Federal Ministry of HEALTH & SOCIAL WELFARE
Federal Republic of Nigeria

NCDC
NIGERIA CENTRE FOR DISEASE CONTROL AND PREVENTION

FMAFS
FEDERAL MINISTRY OF AGRICULTURE AND FOOD SECURITY

FEDERAL MINISTRY OF ENVIRONMENT

ANNEXES

One Health Risk Communication & Community Engagement Training for Public Health and Media Practitioners

April 2023

USAID
FROM THE AMERICAN PEOPLE

Breakthrough ACTION
FOR SOCIAL & BEHAVIOR CHANGE

Table of Contents

ANNEX 1: TOOLS FOR FACILITATORS

The materials in Annex 1 are not for distribution to participants. They consist of:

- The Material Checklist, which provides a list of all materials needed for the training including copies of each handout and list of flip charts to prepare in advance.
- Module checklist.
- The Pre/Post Test Score sheet.

MATERIAL CHECKLIST

Note: The number of copies needed is based on a training group of 24 participants, 4 facilitators, and 2 co-facilitators. Adjust as needed for your group. Please review this checklist before printing any materials front-to-back.

Material	# of Copies Needed	Comments
Facilitator's Training Manual	1 per facilitator (6)	Provide for participants (total is 30)
Annex to Training Manual	1 per facilitator (6)	Provide for participants (total is 30)
Presentation Slides *(optional)*	2 per training	Save on a flash drive
Handout 1: *Character Cards*	6 copies – cut in advance	Cut in pieces in advance
Handout 2: *Agenda*	1 per person (30)	Provide at registration (print daily)
Handout 3: *Pre-Test Questionnaire*	1 per participant (24)	Use google form where possible
Handout 4: *National One Health and PZD Resource Sheet*	1 per participant (24)	Facilitators should use an annex booklet. Session 1.2
Handout 5: *Compiled PZDs Factsheets*	1 per participant (24)	Session 1.2
Handout 6: *Case Studies - Lassa fever, mpox, rabies and avian influenza*	10 copies of full document (Separated by disease scenario)	Session 2.2 Each group gets a case study. ***Do not print front-to-back**

Handout 7: *SBC Materials for PZDs*	6 copies each	Session 2.4 Posters on Lassa fever, rabies, mpox, yellow fever, bovine TB, avian influenza, and brucellosis
Handout 8: *Roles and Responsibilities of Public Health Spokespersons and Media Practitioners*	1 per participant (24)	Session 2.3
Handout 9: *Messages and Materials Checklist*	1 per participant (24)	Session 2.4
Handout 10: *Ade and Musa Scenarios (MP)*	1 per participant (24)	Session 3.1 (MP) Each MP participant (10) receives one of the two scenarios
Handout 11: *Fact Checking and Detecting Mis- and Disinformation (MP)*	1 per participant (24)	Session 3.3 (MP) Each MP participant receives a copy of the handout ***Do not print front-to-back**
Handout 12: *Creative Brief Template (MP)*	1 per participant (24)	Session 3.5 (MP)
Handout 13: *Interview Role Play (MP)*	5 copies separated by scenario A or B in advance	Session 3.2 (MP) ***Do not print front-to-back**
Handout 14: *Pitfalls and Strategies: Public Communication (PHP)*	1 Per PHP participant (10)	Session 3.3 (PHP)
Handout 15: *Community Engagement (PHP)*	1 per PHP participant (10)	Session 3.2 (PHP)
Handout 16: *Channels of Communication (PHP)*	1 per PHP Participant (10)	Session 3.3 (PHP)

Handout 17: *Sample Press Briefing (PHP)*	1 per PHP participant (10)	Session 3.3 (PHP)
Handout 18: *Case Study Interview Preparation (PHP)*	1 per PHP Participant (10)	Session 3.5 (PHP)
Handout 19: *Strategies for Successful Interviews (PHP)*	1 per PHP Participant (10)	Session 3.5 (PHP)
Handout 20: *Resource Package (PHP)*	1 per PHP Participant (10)	Session 3.3 (PHP)
Handout 21: *Disease Z Simulation Role Play*	7 copies of full document (separated by role)	Session 4.2 Each person in the Community Group gets a copy of their role only Each person in the Journalist Group gets a copy of their role only Each person in Public Health Group gets a copy of their role only ***Do not print front-to-back**
Handout 22: *Post-Test Questionnaire*	1 per participant (24)	Session 4.3
Handout 23: *Workshop Evaluation*	1 per participant (24)	Session 4.3
Handout 24: *Certificate* Template	1 per person (30)	Session 4.3 Complete with name, date and local signature before printing. ***Do not print front-to-back**. Distribute with submission of completed evaluation and post test
Scoring Sheet for Pre/Post-Test	1	Not for distribution – in Annex 1
Attendance Sheet	1 for completion + 1 copy of completed sheet for each participant (20)	For completion during registration; so a copy can be distributed to participants with a certificate.

		Recommended entry directly into excel to reduce mistakes due to handwriting. Information to include: • Name • Title/Role • Affiliation/ Organization/Ministry • Area of Expertise • Phone/WhatsApp • Other (Twitter, Skype, Instagram, Facebook, etc.)
Flip charts	10	• Stands are helpful, if available
Markers	5 boxes	Multi-colored
Tape	2-3 rolls	
Scissors	2 pairs	
Bowl or plastic bag	1	
Sticky notes/VIPP Cards	3-5 packs	Multi-colored, if possible
Pens and notepads	1 per person (20)	
Projector, extension cord, laptop, adaptor *(optional)*	2 complete sets	1 for each breakout room
Energizers and Ice breaker ideas	Online resource	https://www.sessionlab.com/library/energiser

MODULE CHECKLIST

Note: This list is to guide the resources needed to be budgeted for during the procurement phase for this training

Activity	Handout	Workshop Materials	Others
Setting the stage	1,2,3	Flip chart stand and papers,	Bowls, QR code/Google form

Module 1	4,5,7	markers, masking tape, tic-tac, coloured sticky notes, candy, timer, paper ball, name tags, scissors	PZDs posters, factsheets, job aid, key messages, videos, IVR, Google drive link for all PZD content. Copies of One Health Strategic Plan
Module 2	6,7,8,9		Lassa fever, mpox, rabies, HPAI - posters and radio spots
Module 3	10,11,12, 13,14,15, 16,17,18, 19,20		N/A
Module 4	21,22,23, 24		Certificates, QR/Google form, Workshop evaluation forms
Closing session	N/A		N/A

- Projector, laptop, extension cord and presentation slides, if using

Attendance List

WORKSHOP TITLE:
DATE:
VENUE:

S/N	Name	Sex	Organisation	Location	Designation	Participant type (see categorization below)	Has BA-N trained you on similar content to this training title? Yes/No	E-mail Address	Phone Number	Sign
1.										
2.										
3.										
4.										

S/N	Name	Sex	Organisation	Location	Designation	Participant type (see categorization below)	Has BA-N trained you on similar content to this training title? Yes/No	E-mail Address	Phone Number	Sign
5.										
6.										
7.										
8.										
9.										
10.										

S/N	Name	Sex	Organisation	Location	Designation	Participant type (see categorization below)	Has BA-N trained you on similar content to this training title? Yes/No	E-mail Address	Phone Number	Sign
11										
12										
13										
14										
15										
16										

S/N	Name	Sex	Organisation	Location	Designation	Participant type (see categorization below)	Has BA-N trained you on similar content to this training title? Yes/No	E-mail Address	Phone Number	Sign
17										
18										
19										
20										

PRE/POST-TEST SCORING GUIDE

Instructions:
Please note that for the post-test, it should be given out on Day 4 at the end of the training.

The sections of the pre and post-test include:

- **Section A:** *True/False.* Measure the difference in the number of correct True/False between the pre-test and post-test
- **Section B:** Score the number of correct responses for each question. Measure the difference in correct answers between the pre-test and post-test
- **Section C:** *Agree or Disagree.* Note an increase in more participants feeling more confident and having more knowledge.

Section A

Q1. One Health focuses on the health of animals only.
FALSE

Q2. The main principles of effective risk communication are transparency, consistency, frequent communication, and empathy.
TRUE

Q3. Messages given about a particular outbreak should include as much medical terminology as possible, so people know the disease is serious.
FALSE

Q4. When communicating to the public about a health risk, it is important for spokespersons to hide what they do not know about the disease.
FALSE

Q5. In order to address a rumour, it is important to understand why it is occurring and to understand the gaps in the public's knowledge and information.
FALSE

Q6. Journalists must obtain informed consent from the sources they interview.
TRUE

Q7. Different groups of people may have customs or beliefs that go against advice given during a disease outbreak.
TRUE

Q8. Communication to the public via social media should be avoided during a public health outbreak because it is hard to control and spreads a lot of misinformation.
FALSE

Q9. The primary role of journalists during a disease threat is to criticise the government response.

FALSE

Q10. The bedrock of risk communication is trust.
TRUE

Section B

Q11. Write down the name of two priority zoonotic diseases.
Use the list of your country's priority zoonotic diseases for answers to this question. Answers could include:

- Viral Hemorrhagic fevers: Ebola, Lassa fever, Crimean Congo hemorrhagic fever, Rift Valley fever, and Marburg virus
- Animal influenzas: avian influenza (bird flu); Swine (pig) flu
- Other bacterial, viral and protozoan diseases: anthrax, bovine tuberculosis, brucellosis, trypanosomiasis (sleeping sickness), and rabies

Q12. What is one way to identify rumours?
Answers may include: monitor social media, listen to community members, building trust with local leaders, talking to health workers.

Q13. Write out the key ministries departments and agencies that foster One Health in Nigeria.
Answers will include: ministries of health, environment and agriculture - and their agencies.

Section C
Q14. I feel confident that I have the skills to communicate with the public and/or report during a disease outbreak.

Q15. I know best practices for coordination, trust-building, and cooperation between journalists and government spokespersons during a zoonotic disease outbreak.

Q14 and Q15. Note whether participants' confidence (Q14) and knowledge (Q15) increase from the pre-test to the post-test.

Annex 2: Materials for Distribution to Participants

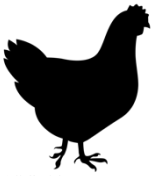
Annex 2 contains the following:

- Agenda
- Pre/Post-Test
- Handouts and resource materials
- Workshop Evaluation
- Certificate

Materials are presented in the order in which they are presented to participants by facilitators

HANDOUT 1: CHARACTER CARDS

Instructions: Cut the squares, fold them in half, and put them in a bowl or bag. Make as many copies as needed so each person has a square.

<table>
<tr><td> 
Created by Laymik
from Noun Project</td><td> 
Created by Laymik
from Noun Project</td></tr>
<tr><td> 
Created by Wahyuntitle
from Noun Project</td><td> 
Created by Wahyuntitle
from Noun Project</td></tr>
<tr><td> 
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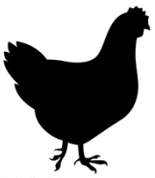
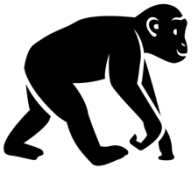
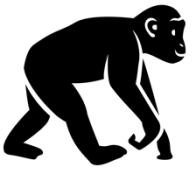
from Noun Project</td><td> 
Created by Yugudesign
from Noun Project</td></tr>
<tr><td> 
Created by David
from Noun Project</td><td> 
Created by David
from Noun Project</td></tr>
</table>

 Created by sarah from Noun Project	 Created by sarah from Noun Project
 Created by Kevin from Noun Project	 Created by Kevin from Noun Project
 Created by parkjisun from Noun Project	 Created by parkjisun from Noun Project

HANDOUT 2: AGENDA

DAY 1 SETTING THE STAGE AND MODULE 1		
Time	**Topic/Session**	**Learning Objectives**
30 MIN	**Registration**	• Receive agenda and printed materials
30 MIN	**Opening remarks, prayers, and other protocols**	• N/A
SETTING THE STAGE – 90 MIN		
30 MIN	***Welcome and Introductions***	• Explain the purpose and clarify expectations of the training. • Introduce each other. • Agree to ground rules for the training. • Define risk communication; and • Assess their level of knowledge using the pre-test to identify personal learning goals for the workshop.
40 MIN	***Purpose, Learning Objectives, and Expectations***	
20 MIN	***Pre-test***	
Tea Break - 30 MIN		
MODULE 1: *OVERVIEW OF ONE HEALTH AND PRIORITY ZOONOTIC DISEASES - 270 MIN*		
30 MIN	**Session 1.1:** *Zoonotic Disease and the One Health Approach*	• Define a zoonotic disease and identify priority zoonotic diseases (PZDs) in Nigeria. • Explain core elements of One Health and key features of One Health risk communication. • Identify their what knowledge gaps participants have about PZDs. • Identify and review local tools and resources available to fill those gaps; and • Discuss One Health operationalization and coordination in Nigeria.
60 MIN	**Session 1.2:** *Priority Zoonotic Diseases – Country Level Focus 1*	
40 MIN	**Session 1.3:** *One Health Operationalization and Coordination in Nigeria*	
Lunch Break - 60 MIN		
120 MIN	**Session 1.4:** *Priority Zoonotic Diseases – Country Level Focus 2*	• Same objectives as Sessions 1.1, 1.2, 1.3
Closing Session: Wrap Up and Tea Break - 20 MIN		
DAY 2 MODULE 2 AND MODULE 3		
30 MIN	**Registration**	• Receive agenda and printed materials
30 MIN	**Recap**	• Review of Day 1 and Introduce Day 2
MODULE 2: *COMMUNICATING FOR BEHAVIOUR CHANGE – 300 MIN*		

45 MIN	**Session 2.1:** *Risk Communication within a One Health Framework*	• Explain the role trust plays in effective risk communication. Identify and discuss principles of effective risk communication and how they work together to strengthen trust. • Identify and discuss common pitfalls in risk communication and factors that drive them. • Begin initial reflection on the professional roles and responsibilities of both media and public health practitioners for enhanced understanding of other priorities, challenges, and expectations. • Review elements of effective communication to communicate and practise applying them.
Tea Break - 30 MIN		
135 MIN	**Session 2.2:** *Trust and Principles of Effective Risk Communication*	• Same objectives as Sessions 2.1
Energizer - 10 MIN		
60 MIN	**Session 2.3:** *Roles and Responsibilities in Risk Communication*	• Same objectives as Sessions 2.1, 2.2
Lunch Break - 60 MIN		
90 MIN	**Session 2.4:** *Elements of Effective Messaging*	• Same objectives as Sessions 2.1, 2.2, 2.3
Tea Break + Energizer - 20 MIN		
DAY 3 MODULE 3: PROFESSIONAL BREAKOUT SESSIONS - MEDIA PRACTITIONERS (MP)		
30 MIN	**Registration (All)**	• Receive agenda and printed materials
30 MIN	**Recap (All)**	• Review of Day 2 and Introduce Day 3
MODULE 3: *PROFESSIONAL BREAKOUT SESSIONS (MP) – 500 MIN*		

120 MIN	**Session 3.1 (MP):** *Ethical Principles and Frameworks for Reporting in Public Health Emergencies*	• Define and agree on ethical principles and frameworks for media practitioners covering a public health emergency. • Discuss the challenges of reporting in an epidemic and identify and practise the application of tips and strategies to manage challenges. • Demonstrate an enhanced understanding of the challenges that other actors, including public health authorities and vulnerable populations, face when being interviewed in public health emergencies, and identify strategies to manage these challenges; and • Improve their ethical interviewing techniques, knowledge, and skills.
Tea Break – 30 MIN		
120 MIN	**Session 3.2 (MP):** *Ethical Interviewing*	• Same objectives as Sessions 3.1 **(MP)**
Lunch Break – 60 MIN		
60 MIN	**Session 3.3 (MP):** *Factual Reporting - Practical Steps to Debunk Health Mis and Disinformation*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP)**
Energizer – 10 MIN		
120 MIN	**Session 3.4 (MP):** *Social Media Ethics*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP),** 3.3 **(MP)**
80 MIN	**Session 3.5 (MP):** *Scripting Public Service Announcement*	
DAY 3 (PHP) MODULE 3: PROFESSIONAL BREAKOUT SESSIONS - PUBLIC HEALTH PRACTITIONERS (PHP) -- 330 MIN		
60 MIN	**Session 3.1 (PHP):** *Understanding Media Needs*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP),** 3.3 **(MP)**
Tea Break – 30 MIN		
90 MIN	**Session 3.2 (PHP):** *Effective Community Engagement*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP),** 3.3 **(MP)**, 3.4 **(MP)**, 3.5 **(MP)**, 3.1 **(PHP)**
Lunch Break – 60 MIN		

45 MIN	**Session 3.3 (PHP):** ***Best Practices:*** *Risk Communication & Community Engagement Plan*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP)**, 3.3 **(MP)**, 3.4 **(MP)**, 3.5 **(MP)**, 3.1 **(PHP)**, 3.2 **(PHP)**
Energizer – 10 MIN		
90 MIN	**Session 3.4 (PHP):** ***Best Practices:*** *Risk Communication Plan and Media Strategy*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP)**, 3.3 **(MP)**, 3.4 **(MP)**, 3.5 **(MP)**, 3.1 **(PHP)**, 3.2 **(PHP)**, 3.3 **(PHP)**
Energizer – 10 MIN		
40 MIN	***BONUS Session 3.5 (PHP):*** *Considerations for Successful Interviews*	• Same objectives as Sessions 3.1 **(MP)**, 3.2 **(MP)**, 3.3 **(MP)**, 3.4 **(MP)**, 3.5 **(MP)**, 3.1 **(PHP)**, 3.2 **(PHP)**, 3.3 **(PHP)**, 3.4 **(PHP)**
Closing Session: Wrap up and Tea Break - 20 MIN		
DAY 4 MODULE 4		
30 MIN	**Registration**	• Receive agenda and printed materials
30 MIN	**Recap**	• Review of Day 3 and Introduce Day 4
Module 4: *ENHANCING COORDINATION – 165 MIN*		
60 MIN	**Session 4.1:** *Envisioning Effective Coordination*	• Establish accepted ground rules to enhance coordination and collaboration between public health practitioners and media practitioners, embrace their differences, and recognize the ways in which they complement one another; • Establish a coordination mechanism for continued joint learning or interaction, if desired; • Complete a posttest to assess knowledge gained across the training; and • Offer feedback on the workshop.
Tea Break – 30 MIN		
60 MIN	**Module 4.2:** *Bringing it all Together*	• Same objectives as Sessions 4.1
45 MIN	**Module 4.3:** *Posttest, Workshop Evaluation, and Closing*	• Same objectives as Sessions 4.1, 4.2

HANDOUT 3: PRE-TEST QUESTIONNAIRE

The Pre-Test questionnaire can also be found as a google form here:
https://forms.gle/ALXi7u1QGzr5Eaxu5

SECTION A: Indicate whether the following statements are True or False. For each answer, circle/tick either True or False.

Q1. One Health focuses on the health of animals only.

True
False

Q2. The main principles of effective risk communication are transparency, consistency, frequent communication, and empathy.

True
False

Q3. Messages given about a particular outbreak should include as much medical terminology as possible, so people know the disease is serious.

True
False

Q4. When communicating to the public about a health risk, it is important for spokespersons to hide what they do not know about the disease.

True
False

Q5. In order to address a rumour, it is important to understand why it is occurring and to understand the gaps in the public's knowledge and information.

True
False

Q6. Journalists must obtain informed consent from the sources they interview.

True
False

Q7. Different groups of people may have customs or beliefs that go against advice given during a disease outbreak.

True
False

Q8. Communication to the public via social media should be avoided during a public health outbreak because it is hard to control and spreads a lot of misinformation.

True
False

Q9. The primary role of journalists during a disease threat is to criticise the government response.

True
False

Q10. The bedrock of risk communication is trust.
True
False

SECTION B: Write your responses to the following questions.

Q11. Write down the names of two priority zoonotic diseases.
_____

Q12. What is one way to identify rumours?

_____

Q13. Write out the key ministries departments and agencies that foster One Health in Nigeria.
_____

SECTION C: Indicate whether you agree or disagree by circling/ticking your responses to the following questions.

Q14. I feel confident that I have the skills to communicate with the public and/or report during a disease outbreak.

5 Strongly Agree	4 Agree	3 Neither or N/A	2 Disagree	1 Strongly Disagree

Q15. I know best practices for coordination, trust-building, and cooperation between journalists and government representatives during a zoonotic disease outbreak.

5 Strongly Agree	4 Agree	3 Neither or N/A	2 Disagree	1 Strongly Disagree

HANDOUT 4: NATIONAL ONE HEALTH AND PZD RESOURCE SHEET

MAPPING ONE HEALTH RESOURCES FOR NIGERIA

Instructions: Work with National One Health Coordination Unit and National Risk Communication TWG to complete this sheet in advance of the training for each participant to use as a reference resource.

