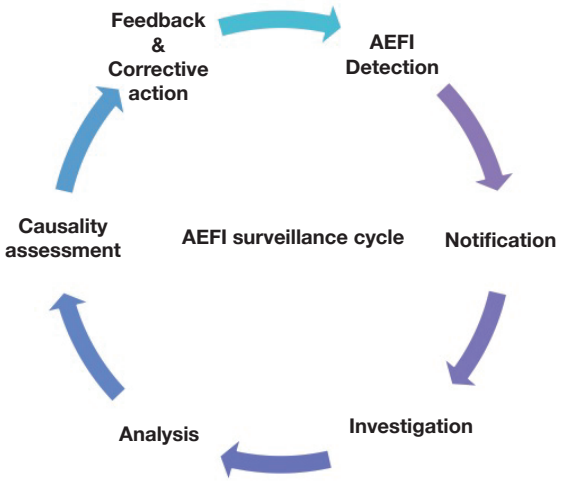
World Health Organization

ADVERSE EVENT FOLLOWING IMMUNIZATION

AIDE-MÉMOIRE ON AEFI INVESTIGATION

Purpose: This aide-mémoire proposes a systematic, standardized process to investigate reported serious adverse events following immunization (AEFI) and ascertain the underlying cause of the AEFI by:

- confirming a diagnosis and timing
- identifying details of vaccine(s) administered
- documenting the outcome of the reported adverse event
- determining whether the reported event is solitary or part of a cluster
- reviewing the operational aspects of the programme



DETECTION AND REPORTING

Vaccine recipients themselves and/or parents of vaccine recipients who identify AEFI should notify the same to the health care provider. All notified AEFI cases should be documented and reported in a simple standard reporting form by the health care provider.

WHICH OF THE REPORTED AEFI SHOULD BE INVESTIGATED IN MORE DETAIL?

A detailed AEFI investigation to assess causality is necessary if:

- it is serious[i]
- it is part of a cluster[ii]
- it is part of a suspected signal[iii]
- it is a suspected immunization error[iv]
- it appears on the list of events defined for AEFI investigation or
- it causes significant parental or public concern

WHO SHOULD INVESTIGATE AEFI?

Detailed AEFI field investigation can be done based on the program's operational structure and the expertise available. A basic preliminary investigation by local programme managers may be sufficient if the cause of the reported AEFI is very clear; otherwise, investigation should be done by next/higher administrative level, by a trained/skilled person/ team, depending on the nature of event, its seriousness and impact to the programme.

WHEN TO INVESTIGATE AEFI?

If a detailed investigation is warranted, it should be initiated as soon as possible, ideally within 24 to 48 hours of the case being first reported.

CHECKLIST FOR AEFI INVESTIGATION

1. PRELIMINARY STEPS

- ☐ Develop national guidelines with case definitions for reportable AEFIs, reporting forms, investigation procedures, roles and responsibilities
- ☐ Develop resource documents and training material on reporting, management and investigation of AEFIs
- ☐ Designate and train staff to conduct an AEFI investigation using the investigation form and guidelines
- ☐ Train staff on how to collect and store specimens
- ☐ Have a functioning National AEFI Review Committee with suitable representation
- ☐ Establish procedure, criteria and designate focal persons for notifying and communicating with WHO and UNICEF (if UN- supplied vaccine) or other relevant party depending on procurement mechanism
- ☐ Identify a spokesperson for public communications

2. RECEIVING A REPORT

- ☐ Provide rapid attention to all reports received and immediate response to serious events
- ☐ Verify the information in the report, confirm the diagnosis, classify and assess the AEFI using established case definitions. Decide whether it needs further detailed investigation.
- ☐ If investigation is warranted, travel to the location of the AEFI, or delegate responsibility to another trained person

3. INVESTIGATE AND COLLECT DATA

- ☐ Obtain information from patient or relatives directly/ use available records
- ☐ Obtain information from immunization service providers and medical care service providers (hospital staff)/ use available records
- ☐ Ask about the vaccine(s) administered and other drugs potentially received
- ☐ Establish a more specific case definition if needed
- ☐ Ask about other vaccinees who may have received the same or other vaccines
- ☐ Observe the service in action
- ☐ Ask about cases in unvaccinated persons
- ☐ Formulate a hypothesis as to what may have caused the AEFI (see table below)
- ☐ Collect specimens (if indicated by investigation, but not as a routine):
  - ✓ from the patient
  - ✓ the vaccine and diluent if applicable
  - ✓ the syringes and needles

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- ☐ Dispatch specimens to appropriate testing facility (laboratory, regulatory authority, etc.)

