World Organisation for Animal Health

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Integrated bite case management (IBCM): a checklist

What is IBCM?

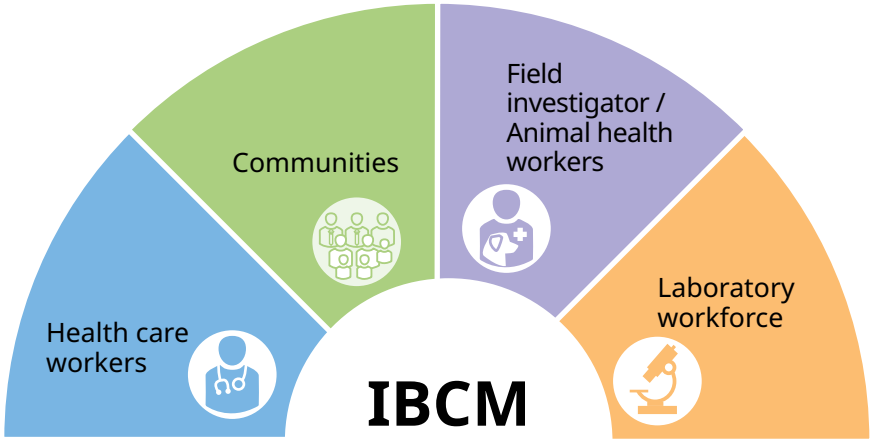
- IBCM is an advanced form of rabies surveillance. It combines efforts from **animal** and **human** health sectors and **communities** to control rabies utilizing the **One Health approach**.
- It focuses on **prompt data collection, rapid response and coordinated action across sectors** to prevent rabies transmission.
- As the surveillance capacity affects Post-Exposure Prophylaxis (PEP) decision-making, IBCM can be used to follow a **risk-based approach to deliver PEP**, where PEP onset may be delayed or discontinued based on the outcome of the animal assessment.

What are the main IBCM benefits?

- ☐ Detect all exposed individuals for timely PEP
- ☐ Strengthen joint investigations and enhance surveillance
- ☐ Maximize resources by using rabies biologicals appropriately
- ☐ Remove risk animals from communities
- ☐ Increase compliance in patients and communities
- ☐ Actively engage communities

IBCM reduces human and animal rabies deaths, maximizes resources and demonstrates One Health in action.

Who are IBCM key players?



Health Care Workers (HCW)

- Assess the patient
- Report the exposure
- Make PEP decision based on risk assessment
- Follow-up on the completion of PEP schedule

Field investigators/ animal health workers (CAHW)

- Safely catch, handle, and assess offending animals (including quarantine, euthanasia, use of rapid diagnostic tests and active follow-up)
- Conduct community outreach activities (including awareness raising, detection of further exposures, referral of individuals to primary health care facilities for PEP) together with responsible authorities

Laboratory workforce

Conduct WOAH- and WHO-recognized assays to diagnose rabies

Communities

- Report suspicious or dead animals
- Support identification of other exposed individuals or animals
- Share knowledge and increase awareness (especially on bite prevention, first aid and healthcare seeking) – Access the Public Information Toolkit for Rabies Prevention from United Against Rabies
- Make empowered decisions and help to leverage rabies control activities including mass dog vaccination campaigns and responsible dog ownership.

Other stakeholders might further include municipalities, media and press representatives, or teachers/education departments.

