Title: **Understanding health inequities among transiting migrants within the Middle East and North African (MENA) region through strengthening data systems**

Authors: Ana Requena-Méndez1,2, PhD, Kolitha Wickramage3 PhD, Chiaki Ito4 PhD, Bouchra Assarag5 PhD, Mahmoud Hilali PhD6, Anna Deal7,8, Sara Arias1, Wafa Chemao-Elfihri5 PhD, Sally Hargreaves7 FRCPE, on behalf of the Migrant Health MENA Working Group.

Affiliations:

1. Barcelona Institute for Global Health (ISGlobal, Hospital Clínic-University of Barcelona). Carrer del Rosselló, 132, 08036 Barcelona, Spain.
2. Department of Medicine Solna, Karolinska Institutet. Solnavägen 9, 171 65 Solna, Stockholm (Sweden)
3. International Organization for Migration, Migration Health Division, Global Health Research Unit. Manila. 28th Floor Citibank Tower Condominium 8741 Paseo de Roxas 1226 Makati City, Philippines
4. IOM Regional Office for the Middle East and North Africa (MENA), International Organization for Migration. 47C Abu El Feda Street Zamalek, Cairo, El Cairo (Egypt).
5. ENSP National School of Public Health, Ministry of Health of Morocco. Rue Lamfadel Cherkaoui, Madinat Al Irfane, Rabat BP-6329 (Morocco).
6. Blue Nile National Institute for Communicable Diseases, University of Gezira. Box 101. Wad Medani, Gezira, Sudan
7. The Migrant Health Research Group, Institute for Infection and Immunity, St. George's, University of London, Cranmer Terrace, London SW17 0RE, UK London (United Kingdom).
8. Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, Keppel St, London WC1E 7HT, UK London

**Key words** : Middle East North African region, migrant, health data, information system, infectious diseases, vaccine and preventable diseases.

**Corresponding author:**

Ana Requena-Méndez

Assistant Research Professor

Barcelona Institute for Global Health.

Sten Bergmans Väg 13, 12146, Stockholm, Sweden.

ana.requena@isglobal.org

The Middle East and North African (MENA) region is an area of the world characterised by major health disparities, protracted regional and sub-regional conflicts, and complex mixed-migration flows – with several of the 21 countries in this region simultaneously representing points of origin, transit, and destination for diverse migrant groups [1]. In 2019 alone, 46 million international migrants were recorded in the MENA region (Table 1), including growing populations of internally displaced people (IDPs) and the world’s largest population of forced migrants. Although a large number are dispersed within host communities, many migrants are housed in camps and detention centres often in appalling and inhumane conditions [2]. The recent push to ensure all migrants are included in the COVID-19 response and vaccine roll-out [3] has shone a much needed spotlight on the plight of these populations, who are frequently excluded or on the margins of health and vaccination systems in this region and ­– importantly – excluded from data systems.

Failure to integrate migration variables within health information systems in many countries in the MENA region means that to date, there has been an absence of comprehensive and disaggregated epidemiological data on infectious disease prevalence, outbreaks, and vaccine coverage, making it difficult to map health disparities and inform evidence-based policy and service delivery. There are no data on morbidity or mortality pertaining to COVID-19 among migrant and IDPs for almost all countries in this Region [4]. Yet migrants, we know, may have been be disproportionately represented in cases, hospitalisations, and deaths for COVID-19 and have a range of key risk factors and vulnerabilities for exposure to SARS Co-V-2 stemming from living in overcrowded accommodation, working in high-risk occupations, and facing barriers to health care and the public health response [4,5]. Despite potential increased risk, however, an assessment of national COVID-19 deployment vaccination plans by both World Health Organization (WHO) and the International Organization for Migration (IOM) have shown varying degrees of inclusion of migrants, which is cause for concern [6]. For example, although 11 countries in the MENA region specifically enshrine inclusion of refugees and asylum seekers within national vaccination plans, only seven so far have started implementing vaccine roll-out to these groups. For 12 of 16 countries no data are available on inclusion of IDPs as yet in the vaccine response, with only three countries specifically stating they will include them in national plans. This is despite the fact that WHO, the IOM, the United Nations High Commissioner for Refugees (UNHCR), and others have called for governments to ensure all migrants and refugees are ensured equitable access to COVID-19 vaccines [7–9].

