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| **Author, Title** | **Country/ Region** | **Public Health Emergency the PHEOC specifically responded to** | **Study design & data collection methods** | **Results Question 1. Role of PHEOC in responding to a public health emergency** | **Question 2. Factors influencing the effective use of a PHEOC when responding to a public health emergency (Barriers and Enablers)** |
| Aceng, J. R., et al. (2020). "Uganda's experience in Ebola Virus Disease virus disease outbreak preparedness, 2018-2019." Globalization and Health 16(1). | Uganda, Africa | Ebola Virus Disease Virus | Descriptive | 2018 - A PHEOC was activated to prevent and limit the spread of Ebola Virus Disease into Uganda. The PHEOC was used to coordinate preparedness efforts, mobilize resources, and assist with field activities | Barriers - Protracted time in responding to PHE events.  Enablers - Multi-sectoral and multidisciplinary national and district task forces; Technical subcommittees for each preparedness pillar; Experience with previous EVD outbreaks; support from partners. |
| Alabbadi, H. and S. Al-Masaeed (2020). "The impact of ICT on coronavirus crisis management case study: National center for security and crises management in Jordan." Journal of Theoretical and Applied Information Technology 8(10): 3128-3138. | Jordan | COVID-19 | Case Study - Survey of employees with direct relationship to ICT in response to COVID-19 | The National Center for Security and Crises Management was used to manage COVID-19 | Barriers - Databases were not adequate for addressing crises efficiently and effectively. Learned lessons from previous crises needed to be addressed; early warning and forecasting; collecting and analysing crisis indicators and developing plans needed to be improved.  Enablers - Latest information technology used in the field |
| Balajee, S. A., et al. (2017). "Sustainable model for public health emergency operations centers for global settings." Emerging infectious diseases 23(Suppl 1): S190. | US CDC, Vietnam, Cameroon | Multiple PHE | Descriptive - case study | Vietnam - A national PHEOC was established 2013 within the Ministry of Health. The PHEOC has been used to manage responses to and risk assessments of several public health emergencies, including a nationwide measles outbreak, preventing potential Ebola Virus Disease Virus Disease and Middle East Respiratory Syndrome, and emergence of Zika virus infection.  Cameroon - A PHEOC was established to improve outbreak coordination, management and response following incident management training. Activated in 2016 in response to an avian influenza A virus (H5N1) outbreak to enable the early case detection, rapid response to interrupt human transmission, and oversee case management. The PHEOC has prepared for Lassa fever and Zika outbreaks; responded to outbreaks of cholera, measles, monkeypox and avian influenza; and preventively activated for wild poliovirus. | Barriers - Expense related to maintaining a freestanding, constantly staffed PHEOC with a large dedicated workforce.. The ability to scale up human and technical resources. Challenges with surveillance and outbreak response due to fragmented data streams making it hard to access and use raw data in a timely manner. Small workforce for surveillance and response-related activities. Poor outbreak coordination leading to slow responses. Limited public health resources; a time lag in data availability from districts because of manual collection and reporting of data and limited information systems capacity to collect and analyze information from diverse data sources.  Enablers - Tailoring the development of PHEOC policies and operating procedures specific context of the country’s existing legislative background. Engaging Cameroon’s Field Epi Trained Program staff critical in designing country’s PHEOC. Cooperation and stakeholder engagement crucial for coordination.  PHEOC being physically and administratively close to or within the epidemiology or surveillance departments of the ministry of health.  “Rotating FETP trainees through the PHEOCs provides the epidemiologic workforce needed for analysis and interpretation of surveillance data”.. Having an “always on” PHEOC to facilitate rapid transition to response mode during outbreaks, ensures sustained technical capacity for data analyses, interpretation.  Each PHEOC must be tailored to the legislative context in which it is situated. |