List of the Priority Zoonotic Diseases in Nigeria (As of June 2022)	mpox (monkeypox), Lassa fever, yellow fever, rabies, Highly Pathogenic Avian Influenza (HPAI), bovine TB
Key risk communication structures in Nigeria	1. National Risk Communication Technical Working Group 2. Sub-national Social Mobilization Committees 3. Risk Communication Pillar of various Disease Specific Technical Working Groups (TWG) at national and sub-national level
Key National/Regional/Sub-national One Health Structures and Ministries in Nigeria (Include disease-specific entities, e.g., National Avian Flu Task Force, etc.)	1. National One Health Coordinating Unit 2. Africa One Health Network 3. African CDC One Health Network 4. West African Animal Network 5. National Avian TWG 6. Ministerial Expert Committee on the Highly Pathogenic Avian Influenza 7. National Yellow fever TWG 8. Brucellosis TWG 9. Anthrax TWG 10. Lassa Fever TWG 11. mpox TWG 12. COVID-19 TWG 13. Rabies TWG 14. Rabies Secretariat (domiciled under FMAFS) 15. Bovine TB TWG 16. AMR TWG 17. National Emerging Viral Haemorrhagic Disease TWG 18. Wildlife TWG 19. National Infodemic Management Group 20. National Food Safety Management Committee

	21. National Committee on Chemical Surveillance and Emergency Systems 22. Sub-national Structures a. One Health State Rapid Response Team b. Disease Specific TWGs c. State Infodemic Management Team
Existing key One Health and PZD documents (strategic plans, operational plans, technical resources in-country) and links to access if available	1. One Health Strategic Plan 2019 - 2023 2. AMR Action Plan (2017-2022) 3. National Rabies Elimination Guideline 4. Avian Influenza emergency preparedness plan 5. National Action Plan for Health Security 6. Yellow Fever Surveillance Guideline 7. Mpox Surveillance guideline 8. Lassa Fever Strategic Plan 9. National Policy on Food Safety and implementation strategy 10. Infectious Disease Risk Communication Strategy 11. Multi-hazard Risk Communication Guideline (Yet to be finalised) 12. Multi-hazard Public Health Emergency Preparedness Response Plan 13. National Animal Health Policy 14. Revised Comprehensive Emergency Preparedness and Response Plan for Highly Pathogenic Avian Influenza in Nigeria 15. One Health Risk Communication and Community Engagement Training Package 16. National Strategic Plan for Elimination of Dog-Mediated Human Rabies
List, links and/or contacts for access to existing One Health or PZD Communication Materials	1. https://ncdc.gov.ng/diseases/guidelines 2. https://ncdc.gov.ng/diseases/a-z 3. NRCTWG repository
One Health Resource persons in Nigeria	1. One Health Lead 2. One Health Focal Persons (Human Health) 3. One Health Focal Persons (Animal Health)

	4. One Health Focal Persons (Environment) 5. AMR Lead 6. Risk Communication Lead 7. Zoonotic Disease TWG Incident Managers
Other One Health Resources	1. https://onehealthbehaviors.org/countries/nigeria/ 2. Key messages on PZDs 3. 6232 Call Center 4. Airtel 421 5. Rapid Needs Assessment for RCCE

HANDOUT 5: COMPILED PZD FACTSHEETS

Lassa Fever **(NCDC)**

- https://ncdc.gov.ng/diseases/info/L

Key facts

- Lassa fever is an acute viral haemorrhagic illness that occurs in West Africa, with an incubation period of 3-21 days.
- The Lassa virus is transmitted to humans via contact with food or household items contaminated with rodent urine or faeces.
- Person-to-person infections and laboratory transmission can also occur, particularly in hospitals lacking adequate infection prevention and control measures.
- Lassa fever is known to be endemic in Benin, Ghana, Guinea, Liberia, Mali, Sierra Leone, and Nigeria, but probably exists in other West African countries as well.
- The overall case-fatality rate ranges from 3% - 42% (and over the last two years has remained between 20% and 25%). Observed case-fatality rate among patients hospitalised with severe cases of Lassa fever is 15%.
- Early supportive care with rehydration and symptomatic treatment improves survival.

Background

Lassa fever (LF) is an acute viral illness and a viral haemorrhagic fever (VHF). The causative agent is a single-stranded RNA virus in the family *Arenaviridae*, the Lassa virus. This zoonotic disease is associated with high morbidity and mortality, and it has both economic and health security consequences.

The illness was first reported in the Lassa community in Borno State, Nigeria, in 1969, when two missionary nurses died from an unusual febrile illness. Since then, cases and outbreaks continue to be reported in Nigeria and the disease is increasingly recognised to be endemic in many parts of West Africa, including Nigeria, Benin, Ghana, Mali and the Mano River region (Sierra Leone, Liberia and Guinea), with the disease probably existing in other West African countries as well. An estimated 300,000-500,000 cases and 5,000 related deaths occur annually in West Africa. In 2018, the Nigeria Centre for Disease Control and Prevention (NCDC) reported the largest ever number of cases in Nigeria, with over 600 confirmed cases and over 170 deaths. The increase is not thought to be due to any new virus strains, and may at least be partially explained by increasing surveillance capacity.

Lassa fever is an epidemic prone disease for immediate notification on the Integrated Disease Surveillance and Response (IDSR) platform in Nigeria. The actual incidence rate in Nigeria is unknown, but case fatality rates range from 3% to 42% (and over the last two years has remained between 20% and 25%). Historically, outbreaks occur during the dry season (November to April), however, in recent years, cases have also occurred during the rainy season. Lassa fever importation into non-endemic countries has occurred in the UK, USA, and Germany, among others.

Symptoms of Lassa fever

Lassa fever presents with symptoms and signs similar to those of many febrile illnesses, thus making it difficult to diagnose clinically. The incubation period is between 3-21 days. It causes a syndrome characterised by fever, muscle aches, sore throat, nausea, vomiting, chest and abdominal pain. Healthcare workers should maintain a high index of suspicion for Lassa fever and consider a testing/diagnosis for Lassa fever in patients with fever of 37.5°C and above. It should also be suspected in any outbreak setting with patients presenting with a compatible syndrome. It also likely has a wide spectrum of disease presentation, from relatively mild illness to severe haemorrhagic manifestations. Case definitions can guide diagnosis.

Transmission

The Lassa virus is transmitted to man by contact with faeces, urine or secretions of infected multimammate rats, the *Mastomys natalensis* species complex which is the reservoir host. Humans become infected from direct contact with the urine and faeces of the rat which contains the virus, through touching soiled objects, eating contaminated food, or exposure to open cuts or sores. Secondary transmission from person to person can occur following exposure to the virus in the blood, tissue, urine, faeces or other bodily secretions of an infected individual. Hospital-acquired (nosocomial) transmission from person to person are common, and importantly can occur if appropriate Personal Protective Equipment (PPE) is not worn when managing suspected cases.

Diagnosis/Testing

A high index of suspicion aids diagnosis, especially in endemic areas like Nigeria, or in patients returning from other endemic areas in West Africa. Diagnosis is based on clinical features (guided by case definitions above) and laboratory confirmation. Laboratory diagnosis is by viral amplification from blood samples using Reverse-Transcription Polymerase Chain Reaction (RT-PCR).

The Technical Guidelines for Integrated Disease Surveillance and Response (IDSR) in Nigeria gives the following standard case definitions:

- Suspected case of Lassa fever:
    - Illness with gradual onset with one or more of the following: malaise, fever, headache, sore throat, cough, nausea, vomiting, diarrhoea, myalgia, chest pain hearing loss and a history of contact with excreta of rodents or with a case of Lassa fever
- Confirmed case of Lassa fever:
    - A suspected case that is laboratory confirmed (positive IgM antibody, PCR or virus isolation) or epidemiologically linked to a laboratory confirmed case.

There are also additional case definitions for clinical decision making to guide management of Lassa fever cases in health facilities, developed by NCDC in November 2018. These include:

- Alert case

- Any person who has an unexplained fever (i.e. malaria and other common causes of fever have been ruled out), with or without bleeding OR Any person who died after an unexplained severe illness with fever and bleeding.

- Suspected case
  - Patient with fever for 3-21 days with a measured temperature of 38^{O}C or more with one or more of the following: vomiting, diarrhoea, sore throat, myalgia (muscle pain), generalised body weakness, abnormal bleeding, abdominal pain OR in neonates: maternal Lassa fever +/- signs and symptoms.

- Any of the following scenarios should raise the index of suspicion:
  - Patient has not responded to standard anti-malaria treatment and treatment for other common infectious causes of fever within 48-72 hours.
  - History of recent contact with a probable or confirmed case of Lassa fever within 21 days of onset of fever.
  - Patient with history of fever and history of travel to high risk/burden areas of Lassa fever.
  - Contact with body fluids or tissues of a dead patient with a febrile illness, symptoms and signs highly suggestive of Lassa fever leading to death.
- Probable case
  - A case who met suspect case definition but died before laboratory confirmation and had one or more of the following complications:
    - Hearing loss
    - Facial or neck swelling
    - Seizures
    - Restlessness
    - Confusion
    - Hypotension

Treatment

Treatment should be carried out in designated treatment centres by trained staff. Standard infection prevention and control (IPC) measures for Lassa fever must be in place. The drug of choice is Ribavirin, an antiviral agent, administered orally or parenterally. Prognosis is best if this treatment is commenced early, usually within six days of onset of symptoms. High quality supportive treatment should also be instituted based on clinical assessment of patients, which improves patient outcomes.

Prompt diagnosis of Lassa fever is key. There is currently no vaccine that protects against Lassa fever. The collaboration of government agencies working with development partners has increased the recognition of Lassa fever and the need for deployment of enhanced IPC measures. Other prevention and control measures include:

- Continued advocacy and sensitisation of States, communities, their leaders and other stakeholders.
- Strengthening of the surveillance system at State and LGA for early detection, isolation and confirmation of cases.
- Promoting good environmental and personal hygiene. This is to discourage rodents from entering homes and having access to food stuff. Effective measures include storing grain and other foodstuff in rodent-proof containers (well covered and tight-fitting lids), disposing of garbage far from the home, and maintaining clean households.
- Reminding caregivers to be careful and maintain standard precautions to avoid contact with blood and body fluids while taking care of an infected person.
- Avoiding nosocomial transmission of infections in health-care settings, with health care workers observing all necessary IPC standard precautions when caring for patients, regardless of their presumed diagnosis.
- Ensuring staff in Lassa fever treatment centres apply extra infection control measures to prevent contact with the patient's blood and body fluids and contaminated surfaces or materials.
- Following safe injection practices at every stage.
- Training health care workers in the laboratories in appropriate specimen receipt and handling, and ensuring all patient samples are properly labelled on collection with appropriate details included such as haemorrhagic manifestations.
- Ensuring safe burial practices are adhered to for anybody that died (or is suspected to have died) of Lassa fever.

Country response

In preparation for a Lassa fever high transmission season, the NCDC sends alert letters to all states, to prepare them for the upcoming Lassa fever season, including the Governor's Forum, the State Ministries of Health and health professional bodies such as the Nigeria Medical Association (NMA). Lassa fever risk assessment and preparedness surveys are carried out in all states. Multi-sectoral Public Health Emergency Operation Centres (PHEOC) are activated in affected States, and in the case of the 2023 outbreak, a national EOC.

In addition to alerts, medical necessities (Ribavirin & IPC equipment) are disseminated to states and treatment centres based on the previous history of Lassa fever burden in the state and the states' needs.

The number of Lassa fever cases are reported and traced weekly in every state, including the FCT. This includes suspected, probable, and confirmed cases. Diagnosis of all cases are conducted in the eight Lassa fever testing laboratories across the country. Confirmed cases are treated at designated Lassa fever treatment centres. Case management, safe burial practices guidelines and IPC guidelines as well as health facility IPC advisories are disseminated to relevant health facilities. In severe situations, National Rapid Response Teams (NRRT) are deployed to mitigate the outbreak.

Regarding prevention, risk communication and community engagement (RCCE) approaches have grown to use diverse forms of communication (such as television, radio, social media, e.t.c.) at both national and state levels. A human-centred design (HCD) approach has been used to identify current enablers and challenges to the spread of Lassa fever, to develop

effective preventive and informative social and behaviour change interventions. In addition, the country recently developed a Lassa fever 5-year Strategic Plan for implementation.[1,2,3]

Yellow Fever **(NCDC)**

- https://ncdc.gov.ng/diseases/info/Y

Key facts

- Yellow fever is an acute viral haemorrhagic disease transmitted by infected mosquitoes. The "yellow" in the name refers to the jaundice that affects some patients.
- Symptoms of yellow fever include fever, headache, jaundice, muscle pain, nausea, vomiting and fatigue.
- Yellow fever is prevented by an extremely effective vaccine, which is safe and affordable. There is currently no specific antiviral drug for the treatment of yellow fever, but good and early supportive treatment in hospitals improves survival rates.
- The risk for infection is highest during the rainy season to early dry season in Nigeria (July to November/December).
- In Nigeria, the NCDC monitors yellow fever outbreaks. As part of the EYE strategy, the NCDC's Developed YF response strategy anchored on the following thematic areas:
- Strong coordination of laboratories providing laboratory confirmation
- Rapid investigation of confirmed cases
- Rapid mobilisation of entomology team for survey
- Increased risk communication centred on sensitisation campaigns with messages around avoiding daytime mosquito bites, keeping home surroundings clean, and clearing mosquito breeding areas
- Rapid development of international Coordinating group for vaccine provision (ICG) request for reactive vaccination campaigns in areas with outbreaks
- Facilitate preventive mass vaccination campaigns
- Prompt case management of cases

Background

Yellow fever is an acute viral hemorrhagic illness caused by the yellow fever virus, an RNA virus that belongs to the family *Flaviviridae*. The virus is found in tropical and subtropical areas of Africa and Central/South America with the illness being endemic in 34 African countries (including Nigeria) and 13 Central and South American countries.

The earliest recorded epidemics occurred in Barbados, Cuba, Guadeloupe and Mexico between 1647 and 1649. There were subsequent outbreaks in North America and Europe

[1] Nigeria Centre for Disease Control and Prevention. (2022, September). Lassa Fever Situation Report: An Update of Lassa Fever Outbreak in Nigeria for Week 37.
[2] Nigeria Centre for Disease Control and Prevention. (2023, January). Lassa Fever Situation Report: An Update of Lassa Fever Outbreak in Nigeria for Week 4.
[3] Nigeria Centre for Disease Control and Prevention. (2023, February). Lassa Fever Situation Report: An Update of Lassa Fever Outbreak in Nigeria for Week 5.
https://ncdc.gov.ng/diseases/sitreps/?cat=5&name=An%20update%20of%20Lassa%20fever%20outbreak%20in%20Nigeria

between the 17th and 19th century. Yellow fever remains a disease of significant public health importance despite the availability of a safe and efficacious vaccine, with an estimated 200,000 cases and 30,000 deaths annually globally. Large epidemics occur when people infected with the virus introduce it into heavily populated areas with high mosquito density and where most people have little or no immunity from vaccination or prior infection.

The earliest outbreak of yellow fever in Nigeria was reported in Lagos in 1864, with subsequent regular outbreaks reported until 1996. For 21 years, no further confirmed cases were reported until September 2017, following which Nigeria has been responding to successive outbreaks. Yellow fever is an epidemic-prone disease for immediate notification on the Integrated Disease Surveillance and Response (IDSR) platform in Nigeria.

The Eliminate Yellow Fever Epidemics (EYE) Strategy was developed to respond to the increased threat of yellow fever urban outbreaks with international spread, following the 2016 linked urban yellow fever outbreaks in Luanda (Angola) and Kinshasa (Democratic Republic of the Congo), with wider international exportation from Angola to other countries, including China. This global strategy (2017-2026) targets the most vulnerable countries, while addressing global risk, by building resilience in urban centres, and preparedness in areas with potential for outbreaks including ensuring reliable vaccine supply. It is guided by three strategic objectives as follows:

- Protect at-risk populations
- Prevent the international spread of yellow fever
- Contain outbreaks rapidly
- Nigeria is a priority country for the EYE Strategy

Symptoms of Yellow fever

The virus incubates in the body for three to six days following infection. Many people do not experience symptoms but when these occur, they vary from very mild, nonspecific, febrile illness to a fulminating, sometimes fatal disease. The clinical symptoms associated with the early stages of infection are indistinguishable from those of influenza or malaria, mainly fever, muscle pain with prominent backache, headache, loss of appetite, and nausea or vomiting. In most cases, symptoms disappear after 3 to 4 days.
A small percentage of patients, however, enter a second, more toxic phase within 24 hours of recovering from initial symptoms. High fever returns and several body systems are affected, usually the liver and the kidneys, and also the heart and occasionally the brain. In this phase, people will likely develop jaundice (yellowing of the skin and eyes), dark urine, and abdominal pain with vomiting. Bleeding can occur from the mouth, nose, eyes, and any other body orifices. Only 15 percent of people with yellow fever enter this phase, but of those that do, approximately half die within 7 - 10 days.

Transmission

Yellow fever virus is transmitted by mosquitoes (both *Aedes* and *Haemogogus* species) and has three transmission cycles, namely jungle (sylvatic), intermediate (savannah), and urban.

The jungle/sylvatic cycle occurs in tropical rainforests where monkeys, which are the primary reservoir of the virus, are bitten by mosquitoes of the *Aedes* and *Haemogogus* species,

passing the virus on to other monkeys. Accidentally, humans working or travelling in the forest are bitten by infected mosquitoes and develop yellow fever.

The intermediate/savannah cycle which is the most common in Africa involves the transmission of viruses from mosquitoes to humans living or working in jungle border areas. The virus can be transmitted from monkeys to humans or from humans to humans via mosquitoes.

The urban cycle involves the transmission of the virus between humans by urban mosquitoes, primarily *Aedes aegypti*. The virus is usually brought to the urban setting by a person who has been infected in the jungle or savannah.

Large epidemics occur when people infected with the virus introduce it into heavily populated areas with high mosquito density and where most people have little or no immunity from vaccination or prior infection. In these conditions, infected mosquitoes of the *Aedes aegypti* species transmit the virus from person to person.

Diagnosis/Testing

Yellow fever is difficult to distinguish from many other infectious diseases and is often impossible when the condition is mild or atypical. In the early stages of the disease, Polymerase chain reaction (PCR) testing in blood and urine can sometimes detect the virus. However, in later stages, testing to identify antibodies is needed.

During a yellow fever outbreak, the basic tests needed include:

- Enzyme-linked immunosorbent assay (ELISA) to measure yellow fever virus IgM – a single positive gives an early diagnosis, with a rising titre over paired sera establishing recent infection from vaccination or cross-reaction with other flaviviruses.
- Reverse transcription polymerase chain reaction (RT-PCR) for yellow fever virus. This should be performed on samples collected within ten days of the onset of symptoms.

Treatment

Good and early supportive treatment in hospitals improves survival rates. There is currently no specific antiviral drug for yellow fever but specific care to treat dehydration, liver and kidney failure, and fever improves outcomes. Vaccination with the yellow fever vaccine provides life-long protection and is the most important means of preventing yellow fever. Vaccination strategies include routine infant immunisation, mass vaccination campaigns to increase coverage in countries at risk, and vaccination of travellers going to yellow fever endemic areas. To prevent and control yellow fever outbreaks, it is important to vaccinate most (80% or more) of the population at risk in addition to establishing systems for prompt detection of yellow fever. In urban areas, yellow fever transmission could be reduced by eliminating potential mosquito breeding sites such as places and containers (old tires, etc.) where standing water collects. Vector surveillance and control are components of transmission control in epidemic situations.

Country Response

Yellow fever response activities are coordinated by the NCDC through a multi-agency yellow fever Technical Working Group (YF TWG).

NCDC uses daily surveillance data across the country to guide response activities. Manuals for training have been finalised to help health workers with yellow fever detection, the documentation process, case management, and the reporting of cases. Samples are collected, managed, and analysed at all testing laboratories for confirmation of cases. Testing reagents and consumables are supplied to laboratories to enhance rapid turnaround times.

NCDC also builds the capacity of state health workers on IDSR and yellow fever case identification, management, and reporting. Led by the National Primary Healthcare Development Agency (NPHCDA), NCDC supports the implementation of integrated supplementary immunisation activities with yellow fever vaccination. In addition, NCDC carries out the dissemination of yellow fever communication materials to states, while social media and traditional media platforms are monitored daily for community surveillance.[4]

Mpox **(NCDC)**

- https://ncdc.gov.ng/diseases/info/M

Key facts

- Mpox is a viral zoonotic infectious disease (i.e. an infection transmitted from animals to humans) that occurs sporadically, primarily in remote villages of Central and West Africa, near tropical rainforests.
- It is caused by the monkeypox virus which belongs to the Orthopoxvirus genus in the family *Poxviridae*.
- The incubation period of mpox usually lies between 6 to 16 days but can range from 5 to 21 days.
- The exact reservoir of mpox is still unknown although African rodents are suspected to play a part in transmission.
- The virus can spread both from animal to human and from human to human with transmission occurring when a person comes into contact with the virus from an infected animal, human, or materials contaminated with the virus such as bedclothes. The virus enters the body through broken skin (even if not visible), the respiratory tract, or the mucous membranes of the eyes, nose, or mouth.
- There are no specific treatments available for mpox infection, although various novel antivirals have in vitro and animal data supportive of effect such as Brincindofovir and Tecovirimat.
- Vaccination against smallpox has been proven to be 85% effective in preventing mpox but is no longer routinely available following global smallpox eradication.

Background

[4] Nigeria Centre for Disease Control. (2022, July). Yellow Fever Situation Report: An Update of Yellow Fever Outbreak in Nigeria for Week 31. https://www.ncdc.gov.ng/diseases/sitreps/?cat=10&name=An%20update%20of%20Yellow%20Fever%20outbreak%20in%20Nigeria

Mpox is a viral zoonotic infectious disease (i.e. an infection transmitted from animals to humans) that occurs sporadically, primarily in remote villages of Central and West Africa, near tropical rainforests. It is caused by the monkeypox virus which belongs to the Orthopoxvirus genus in the family *Poxviridae*. The Orthopoxvirus genus also includes variola virus (the cause of smallpox), vaccinia virus (used in the vaccine for smallpox eradication), and cowpox virus (used in earlier smallpox vaccines). Following the eradication of smallpox, monkeypox virus has emerged as the most important Orthopoxvirus.