Research by the Migrant Health MENA Working Group exploring datasets on mortality and morbidity for vaccine-preventable diseases, key infections, and non-communicable diseases in the region has highlighted that beyond COVID-19, datasets pertaining to the health needs of migrant populations in this region are, too, notably absent [10]. Studies that do exist highlight major gaps in health provision and poor health status of many migrants, including very low immunisation coverage for routine vaccinations in certain migrant populations. One study investigating childhood immunisation coverage in migrants in Sudan (including BCG, measles, diphtheria, tetanus, and pertussis [DTP], hepatitis B and haemophilus influenzae type b [Hib]) found that only 47% of children aged 12-23 months were fully vaccinated [11]. A study of child IDPs in Sudan (aged 12-23 months), found that only 75% were vaccinated for measles [12]. High mobility in these populations complicates effort to track and record vaccination status within national data systems, and thus to ensure they are aligned them with the host country’s vaccination schedule, which will have immediate implications for the COVID-19 vaccine roll-out. Immunization programmes usually identify and forecast their needs based on national census data, which are unlikely to capture these transiting migrants. Jordan, in its last census, developed a specific information form for non-Jordanians, that has accelerated efforts to ensure refugees and other migrants are officially counted. Specifically in countries including Egypt and Yemen, surveillance of notifiable diseases such as tuberculosis in mobile populations remains poor [13] ­although refugees and displaced people, particularly from Sub-Saharan African countries, are known to have high rates of treatment failure and poor follow up due to their displacement, unstable living conditions, and high levels of poverty [14]. COVID-19, too, has highlighted specific challenges to data sharing between MENA countries experiencing high mobility, with too little emphasis to date placed on ensuring data transparency, sharing of health data and models of best practice, and cross-border surveillance.

A key finding of the recent UCL-*Lancet* Commission on Migration and Health was the urgent need to strengthen routine data collection around migrant health globally to establish an evidence-base, and to define key indicators to facilitate monitoring in migrant populations [15]. Going forward, data monitoring systems need to be developed and embedded into country-level health systems to strengthen routine data collection on migrants globally. The Migrant Health Country Profile tool (MHCP-t), being developed in partnership with academics, country-level partners in North Africa (Algeria, Egypt, Libya, Morocco, Tunisia, Sudan) and Yemen, and the IOM [16], is one such approach funded by the Ministry of Foreign Affairs of Finland. MHCP-t is an innovative digital tool that can collate country- level migrant health data on multiple diseases and vaccination coverage from routine health information systems, disease surveillance systems, national public health registries, demographic and health surveys, health insurance data sets, and other sources for monitoring and surveillance purposes, collated with the specific aim of enabling health ministries to rapidly respond to health needs of diverse mobile populations as they arise. Examples of other innovations include the WHO-EMRO Dynamic Infographic Dashboard being used in Iraq for COVID-19, an interactive tool collating open-access data sets incorporating data on diverse populations [17]. Innovative digital technologies now exist that provide new opportunities to ensure collection and reporting of robust disaggregated datasets on health, yet their success will depend on political commitment and financial support [18].

It will be important to ensure not only that we collect better data on these mobile groups, but that we ensure any health inequities highlighted are translated into meaningful changes in both service delivery and policy to improve their health. Thousands are migrants in this region are without meaningful access to basic acceptable levels of health care (including at present the COVID-19 vaccines alongside access to testing and treatment), and this needs to change. Elimination targets for key diseases and vaccine coverage in this region will not be met if we fail to consider the needs of these groups. Recently, there have been some positive developments and initiatives to include migrants in health systems – for example, sub-Saharan migrants living in Morocco, with high rates of HIV, are now included in the country’s National Strategic Plan on HIV and TB [19], ensuring these migrants can now access services, with health data on these populations routinely collected through national programmes.

Ensuring meaningful inclusion of migrants in health, vaccination, and data systems in countries of the MENA region is now an urgent imperative. Collaboration across academic institutions, United Nations actors, non-governmental organisations, civil society, and community groups will be needed to build research capacity in the region to drive innovation and change. In this regard, there is also a need to strengthen and develop collaborative research networks across the countries of the MENA region to build research capacity. This should include funding opportunities for early and mid-career researchers to support research efforts into migrant and inclusion health, in countries witnessing some of the highest rates of migration globally. The lack of mobility sensitive approaches within data systems have hampered efforts to fully understand the true consequences of COVID-19 on migrants in the MENA region. Going forward strategies will be needed to ensure meaningful inclusion of these groups in health, vaccination, and data systems and the immediate pandemic response, with far reaching implications for the whole region.