| Bousso, A. (2019). "Health emergency operation centers implementation challenges in Africa." Pan African Medical Journal 33. | Africa - Senegal | Ebola Virus Disease | Descriptive | The HEOC provides response and pre-crisis assistance (risk mapping, rapid response teams, training). | Enablers - Strong ministry of health leadership; Clear government understanding of the role of EOCs; Capacity to coordinate the whole of health response to a PHE; Clear legal authority through ministry of health; Clear boundaries of the role of a HEOC |
| Brooks, J. C., et al. (2016). "Incident Management Systems and Building Emergency Management Capacity during the 2014-2016 Ebola Virus Disease Epidemic - Liberia, Sierra Leone, and Guinea." Mmwr-Morbidity and Mortality Weekly Report 65: 28-34. | Africa - Liberia, Sierra Leone, and Guinea. | Ebola Virus Disease | Descriptive | Interim national EOC established in 2014 in response to EVD. Permanent EOC established in 2015 to coordinate activities and streamline communication among staff working in various technical areas. In 2015 supported measles vaccination campaign in country. Sierra Leone - CDC helped build system capacity and training. | Enablers - Real-world use of IMS most effective way to demonstrate its value to then request additional resources  Barriers - Progressing beyond basic staff, systems, and infrastructure, and integrating capacities into a sustained and functional operation particularly in a resource limited setting. Balancing long-term capacity building with immediate response actions proved challenging. Turnover of deployed staff and the lack of standardized definitions within and across domains "led to inconsistent interpretation of the indicators". |
| Delaney, A. (2020). "The politics of scale in the coordinated management and emergency response to the COVID-19 pandemic." Dialogues in Human Geography 10(2): 141-145. | US and Ireland | COVID-19-19 | Descriptive | A National Public Health Emergency Team was established to help government decision-making as well as COVID-19-19 response. | Enablers - Centralizing decision-making reduced party politics |
| Demirbilek, Y., et al. (2020). "COVID-19 outbreak control, example of ministry of health of Turkey." Turkish journal of medical sciences 50(SI-1): 489-494.A38 | Turkey | COVID-19 | Descriptive | Public Health Emergency Operation Center within the Ministry of Health established to respond to COVID-19. | Not mentioned in article |
| Ding, F., et al. (2020). "The Practice of Public Health Emergency Operations Center (EOC) The Operations of Chinese Center for Disease Control and Prevention (China CDC)’s EOC." | China | Multiple PHE | Descriptive | 2016 - official PHEOC (part of China CDC) was established. Used to respond to H7N9 avian infectious disease outbreak, earthquake, plague (Madagascar), flood, vaccine, polio virus. In response to COVID-19 cases in Wuhan, China, a "Central Leadership Group for Epidemic Response and the Joint Prevention and Control Mechanism of the State Council" were established to help the response. | Enablers - Having a comprehensive plan combining an emergency operation plan and PHEOC plan- contains the incident management and the standardized response procedures. Having “always on” EOC helps the rapid transition to response model during outbreaks and improves the cost-effectiveness of infrastructure, helps sustain technical capacity for data analyses, interpretation, and visualization tools and equipment. Having logistics support coordination of data within EOC; Well-trained staff for EOC operation. |
| Elachola, H., et al. (2016). "Public health emergency operations center - A critical component of mass gatherings management infrastructure." Journal of Infection in Developing Countries 10(8): 785-790. | United States | Mass Gathering | Descriptive | Assisted in detecting emerging health issues to" carry out an effective response" and "to enable collaboration and partnerships with multiple ministries beyond the authority of the health ministry under a single command structure" when responding to mass gatherings. | Barriers - Online EOC reliability and security of technology  Enablers – Located a facility away from risk, in a safe building; having backup systems – not technology dependant eg generators, essential supplies; open design; multiple communication systems |