Mpox was discovered in 1958 when two outbreaks of a pox-like disease occurred in colonies of monkeys kept for research, hence the name mpox. The first human case was recorded in 1970 in the Democratic Republic of Congo during a period of intensified efforts to eliminate smallpox. Since then, mpox has been reported in humans in other central and western African countries including Nigeria, Cameroon, Gabon, Côte d'Ivoire, Liberia, Central African Republic, Congo, South Sudan and Sierra Leone.

A 2003 outbreak in the United States was the first time mpox infections in humans were documented outside Africa. Other non-African countries such as the UK, Israel and Singapore have also reported imported mpox cases from Africa. In May 2022, several countries in Europe and North America including Italy, France, Germany, Sweden, Spain, Portugal, Australia, Canada and Belgium have reported confirmed cases of mpox with no direct epidemiological linkage to Africa. Case fatality in outbreaks has been between 1% and 10%, with most deaths occurring in younger age groups and immunocompromised patients. There are two distinct types, the Congo Basin clade and West African clade, now referred to as Clade I and Clade II respectively, with the former being more virulent.

Until the recent outbreak of 2017, the last time cases of mpox were reported in Nigeria was in the 1970s.[5] The 2022 Nigerian outbreak is currently the largest documented outbreak of Clade II to date.[6]

Symptoms of Mpox

The incubation period of mpox is usually between 6 to 16 days but can range from 5 to 21 days. The clinical manifestation of the disease has two phases, with an initial invasive period in the first 5 days, where the main symptoms are fever, lymphadenopathy (swelling of lymph nodes), back pain, intense headache, myalgia (muscle ache) and severe asthenia (lack of energy). A maculopapular rash (skin lesions with a flat bases) appears 1-3 days after the onset of fever, developing into small fluid-filled blisters (vesicles), which become pus-filled (pustules) and then crust over in about 10 days.

Complete resolution takes up to three weeks. Nearly all patients have face lesions, three quarters have lesions on the palms of their hands and soles of their feet, and 30% have

[5] Ogoina, D., Izibewule, J. H., Ogunleye, A., Ederiane, E., Anebonam, U., Neni, A., Oyeyemi, A., Etebu, E. N., & Ihekweazu, C. (2019). The 2017 human monkeypox outbreak in Nigeria—Report of outbreak experience and response in the Niger Delta University Teaching Hospital, Bayelsa State, Nigeria. *PLoS ONE*, *14*(4), e0214229. https://doi.org/10.1371/journal.pone.0214229

[6] FIDSA, D. O., MBBS, FWACP, FMCP, FACP. (2022, September 20). *A brief history of monkeypox in Nigeria*. https://www.idsociety.org/science-speaks-blog/2022/a-brief-history-of-monkeypox-in-nigeria/#/+/0/publishedDate_na_dt/desc/www.idsociety.org/science-speaks-blog/2022/a-brief-history-of-monkeypox-in-nigeria/

genital involvement. The eyes are involved in most cases, 20% have lesions on the eyelid, with some on the cornea. There are oral mucosa lesions in 70% of cases. Skin lesions can vary widely from a few to up to many thousands, and the lymph node swelling can precede the rash unlike in other Orthopoxvirus infections.

Mpox is usually self-limiting, with symptoms lasting between 2 and 4 weeks.[7] Severe cases occur more commonly among children, who also have greater mortality - the case fatality has ranged from 1% to 10%, higher in Clade I cases.[8]

Transmission

The exact reservoir of mpox is still unknown although African rodents are suspected to play a part in transmission. The virus can spread both from animal to human and from human to human with transmission occurring when a person comes into contact with the virus from an infected animal, human, or materials contaminated with the virus such as bedclothes. The virus enters the body through broken skin (even if not visible), the respiratory tract, or the mucous membranes of the eyes, nose, or mouth.

Animal-to-human transmission may occur by direct contact with the blood, body fluids, the skin or mucosal lesions of infected animals (e.g. monkeys, squirrels and rodents). This can happen through a bite, scratch, handling, eating of inadequately cooked infected bushmeat. Limited human-to-human transmission is thought to occur primarily through prolonged face-to-face contact via large respiratory droplets. It can also result from direct contact with the body fluids or skin lesions of an infected person, or objects they have contaminated such as clothing or bed linen. As such, household members or healthcare workers are at greater risk of infection.

Diagnosis/Testing

Polymerase chain reaction (PCR) of lesions is the mainstay of mpox diagnosis. Swabs and scabs from skin lesions are sent to the designated reference laboratory in dry containers. The aim of module 3 – rumour collection – was to provide guidance on the different approaches to infodemic management and the key considerations for selecting the right approach, and to provide an overview of how to collect and store rumour data, including potential software and methods. On a scale of 1-5, how well do you think the module did at meeting these aims? Antibody (ELISA) tests can show past exposure to Orthopoxvirus infections, and certain reference facilities can perform virus isolation by cell culture in high containment. In order to interpret test results, it is critical that patient information is provided with the specimens including:

- Approximate date of onset of fever
- Date of onset of rash
- Date of specimen collection
- Current status of the individual (stage of rash)
- Age

[7] WHO. (2022, May 19). *Monkeypox*. https://www.who.int/news-room/fact-sheets/detail/monkeypox

[8] WHO. (2020, October 1). *Monkeypox – Democratic Republic of the Congo*. https://www.who.int/emergencies/disease-outbreak-news/item/monkeypox-democratic-republic-of-the-congo

Case definition

Case definitions developed by NCDC in the wake of the 2017 outbreak are as follows with reporting to be done via the Integrated Disease Surveillance and Response (IDSR) reporting platform.

- Suspected case
    - Any person presenting with a history of sudden onset of fever, followed by a vesiculopustular rash occurring mostly on the face, palms and soles of feet.
- Confirmed Case
    - Any suspected case with laboratory confirmation (Positive IgM Antibody, PCR or virus isolation).
- Contact
    - Any person who has no symptoms but who has been in direct or indirect contact with or exposed to the body fluids of a confirmed case in the last three weeks (i.e. skin secretions, oral secretions, pre-mastication of food, urine, stools, vomiting, blood, sexual contact)

Treatment and Prevention

Treatment for mpox is based on providing symptom-specific care for the various clinical features and complications that arise, such as treating conditions that affect nutrition - mouth sores, vomiting, diarrhoea; adequate nutrition and hydration, including vitamin A and C supplementation; fever and pain management; rash and skin care management by avoiding scratching, gentle washing, keeping clean and dry; and applying gentian violet or nystatin creams or topical antibiotics to prevent secondary infection. Mental health and social support is also needed as caregivers, particularly health workers, and the public are expected to show empathy to affected persons and know how to take precautions and care for themselves.

The National Agency for Food and Drug Administration and Control (NAFDAC), with support from the World Bank, has approved the procurement and use of the Tecovirimat drug for the management of mpox infections. In addition, Nigeria has been prioritised for the delivery of mpox vaccines from the US Government for high-risk populations. Discussions are ongoing to materialise these efforts.

Infection Prevention and Control Measures

These include:

- Isolation of infected patients, including use of personal protective equipment and implementation of standard infection control precautions by health workers.
- Regular hand washing after caring for or visiting sick people
- Avoiding contact with animals that could harbour the virus including sick or dead animals in areas where mpox cases have occurred.
- Avoiding contact with any material that has been in contact with a sick animal or human.
- Isolating potentially infected animals from other animals.

- Quarantine of any animal that may have come in contact with an infected animal or person, and observing for mpox symptoms for 21 days, while handling them with standard precautions and washing with soap and water after contact with infected animals.
- Thoroughly cooking all animal products before eating.
- Public health education on preventive measures.

Country Response

Nigeria developed a national mpox public health response guideline in 2019 following the 2017 outbreak. The multi-agency mpox Emergency Operation Centre (EOC) at NCDC - which was activated in May 2022 - coordinates mpox response activities centrally at NCDC, and through the different state public health emergency operation centres. The EOC operates through various pillars including surveillance, case management, laboratory and risk communication. Health workers - both human and animal sector - are trained to identify mpox and report cases for enhanced surveillance, including contact tracing of cases. Offsite support is also provided to states. Case definitions for mpox have been developed and communicated to health workers, including training on supportive management. Samples are collected, packaged and sent for testing at the National Reference Laboratory in the Federal Capital Territory and the Central Public Health Laboratory (CPHL) in Lagos State, and results are sent back to states. Guidelines for Infection Prevention and Control (IPC) have been developed for human and veterinary health facilities with attendant training of staff. Persons are screened at points of entry for enhanced surveillance, while risk communication on mpox messages have been implemented through airing of audio and video jingles, and the dissemination of posters and FAQs. The developed audio jingles have been translated into five languages, while the development of messages for the animal health sector is underway via engagement with the Federal Ministry of Agriculture and Food Security (FMAFS).[9] A national knowledge, attitude and practices (KAP) study was conducted in six states to provide insights on mpox public awareness and perception.

Highly Pathogenic Avian Influenza (HPAI/Bird Flu) and Swine flu **(NCDC, FMAFS and WHO)**

- https://ncdc.gov.ng/diseases/info/A
- https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic)

Key facts

- Humans can be infected with avian, swine and other zoonotic influenza viruses, such as avian influenza virus subtypes A(H5N1), A(H7N9), and A(H9N2) and swine influenza virus subtypes A(H1N1), A(H1N2) and A(H3N2).

[9] Nigeria Centre for Disease Control. (2022, August). Monkeypox Situation Report: An Update of Monkeypox Outbreak in Nigeria for Week 34. https://www.ncdc.gov.ng/diseases/sitreps/?cat=8&name=An%20Update%20of%20Monkeypox%20Outbreak%20in%20Nigeria

- Human infections are primarily acquired through direct contact with infected animals or contaminated environments, these viruses have not acquired the ability of sustained transmission among humans.
- Avian, swine and other zoonotic influenza virus infections in humans may cause disease ranging from mild upper respiratory tract infection (fever and cough), early sputum production and rapid progression to severe pneumonia, sepsis with shock, acute respiratory distress syndrome and even death. Conjunctivitis, gastrointestinal symptoms, encephalitis and encephalopathy have also been reported to varying degrees depending on subtype.
- The majority of human cases of influenza A (H5N1) and A(H7N9) virus infection have been associated with direct or indirect contact with infected live or dead poultry. Controlling the disease in the animal source is critical to decrease risk to humans.
- Influenza viruses, with the vast silent reservoir in aquatic birds, are impossible to eradicate. Zoonotic influenza infection in humans will continue to occur. To minimise public health risk, quality surveillance in both animal and human populations, thorough investigation of every human infection and risk-based pandemic planning are essential.

Humans can be infected with zoonotic influenza viruses such as avian or swine influenza viruses.

Background

Influenza viruses type A, B and C are among the causes of respiratory tract infections in humans. Type A virus has 15 subtypes some of which are predominant in pigs (swine influenza virus), in humans (human influenza virus), in horses (equine influenza virus) or in birds (avian influenza virus).

Humans and animals can pass influenza virus from one to another. Humans can thus become sick from avian or swine influenza when they pick up the virus from these animals.

In irregular intervals which can be as frequent as yearly, genetic particles of viruses from birds and pigs or humans are mixed (assortment) to produce novel subtypes with increasing virulence. The theory of the pandemic flu is derived from the expectation that such a mixture of viral materials will produce a novel influenza that will spread early in humans unhindered by a non-existent human immunity.

Influenza A viruses are classified into subtypes based on two surface proteins, the hemagglutinin (HA) and neuraminidase (NA). A virus that has a type 1 HA and type 2 NA, for example, would have the subtype H1N2. At least 16 types of hemagglutinins (H1 to H16), and 9 neuraminidases (N1 to N9) are known to exist in birds.

Symptoms of HPAI/Bird Flu

The symptoms of avian influenza in people are similar to the symptoms of regular human seasonal influenza infection and include:

- Fever
- Conjunctivitis

- Fatigue
- Lack of appetite
- Coughing
- Sore throat
- Vomiting and diarrhoea
- Muscle ache

However, it is important to note that infection with a HPAI virus if untreated can result in a multi-organ disease including acute respiratory illness and neurologic disorders.

Transmission (WHO)

Human infections with avian and other zoonotic influenza viruses have been reported, but they are rare. Human infections are primarily acquired through direct contact with infected animals or contaminated environments, but do not result in efficient transmission of these viruses between people.

There are four types of influenza viruses: types A, B, C and D:

- Influenza A viruses infect humans and many different animals. The emergence of a new and very different influenza A virus with the ability to infect people and have sustained human to human transmission, can cause an influenza pandemic.
- Influenza B viruses circulate among humans and cause seasonal epidemics. Recent data showed seals also can be infected.
- Influenza C viruses can infect both humans and pigs but infections are generally mild and are rarely reported.
- Influenza D viruses primarily affect cattle and are not known to infect or cause illness in people.

Diagnosis/Testing

Diagnosis of HPAI is done through isolation of viral particles in culture of respiratory secretions (throat and nasal swab inclusive). However this technology is often not available in developing countries. It is also highly biohazardous. Commercial rapid tests which are easily applicable in the field are less sensitive. The most used diagnostic method is real time polymerase chain reaction RT-PCR13,14, a molecular method alternative that reduces the challenges inherent in the viral culture process. Sequencing will help to identify the circulating strain and will help in the development of vaccines.

Treatment

Antiviral drugs Oseltamivir, Peramivir, and Zanamivir have been successful in treatment of avian influenza A viruses. However, some evidence of antiviral resistance has been reported in HPAI Asian H5N1 viruses and influenza A H7N9 viruses isolated from some human cases.

Prevention and Control

Prevention and control strategies for avian influenza include the following:

- In Humans
    - Vaccination

        - Taking annual seasonal influenza vaccination is recommended to protect against seasonal influenza virus. This might not protect against any new strain.
    - Preventive practices
        - Those responding to or working with poultry should wear personal protective equipment while working in communities with existing outbreak.
        - Eat well cooked poultry and poultry products.
        - Practise good hand hygiene.
    - Public Education
        - Include self-monitoring for illness during and after responding to HPAI outbreaks among poultry.
        - Increase surveillance.
        - Engender societal behavioural changes.
- In Poultry farms
    - Biosecurity measures/practices
    - Disinfection
    - Infection prevention practices
        - Culling infected poultry farm birds
        - Proper disposal of death birds.
- Surveillance
    - Interoperable data exchange among human, animal and environment sectors

Country response

Nigeria has a Revised Comprehensive Emergency Preparedness and Response Plan for Highly Pathogenic Avian Influenza (HPAI) which focuses on the animal health sector.[10] The document provides a framework for preparedness and response to the emergence and re-emergence of avian influenza in Nigeria. Disease control activities are mainly carried out by veterinary and para-veterinary staff with the Ministries of Agriculture/Livestock at the federal and state levels, and the National Veterinary Research Institute, Vom (NVRI) (central laboratory), state laboratories, designated private laboratories and Veterinary Teaching Hospitals. NVRI serves as the national veterinary diagnostic reference and confirmatory laboratory for HPAI in Nigeria. Since the emergence of HPAI in Nigeria in 2006, the Avian Influenza Control Program conducts regular surveillance among live bird markets (LBMs) for the declaration of disease freedom. In addition, capacity has been built at all levels in areas of sample collection, global positioning system (GPS) and risk mapping, and in wild bird capture and sampling. In a confirmed case, the communication is from the laboratory to the Chief Veterinary Officer of Nigeria (CVON), from the CVON to the Director of Veterinary Services (DVS), from the DVS to the farmer/source of the samples submitted within twenty-four hours of the DVS being notified. In the event of a negative result, feedback can be sent from the laboratory to the CVON, DVS, farmer/custodian of the sample simultaneously. There are also standard operating procedures (SOPs) for depopulation, disposal and decontamination, SOPs for the implementation of biosecurity on poultry farms,

[10] Revised Comprehensive Emergency Preparedness and Response Plan for Highly Pathogenic Avian Influenza (HPAI) In Nigeria (Animal Health Component), May 2022.

as well as guidelines for compensation to farmers in the event of depopulation. The Government of Nigeria decided that the stamping out policy has to be followed with parallel compensation to all affected farmers. Risk communication activities for both preventive and control aspects of outbreak management have been carried out.

WHO continuously monitors avian and other zoonotic influenza viruses through its Global Influenza Surveillance and Response System (GISRS). WHO, in collaboration with the World Organisation for Animal Health (WOAH) and the Food and Agriculture Organization of the United Nations (FAO), conducts surveillance at the human-animal interface, assesses the associated risks and coordinates response to zoonotic influenza outbreaks and other threats to public health.

Regarding risk assessment, WHO provides guidance, surveillance, preparedness and response strategies to influenza – seasonal, zoonotic and pandemic influenza. Risk assessment outcomes and intervention recommendations are communicated in a timely manner. Member States collaborate with WHO to enhance preparedness and response nationally and globally.[11]

Rabies (FMAFS, FMoHSW, NCDC and WHO)

- https://www.ncdc.gov.ng/diseases/info/R

Key facts

- Rabies is a vaccine-preventable viral disease which occurs in more than 150 countries and territories.
- Dogs are the main source of human rabies deaths, contributing up to 99% of all rabies transmissions to humans.
- Interrupting transmission is feasible through vaccination of dogs and prevention of dog bites.
- Infection causes tens of thousands of deaths every year, mainly in Asia and Africa.
- Globally rabies causes an estimated cost of US$ 8.6 billion per year
- 40% of people bitten by suspect rabid animals are children under 15 years of age.
- Immediate, thorough wound washing with soap and water after contact with a suspect rabid animal is crucial and can save lives.
- Engagement of multiple sectors and One Health collaboration including community education, awareness programs and vaccination campaigns are critical.
- WHO leads the collective “United Against Rabies” to drive progress towards "Zero human deaths from dog-mediated rabies by 2030"

Background

Rabies is a viral infection spread via saliva through the bite of a rabid animal; it is caused by neurotropic viruses of the genus *Lyssavirus* in the family *Rhabdoviridae,* and is transmissible to all mammals. It is an acute, central nervous system infection, characterised by central nervous system irritation, followed by paralysis and death. Rabies is more prevalent in the

[11] *Influenza (Avian and other zoonotic)*. (2018). https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic)

developing world than in industrialised countries. Approximately 55,000 people die each year from rabies. An estimated 10 million people receive post-exposure prophylaxis each year after being exposed to animals with suspected rabies. The highest risk of human infection is from rabid dogs (accounting for about 94% of the confirmed diagnosed cases).

Rabies was first reported in Nigeria in 1912 and about 10,000 annual human cases are reported in the country making the disease a persistent endemic problem. The rabies viral antigen has been detected in the brain tissues of apparently healthy dogs slaughtered for human consumption in almost all geopolitical zones of the country and poses a significant public health risk to dog meat processors and handlers. It has also been diagnosed in bats, horses, monkeys, cats, and cows.

For a significant reduction in the incidence of human rabies in Nigeria, a concerted effort must be made to control the stray dog population in the urban and rural areas via intense public education on the proper care of dogs including annual vaccination. Above all, each of the above-mentioned points must be tackled scientifically and systematically.

Symptoms of Rabies

It usually takes 4 to 12 weeks for a person to develop rabies symptoms once they are infected. However, incubation periods can also range from a few days to six years. The initial onset of rabies begins with flu-like symptoms, including fever, muscle weakness, tingling. You may also feel burning at the bite site. As the virus continues to attack the central nervous system, there are two different types of the disease that can develop.

- Furious Rabies:
    - Infected people who develop furious rabies will be hyperactive and excitable and may display erratic behaviour. Other symptoms include insomnia, anxiety, confusion, agitation, hallucinations, excess salivation, problems swallowing, fear of water.
- Paralytic Rabies:
    - This form of rabies takes longer to set in, but the effects are just as severe. Infected people slowly become paralyzed, will eventually slip into a coma, and die. According to the WHO, 30 percent of rabies cases are paralytic.

Transmission

Animals with rabies transfer the virus to other animals and to people via saliva following a bite or scratch. However, any contact of saliva or brain tissue with the mucous membranes or an open wound can also spread the virus. While human-to-human transmission of the virus is extremely rare, there have been a handful of cases reported following transplantation of corneas. For humans who contract rabies, a bite from an unvaccinated dog is by far the most common culprit. Following a bite, the rabies virus spreads through the nerve cells to the brain. Once in the brain, the virus multiplies rapidly. This activity causes severe inflammation of the brain and spinal cord after which the person deteriorates rapidly and dies.

Post-Exposure Prophylaxis (PEP)

Post-exposure prophylaxis (PEP) is the immediate treatment of a bite victim after rabies exposure. This prevents virus entry into the central nervous system, which results in imminent death. PEP consists of:

- Extensive washing and local treatment of the bite wound or scratch as soon as possible after a suspected exposure;
- a course of potent and effective rabies vaccine that meets WHO standards; and
- the administration of rabies immunoglobulin (RIG), if indicated.

Starting the treatment soon after an exposure to rabies virus can effectively prevent the onset of symptoms and death.

Extensive wound washing

This first-aid measure includes immediate and thorough flushing and washing of the wound for a minimum of 15 minutes with soap and water, detergent, povidone iodine or other substances that remove and kill the rabies virus.

