Health Workers' Approach Toward Adverse Events following Immunization – An Insight From Madhya Pradesh

Sir,

Adverse event following immunization (AEFI) is a medical incident that takes place after immunization.[1] AEFI is a threat for creating fear of vaccination among parents resulting in low uptake of vaccination.[2] Evidence indicates that the knowledge of AEFI surveillance and vaccination practices of health-care workers influence the quality, safety, and monitoring of the vaccination services which may potentially reduce vaccine-related illness, disability, and death.[1,3,4]

Government of India has issued guidelines[2,5] on AEFI surveillance, investigation, reporting, and management of AEFI but the adherence of the same is reported suboptimal.[5] AEFI surveillance is a system to identify and collect adverse events associated with receipt of vaccines.[2] Further, scarcity of studies on AEFI in India hinders advancement in AEFI investigation, reporting, and management. The present study has assessed knowledge on routine immunization, AEFI management, investigation, reporting, and training received on AEFI among 72 primary health-care workers from Bhopal and Vidisha districts of Madhya Pradesh. We have also assessed vaccination practice and availability of the AEFI kit at the facility level. Primary health-care workers included this study were medical officers (MOs), auxiliary nurse midwifery (ANMs), and accredited social health activists (ASHAs).

In the present study, most MO and ANM knew adverse events following immunization; practices related to vaccine safety and routine immunization process but were unaware of the vaccine safety and reporting procedure [Table 1]. A different questionnaire was prepared for the ASHAs as per their level of comprehension and functional job responsibilities related to AEFI. Table 2 depicts knowledge related to AEFI reported by ASHA.

Authors also assessed routine immunization practices at primary health centers (PHC) and outreach session sites using an observation checklist. The observation revealed varied practices across PHCs and outreach session sites. Compliance was observed in certain practices such as most of them (96%) had checked VVM status, expiry dates of vaccine vials, recorded vaccine's batch number before vaccination and also, informed guardians of children about the common side effects following vaccination and its treatment (79%). However, noncompliance in management, identification, and reporting was noted. For example, only five ANMs diagnosed AEFI and out of them, only one had reported the AEFI; 18 of them (75% of ANMs) did not carry their AEFI treatment kit at their vaccination room or the session site. More than (29%) had not cleaned the injection site before vaccination with a sterilized cotton swab, and 21% had not used sanitizer/soap for aseptic precaution. Although the reporting should be done in AEFI reporting forms as per prescribed guidelines, most of them stated that they reported to MOs through the telephone only. None of them had ever participated in the AEFI investigation and reporting of AEFI was observed to be suboptimal. Few ANMs stated that they did not report until it worsens because of the fear of victimization. Some of the participants, particularly ANM and ASHAs, stated that reporting of AEFI was not part of their clinical responsibilities. This emphasizes the need for sensitizing the health-care workers on AEFI surveillance and reporting.

Table 1: Knowledge of medical officer and auxiliary nurse midwifery on key domains of adverse event following immunization

Key domains of knowledge	Correct response, frequency (%)	
	MO (*n*=17)	ANM (*n*=24)
AEFI and vaccine safety		
Definition of AEFI	14 (83)	20 (83)
Use of VVM	15 (88)	23 (96)
Use of measles and BCG vaccines after opening the vials	13 (76)	23 (96)
Use of diluents of any other vaccines in the absence of proper diluents	16 (94)	21 (88)
Test that can check the potency of the vaccines	11 (65)	15 (63)
Use of vaccine in case of mild medical conditions	13 (76)	6 (25)
Duration of open vial of DPT vaccine for usage	14 (82)	22 (91)
Procedure to cut needles	16 (94)	24 (100)
Treatment of a coincidental illness until investigations confirmed	13 (76)	5 (21)
Identification of AEFI	6 (35)	6 (25)
AEFI surveillance and its reporting		
Steps after the vaccination to identify AEFI	16 (94)	21 (88)
Time when investigation of the AEFI case should start	15 (88)	23 (96)
Personnel responsible for AEFI monitoring facilities	14 (82)	21 (88)
Reporting of all injection site abscesses	10 (59)	12 (50)
Reporting of all injection site swelling and redness	11 (65)	12 (50)
AEFI case reporting by ANM	15 (88)	23 (96)
Nil report in case of no AEFI	9 (53)	15 (63)
Reporting Form for AEFI	10 (59)	10 (42)

AEFI: Adverse event following immunization, VVM: Vaccine vial monitors, BCG: Bacille Calmette-Guérin, ANM: Auxiliary nurse midwifery, MO: Medical officer, DPT: Diphtheria, pertussis tetanus

Table 2: Knowledge of accredited social health activist on key domains of adverse event following immunization

Key domains of knowledge	Correct response ASHA ($n=24$), frequency (%)
Definition of AEFI	13 (54)
Preparation regarding vaccination on the day of immunization	22 (92)
Follow up of AEFI	18 (75)
AEFI investigation process	9 (38)
Reporting of all injection site abscesses	11 (46)
Informing swelling and redness on the site of vaccination	10 (42)
Action to be taken by ASHA when a child experiences AEFI	21 (89)

ASHA: Accredited social health activist, AEFI: Adverse event following immunization

ANMs and their supervisors have been provided logistics related to AEFI management. As per the Government AEFI guideline, all vaccination sites are provisioned AEFI treatment kits to provide first-aid to any kind of AEFI.[4] However, it was observed that the AEFI kit was not maintained as per the guideline at any of the vaccination sites. Of 24 sites, only 14 vaccination sites had complete AEFI kits and surprisingly none of them was having a complete set of materials/instruments.

Trainings on AEFI were conducted by the health department; however, trainings were sporadic, which may be a reason for limited knowledge and noncompliance to AEFI guidelines. Most trainings were conducted 2 years ago and surprisingly all these trainings had similar contents. In the last 3 years, only 10 MOs (out of 24) and 9 ANMs (out of 24) had received training. Most importantly, in the case of ASHAs, only three of them received the training.

The need for periodic trainings and supportive supervision to enhance practices related to AEFI is obvious. Cadre-specific training content, as well as a mode of delivery, should be planned. For example, MOs need to have a clear idea about its treatment, referral, and reporting of the risk-cases to the higher authorities whereas ANMs need competency on vaccine safety, AEFI surveillance, use of AEFI kits, and identification of cases. ASHA needs training on identification of symptoms of severe AEFI, immediate reporting, and referral in case of emergency. In addition to the training, learning resources such as job-aids in simple and vernacular language especially for ANM and ASHA and standard operating procedures on AEFI for MOs can be very useful. Posters of AEFI identification and reporting at PHC and sub-center or Health and Wellness Centre can support timely reporting of AEFI. Supportive supervision of health workers and cold chain points, as well as a weekly review of immunization and AEFI status of immunized children, may improve the accuracy of reporting. A better and coordinated response to AEFI can potentially decrease immunization related disability and increase the confidence of the community on vaccination.

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Conflicts of interest

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