| Hinjoy, S., et al. (2020). "Self-assessment of the Thai Department of Disease Control's communication for international response to COVID-19 in the early phase." International Journal of Infectious Diseases 96: 205-210. | Thailand | COVID-19 | Descriptive - Cross sectional survey & document Review | TPHEOC first activated in the Department of Disease Control, Ministry of Public Health in response to suspected cases of COVID-19 in Wuhan, and later established at the Office of the Permanent Secretary, MOPH. | Barriers - All information required approval from the Incident Commander before release at an international level creating a bottleneck  Enablers - ASEAN EOC Network served as a beneficial tool for addressing COVID-19 through sharing of information across the region |
| Huang, I. Y. F. (2020). "Fighting COVID-19 through Government Initiatives and Collaborative Governance: The Taiwan Experience." Public Administration Review 80(4): 665-670. | Taiwan | COVID-19 | Descriptive | The NHCC is designed to respond to large outbreaks swiftly and acts as a nerve center to mobilize resources, coordinate personnel, and provide advice guidelines during pandemics. Activated to respond to COVID-19. | Not mentioned in article |
| Iskander, J., et al. (2017). "Science in Emergency Response at CDC: Structure and Functions." Am J Public Health 107(S2): S122-s125. | United States | Multiple PHEs | Descriptive | EOC provides a "physical locus for response coordination and response coverage for clinical or public health inquiries. The Incident Management System facilitates coordination of staff and expertise across multiple organizational components of CDC, each of which has its own specialized programs and areas of public health practice". | Enablers - Research informed shorter-term response objectives, including development of diagnostic tests |
| Kim, Y., et al. (2020). "From Uncoordinated Patchworks to a Coordinated System: MERS-CoV to COVID-19 in Korea." American Review of Public Administration 50(6-7): 736-742. | South Korea | Multiple PHEs | Descriptive | KCDC established the Central Epidemic Control Headquarters with a confirmed case of COVID-19 in Korea. The KCDC is the central disease control headquarters and leads the COVID-19 response | Barriers - "Assessing the emerging COVID-19 virus accurately & governments ability to perform as described in the plan" in an evolving situation. The interpretation of the national plan and jurisdictional rules. Different organizational interpretations of the IMS  Enablers -"Having revised national guidelines enhanced critical capacity in the response system. Having a national plan that clearly articulates the crisis levels and the organizational response, as well as the government’s ability to implement the plan". Having a unified command and control and critical crisis and support functions. The ICS reduced conflicts over critical issues, "such as risk information release, which was one of the major criticisms of the MERS-CoV response". |
| Kouadio, K., et al. (2016). "Polio infrastructure strengthened disease outbreak preparedness and response in the WHO African Region." Vaccine 34(43): 5175-5180. | Africa | Polio | Descriptive - document review | The national polio EOC model was used to respond to the Ebola Virus Disease outbreak in Nigeria. EOC provided strong government leadership and ownership. | Enablers - Active participation of EPI team leaders in the EOC from partner agencies "fast-tracked coordination, decision-making and implementation of planned activities". |
| Mobula LM et al., 2020. Recommendations for the COVID-19 response at the national level based on lessons learned from the Ebola Virus Disease virus disease outbreak in the Democratic Republic of the Congo. Am J Trop Med Hyg 103: 12–17 | Republic of Congo | Ebola Virus Disease | Descriptive | "A multi-sectoral national committee under the leadership of the ministry of health and technical secretariat" coordinated the COVID-19 response. "Command and control of operations were centralized in Goma, with decentralized sub-coordination at the health zone level". | Enablers - "Using a multisectoral, and real-time monitoring system that maintained situational awareness to evaluate short- and medium-term impacts of activities". Using an incident management system, strengthened clarity on roles and responsibilities and helped improved "span of control and chain of command". |
