Featuring articles on the fight against cholera and the mental health of refugees
to the *Humanitarian Health Digest*—a biannual bibliography of published peer-reviewed journal articles on humanitarian health. The Digest is compiled by the Johns Hopkins Center for Humanitarian Health and *The Lancet*. It includes one or two new commentaries on peer-reviewed articles cited in the Digest.

The objective of the Digest is to provide links to peer-reviewed articles on humanitarian health from a wide variety of journals in one place for ease of reference. Peer-reviewed articles will be searched systematically using the PubMed and Global Health (OVID) databases. Articles will mostly include primary research and systematic reviews. Humanitarian health will be divided into three broad categories:

- Conflict and Forced Displacement
- Natural Disasters
- Technological Disasters

The articles will be further divided into low- and middle-income countries and high-income countries.

Under each of these two sub-categories, articles will be subdivided into the following public health-related categories:

I. **COMMUNICABLE DISEASE**
II. **NON-COMMUNICABLE DISEASE**
III. **REPRODUCTIVE, MATERNAL, NEWBORN, CHILD AND ADOLESCENT HEALTH**
IV. **NUTRITION AND FOOD SECURITY**
V. **WATER, SANITATION AND HYGIENE (WASH)**
VI. **MENTAL HEALTH, PSYCHOSOCIAL ISSUES, AND SUBSTANCE ABUSE**
VII. **HEALTH SYSTEMS**
VIII. **MULTI-CATEGORY**

All featured articles from the Lancet family of journals will be free to read with registration on TheLancet.com. It is the Center for Humanitarian Health’s goal that other journals will follow suit to allow all peer-reviewed articles to be free to read so that humanitarian workers worldwide can learn from and apply lessons learned and conclusions immediately in the field to benefit persons affected by conflict, natural disasters and technological disasters.

We hope that you will learn and benefit from the articles presented in the *Humanitarian Health Digest*.

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Director of the Center for Humanitarian Health

Richard Horton FRCP FMedSci
Editor-in-Chief of *The Lancet*

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Cover: Cholera in Haiti’s Artibonite region
*A girl infected with cholera holds her IV needle at the hospital in Dessalines, Haiti. © UNICEF/Marco Dormino (CC BY-NC-ND 2.0). (https://flic.kr/p/9ny9fl)*
After the development of the sustainable development goals in 2015, efforts to stem the number of outbreaks as a source of preventable deaths have intensified. In 2017, the Global Task Force on Cholera Control (GTFCC) launched *Ending cholera: a global roadmap to 2030*. A group of 35 members committed to investment, better coordination, and acceleration of efforts to combat the disease with the aim of reducing global cholera deaths by 90% by 2030. Unfortunately, cholera is largely underreported and much is unknown about the global burden of disease. There is no centralized database for cholera outbreaks or systematic evaluation of detection and response measures. Recent estimates have put the numbers at 2.8 million annual cases in endemic countries with 95,000 deaths.

Establishment of early warning and response systems (EWARS) is a critical public health tool to prevent unnecessary mortality and morbidity. It is one of three main strategies laid out in the global roadmap along with a targeted multisectoral approach and an effective mechanism for coordination. In fragile contexts, early detection and response carries even more importance as health systems may lack the capacity and resources to respond to crises once they have begun.

In their article listed in this issue of the *Digest* entitled ‘Early detection of cholera epidemics to support control in fragile states: estimation of delays and potential epidemic sizes’, Ratnayake et al. build upon previous research conducted, and add to the evidence base that early alert and intervention are paramount to the control of cholera outbreaks. They highlight that many of the so-called global cholera ‘hotspots’ occur in some of the world’s most fragile states including the Democratic Republic of Congo (DRC), Iraq, Somalia, South Sudan, and Yemen.

The authors evaluated 76 cholera outbreaks from 34 fragile or conflict-affected countries between 2008 and 2019. For each outbreak, they assessed median delays between onset of symptoms for the index case and: case presentation, outbreak detection, investigation, response and laboratory confirmation. In addition, they modeled the potential size of an epidemic at each delay based on number of existing cases at outbreak detection and assuming that outbreaks below a threshold of 20 cases could be contained.

Most of the reports came from urban settings and were detected through formal and informal alert systems as opposed to routine weekly data. The median delay between onset of symptoms and other outbreak events varied between 5 and 11 days. Crisis-affected countries experienced delays greater than two weeks. Outbreaks in Yemen in the time period are of particular note in the global fight against cholera due to the high number of consequent cases, but delays also occurred in Chad, DRC, South Sudan, and Iraq among others. Model simulations suggested that with large outbreaks of 10 seed cases with even short delays to detection, response, and confirmation (5 days) resulted in uncontainable outbreaks 94.7% of the time. Primary reasons for delays were associated with frail health systems in fragile states, and included poor access to health services, difficulty for health care workers in identifying cholera, over reliance on laboratory confirmation, and weak local responses.