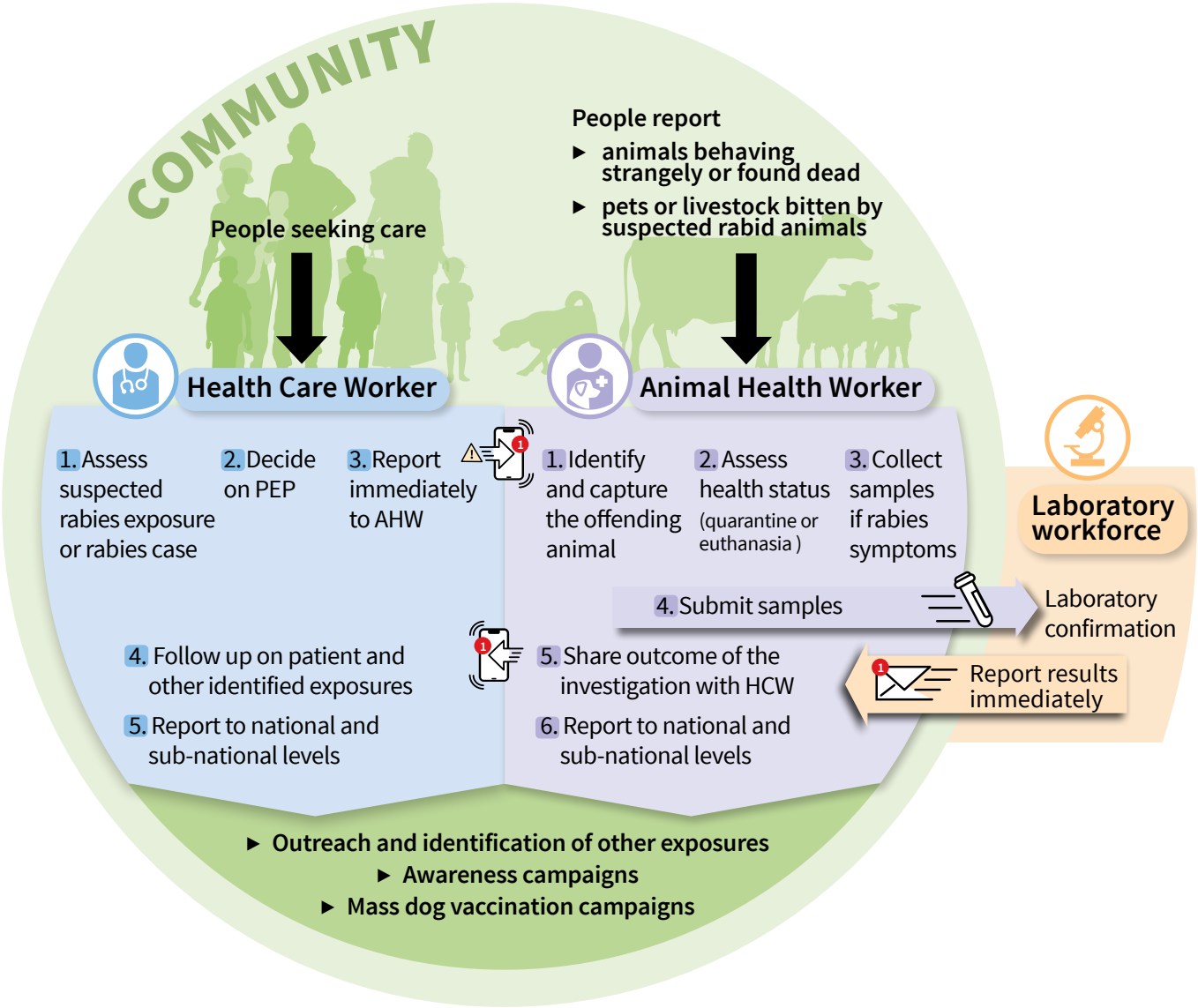
What are IBCM pre-requisites?

- ☑ Standard case definitions for suspected, probable, and confirmed human and animal rabies cases
- ☑ Operational electronic surveillance system to collect, manage and ideally share animal exposure cases, human and animal rabies cases and laboratory results
- ☑ Availability of PEP for bite victims
- ☑ Proper Pre-Exposure Prophylaxis (PrEP) and personal protective equipment for all human and animal workforce investigating and handling suspected human and animal rabies cases, conducting diagnostic testing or animal vaccinations
- ☑ Facilities to quarantine animals or protocols for home-based quarantine of owned animals for 10 days (dogs, cats, and domestic ferrets) or 14 days (other animals)
- ☑ Infrastructure and laboratory capacity to diagnose rabies using WOAH- and WHO-recognized assays both on a national as well as regional level depending on the number of samples, available infrastructure and turnaround of test results

How to prepare for IBCM?