| Nachega, J. B., et al. (2020). "Responding to the Challenge of the Dual COVID-19 and Ebola Virus Disease Epidemics in the Democratic Republic of Congo-Priorities for Achieving Control." Am J Trop Med Hyg 103(2): 597-602. | DRC Africa | COVID-19 and Ebola Virus Disease | Not mentioned in article | A multi-sectoral national committee was established following the diagnosis of the first confirmed cases using lessons learned from the tenth EVD outbreak. | Enablers - Using the Ebola Virus Disease standard operating procedures (SOPs) enhance the pace of developing and updating COVID-19 SOPs. |
| Neupane, H. C., et al. (2020). "COVID-19 and nepal: Identification of critical public health measure." Journal of the Nepal Medical Association 58(225): 355-359. | Nepal | COVID-19 | Not mentioned in article | A COVID-19 Crisis Management Centre was established in response to a confirmed case in Nepal, under the Coordination Committee on Prevention and Control of Novel Coronavirus. | Not mentioned in article |
| Nyenswah, T. G., et al. (2016). "Ebola Virus Disease and Its Control in Liberia, 2014-2015." Emerg Infect Dis 22(2): 169-177.A15 | Liberia, Africa | Ebola Virus Disease | Descriptive | An Incident Management System (IMS) was implemented with an incident manager devoted exclusively to Ebola Virus Disease. The IMS then moved into an emergency operations center, a location for coordination and oversight of all operations. | Enablers - Streamlined management, clear authority and accountability and structured working groups.  Barriers - competing demands leading to missed opportunities to conduct research |
| Okeibunor, J., et al. (2016). "Coordination as a best practice from the polio eradication initiative: experiences from five member states in the African region of the World Health Organization." Vaccine 34(43): 5203-5207. | Africa | Polio | Descriptive | Nigeria - Emergency Operations Center (EOC) set up to improve coordination of government and partners at the national and state levels focused on polio eradication. The National EOC was established in October 2012 and developed the national Polio Eradication Emergency Plan. | Enablers -Not mentioned in article  Barriers - Movement of staff from other programs to operate the EOCs potentially leading to gaps in the operation of other public health programs. |
| Olu, O. O., et al. (2016). "Incident Management Systems Are Essential for Effective Coordination of Large Disease Outbreaks: Perspectives from the Coordination of the Ebola Virus Disease Outbreak Response in Sierra Leone." Front Public Health 4: 254. | Sierra Leona, Africa | Ebola Virus Disease | Descriptive | Detailed in Okeibunor et al (2016) | Barriers - Lack of resources and technical know-how on emergency operations. Bureaucratic decision-making, lack of executive power; and low thresholds for the disbursement of available funds. Combining technical and operational coordination under one coordination structure often "overwhelmed the capacity of the EOC". Multiple EVD information sharing channels and situation reports, different data sources/guidelines leading to disagreements between partners and poor use of data to guide the response. Poor coordination, mobilization, and deployment of resources. Difficulties estimating available logistics, supplies, and essential medicines leading to inaccurate forecasts of essential medicines.  Enablers - Strong government leadership and ownership, a common vision, good management processes, and a shared strategy and priorities between all involved stakeholders. |
| Otu, A., et al. (2017). "An account of the Ebola Virus Disease virus disease outbreak in Nigeria: implications and lessons learnt." BMC Public Health 18(1): 3. | Nigeria, Africa | Ebola Virus Disease | Exploratory; key informant in-depth interviews | The Emergency Operations Centre set up by the Lagos State Government to respond to Ebola Virus Disease | Barriers - The need for an emergency response framework: “The response team comprised of several groups but there was no formal working agreement which brought about problems of ownership, accountability and working limits.”  Enablers - EOC coordinated the support of the international community |