The need to improve surveillance and information systems has been identified as a key concern in cholera outbreak

### COMMENT I.

**Knowledge is power: the key role of surveillance in the fight against cholera**

*by Jennifer O’Keeffe, MPH, PhD Candidate, International Health Department, Johns Hopkins Bloomberg School of Public Health*

control. Over time there have been major improvements in early warning and alert systems. An emphasis on their importance will hopefully serve to increase their performance through renewed attention, investment and resource allocation. This digest features another article by Desai et al. which found that outbreak event reporting for forcibly displaced populations has increased over time, a positive indicator that more outbreaks are being detected.

As the GTFCC emphasized, cholera is “a disease of inequity”, affecting only the most disadvantaged populations in the world. It is essentially a tragic result of inadequate access to clean water. The fact that illness and associated deaths are entirely preventable is a point of shame, but also a sign of hope. Cholera can be readily fought with available public health measures such as vaccines, access to quality health services, and WASH activities. However, as the adage goes, an ounce of prevention is worth a pound of cure. Actors are most effective when they are informed. By describing delays, simulating potential results and identifying barriers to detection, Ratnayake et al. have provided the humanitarian community with critical information to reduce gaps, improve interventions and ultimately reduce cholera disease burden in affected communities. Preventing transmission in the early stages can save lives.

REFERENCES


Before refugees migrate, stressors such as enduring violence, conflict, and trauma can affect them in their countries of origin and in refugee camps. After refugees have settled in their new homelands, various post-migration factors, such as poverty, discrimination, and social isolation, influence their mental health. How and when these stressors occur, their antecedents in past trauma and the effects of current circumstances, and the implications of these factors on future mental health are rarely explored in research, and yet are worthy of further investigation.

Within this context, Shuxian Wu and colleagues’ study shows how refugees’ mental health changes over time. Their longitudinal analysis of 2399 refugees from a national Australian dataset shows that in the early years of settlement, economic insecurity positively correlated with mental ill-health (among men, AOR 1·90 [1·21–2·99], p=0·0051 for PTSD; AOR 3·70 [2·18–6·27], p=0·0001 for psychological distress; and among women, AOR 3·65 [2·08–6·39], p<0·0001 for PTSD; AOR 3·68 [2·02–6·69], p<0·0001 for psychological distress). These findings are important because they highlight not only the continuum of mental health, but also how factors influencing mental health change over the course of a life. Additionally, they offer some answers as to why mental health interventions targeted at refugees achieve such mixed results. First, as Wu and colleagues’ study suggests, the simple act of having a job does not necessarily enhance mental health. Rather, when highly educated, highly skilled refugees end up in low-paying, low-skilled jobs in their settlement countries, the absence of financial security and meaningful work can undermine their mental health in the longer term. In fact, alleviating some economic pressures does not mean that psychological distress axiomatically dissipates, even after a lengthy residence in settlement countries. As a corollary, cross-sectional work using the Australian National Health Survey found that even after adjusting for years lived in Australia, migrants from North Africa and the Middle East (from where considerable refugee populations to Australia have come) had more than three times the levels of distress compared with the Australian and UK-born populations (AOR 3·39; 95% CI 1·9–6·2).

However, just because distress never goes away, this does not mean people are incapacitated by it. Wu and colleagues’ study reiterates this conundrum in migrant mental health research, although the authors themselves do not make this link. Instead, they equate high scores on the Kessler Screening Scale for Psychological Distress (K6) with high-risk of severe mental illness. The association is debatable, but the more interesting question is why some individuals might have high levels of distress but are still able to learn and work, whereas others might struggle. Again, Wu and colleagues’ study offers some answers, illuminating not only the complex interactions between psychological distress and its protective and risk factors over time, but also the

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**COMMENT II.**

Changes in refugees’ mental health: what can granular analyses show?

by Bianca Brijnath, School of Occupational Therapy, Social Work, and Speech Pathology, Curtin University, Perth, WA, Australia; Adjunct Senior Research Fellow at the Department of General Practice at Monash University

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gendered nature of these interactions. In their study,\(^1\) men were found to be particularly vulnerable, with the association between problems adjusting to life in Australia and their mental ill-health increasing over time (AOR increased from 1.41 [95% CI 1.01–1.96], p=0.043, to 2.79 [1.49–5.21], p=0.0013 for PTSD; and AOR increased from 1.53 [1.01–2.33], p=0.045, to 3.87 [1.92–7.82], p=0.0002 for psychological distress). This increase occurred despite the fact that by around their third year of settlement in Australia, men were more educated and earned on average AUS$100 more per week than women in the same cohort did (although both groups earned less than the average Australian wage).\(^1\)

These findings highlight the importance of recognising heterogeneity in refugee and migrant mental health.

