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Editorial

Mass Psychogenic Illness and Immunization Stress-related Responses: Rapid and Appropriate Management are Critical

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An article included in this issue of *Outbreak, Surveillance, Investigation & Response* describes the occurrence of mass psychogenic illness (MPI) during a human papillomavirus vaccine (HPV) campaign in a rural school in Bangladesh.[1] In 2020, cervical cancer was the fourth leading cause of cancer and cancer deaths among women, with approximately 600,000 new cases and more than 340000 deaths.[2] Almost all cervical cancer cases are caused by oncogenic or high-risk HPV types. WHO recommends that HPV vaccines be included in all national immunization programs to prevent cervical cancer, with the goal of reaching all girls by the age of 15 years and accelerate cervical cancer elimination by 2030.[2] HPV vaccines are very safe. Since the first HPV vaccine was licensed in 2006, more than 500 million doses have been administered and post-licensure surveillance has not detected any serious safety issues other than rare instances of anaphylaxis.[2] As of November 2023, 140 countries had introduced HPV vaccine.[3] Bangladesh introduced the HPV vaccine in a national campaign in October 2023. In October 2024, an event classified as MPI occurred among 19 students at an all-girls school in Bangladesh who developed symptoms shortly after receiving HPV vaccine. MPI has also been termed mass sociogenic illness, mass hysteria, epidemic hysteria, and anxiety-related reactions occurring in clusters, and it is defined as the collective occurrence of physical signs or symptoms (e.g., headache, dizziness, weakness) in persons with common beliefs about the cause of their symptoms.[4,5] MPI can occur in persons who are anxious, stressed, or emotionally vulnerable and may be associated with vaccinations and various exposures, such as to toxins, or rumors of exposures. The World Health Organization (WHO) uses the term "immunization stress-related responses" (ISRR) to describe symptoms and signs that develop following immunization that are related to anxiety and are not to the vaccine product or errors in the immunization program.[6] When ISRR occurs in clusters, it can be categorized as MPI. MPI can become epidemic, with spread of facts admixed with misinformation and rumors that are communicated rapidly and widely by word of mouth, phone, social media, and the press, and it can become increasingly difficult to contain. It is important to plan for ISRR, detect it early, manage it appropriately and communicate about it effectively before, during, and following vaccination campaigns to minimize chances it will spread.

MPI has occurred during HPV vaccination campaigns in multiple countries, frequently resulting in minimal impacts but occasionally leading to increased vaccine skepticism and vaccine hesitancy and dramatically reduced rates of vaccine coverage. Widely reported ISRR events with disastrous impacts occurred in Japan in 2013 and Columbia in 2014. In 2013, following extensive coverage of a widespread ISRR event in Japan, the country's national immunization program suspended its proactive recommendations for the HPV vaccination, and HPV vaccine coverage declined from approximately 70% in 2013 to less than 1% in 2019.[7] The decline in HPV vaccination in Japan between 2013–2019 is predicted to lead to approximately 25,000 excess cases and more than 5,000 additional cervical cancer deaths over cohort lifetimes than had HPV vaccine coverage remained at 70%.[7] In 2014, an ISRR event occurred during an HPV vaccine campaign in Carmen de Bolivar, Colombia, that initially involved 15 adolescent girls. However, with viral spread of reports and videos of affected girls fainting, twitching, and arriving unconscious at emergency rooms, the outbreak expanded to more than 600 cases across Colombia.[8] The events in Columbia shook public confidence in HPV immunization and by 2016, vaccine acceptance had declined to less than 15% from approximately 80% in 2014.[8]

WHO, in collaboration with the independent Global Advisory Committee on Vaccine Safety, developed a manual for program managers and health professionals on how to prevent and manage ISRR. The manual provides approaches to the prevention, diagnosis and management of ISRR; emphasizes that all healthcare professionals involved in immunization should be aware of and receive training about ISRR; discusses the importance of addressing prevention measures (including identifying individuals who may be at high risk for an ISRR, paying attention to precipitating factors during immunization, and taking measures to prevent or control ISRR); describes the role of WHO causality assessment classification; and outlines communication strategies before, during, and following immunization.[6]

The importance of the management of MPI and ISRR resonates with me personally. In 2019, as a technical officer with the WHO Regional Office for the Western Pacific's Expanded Program on Immunization, I provided technical assistance to the Solomon Islands' Ministry of Health and Medical Services (MHMS) in their national HPV roll out. A vaccination event was conducted at a school in a rural area. Girls in grades 5 and 6 (most of whom were 10–12 years old) were vaccinated in the school's gymnasium. Many of the girls had not eaten breakfast and it became hotter in the gymnasium as the day progressed. Several hours into the event, five girls became dizzy and weak in rapid succession. All five girls were given water and hard candy; four felt better after 30–40 minutes, but one girl was sent to the local emergency room because of persistent dizziness and weakness. There was concern about the reaction of students who saw the girls get dizzy and vaccination was called off for the day after the fifth girl's symptoms began. The vaccination team spoke to the headmistress, teachers, and concerned students and parents about the episodes to let them know that the episodes were likely due to a combination of heat, dehydration, lack of eating breakfast and observing the reactions of others. The team followed up with the five girls and they all were feeling well and attended school the following day. The team reconfigured the vaccination site on the second day so students could not watch others being vaccinated and provided water and candy to the students and the remaining girls in grades 5 and 6 were vaccinated; none complained of dizziness or weakness. The vaccination team credited the Solomon Islands' HPV vaccine crisis communication plan, which MHMS had developed in advance of the HPV vaccination campaign, with preventing the spread of ISRR to other girls at the school and beyond and with helping maintain public trust in HPV vaccination. The crisis communication plan described principles of appropriate response to rumors and steps that health officials and providers should take to respond to crises and rumors. The steps included ensuring proper sensitization and community mobilization in advance of vaccinations; understanding the content and source of rumors; providing key messages and facts to rumor sources via trusted partners; release of a statement about the safety of HPV vaccines; and notification of the provincial health authorities if crises or rumors escalate.

As with the ISRR event in the Solomon Islands, Jiti et al. reported that timely clinical care, appropriate and effective messaging, and coordinated response efforts were critical for preventing the spread of MPI and maintaining trust in the vaccination program.[1] When MPI occurs, it is essential to prevent and control its spread quickly and effectively. This is particularly true for ISRR following HPV vaccination at a time when vaccine skepticism and vaccine hesitancy are increasing in many areas, vaccine coverage rates are declining, and HPV-related morbidity and mortality may soon start to increase.

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