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Monkeypox

Current status in West and Central Africa

Report of a WHO Informal Consultation Geneva, Switzerland, 3 November 2017



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Table of Contents

EXECUTIVE SUMMARY	5
BACKGROUND	6
RATIONALE	7
MEETING OBJECTIVES	7
CURRENT STATUS OF MONKEYPOX DISEASE	7
DISEASE CONTROL AND OUTBREAK RESPONSE	8
Epidemiology and surveillance challenges	9
Epidemiology and surveillance recommendations	9
Clinical challenges:	
Clinical Recommendations:	
Laboratory challenges:	
Laboratory Recommendations:	11
Laboratory Capacity And Networking	11
Operational and ecologic research	
SUMMARY AND CONCLUSIONs	13

EXECUTIVE SUMMARY

Monkeypox is an emerging viral zoonosis with symptoms similar to those observed in smallpox patients, although less severe. Since the global eradication of smallpox in 1980, monkeypox has emerged as the most important orthopoxvirus in humans. The Advisory Committee on Variola Virus Research (ACVVR) which meets annually to oversee smallpox research has highlighted the importance of diagnostics that could distinguish between variola and other strains of orthopoxviruses, including monkeypox virus. The ACVVR encourages the positive effects of current smallpox research on all orthopoxviruses, specifically monkeypox, such as the development of diagnostic tools.

On 3 November 2017, WHO hosted an informal consultation on monkeypox in Geneva which brought together Ministries of Health of affected West and Central African countries, AFRO and country office staff, global health partners and orthopoxvirus experts to discuss the current situation, state of knowledge, identify needs and address critical gaps and challenges in combatting monkeypox outbreaks.

Through the course of the one-day monkeypox meeting a variety of next steps were agreed upon. It was decided that a follow-up monkeypox meeting will be convened in 2018 in the African region. The meeting will include a training workshop on a newly updated monkeypox field manual to ensure district surveillance officers, laboratory technicians and clinicians have the necessary tools and are adequately trained to collect samples and manage cases. The monkeypox field manual will be developed in collaboration between WHO, CDC and Ministries of Health in the endemic countries and will include practical guidance on surveillance, case definitions, data and reporting requirements; sample collection, storage and transport; clinical case management, the use of personal protective equipment, risk communications, messaging and preventive actions, and overall disease outbreak and response guidance.

The importance of cross-border collaboration along with a one-health approach to disease management and response was highlighted. Research needs to be conducted on a number of topics in order to improve the knowledge base including understanding the animal reservoir and ecology of the disease, disease dynamics, and natural history of disease. In addition, vaccination and therapeutics require further research to enhance their application for public health interventions. Of utmost critical importance is the strengthening of laboratory capacity to identify and detect monkeypox and other orthopoxviruses within endemic countries and the region as a whole. Finally, only with improved surveillance, clinical detection, and case management capacities can there be effective control of further spread and emergence of monkeypox.

BACKGROUND

Monkeypox is a re-emerging zoonotic infectious disease which appears to becoming more entrenched and widespread in regions where it has not been detected for decades. The virus was first identified as a naturally-occurring agent of human disease in 1970 in the Democratic Republic of Congo (DRC, formerly Zaire), and was subsequently documented in other countries of West and Central Africa. With the eradication of smallpox and subsequent cessation of routine smallpox vaccination in 1980, human monkeypox was extensively studied in DRC and was found to be a zoonotic virus (unlike variola virus which causes smallpox) with the ability for limited transmission from human to humans.

During the last five decades the majority of human infections have been reported from DRC where it is a reportable disease and now more than a thousand cases are reported annually. Prior to 2000, reports of human monkeypox outside of DRC were sparse—with 21 cases reported from 7 countries in West and Central Africa – most reported in the 1970's and 1980's. Since 2016, confirmed human monkeypox cases have been reported from Central African Republic, DRC, Liberia, Nigeria, Sierra Leone, and Republic of Congo. Many of these countries have not reported cases previously for several decades. Nigeria is currently facing the largest documented outbreak of West African monkeypox with 197 suspected cases and 68 confirmed cases. In addition, infections in wild and/or captive animals have also been detected in Cameroon, Cote d'Ivoire, and DRC, suggesting the risk of zoonotic transmission to humans from locally circulating virus.