| Ross, E. (2017). "Command and control of Sierra Leone's Ebola Virus Disease outbreak response: evolution of the response architecture." Philos Trans R Soc Lond B Biol Sci 372(1721). | Sierra Leone, Africa | Ebola Virus Disease | Qualitative; Semi-structured and unstructured telephone and/or face-to-face interviews | 2014 - EOC was established by the MOHS as the response command and control centre in response to Ebola Virus Disease. The EOC was later replaced by a National Ebola Virus Disease Response Center. District level EOCs were eventually established "after proof of command and control success". | Barriers - Lack of strategic planning; in-fighting within the MOHS, and over funds; served mainly as a "technical review board for standard operating procedures for the technical pillars - its coordinator was not empowered with a mandate to hold the various ministries to account". Lack of data sharing; "Timely dispensing of funds"'; bureaucracy and auditing requirements; each partner had its own strategy, not always aligned with the NERC’s plans. Cultural differences between "military and civilian responders", and "between those who normally work in development and those who work on humanitarian emergencies, and sometimes there was a resistance to adapting".  Enablers - Applying political leverage in quiet circles e.g. strategic CC’ing of emails resulted in problems getting resolved. Understanding patron–client relationships by "building the political capital to apply the right political levers to clear blockages". |
| Standley, C. J., et al. (2020). "Leveraging Partnerships to Maximize Global Health Security Improvements in Guinea, 2015-2019." Health Secur 18(S1): S34-s42. | Africa/US | Ebola Virus Disease | Descriptive | 2014 - National EOC was established in response to Ebola Virus Disease outbreak (2014-16). Emergency management experts from CDC and PHAC staffed the national emergency operations center and mentored the ministry of health staff until the end of the Ebola Virus Disease response. | Enablers - Efficiency in improving communication and coordination prompted establishment of permanent EOC. Understanding political landscape. "At nearly every level, personalities and personal relationships appeared to be key to the functioning of the response". Training staff strengthened capacity. "Cooperative agreement partners collating and sharing information from many parallel meetings enhanced sustainability and ownership by the national government". "Participation of implementing partners in meetings to develop IDSR tools made it easier for all stakeholders to understand the importance and meaning of each field of information and provide quality training for implementation". |
| Su, Y. F., et al. (2017). "Public Health Emergency Response in Taiwan." Health Secur 15(2): 137-143. | Taiwan | Multiple PHEs | Descriptive; Reviewing JEE, response framework and organisational structure | 2005 - the National Health Command Center (NHCC) was built and established as Taiwan’s Public Health Emergency Operation Center (PHEOC). The Central Epidemic Command Center is part of the NHCC, has responded to dengue fever, enterovirus, novel influenza A virus infections (H1N1, H7N9), rabies, and Zika virus infection. | Not mentioned in article  Barriers - "As response strategies and measures may vary by disease, some response staff may not have a clear understanding of their duties or appropriate responses, which may reduce the efficiency of response operations during emergencies". No SOP's leading to uncertainty around role |
| Undurraga, E. A., et al. (2017). "Potential for broad-scale transmission of Ebola Virus Disease virus disease during the West Africa crisis: lessons for the Global Health security agenda." Infectious diseases of poverty 6(1): 159. | Africa | Ebola Virus Disease | Analytical and Descriptive; Modelling & Case Study | The Nigerian government, in collaboration with CDC and other partners, rapidly created an incident management system and utilized an Emergency Operation Center (EOC) to support the polio eradication initiatives. | Enablers - Having an already established EOC enabled ready access to trained staff and financial resources within the health system and from partner agencies. |
| Vaz, R. G., et al. (2016). "The Role of the Polio Program Infrastructure in Response to Ebola Virus Disease Virus Disease Outbreak in Nigeria 2014." J Infect Dis 213 Suppl 3(Suppl 3): S140-146. | Nigeria, Africa | Ebola Virus Disease | Descriptive case study | National Polio Emergency Operations Center (EOC), established 2012, allows for all government agencies, international agencies, local nongovernmental organizations, and the private sector to work collaboratively on strategy, situational awareness, operations and communication. | Enablers - Using lesson learned, personnel, existing SOP’s and coordination mechanism of polio outbreak assisted with establishing EOC to address EVD; . Strong partnership between government and development partners and other nongovernmental organizations, ensured collaboration and expertise in mobilizing finances for EVD response. "Informed decisions were quickly reached by the EEOC from data and information gathered using the mobile data devices". Leadership from government at the federal and state levels through the coordination of EEOC. Technologies such as geographic information systems resulted in successful contact tracing. |