**Credit author statement**

Conceptualisation – ARM, SH. Writing ­– original draft preparation: AR, SH, KW (Table). Writing – review and editing: all the authors.

**Funding source**

La Caixa- Novo Nordisk: Mobility – Global Medicine and Health Research - Joint call - 2020 (#0062614)

SH is additionally funded by the Academy of Medical Sciences (SBF0051111), the National Institute for Health Research (NIHR 300072), and ESCMID/ESGITM.

**Ethical approval**

Not required.

**Declaration of competing interest and disclaimer**

SH declares that she is a Trustee for the Global Society on Migration, Ethnicity, Race and Health (GSMERH), and a Task Force Member of the Lancet Migration European Regional Hub. All other authors declare no conflict of interest.

The opinions expressed in the letter are those of the authors and do not necessarily reflect the views of the International Organization for Migration (IOM). The designations employed and the presentation of material throughout the letter do not imply the expression of any opinion whatsoever on the part of IOM concerning the legal status of any country, territory, city or area, or of its authorities, or concerning its frontiers or boundaries.

**Acknowledgments**

We would like to thank Prof. Ghedira (Université de Tunis El Manar) and Dr. Chrifi (ENSP National School of Public Health, Ministry of Health of Morocco (Morocco) and all members of the Migrant Health MENA working group for their inputs.

**REFERENCES**

[1] International Organization for Migration. IOM Middle East and North Africa Regional Strategy 2017–2020. Cairo: 2017.

[2] Human Rights Watch. No escape from Hell. 2019.

[3] Bartovic J, Datta SS, Severoni S, D’anna V. Ensuring equitable access to vaccines for refugees and migrants during the covid-19 pandemic. Bull World Health Organ 2021;99:3-3A. https://doi.org/10.2471/BLT.20.267690.

[4] Hintermeier M, Gencer H, Kahikhina K, Rohleder S, Santos-Hövener C, Tallarek M, et al. SARS-CoV-2 among migrants and forcibly displaced populations: a rapid systematic review. MedRxiv 2021.

[5] Hayward SE, Deal A, Cheng C, Crawshaw A, Orcutt M, Vandrevala TF, et al. Clinical outcomes and risk factors for COVID-19 among migrant populations in high-income countries: A systematic review. J Migr Heal 2021;3:100041. https://doi.org/10.1016/j.jmh.2021.100041.

[6] IOM Supports the UN COVID-19 Vaccination Roll-Out in Yemen | International Organization for Migration n.d. https://www.iom.int/news/iom-supports-un-covid-19-vaccination-roll-out-yemen (accessed May 15, 2021).

[7] The United Nations High Commissioner for Refugees. UNHCR calls for equitable access to COVID-19 vaccines for refugees 2021. https://www.unhcr.org/news/press/2021/4/606d56564/unhcr-calls-equitable-access-covid-19-vaccines-refugees.html (accessed May 23, 2021).

[8] World Health Organization. WHO SAGE ROADMAP FOR PRIORITIZING USES OF COVID-19 VACCINES IN THE CONTEXT OF LIMITED SUPPLY. 2020.

[9] Striving for Equitable Access to COVID-19 Vaccines to Leave No Migrant Behind | International Organization for Migration n.d. https://www.iom.int/news/striving-equitable-access-covid-19-vaccines-leave-no-migrant-behind (accessed April 20, 2021).

[10] Deal A, Arias S, Chemao W, Assarag B, Hassan C, Ouahchi H-A, et al. Immunisation coverage, vaccine delivery and migration in North Africa, and implications for Covid-19 vaccine roll-out amongst migrant populations: A rapid review. Prospero 2021;In press.

[11] Ismail I tibin A, El-Tayeb EM, Omer MDF, Eltahir YM, El-sayed E-TA, Deribe K. Assessment of Routine Immunization Coverage in Nyala Locality, Reasons behind Incomplete Immunization in South Darfur State, Sudan - PubMed. Asian J Med Sci 2024;6:1–8.

[12] Elhadi FE, Ibrahim IA. Measles Vaccination among Children (12 to 23 Months) in IDPs Settlements of Khartoum State, Sudan. Int J Child Heal Nutr 2015;4:000–000.

[13] WHO EMRO. Surveillance of communicable diseases for decision-making in Egypt: 2006–2013. East Mediterr Heal J 2017;23.