Indeed, this is the most important contribution of this research because the data are disaggregated by demographic variables (eg, gender, age, country of birth, education, and income) as well as by pre-migration potentially traumatic events and post-migration stressors. This kind of approach answers multiple calls,\(^6,7\) including by the World Psychiatry Association–Lancet Psychiatry Commission,\(^6\) for more granular analyses that help to generate robust evidence for decision makers to make better policies.

Therefore, the key message for policy makers and services from this study is that the initial effort to lessen the economic precarity of refugees should not fade into nothingness 2 or 3 years into their settlement. Rather, these efforts need to transform over time into broader low-cost interventions at the population level, which seek to build and strengthen social ties. By better identifying how psychological distress varies with sociological, cultural, and ethnic diversity, more targeted approaches at particular timepoints are possible, which is a more effective way to strive for mental health equity for all.

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LOW- AND MIDDLE-INCOME COUNTRIES


**HIGH-INCOME COUNTRIES**


II. NON-COMMUNICABLE DISEASE

LOW- AND MIDDLE-INCOME COUNTRIES


HIGH-INCOME COUNTRIES


III. REPRODUCTIVE, MATERNAL, NEWBORN, CHILD, AND ADOLESCENT HEALTH

LOW- AND MIDDLE-INCOME COUNTRIES


### HIGH-INCOME COUNTRIES


IV. NUTRITION AND FOOD SECURITY

LOW- AND MIDDLE-INCOME COUNTRIES


V. WATER, SANITATION, AND HYGIENE (WASH)

**LOW- AND MIDDLE-INCOME COUNTRIES**


**HIGH-INCOME COUNTRIES**

N/A.

VI. MENTAL HEALTH, PSYCHOSOCIAL ISSUES, AND SUBSTANCE ABUSE

**LOW- AND MIDDLE-INCOME COUNTRIES**


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VII. HEALTH SYSTEMS

N/A.

VIII. MULTI-CATEGORY

LOW- AND MIDDLE-INCOME COUNTRIES


HIGH-INCOME COUNTRIES


I. COMMUNICABLE DISEASE

LOW- AND MIDDLE-INCOME COUNTRIES

HIGH-INCOME COUNTRIES
N/A.
II. NON-COMMUNICABLE DISEASE

LOW- AND MIDDLE-INCOME COUNTRIES


HIGH-INCOME COUNTRIES

III. REPRODUCTIVE, MATERNAL, NEWBORN, CHILD, AND ADOLESCENT HEALTH

LOW- AND MIDDLE-INCOME COUNTRIES


HIGH-INCOME COUNTRIES
N/A.

IV. NUTRITION AND FOOD SECURITY
N/A.

V. WATER, SANITATION, AND HYGIENE (WASH)

LOW- AND MIDDLE-INCOME COUNTRIES
N/A.
VI. MENTAL HEALTH, PSYCHOSOCIAL ISSUES, AND SUBSTANCE ABUSE

LOW- AND MIDDLE-INCOME COUNTRIES


HIGH-INCOME COUNTRIES


VII. HEALTH SYSTEMS

**LOW- AND MIDDLE-INCOME COUNTRIES**


**HIGH-INCOME COUNTRIES**


VIII. MULTI-CATEGORY

N/A.

**Technological Disasters**

I. COMMUNICABLE DISEASE

II. NON-COMMUNICABLE DISEASE

III. REPRODUCTIVE, MATERNAL, NEWBORN, CHILD, AND ADOLESCENT HEALTH

IV. NUTRITION AND FOOD SECURITY

V. WATER, SANITATION, AND HYGIENE (WASH)

I.–V., N/A.
VI. MENTAL HEALTH, PSYCHOSOCIAL ISSUES, AND SUBSTANCE ABUSE

LOW- AND MIDDLE-INCOME COUNTRIES

N/A.

HIGH-INCOME COUNTRIES


VII. HEALTH SYSTEMS

VIII. MULTI-CATEGORY

VII.–VIII., N/A.
Using safe water to prevent cholera infection

Nerline Barthelemy, 11, pumps water at Terre Sonnen, Gonaives, Haiti. © EU/ECHO/Evelyn Hockstein (CC BY-NC-ND 2.0).

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