| Yang, T. U., et al. (2020). "How lessons learned from the 2015 MERS outbreak affected the effective response to the COVID-19 epidemic in the Republic of Korea." The Korean Journal of Internal Medicine. | South Korea | COVID-19 | Descriptive case study | Emergency Operation Center in the Korea Centers for Diseases Control and Prevention (KCDC) established and run 24/7 since 2016. | Enablers - "Legislation was amended to allow for a rapid response team to be organised and deployed in the event of an incident"; elevating MOH director to a high level improved coordination between different levels of government; strong IT support to help with tracing. |
| Yao, M. N. (2017). "A Multi-Level and Multi-Sectoral Coordination for an Effective Response to the Cholera Outbreak in Central African Republic." Prehospital and Disaster Medicine 32(S1): S78-S79. | Central African Republic | Cholera | Descriptive - case study | The Public Health Emergency Operation Center was set up (COUSP) to provide technical response to a cholera outbreak. . | Enablers - Having strong technical and operational coordination contributed to mobilising resources and guided the response. |
| United States Department of Homeland Security/Federal Emergency Management (FEMA); Coordinating the Federal Response. https://www.dhs.gov/coronavirus/federal-response | United States | Multiple PHEs | N/A | FEMA activated the National Response Coordination Center to respond to COVID-19 in the United States. This a multi-agency center that coordinates the overall federal support for major incidents and emergencies. | Not mentioned in article |
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| The United States, Centers for Disease Control and Prevention; CDC support for emergency operations centers. https://www.cdc.gov/cpr/eoc/cdcsupport.htm | United States | Multiple PHEs | N/A | The US Centers for Disease Control and Prevention’s EOC coordinates resources, information, training, and crisis and emergency risk communication to strengthen the nation’s ability to detect and respond to public health threats. The incident management system has been activated continuously since December 2011. | Not mentioned in article |
| Pan American Health Organization; Emergency Operations Center; www.paho.org/en/health-emergencies/emergency-operations-center | United States | Multiple PHEs | N/A | PAHO EOC provides a centralized location to coordinate the organisations overall response to ensure that it is timely and effective through the mobilisation of resources, management of information, coordination and control of health related emergency operations and activities. | Not mentioned in article |
| Centre for Disease Control and Prevention, Global Health; Nigeria: How Being Prepared Avoided a Tragedy; https://www.cdc.gov/globalhealth/security/stories/nigeria-prepared-for-outbreaks.html | Nigeria | Multiple PHEs | N/A | Lagos Emergency Operations Center was set up in 2014 to address the polio outbreak, then used to respond to Ebola Virus Disease | Enablers - The EOC had experienced polio staff with extensive experience in Nigeria who knew the key Ministry of Health officials, and understood the strengths and weaknesses of the nation’s health system. Having a local EOC in place allowed for better coordination and a rapid and effective response. Staff were trained. |
| WHO, Senegal; Senegal: Emergency Operations Center Becomes a Model in West Africa; www.cdc.gov/globalhealth/security/stories/senegal\_eoc\_west\_africa.html | Senegal, Africa | Multiple PHEs | N/A | US Centers for Disease Control and Prevention worked with Senegal’s Ministry of Health to establish the country’s first emergency operations center as a result of the first case of EVD in Senegal, 2014. The PHEOC has been utilized to respond to a chikungunya outbreak and manage Senegalese casualties in the Hajj Stampede. | Enablers - Having an active EOC helps with preparedness for a PHE. |