- ☑ Identify focal points in appropriate authorities and institutions, including responsibility for coordination and active follow-up
- ☑ Establish notification and communication channel(s) for information sharing between human and animal health officials (e.g. WhatsApp, email, available integrated data systems, special apps for IBCM like e.g. REACT App, GARC Rabies Epidemiological Bulletin)
- ☑ Define situations that will trigger an animal investigation, e.g.
    - Information from health care facilities of human exposure to a suspected animal rabies case
    - Information from health care facilities of a suspected human rabies case
    - Information reported from the community of a suspected rabid animal
    - Information reported from livestock holders or pet owners of animals being bitten by a suspected rabid animal
- ☑ Create clear guidance/SOP for field investigators, e.g.
    - Define timeframes for animal investigations and follow-ups
    - Consider cases where the animal is unavailable, or the owner is non-compliant
    - Prepare standardized animal rabies reporting forms to collect key data
    - Develop clear guidance including flow-charts/decision trees to facilitate decisions about animal quarantine, euthanasia, sample taking and testing

How to implement IBCM?



Click here to access the detailed overview of the IBCM process

Human rabies surveillance

When IBCM starts with a patient seeking healthcare after being scratched or bitten by an animal or displaying symptoms of rabies

Lead: Health Care Workers (HCW)

1. Patient assessment

Quick access to the PEP Decision tree

1.1. Assess wounds of animal exposure category and information on the exposure event to conduct risk assessment (see WHO TRS 1012, p.61) and make PEP decision as per WHO Rabies PEP Decision Tree.

1.2. For patients displaying rabies symptoms (See standard case definitions for human rabies in WHO TRS 1012, p.21), ask about history of exposure during anamnesis or use verbal autopsy forms for fatal cases if the patient has already passed away.

› Link to Verbal autopsy questionnaire (in WHO TRS 1012, p.160)

1.3. Collect samples from suspected human rabies cases for laboratory diagnosis if laboratory capacity for human rabies diagnosis is available.

2. Notification to field investigators / AHWs

2.1. Share reports of human exposure or rabies cases to field investigators/AHWs immediately through an established communication channel to trigger the necessary animal investigation

2.2. Ideally use an electronic reporting system to allow analysis of case-based data in real time and immediate animal investigation

Example of information retrieved from patient to share

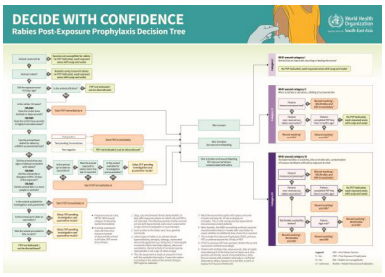
- ☐ Kind of exposure (scratch, bite, multiple bites)
- ☐ Information on the animal (species, behaviour, perceived health status, vaccination and ownership status if known)
- ☐ When and where exposure happened (location, day and time)
- ☐ How exposure happened (provoked/unprovoked aggression)

3. Collect the outcome of the animal investigation and update risk assessment for PEP accordingly

3.1. Ensure that patients with confirmed exposure to suspected, probable (clinically confirmed) or laboratory confirmed rabid animals complete PEP

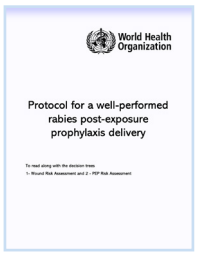
3.2. Ensure other exposed individuals receive complete PEP as well

TOOLBOX



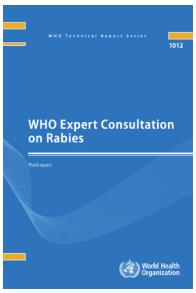
Rabies Post-Exposure Prophylaxis Decision Tree: Decide with Confidence (2024)

PDF link



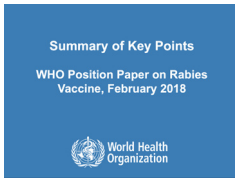
Protocol for a well-performed rabies post-exposure prophylaxis delivery: To read along with the decision trees (Wound Risk Assessment and PEP Risk Assessment).

https://www.who.int/publications/i/item/B09018



WHO Expert Consultation on Rabies: WHO TRS N°1012

https://www.who.int/publications/i/item/WHO-TRS-1012



WHO Position Paper on Rabies Vaccines (February 2018): Summary of key points

https://www.who.int/publications/m/item/who-position-paper-on-rabies-vaccine-february-2018

Animal rabies surveillance

When previously defined situations trigger animal investigations (e.g., reported human exposure, reported animal exposure or reported suspected rabid animal)

Lead: Field investigators / animal health workers (AHW)

1. Animal investigation / health assessment

1.1. Capture and handle the offending animal with proper technique and safety measures

1.2. Assess the health status of the offending animal and determine rabies risk (See case definition of animal rabies in the WHO TRS 1012, p.78)

2. Decision-making based on the investigation / assessment

2.1. If the offending animal appears healthy:

2.1.1. Ensure proper confinement/quarantine where indicated (as animals can transmit rabies already before showing clinical signs, WHO recommends observing suspected dogs, cats and domestic ferrets that appear healthy for at least 10 days and other animals for 14 days after exposure).

