**Technical Appendix**

**Technical Appendix Table.** Select Centers for Disease Control and Prevention Emergency Response and Recovery Branch humanitarian emergency responses conducted, by year, type of emergency, activity, and partner, 2007–2016*

| Year | Type | Country or region, nature of emergency | Description of activities | Partners for activities |
|------|------|---------------------------------------|---------------------------|-------------------------|
| 2007 | CE   | Sudan (Darfur, southern Sudan) displacement crises of refugees and IDPs | 1. Supported USAID’s OFDA DART 2. Conducted emergency food security and nutrition assessment 3. Assessed clinical care access among returning refugees 4. Provided technical assistance for WASH interventions for hepatitis E outbreak | 1. USAID/OFDA 2. World Food Programme, UNICEF 3. Southern Sudan Ministry of Health, UNHCR 4. Southern Sudan Ministry of Health, WHO |
| 2008 | CE   | Zimbabwe political instability and cholera outbreak | 1. Supported DART on WASH activities for cholera response 2. Evaluated cholera WASH response activities 3. Investigation of high rates of community-based cholera deaths (1) | 1. USAID/OFDA 2. UNICEF 3. Zimbabwe Ministry of Health and Child Welfare, UNICEF, Medical Emergency Relief International, WHO |
| 2009 | CE   | Sri Lanka displacement crisis | 1. Conducted community and household assessment of vaccination rates, healthcare access, death, prevalence of injury, disability, mental health conditions, and sexual and gender-based violence (2) 2. Assessed mental health of national humanitarian aid staff (3) | 1. UNICEF, Sri Lanka Ministry of Health 2. Consortium of Humanitarian Agencies, Antares Foundation |
| 2010 | ND and CE | Haiti earthquake and cholera outbreak | 1. Established sentinel site surveillance systems (4,5) 2. Conducted nutrition assessment and provided technical assistance for supplemental immunization activities 3. Conducted rapid assessments of water access and quality in IDP camps and cholera-affected areas 4. Provided technical assistance with maternal surveillance 5. Supported UN coordination of response | 1. PAHO, Haiti MSPP 2. UNICEF, MSPP 3. Haiti DINEPA 4. UNFPA, PAHO 5. PAHO, MSPP |
| 2010 | ND   | Pakistan floods | 1. Expanded and strengthened EWARN (6) 2. Conducted emergency nutrition surveys in flood-affected areas 3. Supported WHO in coordination of flood response | 1. Pakistan National Institute of Health, National Emergency Preparedness and Response Network, WHO 2. UNICEF 3. WHO, Pakistan Ministry of Health |
| Year       | Type       | Country or region, nature of emergency | Description of activities                                                                 | Partners for activities                                                                 |
|------------|------------|----------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 2011–2014  | CE         | Horn of Africa famine and displacement crisis | 1. Strengthened UNHCR Health Information System surveillance (1)  
2. Strengthened WASH preparedness in refugee camps, trained healthcare workers on cholera management (2)  
3. Described measles outbreaks in 2 refugee camps in Kenya and Ethiopia (7)  
4. Assisted in coordination of measles vaccination campaign in Somalia (1)  
5. Investigated mortality rates among refugees (8)  
6. Conducted prospective cohort study to assess impact of blanket supplementary feeding in nutritional emergencies (9)  
7. Conducted expert review of nutrition quality and mortality data from affected areas in Somalia for possible famine declaration (10)  
8. Identified gaps in emergency obstetric care (11)  
9. Planned and implemented measles vaccination campaign in Somalia (12)  
10. Supported Health Coordinator in refugee camp in Ethiopia (13)  
11. Supported OFDA DART (14)  
12. Supported Somali communicable disease reporting system improvement (15) | 1–3. UNHCR  
4. UNICEF  
5. UNHCR, Kenya Medical Research Institute, Food Security and Nutrition Analysis Unit Somalia  
6. World Food Programme, UNICEF, Arid Lands Development Focus Kenya, International Rescue Committee, Islamic Relief, Merlin, Oxfam, Save the Children, World Vision  
7. FAO/World Food Programme, Food and Agriculture Organization of the United Nations, Centers for Disease Control and Prevention, USAID  
8. UNFPA  
9. UNICEF  
10. UNHCR, Ethiopia Ministry of Health  
11. USAID/OFDA  
12. WHO Somalia |
| 2012–2016  | CE         | Republic of Congo Human-made disaster (explosion) South Sudan displacement crisis of refugees and IDPs | 1. Established EWARN (1)  