[14] Shelli M, Almhalhel F, Alfurjani M. An 8-year Retrospective Study on Trends of Incidence and Treatment Outcome of Bacteriologically Confirmed Pulmonary Tuberculosis in Libya | Insight Medical Publishing. Heal Sci J 2019;13:641.

[15] Abubakar I, Aldridge RW, Devakumar D, Orcutt M, Burns R, Barreto ML, et al. The UCL-Lancet Commission on Migration and Health: the health of a world on the move. Lancet 2018;392:2606–54. https://doi.org/10.1016/S0140-6736(18)32114-7.

[16] International Organization for Migration. « Fostering the health and protection for vulnerable migrants» project Key achievements of the. 2020.

[17] WHO-EMRO. COVID-19 dynamic infographic dashboard. Iraq 2020-2021 2021. https://app.powerbi.com/view?r=eyJrIjoiNjljMDhiYmItZTlhMS00MDlhLTg3MjItMDNmM2FhNzE5NmM4IiwidCI6ImY2MTBjMGI3LWJkMjQtNGIzOS04MTBiLTNkYzI4MGFmYjU5MCIsImMiOjh9 (accessed May 11, 2021).

[18] Cosgriff C V., Ebner DK, Celi LA. Data sharing in the era of COVID-19. Lancet Digit Heal 2020;2:e224. https://doi.org/10.1016/S2589-7500(20)30082-0.

[19] Royaume du Maroc. Mise en œuvre de la déclaration politique sur le VIH/sida. 2015.

Table 1. Selected International and Internal Migrant Data from Countries in WHO MENA Region

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Country** | **International migrants totala** | **Total refugees b,c** | **Asylum seekers with pending applicationsb,d** | **Total IDPs, due to conflict and violencee** | **Total IDPs, due to disasters (as of 31 Dec 2019)e** | **Total number of immigration detainees by yearf**  |
| Afghanistan | 144098 | 72228 | 251 | 2993000 | 1198000 | NA |
| Bahrain | 936094 | 255 | 57 |   |  | 5,710 (2017) |
| Djibouti | 119738 | 19641 | 11153 |  |  | NA |
| Egypt | 543937 | 258401 | 256 | 3200 |  | 3,051 (2014) |
| Iran (Islamic Republic of) | 2797235 | 979435 | 33 |  | 180000 | NA |
| Iraq | 365766 | 273992 | 12938 | 1555000 | 300 | NA |
| Jordan | 3457691 | 693684 | 51305 |  |  | 2,541 (2014) |
| Kuwait | 3110159 | 692 | 1073 |  |  | NA |
| Lebanon | 1712762 | 916156 | 12123 | 7000 | 200 | NA |
| Libya | 826537 | 4739 | 40719 | 451000 |  | 8,672 (2018) |
| Morocco | 102358 | 6656 | 3100 |  |  | NA |
| Oman | 2372836 | 307 | 256 |  |  | 27,837 (2017) |
| Pakistan | 3276580 | 1419606 | 8541 | 106000 | 15000 | NA |
| Qatar | 2226192 | 203 | 100 |  |  | NA |
| Saudi Arabia | 13454842 | 320 | 2331 |  |  | NA |
| Somalia | 58590 | 17883 | 17789 | 2648000 | 600 | NA |
| Sudan | 1379147 | 1055489 | 15545 | 2134000 | 272000 | NA |
| Syrian Arab Republic | 868711 | 16213 | 12069 | 6495000 | 2900 | NA |
| Tunisia | 60145 | 1746 | 1523 | 4 |  | NA |
| United Arab Emirates | 8716332 | 1247 | 7270 |  | 20 | NA |
| Yemen | 387113 | 268511 | 10682 | 3635000 | 400 | NA |
| **a** [dataset]United Nations - Department of Economic and Social Affairs. Population Division. International Migration. 2019 https://www.un.org/en/development/desa/population/migration/data/estimates2/estimatesmaps.asp?0t0; **b** [dataset]UNHCR, 2020 (as of 31 Dec 2019) https://data2.unhcr.org/en/countries/; **c** This figure includes refugees and people in refugee-like situations. **d** According to UNHCR, "asylum seekers are individuals who have sought international protection and whose claims for refugee status have not yet been determined."; **e** [dataset] According to Internal Displacement Monitoring Centre (as of 31 Dec 2019). <https://www.internal-displacement.org>; **f** [dataset] According to The Global Detention Project <https://www.globaldetentionproject.org/countries/> IDP=Internally displaced persons. NA=not available.  |