2.1.2. **If the animal has an owner**, consider instructing the owner on how to quarantine their animal themselves; but still document the investigation and follow up at least on day 5 and 10 to confirm any potential changes in the health status of the animal.

2.1.3. **If the health status of the animal changes** during confinement/quarantine, euthanise and test the animal immediately.

2.1.4. **If the animal remains healthy** during confinement/ quarantine, consider them not rabid at the time of exposure. vaccinate them against rabies and release them at their specific location.

2.1. If the offending animal presents signs of rabies:

2.2.1. Ensure humane euthanasia by a trained professional.

2.2.2. Ensure adequate sample taking (personal protective equipment, correct technique, sufficient equipment, disposal of potentially contagious material). Minimum capacity for sample taking includes the ability to collect a full cross-section of brainstem and partial sample of the cerebellum from deceased, rabies suspected animals (see recommandations for brain removal in the field in WHO Laboratory techniques Vol.1, p.69 and WOAH Manual of Diagnostic Tests and Vaccines for Terrestrial Animals)

2.2.3. Especially in settings with limited access to standard laboratory diagnostics, Lateral Flow Devices (LFDs) may be used as initial screening tools. Follow strict biosafety and quality assurance protocols to ensure safe and effective use:

- Use only brain tissue for LFD testing.
- Demonstrate adequate LFD performance nationally, including high sensitivity and specificity.
- Train personnel in test administration and result interpretation.
- Treat positive LFD results as presumptive positives.
- Confirm negative LFD results using WHO- and WOAH-recommended laboratory diagnostic methods.
- Never use negative LFD results alone to rule out rabies or guide decisions on PEP.

2.2.4. Ensure the proper transportation of samples for laboratory testing (see recommendations from WOAH)

TOOLBOX

WOAH Rabies Reference Laboratory Network's (RABLAB) overview of LFD tests for field application

https://www.woah.org/en/document/woah-rabies-reference-laboratory-networks-rablab-overview-of-lfd-tests-for-field-application/

3. Notification to health care workers

Communication and feedback to the health care workers is necessary throughout the entire investigation process

3.1. Communicate results (animal assessment outcome, changes during confinement/quarantine, laboratory results) to health care workers promptly

Example of information collected about the offending animal to share

- ☐ Ownership and health status (including vaccination, previous potential exposure events)
- ☐ Number of other people or animals exposed to the animal
- ☐ If animal is sick: onset of clinical signs and symptoms
- ☐ If animal is confined/quarantined: information on quarantine and potential changes in health status
- ☐ If animal has been euthanised and tested: results of testing

Laboratory confirmation

Accurate animal and human rabies diagnosis using standard diagnostic tests

Lead: Laboratory workforce

1. Laboratory testing

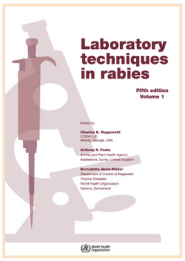
1.1. Perform prompt laboratory confirmation with a standard diagnostic test (see toolbox below), as defined by WHO or WOAH to allow real-time decision-making on PEP.

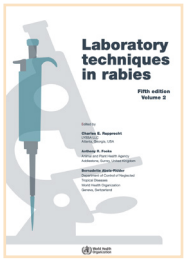
1.2. If other diagnostic tests are used, depending on their sensitivity and specificity, confirmation with a validated secondary test may be required, particularly in the case of negative results.

2. Reporting of results

2.1. Immediately report laboratory results back to field investigators/AHWs

TOOLBOX

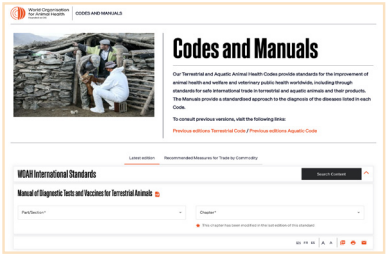




Laboratory techniques in rabies - Fifth edition.