2. Conducted hepatitis E outbreak investigation and response (2)  
3. Conducted nodding syndrome investigation (3)  
4. Assessed mortality rate among refugees (4)  
5. Initiated community-based pregnancy surveillance (5)  
6. Provided technical assistance for managing acute malnutrition programs in emergencies, reviewed and validated all nutrition and mortality surveys (6)  
 | 1. Republic of Congo Ministry of Health, WHO  
2. WHO, South Sudan Ministry of Health  
3. UNHCR, Medecins Sans Frontieres  
4. Ministry of Health, South Sudan  
5. WHO, UNICEF  
6. Ministry of Health, South Sudan, UNICEF  
7. UNHCR, Women’s Refugee Commission, Boston University School of Public Health, UNFPA, International Rescue Committee  
8. UNICEF  
9. UNICEF  
10. USAID/OFDA  
11. UNICEF  
12. UNICEF  
13. UNHCR, Women’s Refugee Commission, Boston University School of Public Health, UNFPA, International Rescue Committee  
14. Department of State US Embassy, Government of Greece |
| Year | Type | Country or region, nature of emergency | Description of activities | Partners for activities |
|------|------|----------------------------------------|---------------------------|------------------------|
| 2013 | ND   | Philippines typhoon                    | 1. Strengthened EWARN     | 1. WHO, Philippines Department of Health |
|      |      |                                        | 2. Contributed to restoration of vaccine services, assisted with measles vaccination campaign | 2. UNICEF, Philippines Department of Health |
|      |      |                                        | 3. Developed cholaera preparedness plan | 3. UNICEF, Philippines Department of Health |
| 2014 | CE   | Ukraine displacement crisis            | 1. Coordinated nutrition sector humanitarian response | 1–4. UNICEF, Ukraine Ministry of Health |
|      |      |                                        | 2. Conducted health and nutritional assessment of older adults residing in conflict areas | |
|      |      |                                        | 3. Assessed infant and young child feeding practices among displaced population | |
|      |      |                                        | 4. Established and evaluated anemia surveillance | |
| 2014–2016 | CE | Iraq displacement crisis | 1. Analyzed injury surveillance data (16) | 1. WHO, Iraq Ministry of Health |
|      |      |                                        | 2. Provided technical assistance to support WASH and outbreak control response to cholaera outbreak | 2. USAID/OFDA, UNICEF, Iraq Ministry of Health |
|      |      |                                        | 3. Provided technical assistance to implement and evaluate oral cholaera vaccination campaign (17) | 3. WHO, Iraq Ministry of Health and Sanitation, UNICEF, Iraq Red Crescent Society |
|      |      |                                        | 4. Evaluated EWARN | 4. WHO, Iraq Ministry of Health and Sanitation |
| 2016 | CE   | Nigeria displacement crisis            | 1. Conducted survey to estimate acute malnutrition and infectious diseases rates | 1. UNICEF |
|      |      |                                        | 2. Conducted expert review on nutrition quality and mortality rate data in affected areas for possible famine declaration | 2. FAO |
| 2016 | ND   | Haiti hurricane                        | 1. Evaluated cholaera treatment protocol and surveillance system | 1. Haiti MSPP |
|      |      |                                        | 2. Provided technical assistance to improve WASH interventions for cholaera prevention | 2. USAID/OFDA, DINEPA, International Organization for Migration |
|      |      |                                        | 3. Assessed access to HIV and tuberculosis clinical care | 3. MSPP |

*CE, complex emergency; DART, Disaster Assistance Response Team; DINEPA, National Directorate for Potable Water and Sanitation; EWARN, Early Warning Alert and Response Network; FOA, Food and Agriculture Organization; IDP, internally displaced person; ND, natural disaster; MSPP, Ministry of Public Health and Population; OFDA, Office of Foreign Disaster Assistance; PAHO, Pan-American Health Agency; UNHCR, United Nations High Commissioner for Refugees; UNICEF, United Nations Children’s Fund; UNFPA, United Nations Population Fund; USAID, US Agency for International Development; WASH, water, sanitation, and hygiene; WHO, World Health Organization.*

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