Exposure risk and indications for PEP

Depending on the severity of the contact with the suspected rabid animal, administration of a full PEP course is recommended as follows:

Categories of contact with suspect rabid animal	Post-exposure prophylaxis measures
Category I - touching or feeding animals, animal licks on intact skin (no exposure)	Washing of exposed skin surfaces, no PEP
Category II - nibbling of uncovered skin, minor scratches or abrasions without bleeding (exposure)	Wound washing and immediate vaccination
Category III - single or multiple transdermal bites or scratches, contamination of mucous membrane or broken skin with saliva from animal licks, exposures due to direct contact with bats (severe exposure)	Wound washing, immediate vaccination and administration of rabies immunoglobulin

All category II and III exposures assessed as carrying a risk of developing rabies require PEP.

This risk is increased if:

- the biting mammal is a known rabies reservoir or vector species
- the exposure occurs in a geographical area where rabies is still present
- the animal looks sick or displays abnormal behaviour
- a wound or mucous membrane was contaminated by the animal's saliva
- the bite was unprovoked
- the animal has not been vaccinated

The vaccination status of the suspect animal should not be the deciding factor when considering initiating PEP or not when the vaccination status of the animal is questionable. This can be the case if dog vaccination programs are not being sufficiently regulated or followed out of lack of resources or low priority.

WHO continues to promote human rabies prevention through the elimination of rabies in dogs, dog bite prevention strategies, and more widespread use of the intradermal route for PEP which reduces volume and therefore the cost of cell-cultured vaccines by 60% to 80%.

Diagnosis/Testing

There is no test to detect the early stages of rabies infection. After the onset of symptoms, a blood or tissue test will help a doctor determine whether the disease is present. If a person has been bitten by a wild animal, doctors will typically administer a preventive shot of rabies vaccine to stop the infection before symptoms set in.

Treatment

Getting a rabies vaccination as soon as possible after an animal bite is the best way to prevent the infection. Doctors will treat the wound by washing it for at least 15 minutes with soap and water, detergent, or iodine. Then, rabies immunoglobulin will be administered, in addition to starting a round of injections for the rabies vaccine. This protocol is known as post-exposure prophylaxis. Animal control will try to find the biting animal so that it can be tested for rabies. If the animal is not rabid, the large round of rabies shots can be avoided. However, if the animal cannot be found, the safest course of action is to take preventive shots.

Prevention

As rabies is preventable, the following simple measures can help keep you safe:

- Vaccinate your pets
- Get a rabies vaccination before travelling to developing countries, working closely with animals, or working in a lab handling the rabies virus
- Keep your pets from roaming outside
- Report stray animals to animal control
- Avoid contact with wild animals
- Prevent bats from entering living spaces or other structures near your home.

Country response

Country response to rabies outbreak is a One Health approach coordinated by the Federal Ministry of Agriculture and Food Security (FMAFS) through the national rabies technical working group (TWG). Nigeria recently launched its National Strategic Plan (NSP) for the elimination of dog-mediated human rabies (2022-2026) for implementation. Prior to the NSP, response to dog bite incidence and suspected rabies outbreaks would require the confirmation of the status of the biting dog. The biting dog, if alive, is usually quarantined for 10 days - with provision of food and water - within which time it dies.

Samples from the brain (whole head) are sent to the National Veterinary Research Institute (NVRI) for laboratory confirmation. This activity is usually undertaken by the disease investigating officer through the office of the Director of Veterinary Services (DVS) in the state. Depending on the circumstances surrounding the bite, and the vaccination of the animal, the bite victim is referred to a human health facility for assessment and treatment, even before confirmation of the results from the laboratory.

When there is a confirmed case, it is reported through the DVS to the Office of the Chief Veterinary Officer of Nigeria (CVON); and the CVON notifies WOAH (formerly OIE). This is done on a quarterly basis because rabies is endemic in Nigeria. The DVS also reports back to the investigating officer who communicates with the family of the victim or the health centre.

It is usual for states experiencing an outbreak (a single case of rabies is considered an outbreak) to request support from the CVON in terms of animal anti-rabies vaccines, social behavioural change (SBC) materials, and other logistics to carry out mass dog vaccinations. On the other hand, while the Federal Ministry of Health (FMoH) coordinates the procurement and distribution of a national quota of human anti-rabies vaccines to states, the states are expected to source and provide human anti-rabies vaccines for their response. The last national mass dog vaccination was in 1982. However, states have conducted mass dog vaccinations, including the FCT in 2023, albeit in a less coordinated manner and mostly during World Rabies Day activities.

With the development of the NSP, plans are underway to strategize the rabies response for maximum impact, including improved surveillance and data on dog bite/rabies cases, integrated bite case management (IBCM), and training of veterinary and animal health officers on rabies prevention and control. Public awareness of rabies and its prevention will feature prominently as part of activities in the NSP.

Rabies is included in WHO's new 2021-2030 road map, with the following highlights:

- WHO, FAO and WOAH have prioritised rabies under a One Health approach and have launched the multi-stakeholder 'United Against Rabies Forum' (UAR)
- WHO works with partners to guide and support countries as they develop and implement their national rabies elimination plans
- On the path towards rabies elimination, countries can request WHO validation of achieving zero human deaths from dog-mediated rabies, and seek OIE endorsement of their dog rabies control programmes and self-declare freedom from dog rabies
- The inclusion of rabies biologics into countries' list of essential medicines and advocating for increased access of poor and rural populations to PEP
- Monitoring of rabies programmes and disease surveillance are needed to measure impact and for increasing awareness and advocacy.[12]

Bovine Tuberculosis **(WOAH, FMAFS, and FAO)**

- https://www.woah.org/en/disease/bovine-tuberculosis/

[12] Rabies. (2021). https://www.who.int/news-room/fact-sheets/detail/rabies

What Is Bovine Tuberculosis?

- Bovine Tuberculosis (Bovine TB; bTB) is caused by *Mycobacterium bovis* and affects various species of animals including humans. It mainly affects cattle, which are the most important animal reservoir, and can become established in wildlife. It belongs to the *Mycobacterium* tuberculosis complex.
- It often affects sites other than the lungs (extrapulmonary), but in many cases is clinically indistinguishable from TB caused by *M. tuberculosis*.
- The disease results in important economic losses and trade barriers with a major impact on the livelihoods of poor and marginalised communities.

Burden

Humans

- In 2016, there were an estimated 147 000 new cases of bovine TB in people globally, and 12 500 deaths due to the disease. The African region carries the heaviest burden, followed by the South-East Asian region.
- The true burden of bovine TB is likely to be underestimated due to a lack of routine surveillance data from most countries.
- Global estimates of 9.4% of extrapulmonary TB cases in humans is attributed to *M. bovis* [13]
- Losses associated with bovine TB based on the value of future years of life loss amounts to nearly 8 billion USD purchasing power parity (PPP), which is 0.7% of the total National Gross Domestic Product (GDP).[14]

Animals

- There is limited data regarding the spread of bovine TB in animals. However, bovine TB is endemic in animal populations in low and middle income countries (LMIC).
- The highest prevalence of bovine TB is in Africa and parts of Asia.[15]
- In 2018, the estimated economic impact of bovine TB in Nigeria due to direct and indirect losses is estimated as 1.8 billion USD PPP which was 9.97% of the livestock value added and 0.61% of the National GDP.[16]

Risk Factors

Humans

- The most common route of transmission of *M. bovis* to humans is through contaminated food, mainly untreated dairy products or, less commonly, untreated meat products.

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[13] Anaelom, N. J. et al. (2010) 'Zoonotic tuberculosis : A review of epidemiology , clinical presentation , prevention and control', 2(September), pp. 118–124.
[14] FAO (2018). Africa Sustainable Livestock (ASL) 2050. The monetary impact of zoonotic diseases on society - Nigeria. Evidence from four zoonoses.
[15] Devi, K. R. et al. (2021) 'Occupational exposure and challenges in tackling *M. bovis* at human–animal interface: a narrative review', International Archives of Occupational and Environmental Health. Springer Science and Business Media Deutschland GmbH, 94(6), pp. 1147–1171. doi: 10.1007/S00420-021-01677-Z/TABLES/1.
[16] FAO (2018). Africa Sustainable Livestock (ASL) 2050. The monetary impact of zoonotic diseases on society - Nigeria. Evidence from four zoonoses.

- Airborne transmission also poses an occupational risk to people in contact with infected animals or animal products, including farmers, veterinarians, slaughterhouse workers and butchers.

Animals

- Factors include age, sex, breed, body weight, average daily gain, immune factors, genetic resistance or susceptibility to bovine TB.[17]

Key Challenges

- The laboratory procedures most commonly used to diagnose TB do not differentiate *M. tuberculosis* from *M. bovis*. This leads to underdiagnosis of bovine TB.
- Bovine TB poses challenges for patient treatment and recovery.
- *M. bovis* is naturally resistant to pyrazinamide, one of the four medications used in the standard first-line anti-TB treatment regimen.
- Healthcare providers initiate treatment without drug susceptibility testing, as a result, patients with zoonotic TB may receive inadequate treatment.
- Bovine TB in humans is often initially extrapulmonary and may be misdiagnosed, and therefore initiation of treatment can be delayed.

Country response

Nigeria is currently working to develop a national bovine tuberculosis specific contingency plan that sets out the structures and systems used to coordinate an effective response and to ensure alignment with national and international frameworks, laws and standards related to the prevention and control of bovine tuberculosis. A workshop was conducted in December 2022 and a draft Bovine Tuberculosis Strategic Plan (2023-2027) was developed. A follow-on workshop to validate and finalise the plan was conducted in June 2023.

WHO Priorities For Bovine Tb

WHO, WOAH, FAO and the International Union Against Tuberculosis and Lung Disease (The Union) launched the first-ever roadmap for tackling bovine TB in October 2017. The roadmap is centred on a One Health approach, recognizing the interdependence of human and animal health sectors to address the major health and economic impact of this disease. It articulates clear immediate actions that all stakeholders can take to address this issue across different sectors and disciplines and defines milestones for the short- and medium-term. The roadmap calls for concerted action from government agencies, donors, academia, non-governmental organisations and private stakeholders across political, financial and technical levels. Ten priorities for action are defined, which will also bring substantial benefits for the control of other zoonotic and foodborne diseases:

Improve the scientific evidence base

[17] www.frontiersin.org/articles/10.3389/fvets.2022.846423/full#B12

1. Systematically survey, collect, analyse and report better quality data on the incidence of bovine TB in people, and improve surveillance and reporting of bovine TB in livestock and wildlife.
2. Expand the availability of appropriate diagnostic tools and capacity for testing to identify and characterise bovine TB in people.
3. Identify and address research gaps in bovine TB, including epidemiology, diagnostic tools, vaccines, effective patient treatment regimens, health systems and interventions coordinated with veterinary services.

Reduce transmission at the animal-human interface

4. Develop strategies to improve food safety.
5. Develop capacity of the animal health sector to reduce the prevalence of TB in livestock.
6. Identify key populations and risk pathways for transmission of zoonotic TB.

Strengthen intersectoral and collaborative approaches

7. Increase awareness of zoonotic TB, engage key public and private stakeholders and establish effective intersectoral collaboration.
8. Develop and implement policies and guidelines for the prevention, surveillance, diagnosis, and treatment of zoonotic TB, in line with intergovernmental standards where relevant.
9. Identify opportunities for community-tailored interventions that jointly address human and animal health.
10. Develop an investment case to advocate for political commitment and funding to address zoonotic TB across sectors at the global, regional and national levels.

Brucellosis (WHO, FAO, and FMAFS)

- https://www.who.int/news-room/fact-sheets/detail/brucellosis

Key Facts

- Brucellosis is a zoonotic disease with high economic impact in animals and humans.
- In animals, it causes abortion in the third trimester and infertility in males.
- Brucellosis is found globally and is a reportable disease in most countries.
- The disease causes flu-like symptoms, including fever, weakness, malaise and weight loss.
- Person-to-person transmission is rare.
- Brucellosis is a bacterial disease caused by various *Brucella* species (*B. abortus* and *B. suis*), which mainly infect cattle, swine, goats, sheep and dogs.
- The overall loss in animal production due to brucellosis is estimated at 1.37 billion USD PPP, which is equivalent to 7.77% of the livestock GDP and 0.13% of the national GDP.[18]

Brucellosis is a bacterial disease caused by various *Brucella* species, which mainly infect cattle, swine, goats, sheep and dogs. Humans generally acquire the disease through direct

[18] FAO (2018). Africa Sustainable Livestock (ASL) 2050. The monetary impact of zoonotic diseases on society - Nigeria. Evidence from four zoonoses.

contact with infected animals, by eating or drinking contaminated animal products or by inhaling airborne agents. Most cases are caused by ingesting unpasteurized milk or cheese from infected goats or sheep.

Brucellosis is one of the most widespread zoonoses transmitted by animals and in endemic areas, human brucellosis has serious public health consequences. Expansion of animal industries and urbanisation, and the lack of hygienic measures in animal husbandry and in food handling, partly account for brucellosis remaining a public health hazard.

Who is at Risk?

Brucellosis is found globally and is a reportable disease in most countries. It affects people of all ages and both sexes. In the general population, most cases are caused by the consumption of raw milk or its derivatives such as fresh cheese. Most of these cases are from sheep and goat products.

The disease is also considered an occupational hazard for people who work in the livestock sector. People who work with animals and are in contact with blood, placenta, foetuses and uterine secretions have an increased risk of contracting the disease. The organism can easily penetrate open skin and transmit infection to humans. The high-risk population primarily are livestock farmers, butchers, hunters, veterinarians, para-veterinarians and laboratory personnel. Worldwide, *Brucella melitensis* is the most prevalent species causing human brucellosis, owing in part to difficulties in immunising free-ranging goats and sheep. Human-to-human transmission is very rare.

Prevention and Control

Prevention of brucellosis is based on surveillance and the prevention of risk factors. The most effective prevention strategy is the elimination of infection in animals. Vaccination of cattle, goats and sheep is recommended in enzootic areas with high prevalence rates. Serological or other testing and culling can also be effective in areas with low prevalence. In countries where eradication in animals through vaccination or elimination of infected animals is not feasible, prevention of human infection is primarily based on raising awareness, food-safety measures, occupational hygiene and laboratory safety.

Pasteurisation of milk for direct consumption and for creating derivatives such as cheese is an important step to preventing transmission from animals to humans. Education campaigns about avoiding unpasteurized milk products can be effective, as well as policies on its sale.

In agricultural work and meat-processing, protective barriers and correct handling and disposal of afterbirths, animal carcasses and internal organs is an important prevention strategy.

Treatment and Care

Brucellosis typically causes flu-like symptoms, including fever, weakness, malaise and weight loss. However, the disease may present in many atypical forms. In many patients the

symptoms are mild and, therefore, the diagnosis may not be considered. The incubation period of the disease can be highly variable, ranging from 1 week to 2 months, but usually 2–4 weeks.

Treatment options include doxycycline 100 mg twice a day for 45 days, plus streptomycin 1g daily for 15 days. The main alternative therapy is doxycycline at 100mg, twice a day for 45 days, plus rifampicin at 15mg/kg/day (600-900mg) for 45 days. Experience suggests that streptomycin may be substituted with gentamicin 5mg/kg/daily for 7–10 days, but no study directly comparing the two regimes is currently available. The optimal treatment for pregnant women, neonates and children under 8 is not yet determined; for children, options include trimethoprim/sulfamethoxazole (co-trimoxazole) combined with an aminoglycoside (streptomycin, gentamycin) or rifampicin.

WHO RESPONSE

WHO provides technical advice to member states through provision of standards, information and guidance for the management of brucellosis in humans and animals. The Organization works to support the coordination and sharing of information between the public health and animal health sectors. In collaboration with FAO, WOAH and the Mediterranean Zoonoses Control Programme (MZCP), WHO supports countries in the prevention and management of the disease through the Global Early Warning System for Major Animal Diseases (GLEWS).

WHO works with national governments, academia, non-governmental and philanthropic organisations, and regional and international partners to prevent and manage zoonotic threats and their public health, social and economic impacts. These efforts include fostering cross-sectoral collaboration at the human-animal-environment interface among the different relevant sectors at regional, national and international levels. WHO also works to develop capacity and promote practical, evidence-based and cost-effective tools and mechanisms for zoonoses prevention, surveillance and detection through reporting, epidemiological and laboratory investigation, risk assessment and control, and assisting countries in their implementation.

As part of the One Health approach, WHO collaborates with FAO and WOAH on the Global Early Warning System for Major Animal Diseases (GLEWS). This joint system builds on the added value of combining and coordinating alert mechanisms of the three agencies to assist in early warning, prevention and control of animal disease threats, including zoonoses, through data sharing and risk assessment.

Handout 6: Case Studies - Lassa Fever, mpox, Rabies and Avian Influenza

Instructions: The following case studies are based upon real-world zoonotic disease epidemic scenarios. Each member of the group should take a few minutes to read through your assigned case study. All group members should then come together to discuss:

1. Which principles of risk communication were applied?
2. What could have been done better?
3. And who should have been more involved?
4. How could the media and the public health sector better coordinate in this response?

One person should take notes of key points of the discussion. You will have twenty minutes to work on this exercise before presenting your analysis for five minutes to the larger group.

CASE STUDY 1: Lassa Fever In Nigeria

Scenario

In November 2022, a female patient was rushed into a Teaching Hospital with a two-day history of high-grade fever and profuse vaginal bleeding. The gynaecology team on call evaluated the patient and hurriedly moved her to the theatre, where an emergency surgical procedure was conducted to control the bleeding. The vaginal bleeding became worse, in addition to more bleeding from the operation site, and the patient died 24 hours later, despite every effort made to save her life.

A 36-year-old male resident doctor, who was a member of the surgical team for the female patient, developed fever, diarrhoea, and vomiting two weeks after assisting in the surgical procedure. The doctor was taken to a private facility and treated for malaria. Despite the medications, his fever persisted, and he was readmitted to the same private facility where he had been admitted previously. He was further evaluated for other causes of fever. Some days later, his condition deteriorated, and he later developed severe abdominal pain. He was transferred to the Teaching Hospital, where the surgical team there took over the management of his condition after a diagnosis of “acute abdomen” was made. To ease the pain, some medications were administered and bleeding from the injection site was noticed by the consultant team lead. This triggered a high index of suspicion for Lassa fever by the consultant who requested a Lassa fever test. Four days later, the result came out positive for Lassa fever, which was sent to the facility. The medical doctor, now turned patient, was moved to the isolation ward, where the management of Lassa fever infection began.

Following this diagnosis, public health officials conducted contact tracing among the doctor’s family members in the community and his colleagues (doctors, nurses, attendants, and cleaners) from both the teaching hospital and the private hospital. One of the theatre nurses who had been absent from work for weeks after the procedure was traced to her village, where she was found to be recovering from a “febrile” illness and having some hearing difficulties. She and two other support staff at the teaching hospital tested positive for Lassa

fever. The theatre nurse was found to be a small-scale farmer who produced cassava and dried them on a sack spread outside on the ground, in front of her home.

The media was not adequately involved in the outbreak investigation; as a result, radio and TV stations carried varying reports of the incident. They exaggerated the number of people affected by the disease and gave incorrect information about the cause, mode of transmission, and complications or outcomes of the disease. News about the hospital Lassa fever outbreak (from the media reports and hearsay) spread among the Teaching Hospital staff and the community, and the circulating rumours instilled fear and suspicion. The gynaecological and surgical wards where the doctor was treated were deserted, making it impossible to obtain all the necessary information from some of the exposed staff. Also, the majority of the contacts in the community were not cooperating with the investigators because of the stigma associated with Lassa fever in the community.

CASE STUDY 2: Rabies In Nigeria

Mr. Dung kept many dogs in his compound. His favourite dog was Kir. Although a local breed, Kir was so beautiful and prolific. She had litters twice a year, sometimes with as many as ten puppies. Mr. Dung lived in Buga community, where the people also kept dogs as pets and for hunting purposes. Buga people are avid radio listeners, especially the hunters who carry around small radios as this was a trusted method of getting information.

Last year, there was quite a stir in the community. It was during the Christmas holidays, and there were many people and things to do in the village. Radio stations constantly played Christmas jingles with catchy messages that brought joy to listeners. Perhaps that is why Mr. Dung missed the changes in Kir. She was no longer excited to see him, and her appetite had diminished. It was like her whole personality changed. One day, she quietly slipped out of the compound when someone opened the gate. For days, no one could locate her.

On his way back from work four days later, Mr. Dung saw a group of people carrying a blood-soaked toddler, running to the health centre. After asking what had happened, he discovered that his dog, Kir, had bitten the child on the shoulder. He hastily followed them to the clinic, where the youngster received post-exposure anti-rabies treatment and medical attention. The health worker took advantage of the situation to inform the crowd about the risks associated with rabies. She urged everyone with dogs in their homes to take them to the public veterinary clinic annually for an anti-rabies shot.

Mr. Dung was enraged; he wondered what had happened to Kir that she could suddenly become this violent. On getting home, his children told him they had found Kir cowering under a parked car in the compound. Mr. Dung was so angry that he took a piece of wood and hit Kir the dog on the head. The dog died. While preparing the meat for consumption, Mr. Dung cut his hand against a skull bone. It was such a little cut that he thought nothing of it. Three months later, Mr. Dung noticed he disliked being under the glare of the sun, it hurt his eyes. His hand also hurt. This went on for several weeks until Mr. Dung woke up paralyzed one morning. The act of swallowing anything, even water, became more and more difficult for him. He also started developing a fear of water. His family then took him to the

hospital, where the doctor diagnosed him with rabies after taking an extensive history. It was a sad experience for Mr. Dung's family when he passed away one week later.