4. ANALYSE THE DATA

- ☐ Review epidemiological, clinical, and laboratory findings
- ☐ Share findings with national AEFI committee for expert advice
- ☐ Summarize and report findings

5. TAKE ACTION

The local response after an AEFI investigation should be based on findings (data/information) and local practices.. The highest priority is to treat patient. Suspending vaccination at the locality of the event temporarily pending investigation outcome may be necessary but is uncommon. Broader suspension of vaccination is only very rarely necessary. When taking action, it is important to

- ☐ Provide feedback to health staff
- ☐ Communicate findings and action to the parents and public – during all stages of the investigation
- ☐ Correct problem (based on the cause) by improving training, supervision and/or distribution of vaccines/injection equipment
- ☐ Replace vaccines if indicated

INVESTIGATING DEATHS AFTER IMMUNIZATION

After informing higher authorities, field investigation should be conducted by a team of clinical, laboratory and forensic experts supported by programme managers. A decision on autopsy should be taken within the local sociocultural, religious, political context. Autopsies should be done with adequate information of the circumstances of the event using standard autopsy protocols. Appropriate specimens should be collected for testing.

If an autopsy is not possible, a verbal autopsy can be carried out using established guidelines and protocols.

OUTCOME OF AEFI INVESTIGATION

On concluding the investigation, the documents and evidence collected should be compiled, a report prepared and submitted to a group of experts to determine/evaluate causality.

POSSIBLE CAUSES OF AEFI
Related to vaccine or vaccination
Vaccine product-related
Vaccine quality defect-related
Immunization error-related
Immunization anxiety-related
Coincidental adverse event

KEY RESOURCES FOR AEFI INVESTIGATION

- WHO standard AEFI reporting form http://www.who.int/vaccine_safety/REPORTING_FORM_FOR_ADVERSE_EVENTS_FOLLOWING_IMMUNIZATION.pdf?ua=1
- WHO standard AEFI investigation form http://www.who.int/vaccine_safety/initiative/investigation/AEFI_Investigation_form_2Dec14.pdf?ua=1
- Global manual on surveillance of AEFI http://www.who.int/vaccine_safety/publications/aefi_surveillance/en/
- User manual for the revised WHO AEFI causality assessment classification http://www.who.int/vaccine_safety/publications/gvs_aefi/en/
- Brighton Collaboration standard case definitions https://brightoncollaboration.org/public.html
- Verbal autopsy standards: ascertaining and attributing causes of death http://www.who.int/healthinfo/statistics/verbalautopsystandards/en/index1.html

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[i] An AEFI is any untoward medical occurrence which follows immunization and which does not necessarily have a causal relationship with the usage of the vaccine. The adverse event may be any unfavourable or unintended sign, abnormal laboratory finding, symptom or disease.

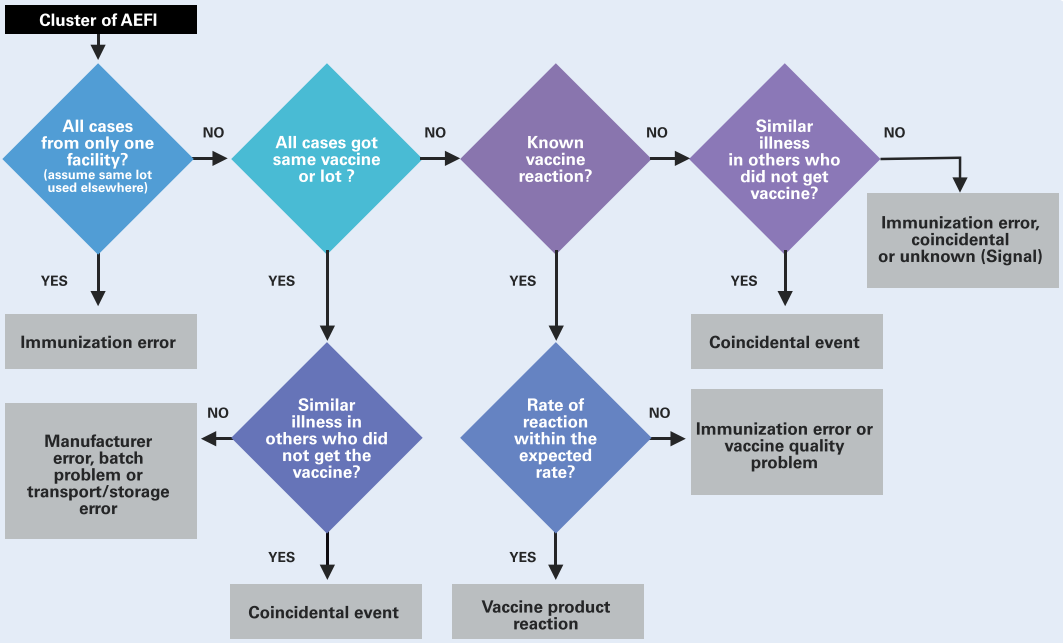
[ii] Serious AEFI include death, hospitalization or prolongation of existing hospitalization, persistent or significant disability or incapacity, congenital anomaly/birth defect or is life-threatening

[iii] A cluster of AEFIs is two or more cases of the same adverse event related in time, place or vaccine administered

[iv] Information (from one or multiple sources) which suggests a new and potentially causal association, or a new aspect of a known association, between an intervention and an adverse event or set of related adverse events, that is judged to be of sufficient likelihood to justify verificatory action.

INVESTIGATING AEFI CLUSTERS

Suggested steps for identifying the most likely cause of a cluster of AEFI



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