report of Review Committee*, § 23, *supra* note 34.