Local government health officials visited the community and met with the community leaders. They taught the leaders the various ways rabies could be contracted, the simple methods for preventing rabies infection even after exposure, such as washing hands with soap and running water, and to report for post-exposure vaccination at a health facility as soon as possible. They explained that rabies was incurable once symptoms started to manifest. The veterinary department also vaccinated all dogs in the community against rabies.

CASE STUDY 3: Mpox In Nigeria

Kura is a community located in Tsinke LGA of Nachira State. Farming and hunting are the predominant occupations of residents in the community. The community has one secondary and two primary schools. The market day is held every Wednesday and a predominant delicacy sold on the market day is bushmeat.

On the 5th of January 2023, a healthcare worker with the primary healthcare centre (PHC), Kura, noticed three patients who presented with fever, intense headache, swelling of the lymph nodes, and rashes, which were more concentrated on the face, extremities, soles, and palms rather than on the trunk.

Upon further investigation, he discovered that there were more people in the same community who had similar symptoms. He statutorily notified the Disease Surveillance and Notification Officer (DSNO), who promptly took samples from the patients, and the results confirmed that all three patients had mpox.

A rapid response team (RRT), which included media personnel, was mobilised to the community for an outbreak investigation. Through contact tracing, they identified 43 close contacts of the index cases. Six of the contacts were diagnosed with mpox, including a primary school pupil. Most of the secondary cases were from the same household or were neighbours of the index cases.

Throughout the entire investigation, daily updates about the number of people affected were announced on the local TV and radio stations. The Tsinke local government authorities declared an outbreak based on the national case definition. The people in the community were agitated by the situation because they believed that the disease was a punishment from the gods and felt that it could only be cured by carrying out some traditional rituals. The authorities were concerned about this because this showed that mpox awareness was low among community members and therefore, the disease could easily spread further in the community. Although information about the cause of mpox, its mode of transmission, and prevention was disseminated in the community, the contents of the messages were not simple, concise, and clear enough for the community to understand. As a result, this increased the fear of being isolated and stigmatised within the community.

CASE STUDY 4: Avian Influenza In Nigeria

On the evening of November 7th, Mr. Nasir returned from his trip to the Niger Republic, where he had gone to attend the wedding of his long-time friend and business partner, Mr. Audu. Mr. Audu gave him a family of exotic geese as a token of his appreciation for his presence. He claimed to have just imported them from China. After much deliberation, Mr. Nasir accepted the gift and brought the geese home with him so that he could add them to his poultry farm. He reasoned that they would blend in just fine with the other birds. As he settled back into his routine, he soon forgot that he had brought in the geese into his farm. The poultry farm was situated in the outskirts of Nafia, a semi-urban settlement and was surrounded by many other poultry and integrated farms and orchards. Hausa was the predominant language spoken and the people had a culture of not consuming sick or dead animals. It was considered a taboo to eat animals that were sick or about to die.

After a week, Mr. Nasir began to experience fatigue, sore throat, fever, coughing, muscle and joint pain, headaches, and conjunctivitis. After taking some medication for the common cold, Mr. Nasir realised he was not getting better. He wondered what kind of severe cold he had this time, yet he felt it was something that would pass with time.

The following week, his farm manager called him: “I didn't want to bother you before sir, but you must see this. I urgently need you to come to the farm.” When Mr. Nasir arrived at the farm, he was surprised to see piles of dead birds, about 200 of them, which had not happened before. The manager told him the deaths started five days after his return from the Niger Republic, and many others were sleepy and droopy. There was no history of stampedes, heat stroke, or poisoning at the farm. They decided that this was not serious since he had 10,000 birds. The next day, 500 birds died, and they had to invite a veterinarian to treat the rest of the birds. The birds still did not get better. It all culminated in 800 birds dying in one day.

Worried, Mr. Nasir made his way back home. To find out more about this latest spate of deaths at his farm, he called his neighbour, Mr. Job - also a poultry farmer - who said there was nothing out of the ordinary. That night, Mr. Nasir could not sleep. His health took a turn for the worse, and he had to be rushed to the hospital. The index of suspicion for highly pathogenic avian influenza (HPAI) was raised when the doctor at the health facility learned that Mr. Nasir was a poultry farmer. Samples were collected and tested for HPAI, and they returned positive. This was escalated to the state epidemiologist, and the state declared an outbreak.

The following day, all the major news outlets reported the case of HPAI. The state veterinary department also contacted Mr. Nasir. They told him they were going to test his birds, and if they tested positive for HPAI, they would depopulate the birds. When the other farmers in the vicinity heard about this, they quickly and quietly sold off their birds and eggs.

HANDOUT 7: SBC MATERIALS FOR PZDS

Instructions:

A Google folder link with all the SBC materials for PZDs can be accessed here: https://drive.google.com/drive/folders/1S9LCLpWqtGzibxbJ1BfVlKOt7TmTa8-8?usp=share_link . Participants will receive a flash drive with all the SBC materials. In the folders, you will find the following:

1. Print materials for the following diseases:
    a. Lassa fever
    b. Yellow fever
    c. Mpox
    d. Avian Flu
    e. Bovine TB
    f. Brucellosis
    g. Rabies
2. Audio materials for the following diseases:
    a. Yellow Fever (Hausa, Pidgin)
    b. Mpox (English, Hausa, Igbo, Pidgin, Yoruba)
3. Nigeria One Health Strategic Plan
4. NCDC Social Media Strategy

Handout 8: Roles and Responsibilities of Public Health and Media Practitioners

Key Role of the Government Spokesperson in an Epidemic: Communicate information that the public wants or needs; enable people to take informed action to protect themselves; strengthen trust; and minimize physical and mental harm. The spokesperson **does not accomplish these objectives** alone but works in close collaboration with key professionals with expertise in communication/SBC, relevant in-country Technical Working Groups, and other key actors in One Health (animal, human, environmental health); risk communication; and epidemic response.

KEY ROLES AND RESPONSIBILITIES OF PUBLIC HEALTH PRACTITIONERS

Phase	Main Responsibilities
Pre - epidemic	• Keep up-to-date information of the situation of the PZDs in the country. • Attend One Health team meetings regularly • Know the actors involved in risk communication and rumour management at all levels • Be involved in Technical Working Groups activities for public health emergency • Participate in preparedness exercises and/or emergency simulations to test the functionality of the communications processes in place; and communicate with the media and public about the importance of these exercises. • Take part in international webinars and meetings on zoonotic and infectious diseases, One Health, antimicrobial resistance, food safety, vector-borne diseases, recent outbreaks, and related health threats at the animal-human-environment interface. • Be part of a pool of experts for all One Health Stakeholders at all levels of government
During an active epidemic	• Actively link with experts from the One Health sector to obtain key information from each perspective. • Collaborate with other spokespersons at various levels of government to strategize on sharing key information and messaging. • Determine priorities for pushing out messaging around prevention, consistently highlighting those actions which are most critical.

	• Acknowledge uncertainties to the public; craft messages that convey what is known and not known in a clear, precise and transparent way.
	• Remain abreast of emerging data and research findings related to the epidemic, and craft precise, clear summaries of relevant results to share with the public; direct the media to official sources for up-to-date data.
	• Give journalists a reasonable time frame in which new information will be released and establish a schedule for releases along with ground rules.
	• Be readily available at all times to respond timely to concerns raised by the media and other actors; provide regular opportunities for questions, and respond to all questions transparently, accurately and to the best of one's knowledge while recognizing areas of uncertainty.
	• Remain aware of emerging false information and rumours, and address them in briefings with factual information—while avoiding repeating the rumour itself.
	• Anticipate and prepare in advance for the questions that journalists are likely to pose during a response *(see "Questions journalists might ask of official spokespersons" below)*
	• Regularly offer the media:
	  ○ Quotes and key, digestible background information about disease origins and spread.
	  ○ Synthesis of important data and studies about the outbreak.
	  ○ Insight into the human, animal and environmental health connections.
	  ○ Information about the impact of the epidemic on animals and humans.

Post epidemic	• Communicate clearly and precisely about ongoing risk as an epidemic begins to recede.

	• Review official messaging, successes and difficulties in the response, and support the transparent dissemination of these lessons.
Key Role of the Journalist in an Epidemic: Informing a majority of the public very quickly with critical, factual information that enables them to make informed choices to protect their lives and counter misinformation. This includes acting as public watchdog; interpreting official information; driving public agendas and reflecting what is already on communities' agendas.	
	• Maintain communication surveillance about the outbreak.

KEY ROLES AND RESPONSIBILITIES OF JOURNALISTS/MEDIA PRACTITIONERS

Phase	Main Responsibilities
Pre-epidemic	• Establish relationships with key public health officials, experts and other One Health actors, as well as community leaders and representatives. • Become familiar with the One Health and risk communication infrastructure, terminologies and emergency response protocols in the country. • Understand and raise public awareness about zoonotic disease signs & symptoms, risks and what is being done within the public health system to prepare for a possible outbreak. • Report regularly on the concerns of the community that affect preparedness for an epidemic—such as resources for the local health system, satisfaction and feedback linkages with health providers, etc.
During an active epidemic	• Rapidly activate a network of diverse sources to get information out as timely as possible to inform and empower the public. • Encourage people to adopt protective measures, health-seeking behaviour, and direct people to services and information. • Reach audiences in different locations using different languages and channels. • Build large or location-dependent audiences and attract readers and listeners. • Work with One Health Communication experts or authorities to counter misinformation with facts.

	• Create awareness and update the public on the work that the government and its partners are doing to respond to the outbreak. • Frame issues compellingly with “a human-angle story” (see “What’s a good story?” below). • Interpret or help explain official information coming from government sources so that it is understandable to the non-technical media consumer (in layman’s language, distilled to key take-aways, highlighting the relevance of the information to the broader public). • Carefully verify and corroborate emerging information before reporting it; collect perspectives from multiple sources and always seek expert verification in checking facts. • Collect and report on the concerns of real community members; develop stories centred on the concerns of communities and groups whose perspectives may not easily be heard. • Serve as a watchdog to hold authorities to account, raising the concerns of the community when posing questions to authorities and investigating as necessary the cause, responsibility and adequacy of the response. • Explore viewpoints that may differ from those of public health practitioners and authorities; point out apparent contradictions or misinformation in public health-related statements so that these points can be clarified for the public. • Respect confidentiality and abide by all principles of journalistic ethics in reporting.
Post - epidemic	• Continue to share information about the long-term impact of the epidemic and its intervention. • Report on any post-response action or reports, so that the public is aware and can hold officials accountable for continued investment. • Report and promote human angle stories that will reinforce positive behaviour change in the long term.

What's a "Good Story" in an Epidemic?

One that speaks to the current moment and the public's most pressing concerns.

One that captures the reality of ordinary people's experiences but avoids sensationalizing.

One that helps people understand complex issues to make informed choices.

One that can attract attention in a crowded media landscape with many voices.

One with widespread appeal, that can grow the following of the journalist or media outlet.

Handout 9: Messages and Materials Checklist

Before finalising your messages and associated materials, ensure that:	✓
All messages and materials:	
Are accurate	
Are presented in clear language, without technical jargon or complex words	
Acknowledge feelings of fear and uncertainty, without elevating either	
Are written in a way that communicates empathy for the audience	
Are expressed in a concise manner, with only the information the audience needs to know	
Do not promote stigma or discrimination against a certain group(s) of people	
Were developed after considering feasibility of actions, cultural and religious practices, perceived risks and barriers and facilitators	
Are clear and attractive in presentation	
Consider different cultural context and linguistics	
Preventative action messages:	
Indicate the audience(s) for which the action is appropriate	
Have a clear and feasible call to action	
Are aligned with messages from other key actors (WHO, MOH, and partners), to avoid confusion	
Link to available services and resources	

Provide information on how or why as appropriate	
Outbreak updates and new information messages:	
Address current concerns of the community/public	
Clearly communicate what is known and not known about the disease and outbreak at the time	
Explain what is being done to understand the outbreak further	
If dispelling rumours, myths or misinformation, do so in a manner that is understanding, and not accusatory	
Indicate where to find the most updated information	
Additional considerations for messages prior to dissemination:	
Are contextualised according to local culture, linguistic preferences, and current data, on behaviour change and social science data	
Are appropriate in length, format and content for the media channel/delivery method	
Have been pre-tested with key audience(s) and revised to incorporate and address feedback received	

Handout 10: Ade and Musa Scenarios (MP)

Instructions: Read the below scenarios (1 or 2 based on your assigned group.) After reading and discussing the scenario, take **twenty minutes** to discuss and take notes on the following questions for share-out:

Scenario 1: Ade

You run into your cousin's friend, Ade, a farmer in Rain Town, a small village not far from Sun Town, a larger market town. In catching up with him, he tells you this story. A few weeks ago, he came into Sun Town to visit the market and ran into his friend, Obi, a popular traditional healer. Obi says he has been receiving a very large number of visitors complaining of fevers, headaches and muscle pain and has treated them. He has heard of several people who have died and more keep coming to visit him with the same symptoms. Two weeks later, at the next market day, Ade looked for but could not find Obi; after asking around, a market vendor told him that Obi hasn't been seen for the past week and people are saying that he is very ill at home. When Ade arrives back in Rain Town that evening, he hears that the village chief of Rain Town has died. He usually doesn't travel outside of the village these days but had walked into Sun Town a week earlier to seek traditional medicine for a skin condition and became dramatically ill over the last two days. His wife was also beginning to develop a strong fever and was staying at home.

1. Who do you need to talk with to confirm the accuracy of the information?
2. Are there characteristics of the health issue that you need more information about?
3. What is the best source to learn more?
4. What angle/perspective would you take in reporting the story?
5. What are some of the potential unintended consequences the story could have?
6. What are some of the things people in the community would want to know?
7. How would you present the information in a useful and actionable way?

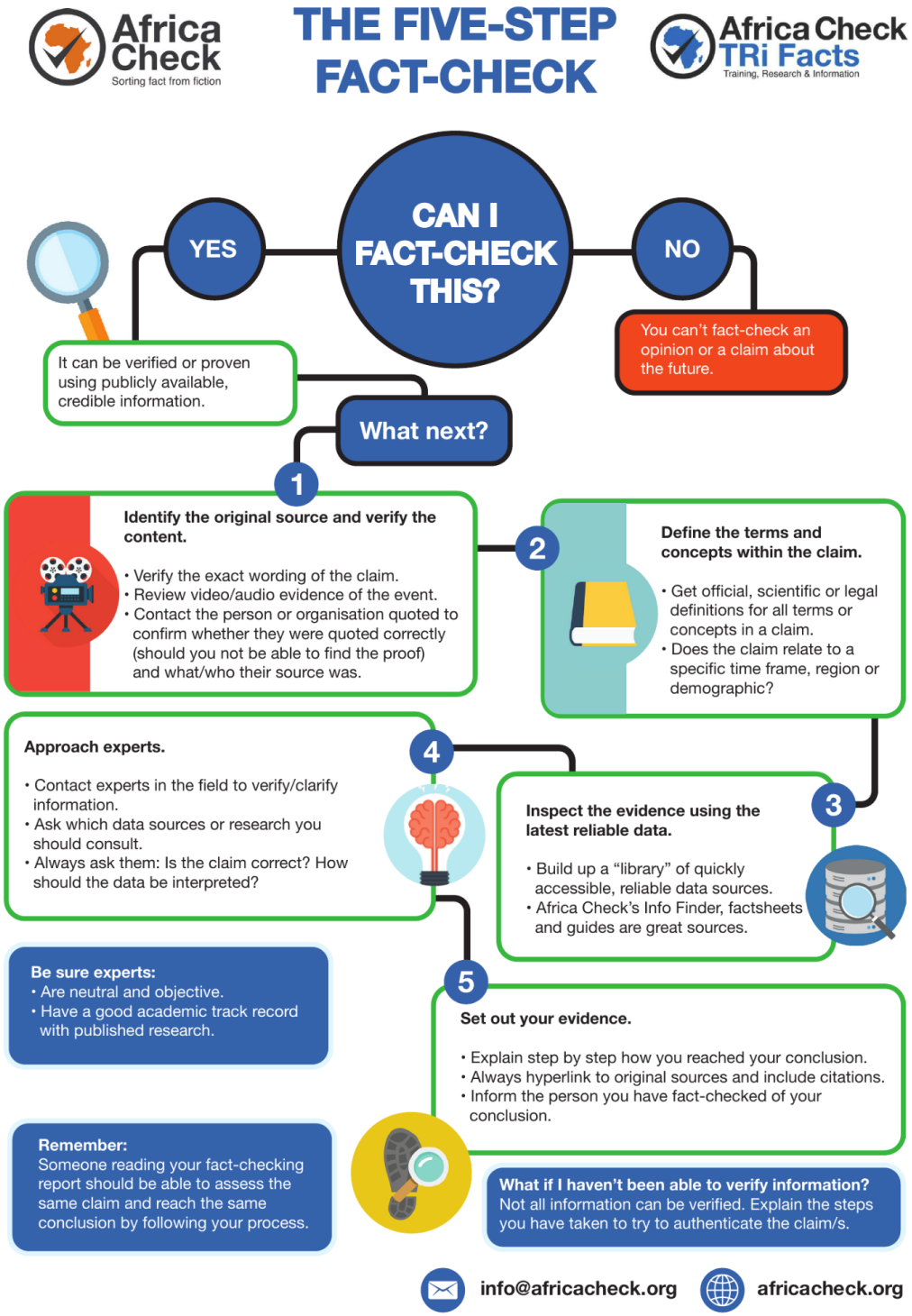
Scenario 2: Musa

One of your neighbours tells you a story they heard at church from their friend Musa. Musa is a farmer who lives in Sun Town. Musa shared that a lot of the poultry farmers in Sun Town are really worried about a spate of deaths of poultry in the past few weeks; the disease became quite widespread at one large farm and soon other farmers with much smaller flocks were sharing on a WhatsApp group for area farmers that their chickens were dying. He heard that one poultry farmer had become very ill. Government inspectors had been out to the large farm to investigate

and ordered a number of flocks to be culled, generating press attention. Musa says that villagers think that this is an attempt by a nearby large poultry farming enterprise to sabotage the business of small poultry farmers in the area; he believes that the media are exaggerating the story and the numbers of chickens affected. There is another rumour circulating that the national government is playing up the risk of this poultry disease to gain more funding from international organisations. Farmers are complaining that the new farm regulations the government is establishing to control the poultry disease are impossible for them to meet; some are avoiding informing the authorities of illness in their chickens for fear that the whole flock will be destroyed by inspectors and their livelihoods affected.

1. Who do you need to talk with to confirm the accuracy of the information?
2. Are there characteristics of the issue that you need more information about?
3. What is the best source to learn more?
4. What angle/perspective would you take in reporting the story?
5. What are some of the potential unintended consequences the story could have?
6. What are some of the things people in the community would want to know?
7. How would you present the information in a useful and actionable way?