Volume 1
https://www.who.int/publications/i/item/9789241515153

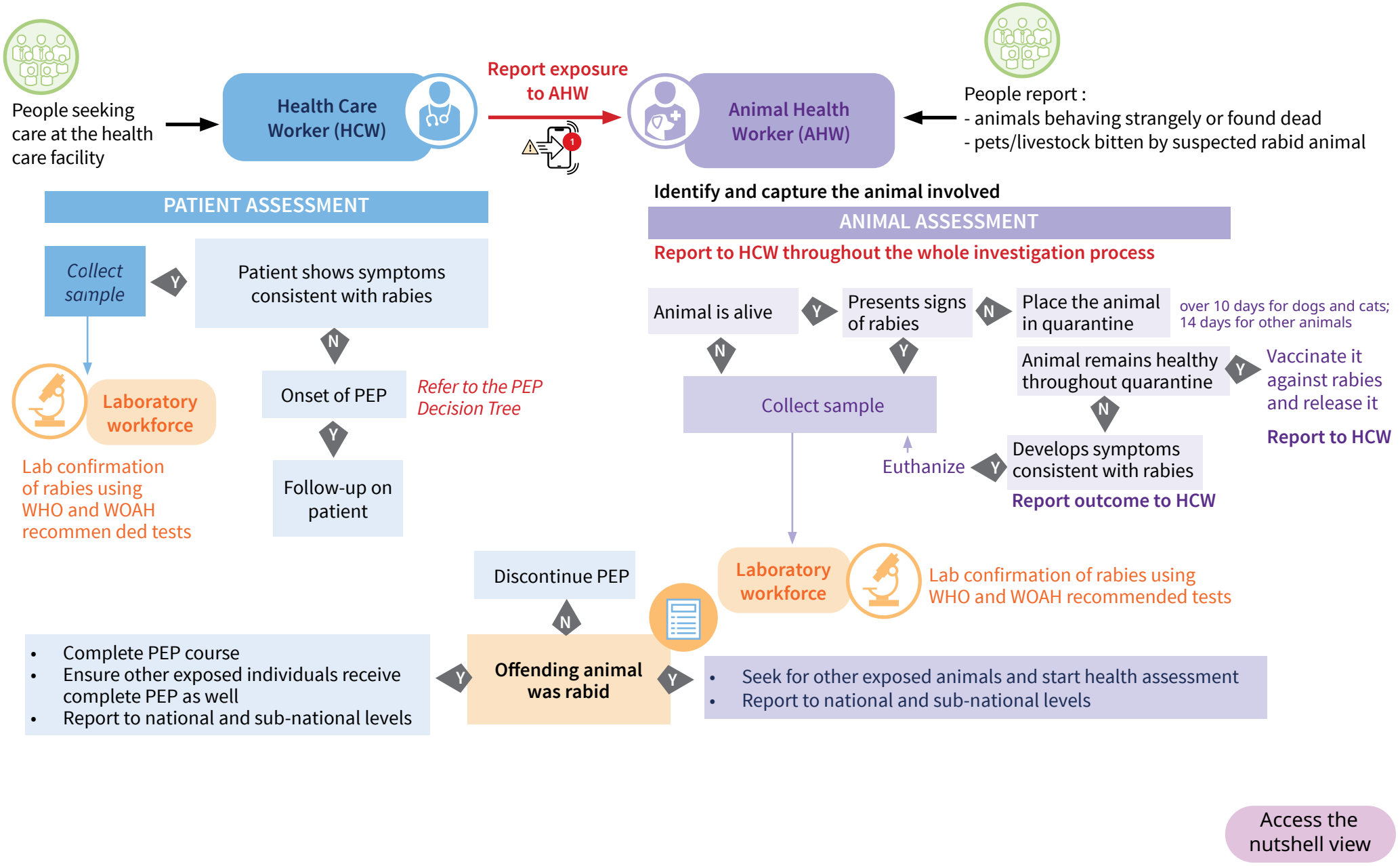
Volume 2
https://www.who.int/publications/i/item/9789241515306



WOAH Manual of Diagnostic Tests and Vaccines for Terrestrial Animals

https://www.woah.org/en/what-we-do/standards

Overview of the IBCM process



Access the nutshell view

For more information please contact:

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Avenue Appia 20
CH-1211 Geneva 27
Switzerland

Website: https://www.who.int/health-topics/rabies