| [WHO, Sierra Leone; Sierra Leone: Committed Leaders Build Robust Public Health Emergency Management System; www.cdc.gov/globalhealth/healthprotection/fieldupdates/fall-2016/sierra-leone-public-health.html](http://www.cdc.gov/globalhealth/healthprotection/fieldupdates/fall-2016/sierra-leone-public-health.html) | Sierra Leone, Africa | Multiple PHEs | N/A | PHEOC was separate to the National Ebola Virus Disease Response Centre (NERC) in responding to Ebola Virus Disease. In 2015, the NERC transitioned to the PHEOC at the ministry of health. From 2016, the PHEOC led all PHE responses. | Enablers - Having coordinated systems and information flow; Utilising CDC PHEM Fellowship training to build capacity |
| WHO, Thailand; The Ministry of Public Health and the World Health Organization Review Thailand’s COVID-19 Response; www.who.int/thailand/news/detail/14-10-2020-Thailand-IAR-COVID-1919 | Thailand | Multiple PHEs | N/A | The EOC was activated in the Department of Disease Control (DDC), Ministry of public health (MOPH) within a few days of the report of a cluster of pneumonia cases in Wuhan, China, and later established at the Office of the Permanent Secretary, MOPH and in all Provinces. | Enablers - Previous experience with other PHEs; early activation of the EOC and IMS |
| WHO, China; Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-COVID-19-final-report.pdf | China | COVID-19 | N/A | Upon the detection of a cluster of pneumonia cases of unknown aetiology in Wuhan, the CPC Central Committee and the State Council launched the national emergency response. A Central Leadership Group for Epidemic Response and the Joint Prevention and Control Mechanism of the State Council were established. | Not mentioned in article |
| Centers for Disease Control and Prevention, Vietnam; Vietnam: Connecting for stronger Emergency Response; www.cdc.gov/globalhealth/security/stories/vietnam\_emergency\_response.html | Vietnam | Multiple PHEs | N/A | Vietnam ‘inaugurated’ its national EOC in February 2015. The EOC has been activated for emergency preparedness during the Ebola Virus Disease outbreak in West Africa, the MERS-CoV outbreak in South Korea, and the Zika outbreak in South America and Vietnam. | Enablers - Having a national network of EOCs to act as nerve centers for epidemic intelligence, sharing and collecting data. Having a data visualization dashboard for the EOC network to decide how and when to deploy resources. |
| Taiwan Centers for Disease Control; IHR JEE Report of Taiwan; https://www.cdc.gov.tw/En/InfectionReport/Info/g6GB-Fg4GqQRYhF8jHY7Gw?infoId=opt6dfR9IEfG-IMY0BrR9A | Taiwan | Not mentioned in article | N/A | Taiwan has a national EOC. The Central Epidemic Command Center is the EOC for significant PHEs. EOC is used for response, surveillance; training and exercises also conducted. | Enablers - A network of EOCs - at regional and local level, feeds up information to national EOC |
| [Association of South East Asian Nations; ASEAN EOC Newsletter; https://asean.org/wp-content/uploads/2017/02/OCTOBER-NEWSLETTER-final-2.pdf](https://asean.org/wp-content/uploads/2017/02/OCTOBER-NEWSLETTER-final-2.pdf) | Thailand | Not mentioned in article | Not mentioned in article | Bureau of Health Emergency Response as part of Ministry of Health, established in 2012 and approved as a formal organization on April 2017 as a public health emergency operations center. | Not mentioned in article |
| Association of South East Asian Nations; ASEAN EOC Newsletter; https://asean.org/wp-content/uploads/2017/02/SEPTEMBER-NEWSLETTER-final.pdf | Philippines | Not mentioned in article | Not mentioned in article | In 1992, the Disaster Management Unit (now Health Management Bureau) was established as a nerve center to process and facilitate information and mobilize resources in response to emergencies and disasters. | Not mentioned in article |
| Saudi Arabia Ministry of Health. The Kingdom of Saudi Arabia’s experience In Health Preparedness and Response to COVID-19 pandemic. https://www.moh.gov.sa/en/Ministry/MediaCenter/Publications/Documents/COVID-19-NATIONAL.pdf;  MOH: Mina's EOC Helped Save Lives of Tens of Stampede Victims 2015 [Available from: https://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2015-09-25-007.aspx. | Saudi Arabia | Multiple PHEs | N/A | The National and Regional Command and Control Centers, through the Ministry of Health coordinates PHE response. This center activated a COVID-19 preparedness and response plan; coordinates communications, surveillance, information, resource allocation and educational activities to prevent and control possible COVID-19 events. An EOC was also established to coordinate the response to Hajj, including the Mina Stampede. | Not mentioned in article |