Handout 11: Fact Checking & Detecting Mis- and Disinformation (MP)



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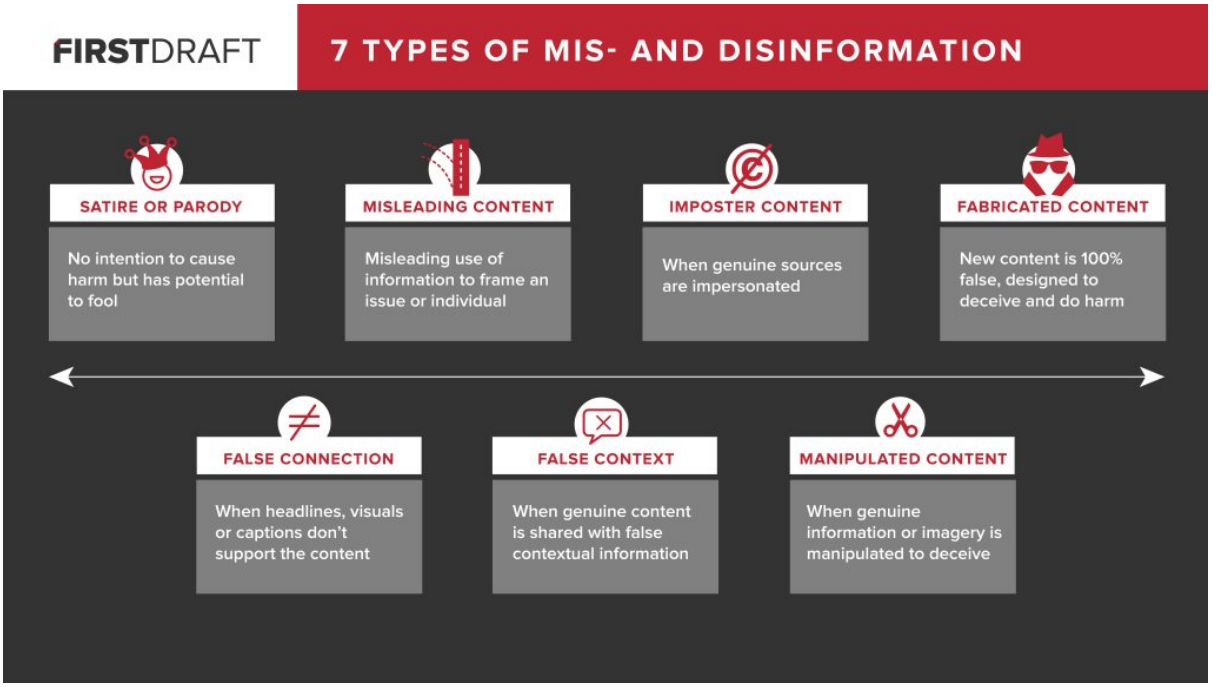
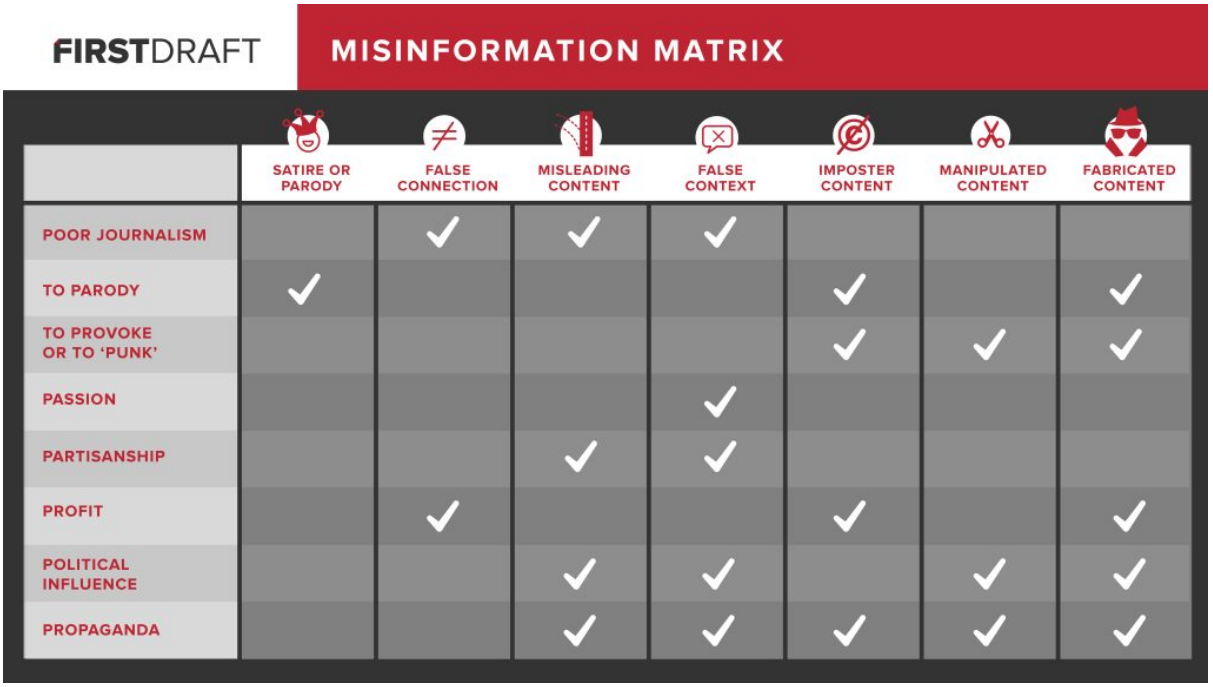
[19] Brodie, N. (2015). *GUIDE: The five-step fact-check*. Africa Check. http://africacheck.org/fact-checks/guides/guide-five-step-fact-check





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[20] Rinehart, A. (2017, February 16). *Fake news. It's complicated.* First Draft. https://firstdraftnews.org:443/articles/fake-news-complicated/

Handout 12: Creative Brief Template (MP)

Name of your campaign	
Timeline of your campaign	

What is your campaign about? – overview and background
What problem do we want our PSA to solve and how do we intend to solve it? **Why is it important to solve this problem and how does it benefit the community?**

Who is your target audience?
Who do you want to reach with the PSA? – Chicken farmers? Why? **Your audience can be divided into two – Primary and Secondary** **1. Who is your primary audience and what is their personality?** **2. Who is your secondary audience and what is their personality?** **3. What do we know about this audience that can help us deliver a PSA that will speak to them?** **4. What does this audience think now about our intended message and what do we want them to do after?**

Scope of campaign and expected deliverable(s)
How many PSAs do you want to develop for the campaign? Will they be for Radio, Television or Print media or a combination of all? Be specific

Estimated length of PSA	**30 seconds? 60 seconds?**

Message & call to action
Every PSA has a message it wants to share with the audience, so what specific single key message do you want to leave with your audience? The message is the *oxygen* of your PSA and remember to keep it simple.

Tone
After listening to the PSA: **1. What do we want the audience to feel?** **2. What do we want them to take away after listening to the PSA?**

Handout 13: Interview role play (MP)

Group A Instructions:

You will be role playing the below scenario within your group in order to practise what we have discussed about interviewing during a public health emergency.

Please select one person in your group to be the journalist in the scenario; this person will represent your group. As a group, you will have **ten minutes to work with your journalist and prepare for the interview role play**. The journalist should be prepared with questions and keep in mind all of the principles we have discussed in previous sessions.

After **ten minutes**, you will begin to act out the scenario in a ten-minute interview with Group B. Those group members without an acting role will be observing and taking notes on how the journalist applies, or does not apply, the principles we have discussed, such as: empathy, informed consent, considering the risks involved for informants, active listening and types of questions. After this ten-minute role play, we will come together to discuss these questions for the last five minutes.

Scenario

There has been a spate of reported illnesses in chickens in Sun Town over the past few weeks. Since the first cases at a large commercial farm nearby, other small family-owned farms have started to see their flocks affected. Animal husbandry and poultry rearing in particular is the most significant industry in Sun Town; many families rely on their flocks as a major source if not the only source of income for their families. There has been talk of the owner of the first commercial farm also becoming ill recently with flu-like symptoms, although these reports are unconfirmed. Government veterinary inspectors have been out to the large farm and have ascertained that the cause of the widespread chicken disease is most likely a form of influenza. They ended up culling a significant portion of the flock, but some were spared because the large farm had enough resources to space out the chickens into numerous chicken houses and limit its spread.

Now panic is spreading among the smaller family farms in Sun Town, most of which have far fewer resources than the commercial farm to protect their flocks or their families. Most only have one or two small chicken houses, with chickens overcrowded because of the limited land available.

As a journalist with the *Sun Town Times*, you have been covering the ongoing investigation into the chicken epidemic and the actions of the local public health and veterinary authorities. A contact from the local Farmer's Union puts you in touch with his friend Musa, who he says has been greatly affected by the spreading epidemic as his own flock became infected following a visitor from the nearby commercial farm. The illness spread rapidly amongst his chickens and a visit from the veterinary inspector led to the vast majority of his flock being culled to avoid spreading the infection. Your contact tells you that Musa's family is devastated. They do not know what will replace the income from their lost flocks, nor do they trust the government to offer the support promised to farmers whose animals must be culled due to disease. He says that Musa is bitter with what he says has been a lack of

understanding or empathy on the part of the veterinary services and the feeling that he and his family have been 'the sacrificial lambs' of a government trying to show that the epidemic is under control. He has also been active in a WhatsApp group discussing the rumour that the chicken disease is a political ploy to disempower the farmers of the region.

You contact Musa, who agrees to be interviewed the next day at 10AM at the family farm. You immediately begin preparing for the interview.

Group B Instructions:

You will be role playing the below scenario with your group in order to practise what we have discussed about interviewing during a public health emergency.

Please select one person in your group to be Musa, the person being interviewed in the below scenario; this person will represent your group. As a group, you will have ten minutes to work with your representative and get him into character for this role. Discuss what this character might be feeling and how he might respond to likely questions based on his story and experiences.

After **ten minutes,** you will begin to act out the scenario (a ten-minute interview) with Group A.

Those group members without an acting role will be observing and taking notes on how the journalist applies, or does not apply, the principles we have discussed, such as: empathy, informed consent, considering the risks involved for informants, active listening and types of questions. After this ten-minute role play, we will come together to discuss these questions.

Scenario

There has been an increase of reported illnesses in chickens in Sun Town over the past few weeks. Since the first cases at a large commercial farm nearby, other small family-owned farms have started to see their flocks affected. Animal husbandry and poultry rearing in particular is the most significant industry in Sun Town; many families rely on their flocks as a major source if not the only source of income for their families. There has been talk of the owner of the first commercial farm also becoming ill recently with severe flu-like symptoms, although these reports are unconfirmed. Government veterinary inspectors have been out to the large farm and have ascertained that the cause of the widespread chicken disease is most likely a form of influenza. They ended up culling a significant portion of the flock, but some were spared because the large farm had enough resources to space out the chickens into numerous chicken houses and limit its spread.

Now panic is spreading among the smaller family farms in Sun Town, most of which have far fewer resources than the commercial farm to protect their flocks or their families. Most only have one or two small chicken houses, with chickens overcrowded because of the limited land available.

You are Musa, a small-time farmer who has been greatly affected by the spreading epidemic. Your flock first became infected following a visit from your neighbour—worker at a nearby large commercial farm. The illness spread rapidly amongst your chickens and a visit from the veterinary inspector led to the vast majority of the flock being culled to avoid spreading the infection; they told you that it was a public health necessity even though you explained the impact this would have on your livelihood. Your wife and children are devastated; you do not know how you are going to replace the income from the lost flocks. The government inspector who culled the chickens promised that a program would offer your family support to replace the income from the culled flocks, but so far you have seen none of these promises come to fruition. You are bitter that the epidemic has hit small farmers like you so hard, while bigger farms scrape by and can more easily adapt. You hear rumours that this chicken disease is just a government conspiracy or political ploy to disempower the small farmers of the area; you don't know what to believe, but you think it is important that decision makers realise how difficult the culling policy has been to families like yours.

A friend of yours from the local farmers' union connected you with a reporter at the *Sun Town Times.* You have agreed to meet the reporter at your family farm for an interview tomorrow at 10AM. Now, you must prepare for what you want to say.

Handout 14: Pitfalls and Strategies: Public Communication (PHP)

Pitfalls and Strategies for Public Health Spokespersons Conducting Briefings

Common Briefing Pitfalls	Better Strategy
Defaulting to acronyms, jargon, technical, language or NGO lingo	• If it is necessary to use a technical term or acronym, take the time to introduce it and explain it to the audience, using short sentences and simple, plain language. • Emphasise what you know, acknowledge what isn't yet known, and what type of process is in place to learn more.
Referring to people with the disease or possible disease as "cases" or "victims" or "suspects"	• Instead use "people who have X"; "people who are being treated for X"; "people who are recovering from X" or "people who have died after contracting X" or "people who are presumptive for X", or "people who may have X." • Commit to helping your audience understand how a disease may affect someone and the ways they can safely interact with them without stigmatising or isolating them.
Attaching locations or ethnicity to the disease	• Use the appropriate scientific names of the disease to avoid stigma, e.g. COVID-19, instead of "Wuhan Virus," "Chinese Virus," or "Asian Virus."
Talking about a person "transmitting the disease," "infecting others," or "spreading the virus"	• Instead talk about people "*acquiring*" or "*contracting*"
Using humour or off the cuff remarks like one-liners	• In line with the principle of offering authentic expressions of care, seek to acknowledge fears, uncertainty, and a shared sense of misery. • Reinforce the steps that people can take.
Repeating negative allegations or rumours	• Know the messages you want to emphasise and consistently use positive and neutral terms.

Avoiding uncertainty, speculating, or making premature promises	• Emphasise what you know, acknowledge what isn't yet known, and what type of process is in place to learn more. • If you anticipate the situation may get worse, always *let people know what to expect* to help manage expectations.
Answering a question or offering information outside the scope of the emergency response	• Know your agency's policies about the clearance process and release of information and the scope of their responsibilities. • Tell the truth and be open when challenged. Explain why a given question cannot be answered.

General Dos and Don'ts for Public Communication

Do's	Don'ts
• PREPARE: o Prepare a message house, including the umbrella message, the key points and the supporting evidence. o Make sure you are familiar with the format the briefing will be delivered in – radio, TV, webcam, so you know what is expected of you and you minimise distractions from technical glitches. o Have a template with the information you want to share. o Identify your key messages and behaviours you want to drive home no matter what happens - think about the final message you wish the public to receive. o Coordinate with others working on the various aspects of risk communication such as messaging and community engagement as well as other pillars of the response to make sure you understand the information you are delivering and can answer questions. o Determine in advance who will answer questions about specific topics. Consider having various experts	• Do not show anger. • Do not rehash mistakes. • Do not offer immediate solutions to the problem without listening first to the community's concerns.

available during the briefing as part of the team.
  - Consider the audience and their needs – are your words and delivery accessible and appropriate to the needs of the most vulnerable?
  - Prepare short brief answers to anticipated questions about uncertainties.
  - Practice delivery and watch recordings of yourself on the phone or previous briefings.
• Show empathy.
• Maintain calm and manage emotions.
• Listen carefully to feedback and ask questions.
• Acknowledge mistakes and encourage people to look forward.	

Handout 15: Community Engagement (PHP)

The objectives of this exercise are two-fold: (1) provide insights as to how well we know the communities that we serve and (2) plan for how to engage affected communities before, during, and after a crisis. This can be used in an emergency to understand community perceptions and support the design of a communication response.

Instructions:

Part 1: Reflection on what we know about a community

1. Each group will receive 3 questions from the below list:
    - What are some of the existing community stakeholders that can be leveraged?
    - What two-way forms of communication exist in target communities?
    - Who are the most trusted voices among target populations, and does this differ by demographic features?
    - Who are the dissenting voices that are likely to contradict a new narrative, and what motivates them?
    - What are the additional vulnerabilities that need to be considered, that may differ among various groups in the same community?
    - What is the language the audience is most comfortable with?
    - How can you rapidly pretest with the key audience for comprehension, acceptability, and appeal?
2. Take 3 minutes to jot down your thoughts/responses to the questions individually.
3. Then, take the next 7 minutes to discuss what you wrote down with your group mates.
4. Identify a spokesperson who will share back any common responses at the end of the exercise.

Part I should take approximately 10 minutes in total for the individual reflection and group discussion.

Part 2: Plan for community engagement

5. In your small group, draw three columns on a flipchart that read:
Before a crisis | During a crisis| After a crisis
6. Have the spokesperson identified for Part I serve as the facilitator/notetaker and jot down ideas that the group has about how best to engage the community during the different phases of a crisis, considering your earlier reflections. Some examples of what you can do before an outbreak are:
    - Learn about what public health coordination mechanisms exist in the event of a public health emergency.
    - Identify key personnel and community stakeholders to develop relationships with so that you can learn about the latest information about an event and the community's reactions to it and ideas for solutions.
    - Identify partners that can be leveraged to fill gaps, such as in translating research into simple terminology.
7. Post the completed flipchart on the wall so that the spokesperson can present to the larger group.

Part II should take approximately 20 minutes in total.

8. After 30 minutes, we will share our discussions as a large group to learn from each other.
9. Look to see if there is consensus among the groups or if there are areas of disagreement

Dos and Don'ts for Community Engagement

Do's	Don'ts
• Ask people what they know, think, and feel first – then address them with information. • Allow the community to participate in finding solutions. Give information that helps people to discover how they can enact the protective behaviours. • Understand anger in the context of an emergency. Listen for both intent (feeling) and content (facts) and ask questions to make sure you understand and indicate your interest in what is being said. • Have a two-way conversation with communities. Provide information openly and maintain avenues for communities to ask questions. Provide opportunities for communities to provide inputs into the response. Those who have been most affected by a crisis want to participate in key decisions. The opportunity to provide input can help offset feelings of being powerless. Make communities part of the response process and decision-making. • Express empathy. Communities need to know that response officials understand at a very human level what they are experiencing. • Regularly adapt and update information based on community feedback.	• Don't simply tell people what to do. Behaving as if you and your organisation know what is best for others may seem arrogant to stakeholders who already feel powerless. • Avoid defining anger as either rational or irrational. • Use one-way messages & channels to communicate. There is a tendency during a crisis to engage in internal decision-making. This may make you and your organisation seem inaccessible. • Do not speak in absolutes or perpetuate misinformation. • Write messages at the start of the outbreak and don't update them.

Adapted from: https://emergency.cdc.gov/cerc/ppt/CERC_CommunityEngagement.pdf and https://emergency.cdc.gov/cerc/resources/pdf/CERC_Engaging_the_Community_with_Credibility.pdf

Handout 16: Channels of Communication (PHP)

Choosing Communication Channels

Some messages will not be appropriate for every channel of communication. Messages should be created with consideration of audience needs and **intervention activity.**

Understanding the behaviours, knowledge, aspirations, and feelings of an audience can help identify messages and activities that resonate and motivate behaviour change. It also informs the selection of approaches and delivery channels to which audiences are more likely to respond for the desired changes to occur.

What is a Communication Channel?

A communication channel is a medium or method used to deliver a message to the intended audience. A variety of communication channels exist, and examples include:

- **Mass media,** such as television, radio (including community radio) and newspapers
- **Community engagement**, also known as social mobilisation with two-way participation that fosters community ownership, such as community dialogues, listening groups or action planning
- **Print media**, such as posters, flyers and leaflets
- **Social and digital media,** such as mobile phones and social media applications
- **Interpersonal Communication**, such as house-to-house visits, phone lines and discussion groups

Different channels are appropriate for different audiences, and the choice of channel will depend on the audience being targeted, the messages being delivered and the context of the emergency. Using a variety of channels or a channel mix, is recommended so that messages can be reinforced through multiple sources.

Channel	In an outbreak context, this channel is most appropriate for…
Community Engagement	• Engaging communities • Promoting discussion and reflection among communities about the issues or regarding the adoption of complex prevention practices (e.g., changes to burial practices, safer food processing and storage practices) • Modelling behaviours • Communicating with low literacy and/or hard-to-reach audiences
Mass Media	• Raising awareness across audiences (informing and educating) • Modelling behaviours • Addressing stigma and harmful sociocultural norms • Communicating with low literacy audiences

	• Obtaining wide regional and national reach • Sharing information timely and frequently • Linking the public to credible and official information sources
Print Media	• Supporting other communication channels • Providing more detailed information on a particular topic that individuals can look through at home • Providing information about personal and confidential issues • Engaging with policy and decision makers
Social & Digital Media	• Obtaining a large reach (if Internet is widely available and accessible) • Promoting discussions through chat rooms or email exchanges • Providing information about personal and confidential issues • Addressing stigma and harmful sociocultural norms • Enabling social listening • Supporting rumour management
Interpersonal Communication	• Creating a two-way communication process with the audience • Engaging community members and creating community action plans • Promoting discussion, reflection and challenging dominant norms • Creating community champions • Informing and educating (increase knowledge) • Imparting skills • Discussing sensitive topics

Check out this worksheet for assessing available communication channels: http://sbccimplementationkits.org/sbcc-in-emergencies/wp-content/uploads/sites/14/2016/09/worksheet7.1.pdf

Handout 17: Sample Press Briefing (PHP)

Group A Instructions:

You will have **twenty minutes** to discuss the scenario below with your group, and prepare a five-minute press briefing taking into account the techniques we have discussed for practitioners delivering press briefings. Your goal is to highlight best practices (the "dos") to ensure the effectiveness of the briefing. Together, write a five-minute briefing and practice delivering it amongst your group. We will have ten minutes at the end to come together and present both groups' briefings.

Group B Instructions:

You will have **twenty minutes** to discuss the scenario below with your group, and prepare a five-minute press briefing around the situation that demonstrates what NOT to do as a spokesperson giving a briefing. Be sure to refer to the best practices for press briefings and ensure that your briefing does not follow this guidance. Your goal is to highlight all the mistakes or pitfalls (the "don'ts") a spokesperson might make in giving a briefing on the situation. Together, write a five-minute briefing and practice delivering it amongst your group. We will have ten minutes at the end to come together and present both groups' briefings.

Scenario:

There has been an epidemic of Disease X in Country Y raging for the past seven months. Disease X is a new respiratory disease that is moderately easily spread; it has so far claimed thousands of lives and continues to spread rapidly, particularly in crowded urban areas and during cold weather when other commonly known infectious diseases routinely spread. Scientists have been rapidly working to find a vaccine for the illness; fortunately, they have finally found a candidate that made it through safety trials and is expected to be available for use in the coming month or two. There is much optimism about the vaccine amidst the rising incidence and mortality due to disease X; still, there is some public scepticism given that several other vaccine candidates' trials have been cancelled following reports of adverse events, although their relationship to the vaccine itself has still not been fully proven. Without available and accessible vaccines to the general population before the change in season, reports of a possible spike in infection rates have caused great alarm among the general public, creating a sense of urgency to release a vaccine as soon as possible.

As a public health practitioner, you have been asked to deliver a media briefing regarding the vaccine. You know that even though the vaccine is projected to be available very soon, there are unlikely to be enough doses for the entire population at risk of Disease X and there will need to be a prioritisation process and phased rollout so that those who are most at-risk or most vulnerable to severe disease are first considered. Key officials are still in the process of determining what that prioritisation process will look like and what criteria will be used to determine who gets first access to the vaccine. While promoting the acceptance of this vaccine, there is a need to temper the public's expectations about the gradual rollout so as to avoid a possibly counterproductive outcry or refusal of the vaccine.

Handout 18: Case Study Interview Preparation (PHP)

Instructions

In your group, decide on one person who will be the government spokesperson being interviewed. Read the below scenario and take the first ten minutes to prepare the person who will be doing the interview.

Discuss and coach your spokesperson from the initial contact with the reporter, to identify key messages and dealing with potential challenging tactics by the journalist. You will want to refer to **Handout 16** as a reminder of important aspects of preparation for an interview as a public health practitioner or spokesperson.