The continued, intense focus of monkeypox transmission in DRC along with increasing numbers of human and animal infections several countries in West and Central Africa, underscores the urgent need for coordination of disease prevention, detection and response efforts. Human monkeypox is often reported from highly forested areas where the populations are dependent on bushmeat as a protein source. The hunting and preparation of bushmeat are human risk factors for infection. This cultural aspect requires specific health promotion and prevention messages well as coordination with animal health authorities. The geographic breadth of areas at risk for zoonotic transmission raises the possibility of disease importation to non-endemic but susceptible regions; this has been documented before in South Sudan with human cases attributed to viral movement from DRC. Most areas at-risk for monkeypox have under-resourced health services; many are also active sites of conflict and civil disturbance.

There are two distinct clades of the virus: West African Clade with a case fatality rate in unvaccinated individuals of less than 1% and the Central African Clade which can have a case fatality rate up to 11%. The incubation period is between 5-13 days and to date there is no licensed pathogen-specific treatment. Smallpox vaccine, as studied in the 1980s in DRC (administered 3-19 years previously) appears to be 85% protective to prevent disease acquisition in household contacts of a case.

RATIONALE

The WHO Advisory Committee on Variola Virus Research (ACVVR) that meets annually to oversee smallpox research has highlighted the importance of diagnostics that could distinguish between variola and other strains of orthopoxviruses, including monkeypox. The ACVVR encourages the positive effects of current smallpox research on all orthopoxviruses, specifically monkeypox, which remains endemic in certain parts of Africa.

WHO convened an informal consultation on 3 November 2017 in Geneva to discuss progress on and coordination of human monkeypox disease surveillance and response in West and Central Africa. Regional approaches to augmenting disease prevention and control will be discussed along with defining future research priorities and establishing laboratory capacities.

MEETING OBJECTIVES

The purpose of this meeting was to review the current status and state of knowledge of monkeypox in West and Central Africa and to discuss optimization of outbreak prevention and control strategies in order to mitigate further emergence and spread of this disease. Emphasis was placed on ongoing surveillance efforts, risk and ecological niche mapping, expansion of laboratory testing capacities, case management and disease control, and identification of research priorities.

Outcomes of the meeting included:

- Review current status of monkeypox epidemiology in affected African countries to enhance understanding among all partners and affected countries
- Discuss options for sharing of information, knowledge, resources and technical support to improve coordination among partners and affected countries
- Improve situational awareness of the geographical and epidemiological aspects of the disease and describe elements of a risk map
- Describe current and future research requirements as they related to prevention and control activities
- Develop a working roadmap to enhance prevention and response to monkeypox outbreaks

CURRENT STATUS OF MONKEYPOX DISEASE

In 2017 cases of monkeypox have been confirmed in Central African Republic, Democratic Republic of Congo, Liberia, Nigeria, Republic of Congo, and Sierra Leone. A brief overview of the epidemiological situation was provided by all countries with the exception of Sierra Leone and Liberia (who were not able to attend the meeting).

Below is a broad summary of key challenges endemic countries face – some are universal while other challenges are very specific to individual countries.

Some of the key programmatic and operational challenges in responding to the emergence of monkeypox include the following:

- Many affected countries do not have well-functioning disease surveillance systems which can hamper early detection and response
- Lack of knowledge about monkeypox in some countries, including at the national level
- Inadequate or inappropriate specimen collection and associated case information in order to confirm disease
- Animal surveillance, particularly related to wildlife (including bushmeat) is not systematically performed in affected countries
- Laboratory surveillance systems for testing and confirmation of disease is limited. Prior to 2017, regional laboratory capacity was only available at Pasteur Institute Bangui and National Institute for Biomedical Research, DRC.
- Systems for shipment of samples (domestic and international) for diagnostic testing are inadequate
- Seasonal nomadism, refugee movement and cross-border economic movement between and across borders impacts surveillance and hinders implementation of appropriate public health control measures.
- The cadre of trained public health professionals is limited and, although training schemes have started in some countries, it will take time to build sufficiently critical mass to build a robust programme of activities.
- Lack of availability of health care isolation areas and appropriate personal protective equipment in remote, rural areas where cases occur
- Stigmatization of monkeypox patients results in patients refusing to seek care, to be isolated and even escaping from health centres.
- Cost of care at health clinics, lack of specific treatments, and fear about the outcome are also deterrents to seeking health care
- Countries rely heavily on NGOs or polio programme team members for ad hoc surveillance and response which results in irregular activities
- Geographic access to areas where monkeypox cases occur can be difficult which

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