After about ten minutes of strategizing, start practising the interview within your group. One person should play the journalist and pose questions to the spokesperson. You will have about fifteen minutes to role play with the interview. If you finish the interview with time to spare, you may want to switch roles so that someone else can practise being the spokesperson.

We will come together after **twenty-five minutes** to briefly discuss your experience.

Scenario

Outside of Rain Town, in a small farming village, there has been a cluster of illness in households. At first, it seemed that people were only becoming mildly ill—headaches and short-lived fevers that gave rise to suspicions of malaria. However, there were more severe cases where people have died, sometimes after bouts of bleeding or after falling into a coma. A pregnant woman in Sun Town, in her eighth month of pregnancy, recently just died following this illness; her foetus did not survive. Following testing in the capital city, it has been confirmed that the disease affecting the village is not malaria, nor even the much-feared Ebola – it is in fact Lassa fever, carried into the village by a large population of rats, the natural vectors of the virus to humans.

This village has cyclical cases of Lassa fever following the harvest each year—villagers report an increase in the rat population in and around their homes once the farmlands have been harvested. However, this seems to be an unprecedented outbreak for this area in terms of scale. Nearly 30 people are reported to have been infected, and four including the pregnant woman have died.

You are the Communications Liaison at the Rain Town Office of Public Health and have been fielding questions from anxious community members and the media over the past several weeks. The Ministry of Health has sent contact tracers to the village where the first case was reported and other villages in Rain Town, with ecology officers to trap rats. This has been met with resistance in some cases. Your office has been criticised for not doing enough to control the epidemic quickly or to discourage the sale and consumption of rodent meat, which is part of the reason people are saying that the virus has been able to spread. Doctors and nurses unions, meanwhile, have been upset and vocal about the lack of protective equipment to deal with potential Lassa cases at the district hospital. There are rumours circulating in some villages that people with Lassa symptoms sent to the hospital who are determined to be lethally infected are being injected to die faster, as a dramatic means to control the spread of the disease. Others are saying that the pregnant woman who died

early on in the outbreak did not have Lassa, but rather died during a medical procedure. Lassa was being used as a cover-up to take the blame off the health workers involved. For this reason, there have been reports that some communities are rejecting contact tracers.

In this context, you are asked to give an interview to the *Rain Town Times* regarding the government's response to the Lassa outbreak. You have agreed to do so and must now prepare for this interview.

Handout 19: Strategies for Successful Interviews (PHP)

Domain	Specific Strategies
Pre-Research	Know in advance: • Who will be conducting the interview, what news outlet are they working with, and who is their audience? • What is the purpose of the interview and the subjects to be covered? • If the interview goes in a different direction, this will help you to refocus the conversation or indicate you are not the right person to answer the question at this time. • Who else has/will be interviewed? • What is the format and duration of the interview?

Preparation and practice	• Identify a clear purpose for your interview.
	  ○ What is the umbrella (overarching) message?
	  ○ What are the core messages you want to deliver?
	  ○ Are there supporting papers (or weblinks) that you can have with you to give to the reporter after the interview that can be used as a way of confirming information and facts?
	  ○ What are some anticipated questions?
	• Take time to thoroughly learn the ideas, facts, and anecdotes that apply to the interview topic.

Pacing	• Microphones and nerves tend to make people talk faster. Practice speaking at a measured pace with deliberate pauses between sentences.
Brevity	• Try to say the key points in thirty seconds and in fewer than ninety words. • Avoid lengthy scientific responses aiming to keep answers focused, organised and no longer than two minutes. • Reporters may often hold a microphone in front of your face after you have answered. Resist the temptation to add to your response. Redirect the conversation instead.

Manage tone of voice and mannerisms	• Approaching the journalist and the interview with a sense of optimism and trust adds credibility and can help pave the way for a positive outcome. • Use simple, conversational tone and phrases for clarity and warmth. • Use natural gestures and facial expressions. Remember the power of non-verbal communication and avoid expressions of annoyance, anger, hurry/rushed, confusion, or surprise. • Look at the reporter or camera, try not to look at or shuffle your notes. • If a reporter offers rapid-fire questions, regain control of the pacing with a phrase like *"I would like to answer those questions one at a time."* • *Reframe loaded or leading questions* in neutral terms and avoid repeating any inflammatory or emotional language.
Reframe or redirect	• Reframe hypothetical or sensational questions in a way that addresses legitimate concerns of the public without being sensational or offering speculation. • Use positive words to correct any inaccuracies or reject the dilemma without repeating the negative words. • Use phrases that redirect (pivoting or bridging phrases) (*The overall issue is" "What is important to remember is…" "What I am really here to discuss is…")*
Transparency and accountability	• Do not make up answers, over reassure, speculate, or distort the truth in any way. If the specific piece of information is not yet available, say so, along with what you are doing to find answers. • Avoid responding to a question with "*no comment*". As we discussed yesterday, explain why you can't answer that question, e.g. "I don't have the answers/information right now, however that will be provided later." • Do not say anything before, during, or at the conclusion of an interview that you are not prepared to see in print the next day or uploaded to social media in the next hour. • Make yourself available to the media even if only for a few moments. Try not to actively avoid media which can give a sense you have something to hide.

Reflection and follow-up following the interview	• When reviewing the published story, ask yourself:
	  • Did the reporter effectively and accurately convey my message, or did they misquote me? Are the facts accurate?
	  • In case the answer is 'no', contact the journalist directly and ask for a correction to be issued. This is common practice in journalism.
	  • Is there anything I didn't convey in my interview that I wanted to express?
	  • Are my quotes succinct and clear?

Preparation is Critical: Questions Journalists Might Ask of Public Health Professionals

What are you doing to bring the situation under control? How much has been earmarked for the response? Have the funds been released/disbursed? How much funding has been spent? Where is the funding going? What is going to happen next? How soon will this vaccine/therapeutic be rolled out? How long will it be until the situation returns to normal? Why did this happen? What is the cause of this outbreak?

Why didn't the government react faster? Are you hiding information? Are you sure this isn't a man-made outbreak? Why didn't you do more to prevent this outbreak happening? What are you doing now? What is the worst-case scenario? What is the best-case scenario? Can you grant us access to hospitals and health facilities? Can you help journalists get the vaccine? What lessons are you learning, and are you going to implement them? Why aren't you telling us the name of patient zero?

What are the most important things that people need to know? How can people protect themselves? Where can people get help/healthcare/food/money at this time? What is the meaning behind all this? How does the vaccine/therapeutic work? What does the disease do to the human body? When is the next press conference?

Handout 20: Resource Package (PHP)

Needs Assessment for Crisis and Emergency Risk Communication (US CDC)

This checklist is a resource from the US CDC's CERC Guide. A PDF of the checklist and many other useful risk communication resources is available on the resource page: https://emergency.cdc.gov/cerc/resources/templates-tools.asp

Planning, Research, Training, and Evaluation

❑ **Yes** ❑ **No** Does your organisation have a crisis and emergency risk communication operational plan for public information and media, partner, and stakeholder relations?

❑ **Yes** ❑ **No** Have you coordinated your planning with the community or state emergency operation centre?

❑ **Yes** ❑ **No** Have you coordinated your planning with other response organisations or competitors?

❑ **Yes** ❑ **No** Have designated persons received media training and risk communication training?

❑ **Yes** ❑ **No** Do they understand crisis and emergency risk communication principles to build trust and credibility?

If Your Organization Has a Plan, Does It Have the Following Elements:

❑ **Yes** ❑ **No** Designated responsibilities for public information team?

❑ **Yes** ❑ **No** Information verification and clearance procedures?

❑ **Yes** ❑ **No** Agreements on information release authorities (who releases what, when, and how)?

❑ **Yes** ❑ **No** Regional and local media contact list, including after-hours news desks?

❑ **Yes** ❑ **No** Procedures to coordinate with the public health organisation response teams?

❑ **Yes** ❑ **No** Designated personnel for public health issues in an emergency?

❑ **Yes** ❑ **No** Public health organisation emergency response team after-hours contact numbers?

❑ **Yes** ❑ **No** Contact numbers for emergency information partners such as governor's public affairs officer, local police public relation officer or public information officer, local or regional department of agriculture or veterinary public information officers, Red Cross and other relevant non-governmental organisations?

❑ **Yes** ❑ **No** Agreements and procedures to join the Joint Information Center (JIC) of the emergency operations centre, if activated?

❑ **Yes** ❑ **No** Procedures to secure needed resources such as space, equipment, and personnel, to operate the public information operation during a public health emergency 24 hours per day, 7 days per week, if needed?

❑ **Yes** ❑ **No** Identified methods of information dissemination to the public, stakeholders, and partners such as websites, social media, e-mail, SMS, newsletters, social and behavioural change (SBC) materials (flyers, posters) , and press releases, during a crisis?

Message and Audiences

❑ **Yes** ❑ **No** The following are types of incidents that could require intense public information, media, and partner communication responses:

- Infectious disease outbreak (e.g., pandemic influenza, cholera, *E. coli* infection)
- Bioterrorism (e.g., anthrax, smallpox)
- Chemical emergencies (e.g., nerve agents, oil spill)
- Explosions (e.g., explosions, terrorist bombing)
- Natural disasters and severe weather (e.g., tremors/earthquakes, flooding, drought, erosions, landslides, sandstorms etc)
- Radiation emergencies (e.g., dirty bomb, nuclear accident)

❑ **Yes** ❑ **No** Have you identified special populations, such as the elderly, people who speak a first language other than English, tribal communities, and border populations? List any specific subpopulations, such as ethnic groups, persons living with disabilities, hard-to-reach communities, internally displaced persons (IDP) camps, persons with chronic respiratory and other illnesses, children, pregnant women, other underserved and vulnerable groups, that need to be targeted with specific messages during a public health emergency related to your organisation.

❑ **Yes** ❑ **No** Have you identified your organisation's partners who should receive direct information and updates (not solely through the media) from your organisation during a public health emergency?

❑ **Yes** ❑ **No** Have you identified all stakeholder organisations or populations who should receive direct communication during a public health-related emergency? These are groups or organisations believed to have an active interest in monitoring activities, to whom you are most directly accountable, other than the official chain of command.

❑ **Yes** ❑ **No** Have you planned ways to reach people according to their reactions to the incident (fight or flight)? Are messages, messengers, and methods of delivery appropriate for all types of audiences in your area of responsibility?

❑ **Yes** ❑ **No** Are there mechanisms and resources in place to create messages for the media and public under severe time constraints, including methods to clear these messages within the emergency response operations of your organisation? Make sure to include cross clearance in this consideration.

❑ **Yes** ❑ **No** Have you identified how you will perform media evaluation, content analysis, and public information call analysis in real time during an emergency to ensure adequate audience feedback?

❑ **Yes** ❑ **No** Have you developed topic-specific pre-crisis materials for identified public health emergency issues, or identified sources of these materials if needed?

❑ **Yes** ❑ **No** Topic fact sheet (e.g., description of the disease, public health threat, treatment?)

❑ **Yes** ❑ **No** Public Questions and Answers?

❑ **Yes** ❑ **No** Partner Questions and Answers?

❑ **Yes** ❑ **No** Resource fact for media, public, or partners to obtain additional information?

❑ **Yes** ❑ **No** Web access and links to information on the topic?

❑ **Yes** ❑ **No** Recommendations for affected populations?

❑ **Yes** ❑ **No** Background B-roll for media use on the topic?

❑ **Yes** ❑ **No** List of subject matter experts outside your organisation who would be effective information sources for the public and the media regarding your activities during a public health emergency?

Messenger

❑ **Yes** ❑ **No** Have you identified public health spokespersons for media and public appearances during an emergency?

If Yes, Have You…

❑ **Yes** ❑ **No** Identified persons by position, such as a media spokesperson or a community meeting speaker, to act as spokespersons for multiple audiences and formats about public health issues during an emergency?

❑ **Yes** ❑ **No** Ensured that the spokespersons understand their communication roles and responsibilities and will incorporate them into their expected duties during the crisis?

Methods of Delivery and Resources

❑ **Yes** ❑ **No** Does your organisation have “go kits” for public information officers who may have to abandon their normal place of operation during a public health emergency or join a JIC? Do the Kits include…

❑ **Yes** ❑ **No** Computer(s) with access to the Internet and e-mail?

❑ **Yes** ❑ **No** CD-ROM, DVD, or flash drives containing the elements of the crisis communication plan, including media contact lists, public health contact lists, organisation contact lists, partner contact lists, and information materials?

❑ **Yes** ❑ **No** Cell phone or satellite phone, wireless device, etc.?

❑ **Yes** ❑ **No** Funding mechanism, such as a credit card, that can be used to purchase operational resources as needed?

❑ **Yes** ❑ **No** Manuals and background information necessary to provide needed information to the public and the media?

❑ **Yes** ❑ **No** Care and comfort items for the public information operations staff?

Channels of Communication

❑ **Yes** ❑ **No** Have you identified the mechanisms that are or should be in place to ensure multiple channels of communication to multiple audiences during a public health emergency?

If Yes, Do Mechanisms Include…

❑ **Yes** ❑ **No** Media channels such as print, TV, radio, and web?

❑ **Yes** ❑ **No** Websites, Facebook, Twitter, and other social media?

❑ **Yes** ❑ **No** Phone directories?

❑ **Yes** ❑ **No** Town hall meetings?

❑ **Yes** ❑ **No** Listserv e-mail?

❑ **Yes** ❑ **No** SMS blasts?

❑ **Yes** ❑ **No** Letters by mail?

❑ **Yes** ❑ **No** Subscription newsletters?

❑ **Yes** ❑ **No** Submissions to partner newsletters?

❑ **Yes** ❑ **No** Regular or special partner conference calls?

❑ **Yes** ❑ **No** House-to-house visits?

❑ **Yes** ❑ **No** Are contracts or agreements in place to post information to SMS blasts, interactive voice response (IVR) or e-mail systems?

❑ **Yes** ❑ **No** Have locations for press conferences been designated and resourced?

Personnel

❑ **Yes** ❑ **No** Have you identified employees, contractors, fellows, and interns currently working for you or available to you in an emergency that have skills in the following areas:

❑ **Yes** ❑ **No** Public Affairs Specialist?

❑ **Yes** ❑ **No** Health Communication Specialist?

❑ **Yes** ❑ **No** Communication Officer?

❑ **Yes** ❑ **No** Health Promotion Officer?

❑ **Yes** ❑ **No** Environmental Health Officer?

❑ **Yes** ❑ **No** Training Specialist?

❑ **Yes** ❑ **No** Writer/Editor?

❑ **Yes** ❑ **No** Technical Writer/Editor?

❑ **Yes** ❑ **No** Audio/visual Specialist?

❑ **Yes** ❑ **No** Graphics/Web Designer?

❑ **Yes** ❑ **No** Social Media Strategist/Manager?

❑ **Yes** ❑ **No** Others who contribute to public and provider information?

❑ **Yes** ❑ **No** Have you identified who will provide the following expertise or execute these activities during a public health emergency (including backup)

Command and Control

❑ **Yes** ❑ **No** Directs the work related to the release of information to the media, the public, and partners?

❑ **Yes** ❑ **No** Activates the plan, based on careful assessment of the situation and the expected demands for information by the media, partners, and the public?

❑ **Yes** ❑ **No** Coordinates with horizontal communication partners, as outlined in the plan, to ensure that messages are consistent and within the scope of the organisation's responsibility?

❑ **Yes** ❑ **No** Provides updates to the organisation's director, EOC command, and higher headquarters, as determined in the plan?

❑ **Yes** ❑ **No** Advises the director and chain of command regarding information to be released, based on the organisation's role in the response?

❑ **Yes** ❑ **No** Ensures that risk communication principles are employed in all contact with the media, the public, and partner information release efforts?

❑ **Yes** ❑ **No** Advises on incident-specific policy, science, and the current situation?

❑ **Yes** ❑ **No** Reviews and approves materials for release to the media, the public, and partners?

❑ **Yes** ❑ **No** Obtains required clearance of materials for release to the media on policy or sensitive topic-related information not previously cleared?

❑ **Yes** ❑ **No** Determines the operational hours and days, and reassesses throughout the emergency response?

❑ **Yes** ❑ **No** Ensures resources are available, such as personnel, technical resources, and mechanical supplies?

❑ **Yes** ❑ **No** Assesses media needs and organises mechanisms to fulfil media needs during the crisis, such as daily briefings in person versus a website update?

❑ **Yes** ❑ **No** Triages the response to media requests and inquiries?

❑ **Yes** ❑ **No** Ensures that media inquiries are addressed as appropriate?

❑ **Yes** ❑ **No** Supports and briefs spokespersons?

❑ **Yes** ❑ **No** Develops and maintains media contact lists and call logs?

❑ **Yes** ❑ **No** Produces and distributes media advisories and press releases?

❑ **Yes** ❑ **No** Produces and distributes materials such as fact sheets and B-rolls?

❑ **Yes** ❑ **No** Oversees media monitoring systems and reports (e.g., analysing environment and trends to determine needed messages, determining what misinformation needs to be corrected, identifying concerns, interests, and needs arising from the crisis and the response)?

❑ **Yes** ❑ **No** Ensures that risk communication principles to build trust and credibility are incorporated into all public messages delivered through the media?

❑ **Yes** ❑ **No** Acts as member of the JIC of the field site team for media relations?

❑ **Yes** ❑ **No** Serves as liaison between organisations through the JIC?

❑ **Yes** ❑ **No** Manages the mechanisms for responding to public requests for information via social media, telephone, in writing, or by email?

❑ **Yes** ❑ **No** Oversees public information monitoring systems and reports (e.g., analysing environment and trends to determine needed messages; determining what misinformation needs to be corrected; identifying concerns, interests, and needs arising from the crisis and the response)?

❑ **Yes** ❑ **No** Oversees and activates social media, telephone, public e-mail correspondence response systems?

❑ **Yes** ❑ **No** Organises and manages the emergency response Web sites, Web pages, Facebook page and other social media?

Direct Public Information

❑ **Yes** ❑ **No** Establishes and maintains links to other emergency response websites?

Partner and Stakeholder Information

❑ **Yes** ❑ **No** Establishes communication protocols based on prearranged agreements with identified partners and stakeholders?

❑ **Yes** ❑ **No** Translates EOC situation reports and meeting notes into information appropriate for public and partner needs?

❑ **Yes** ❑ **No** Works with subject matter experts (SMEs) to create situation-specific fact sheets, Q&As, and updates?

❑ **Yes** ❑ **No** Manages the development and testing of messages and materials for cultural and language requirements of special populations?

❑ **Yes** ❑ **No** Coordinates with other communication team members regarding content and message needs?

❑ **Yes** ❑ **No** Adapts messages based on analysis from media, social media, public, and partner monitoring systems, SME clearance, and feedback?

❑ **Yes** ❑ **No** Guides documents through formal clearance process before they are released to the media, the public, or partner organisations?

Content and Material for Public Health Emergencies

❑ **Yes** ❑ **No** Develops and establishes mechanisms and protocols to rapidly receive information from the EOC

❑ **Yes** ❑ **No** Translates EOC situation reports and meeting notes into information appropriate for public and partner needs

❑ **Yes** ❑ **No** Works with subject matter experts (SMEs) to create situation-specific fact sheets, Q&As, and updates

❑ **Yes** ❑ **No** Manages the development and testing of messages and materials for cultural and language requirements of special populations

❑ **Yes** ❑ **No** Coordinates with other communication team members regarding content and message needs

❑ **Yes** ❑ **No** Adapts messages based on analysis from media, social media, public, and partner monitoring systems, SME clearance, and feedback

❑ **Yes** ❑ **No** Guides documents through formal clearance process before they are released to the media, the public, or partner organisations

Suggestions to Consider about Resources

Space

❑ **Yes** ❑ **No** You have space to operate communication teams or the JIC outside the EOC. A place is also needed to bring media on site that is separate from the EOC and the JIC.

❑ **Yes** ❑ **No** You have quiet space to quickly train and brief spokespersons.

❑ **Yes** ❑ **No** You have conference space for team meetings.

❑ **Yes** ❑ **No** You have office space dedicated for equipment exclusive to your use. You cannot stand in line for the copier when facing media deadlines.

❑ **Yes** ❑ **No** You have space where staff can take breaks when necessary, whether for eating, sensory deprivation, rest, or even a nap.

❑ **Yes** ❑ **No** An offsite space is identified in case the crisis damages your original space. Contracts and Memoranda of Agreement(s)

❑ **Yes** ❑ **No** Consider a contract with a comprehensive newswire service that will disseminate your information across a wide variety of platforms, such as print and broadcast news, Internet, and social media sites. Also consider using a variety of communication tools, such as press releases, videos, images, e-mail, and social media tagging.

❑ **Yes** ❑ **No** Consider contracts with writers or public relations personnel who can augment your staff, especially persons with social media writing and monitoring expertise, if your organisation doesn't have those personnel.

❑ **Yes** ❑ **No** Consider a contract for administrative support and technical support.

Contracts and Memoranda of Agreement(s)

❑ **Yes** ❑ **No** Consider a phone system/contractor that can supply a phone menu that directs the type of caller and level of information desired:

- General information about the threat
- Tip line listing particular actions people can take to protect themselves
- Reassurance/counselling
- Referral information for media requests for information or interviews
- Referral information for healthcare/medical facility workers
- Referral information for epidemiologists or others needing to report cases
- Laboratory and treatment protocols
- Managers looking for policy statements for employees

Equipment

❑ **Yes** ❑ **No** Computers (desktop or laptop) loaded with secure Internet access, software programs, and documents needed for crisis communication and information sharing. These items include email lists, the crisis communication plan, and collaboration software.

❑ **Yes** ❑ **No** Landline phones with dedicated lines and 800 MHz radios, in case of power outage or cell phone network overload

❑ **Yes** ❑ **No** Fax machines with numbers preprogrammed for broadcast fax releases to media outlets and partners

❑ **Yes** ❑ **No** Dedicated computer server with additional bandwidth to handle increased Internet traffic

❑ **Yes** ❑ **No** Computer printers, including at least one colour printer

❑ **Yes** ❑ **No** Tables (You will need a large number of tables)

❑ **Yes** ❑ **No** Colour copier machine and backup

❑ **Yes** ❑ **No** Cell phones, pagers, personal data devices, and e-mail readers

❑ **Yes** ❑ **No** Extension cords

❑ **Yes** ❑ **No** Visible calendars, flow charts, bulletin boards, and easels

❑ **Yes** ❑ **No** Designated personal message board

❑ **Yes** ❑ **No** Small refrigerator

❑ **Yes** ❑ **No** A/V equipment to host press conferences such as portable microphones, sound system, multibox or press box, projector and screen, and recording devices

❑ **Yes** ❑ **No** Podium

❑ **Yes** ❑ **No** TVs with cable hookup

❑ **Yes** ❑ **No** DVD player

❑ **Yes** ❑ **No** Paper shredder

❑ **Yes** ❑ **No** Alternative power supply, such as a generator, for the EOC and the JIC

❑ **Yes** ❑ **No** Portable cots

❑ **Yes** ❑ **No** Supplies (all labelled “for emergency only use”):

- Copier toner
- Printer ink
- Paper, notepads, and notebooks
- Pens, pencils, markers, highlighters, and erasable markers
- Supplies for mail, DHL, GIG, and other logistics services
- Sticky notes
- Standard press kit folders
- Flash drives and portable hard drives
- Organisers to support your clearance and release system
- Files or Folders
- Staplers
- Paper punch
- Three-ring binders
- Organisation’s press kit or its logo on a sticker
- Organisation letterhead
- Paper clips (all sizes)
- Tape

Message Maps

What is a Message Map?

A message map is a roadmap for displaying detailed, organised responses to anticipated questions or concerns. Well-constructed and accessible message maps are useful tools during an emergency that, if shared with partners and stakeholders, can support harmonised messages.

Message maps are developed for each intended audience segment. There are generally three levels to a message map:

Audience:	*Level 1:* ***Insert the audience to whom this message map is addressed.*** *It can be as broad as "the general public," or more specific. For example, the media, decision makers or at-risk individuals. Each message map should target ONE audience only.*		
Concern or Question:	***Insert ONE anticipated concern or question*** *that the audience is likely to have regarding the emergency. Examples include: "What does one do to stop the outbreak?"; "What are the signs and symptoms of COVID-19?"*		
	Level 2 **Key Message 1:** *Insert one message that can help answer the selected concern/question.*	**Key Message 2:** *Insert a second message that can help answer the selected concern/question.*	**Key Message 3:** *Insert a third message that can help answer the selected concern/question.*
	Level 3. **Supporting Points:** *Write between two and five points with information that supports and clarifies the key message.*	**Supporting Points:** *Write between two and five points with information that supports and clarifies the key message.*	**Supporting Points:** *Write between two and five points with information that support*

How to Develop a Message Map[21]

Message maps are generally designed following seven recommended steps. For the case of emergencies, the seventh step has been adapted to ensure timely updates to the map. It is also recommended that partners and stakeholders convene and create message maps together, in order to ensure harmonisation from the outset.

[21] http://rcfp.pbworks.com/f/MessageMapping.pdf

Step	Details
Identify audiences (or stakeholders)	Stakeholders include the general public as well as other interested parties who are in some way affected by the emergency. Examples include: at-risk individuals, service providers, journalists and authorities. The list of stakeholders for a message map generally includes more parties than the intended audiences of a social and behaviour change (SBC) strategy. As the emergency evolves, in fact, the communication response becomes more focused through a SBC strategy in which primary and influencing audiences are identified.
Identify anticipated questions and/or concerns of stakeholders	A list should be developed of potential questions and concerns relating to the emergency that each major group of stakeholders is likely to have.
Identify frequent concerns	From the list of questions and concerns produced under point 2, select the most common categories of underlying concerns for each stakeholder. These common concerns will form the first level of the message map. Examples include: health risks, safety, environment, ethics, livestock or pets, religion.
Develop key messages	For each concern, identify a maximum of three key messages that respond to it. These key messages make up the second layer of the message map.
Develop supporting information	Identify key supporting facts for each key message.
Contextualising messages	As messaging strategies evolve and become tailored to different audiences, also consider risk perceptions; knowledge about causes, symptoms, and transmission; beliefs, attitudes and concerns about these causes, symptoms and transmission; rumours or misinformation; social and cultural norms around behaviours and practices; habits; and key barriers and facilitators, including structural barriers that may inhibit practices.
Conduct pretesting	The pretest should be conducted both with technical experts to ensure that the information is factually correct, and with representatives of the target stakeholder group to ensure that it is understood and received as intended.
Update and disseminate the maps	Even when maps are developed jointly with partners and stakeholders, they should be shared among all parties involved in communication. In emergency settings, a system should also be set up to update message maps with the most current information on

	the outbreak and disseminate the revised message maps to ensure continued coordination among communication partners.

Developing Message Maps

Directions: Complete this worksheet together with stakeholders to promote a broad exchange and analysis. Wherever possible, access evidence-based data to complete this worksheet.

1. Brainstorm with your team to name all possible audiences that are in some way affected by the emergency. Consider some of the following categories of stakeholders to prompt your thinking; however, you may wish to add other categories specific to your context:

Category	Stakeholders/Audiences	Concerns/Questions
Individuals directly or indirectly affected	*[E.g., Persons who have been in close contact with individuals who have had COVID-19 – persons who have recently travelled to Hubei, China]*	
At-risk and vulnerable individuals	*[E.g., Everyone is at risk. Elderly and people with underlying conditions (e.g., heart disease, diabetes) have been shown to be more at risk for severe disease.]*	
Healthcare	*[E.g., healthcare workers, etc.]*	
Education	*[E.g., School administrators, teachers, students, parents of school-aged children]*	
Government	*[E.g., Ministry of Health, Ministry of Agriculture and Rural Development, Ministry of Environment, Ministry of Education, Military, etc.]*	
Decision makers/influential individuals	*[E.g., Parent-teacher associations, respected religious leaders, respected/trusted cultural leaders, etc.]*	
Response teams, organisations	*[E.g., Case management, surveillance; infection,*	

	prevention and control (IPC), food security, etc.]	
Other	*[E.g., security agencies, etc.]*	

2. To help you identify possible concerns or questions an audience may have relating to the emergency, consider the various aspects that may be impacted by the outbreak or that impact the way the individual responds to the outbreak. Coordination with various sectors – contact tracers, burial teams, psychosocial teams, case management, as well as social mobilizers, hotline operators or social scientists – often helps identify these. For each audience, list possible concerns or questions relating to the following areas: access to information, ethnicity, gender, health, susceptibility, economics/income generating activities, religion, trust, safety/security, livestock, others.
3. Review the questions/concerns in the table above and select the ones that you believe to be most pertinent. For each selected audience and question/concern, use the tables below to develop:
    a. Three key messages that answer that question/concern
    b. Three supporting facts for each key message, addressing **what** people need to know and do, **why** they should do it (benefits and risks), and **how** they should do it.
    c. Be sure to align your messages and facts with the most updated information on the outbreak as provided by the WHO, FMoHSW/NCDC, FMAFS, FMEnv or other reliable sources of information.

Contextualising Messages

Messages will need to be contextualised to ensure they are culturally and linguistically relevant, and consider current behaviours, practices, attitudes, concerns, stigma, and rumours and misinformation.

As messaging strategies evolve and become tailored to different audiences, also consider the following information in relation to the audience. Where possible, use recent research/evidence to inform your messages:

- What are their general **risk perceptions, emotions and fears associated with the outbreak**?
- What is their level of **knowledge about causes, symptoms and transmission**?
- What are their **common beliefs, attitudes and concerns about these causes, symptoms and transmission?**
- What **rumours or misinformation** are prevalent and need to be addressed?
- What are the dominant **social and cultural norms around behaviours and practices** linked to the outbreak?

- What are the **dominant current behaviours**?
- What are the **key barriers and facilitators** to the desired behaviour?

Social mobilizers, community workers and volunteers have an important role in providing timely and actionable information and promoting community dialogues with trusted community leaders to identify key knowledge gaps and address fears and anxiety. It is important to consider the following.

- **Engage families and communities in a dialogue** to share information and understand key concerns and questions, rather than telling people what to do. Asking people what they know, want and need, and involving them in designing and delivering infectious disease related activities improves the effectiveness of our community interventions and sustains necessary changes.
- **Recruit and support peers and leaders to deliver messages**: People are more likely to pay attention to information from people they already know, trust and whom they feel are concerned about their wellbeing.
- **Encourage awareness and action:** communication and community engagement typically contain information targeted to communities and should be action oriented, including:
    - an instruction to follow (e.g., if you get sick, seek medical care at hospital x),
    - a behaviour to adapt (e.g., wash your hands frequently to protect yourself and others from getting sick…) and information they can share with friends and family (such as where and when to access services, e.g. treatment is free of charge and available at health facilities).

Data Source	Details
Rapid Needs Assessment	Provides insights and understanding about a range of factors that affect behaviours related to an outbreak and about how to best support the population to reduce their risk. Dedicating even just a few days to a needs assessment is important to obtain information about how households and communities perceive a potential or outbreak, what they know and do about it, what barriers and facilitators exist to the adoption of protective behaviours, and how cultural and social dynamics influence them. This knowledge supports program managers and implementers to develop targeted interventions and messages to support the success of all response efforts.
Secondary data with epidemiological data	Often used to assess information that already exists about demographic, geographic, behavioural and social factors that affect how people respond to an outbreak. Data to review can include WHO/FMoHSW/NCDC/FMAFS/FMEnv Situation Reports on

	the outbreak and other related data about the outbreak, such as inter-border exchanges that may affect how the disease spreads. Other examples of useful secondary data include knowledge, attitudes and practice (KAP) surveys, media consumption studies and project reports from organisations working in the affected areas. DHS data can provide information on literacy levels and health practices and behaviours.
Knowledge, Attitudes, and Practices (KAP) surveys	Representative of a specific population to collect information on what is known, believed, and done in relation to a particular topic. In an outbreak response, knowledge is usually assessed to see how far community knowledge corresponds to biomedical concepts. Typical questions include knowledge about causes and symptoms. Knowledge that deviates from biomedical concepts is usually termed as *beliefs*. Attitude has been defined as "a learned predisposition to think, feel and act in a particular way towards a given object or class of objects." As such, attitude is a product of a complex interaction of beliefs, feelings, and values.[22] Keep in mind that with KAP survey findings, there may be considerable gaps between what is said and done, and a lack of cultural/religious/social context. Knowledge is generally a poor predictor of behaviour. This introduces the concept of **Risk Perception**, that is the way people understand the threats or risks they face and its impact on their lives.
Social Science studies	These studies might focus on culture and society, social risk factors and mechanisms for disease transmission, local cultural interpretations of disease and response interventions, and the functioning of the health system and local structures of power and authority. Studies by social behaviour change experts, social scientists and/or medical anthropologists can fill in the gaps of KAP studies, particularly where geographic areas of an outbreak are more defined. This information can be essential in developing effective community engagement and health promotion strategies, and ensuring response pillars are fit-for-purpose at the local level.

[22] https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-12-692

Handout 21: Disease Z Simulation Role Play

Group 1: Public Health Officials (Red Team)

Instructions:

Within your group, carefully read the scenario below, which involves an entirely fictional zoonotic outbreak situation of a disease known as "Disease Z." In this exercise, your group will be representing the **role of public health officials**. Please choose one person to serve as the official spokesperson who will represent all the points of the group.

You will have ten minutes to discuss among yourselves the scenario and key aspects of the public health spokesperson's role. Then, you will conduct a short role play of a press conference and community meeting involving this outbreak.

Scenario:

In Village X, local animal health workers have been reporting an unusually high number of goats and cattle falling ill and dying over the past month. Some farmers have directly observed high fever or other signs of distress in the animal for a period of time prior to death. However, others are finding their animals dead without having had any obvious symptoms. A number of carcasses have been found in areas surrounding the village. So far, there has been one case of a worker at the local slaughterhouse also falling ill; the worker eventually died. No other suspicious illnesses or deaths in humans have been reported. Residents of the village are becoming anxious following the death of the slaughterhouse worker and the rapid increase in animal deaths.

The local veterinary health team is conducting a joint investigation of the outbreak with the local health authorities. After consulting with the local animal health worker, investigators noted that few residents of the remote village who have regularly vaccinated their animals were spared from the outbreak. Furthermore, many residents, when they find their animals dead, are moving as quickly as possible to either eat the animal or to sell the meat at the local market while they can still fetch a reasonable sum. It appears that this practice is contributing to a high risk of further human transmission of Disease Z. However, despite messaging on the radio and awareness sessions with local health teams, the population is reluctant to disrupt their livelihoods by stopping the sale of animal products at the local market, and the informal nature of the sale makes it very difficult to monitor or regulate.

You are a public health official of the local public health department and have decided to host a **press conference and community meeting** in Village X in light of the continued rapid spread of Disease Z.

Your main goal as a public health official is to convey the **three public health messages that are most critical** for the population of Village X at this time.

You will be providing a very brief summary of the current Disease Z situation and taking questions from the journalists and members of the community. You will have ten minutes to

prepare your talking points. Remember to be brief and take into account the best practices you have learned in this course.

Group 2: Media Practitioners (Blue team)

Instructions:

Within your group, carefully read the scenario below, which involves an entirely fictional zoonotic outbreak situation of a disease known as "Disease Z." In this exercise, your group will be representing the role of local journalists.

You will have ten minutes to discuss among yourselves the scenario and key aspects of the journalist's role in the situation and prepare points. Then, you will participate in a short role play of a media press conference and community meeting around this outbreak.

Scenario:

In Village X, local animal health workers have been reporting an unusually high number of goats and cattle falling ill and dying over the past month. Some farmers have directly observed high fever or other signs of distress in the animal for a period of time prior to death. However, others are finding their animals dead without having had any obvious symptoms. A number of carcasses have been found in areas surrounding the village. So far, there has been one case of a worker at the local slaughterhouse also falling ill; the worker eventually died. No other suspicious illnesses or deaths in humans have been reported. Residents of the village are becoming anxious following the death of the slaughterhouse worker and the rapid increase in animal deaths.

The local veterinary health team is conducting a joint investigation of the outbreak with the local health authorities. After consulting with the local animal health worker, investigators noted that few residents of the remote village who have regularly vaccinated their animals were spared from the outbreak. Furthermore, many residents, when they find their animals dead, are moving as quickly as possible to either eat the animal or to sell the meat at the local market while they can still fetch a reasonable sum. It appears that this practice is contributing to a high risk of further human transmission of Disease Z. However, despite messaging on the radio and awareness sessions with local health teams, the population is reluctant to disrupt their livelihoods by stopping the sale of animal products at the local market, and the informal nature of the sale makes it very difficult to monitor or regulate.

You are a local media practitioner attending a **press conference and community meeting** in Village X in light of the continued rapid spread of Disease Z.

Your goals in this role are to:

- Clarify the scientific facts of the outbreak with the public health experts.
- Hold local officials accountable for the timeliness and quality of the outbreak response.

As a media practitioner, you will be posing questions to the public health practitioner during the press conference. You will have ten minutes to prepare your talking points/questions for

the spokesperson. Remember to be brief and take into account the best practices you have learned in this course.

Group 3: Community Members (Orange Team)

Instructions:

Within your group, carefully read the scenario below, which involves an entirely fictional zoonotic outbreak situation of a disease known as "Disease Z." In this exercise, your group will be representing the role of community members living in Village X, affected by the outbreak.

You will have ten minutes to discuss among yourselves the scenario and key aspects of the community members' concerns and role in this situation. Then, you will participate in a short role play of a press conference and community meeting around this outbreak.

Scenario:

In Village X, local animal health workers have been reporting an unusually high number of goats and cattle falling ill and dying over the past month. Some farmers have directly observed high fever or other signs of distress in the animal for a period of time prior to death. However, others are finding their animals dead without having had any obvious symptoms. A number of carcasses have been found in areas surrounding the village. So far, there has been one case of a worker at the local slaughterhouse also falling ill; the worker eventually died. No other suspicious illnesses or deaths in humans have been reported. Residents of the village are becoming anxious following the death of the slaughterhouse worker and the rapid increase in animal deaths.

The local veterinary health team is conducting a joint investigation of the outbreak with the local health authorities. After consulting with the local animal health worker, investigators noted that few residents of the remote village who have regularly vaccinated their animals were spared from the outbreak. Furthermore, many residents, when they find their animals dead, are moving as quickly as possible to either eat the animal or to sell the meat at the local market while they can still fetch a reasonable sum. It appears that this practice is contributing to a high risk of further human transmission of Disease Z. However, despite messaging on the radio and awareness sessions with local health teams, the population is reluctant to disrupt their livelihoods by stopping the sale of animal products at the local market, and the informal nature of the sale makes it very difficult to monitor or regulate.

You are community leaders attending a **press conference and community meeting** in Village X in light of the continued rapid spread of Disease Z. Your main goal in this role is to **represent the concerns and fears of the community to public health officials and the media.**

You will have ten minutes to prepare your points. Remember to be brief and take into account the best practices you have learned in this course.

Handout 22: Post-Test Questionnaire

The Post-Test questionnaire can also be found as a google form here:
https://forms.gle/tKVLcHDtzcUJ49if6

SECTION A: Indicate whether the following statements are True or False. For each answer, circle/tick either True or False.

Q1. One Health focuses on the health of animals only.

True
False

Q2. The main principles of effective risk communication are transparency, consistency, frequent communication, and empathy.

True
False

Q3. Messages given about a particular outbreak should include as much medical terminology as possible, so people know the disease is serious.

True
False

Q4. When communicating to the public about a health risk, it is important for spokespersons to hide what they do not know about the disease.

True
False

Q5. In order to address a rumour, it is important to understand why it is occurring and to understand the gaps in the public's knowledge and information.

True
False

Q6. Journalists must obtain informed consent from the sources they interview.

True
False

Q7. Different groups of people may have customs or beliefs that go against advice given during a disease outbreak.

True
False

Q8. Communication to the public via social media should be avoided during a public health outbreak because it is hard to control and spreads a lot of misinformation.

True
False

Q9. The primary role of journalists during a disease threat is to criticise the government response.

True
False

Q10. The bedrock of risk communication is trust.
True
False

SECTION B: Write your responses to the following questions.

Q11. Write down the name of two priority zoonotic diseases.

_____

Q12. What is one way to identify rumours?

_____

Q13. Write out the key ministries departments and agencies that foster One Health in Nigeria.

_____

SECTION C: Indicate whether you agree or disagree by circling/ticking your responses to the following questions.

Q14. I feel confident that I have the skills to communicate with the public and/or report during a disease outbreak.

5 Strongly Agree	4 Agree	3 Neither or N/A	2 Disagree	1 Strongly Disagree

Q15. I know best practices for coordination, trust-building, and cooperation between journalists and government spokespersons during a zoonotic disease outbreak.

5 Strongly Agree	4 Agree	3 Neither or N/A	2 Disagree	1 Strongly Disagree

Handout 23: Workshop Evaluation

Instructions: Please take a few moments to provide us with some important feedback about your experience with the One Health Risk Communication training program. Your responses are anonymous and will help improve future workshops.

Please indicate the extent to which you agree or disagree with the following statements:

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Objectives					
The workshop objectives were clearly stated and met.					
The workshop objectives met my expectations.					
The information in the workshop is relevant to my work.					
Content					
The content was applicable to people with different experiences and skill levels.					
The content is relevant to my job.					
The difficulty level of this workshop was appropriate.					
Facilitation					
The facilitator was knowledgeable.					
Module 1					
Module 2					
Module 3					
Module 4					
The facilitator provided ample time for questions and answered them satisfactorily.					
Module 1					
Module 2					
Module 3					

Module 4					
The facilitator spoke in a clear and easy-to-understand manner.					
Module 1					
Module 2					
Module 3					
Module 4					
Workshop Organization					
The workshop was well-organised.					
The workshop provided several opportunities for me to practise the new skills I learnt.					
The activities helped me deepen my understanding of the materials.					
The workshop format allowed for collaboration with other participants.					
Result					
I will be able to use what I learned in my work.					
I accomplished the objectives of this workshop.					
What would you improve about this workshop?					
Additional Comments					

Handout 24: Certificate Templates

One Health Risk Communication & Community Engagement Training for Public Health and Media Practitioners

Certificate of Completion

Awarded to

_____

Dr. Ifedayo Adetifa
Director General NCDC/Chair National One Health Technical Committee

Ian Tweedie
Project Director, Breakthrough ACTION-Nigeria

ANNEX 3: PRESENTATION SLIDES

Instructions:

The training slides are below and can also be accessed here: https://drive.google.com/drive/folders/1S9LCLpWqtGzibxbJ1BfVlKOt7TmTa8-8?usp=share_link .

1. Day 1 Slides
2. Day 2 Slides
3. Day 3 Slides
4. Day 4 Slides