

# Immunization Barriers in Kyber Pukhtunkhwa (KP), Pakistan

Amir Abdullah<sup>1</sup>, Muhammad Anwar<sup>2</sup>

<sup>1</sup>MSc. N student at Aga Khan University School of Nursing and Midwifery Karachi, Pakistan

<sup>2</sup>Master in public health, Rafaidah Nursing College Peshawar, Pakistan

**Abstract:** *It is concluded, that complete coverage of immunization is a complex process in the present situation of Pakistan. The main causes of EPI failure are poor polices and management, shortage of vaccination centers and resources, cold chain failure, staff shortage, lack of community participation, misconception, and security situation. The government and the health ministry need to play a pivotal role in the solution of these barriers. The government needs to modify the policies and plan effective strategies with media and religious scholar to increase awareness against negative propagandas. Furthermore, a strong encouragement is required for continue funds to increase staff, resources (vaccines, syringes, refrigerators, and electricity power), and community participation through different strategies. In short, resolving of mentioned immunization barriers can make substantial impact in Pakistan's reaching of Millennium Development Goals (MDGs) for reduction in child mortality rate.*

**Keywords:** immunization, barriers, shortage, cold chain, misconception, security

## 1. Background

Immunization is a protective process in which a person is made immune or resistant to an infection or disease. In this process, a person is normally immunized by the administration of a vaccine. Vaccines are prepared from an agent that bear a resemblance to an infection causing microorganism, but it is made from weakened or killed forms of the microorganism.

Pakistan's Expanded Program on Immunization (EPI) was launched in 1978 with the goal to protect the children from infectious diseases. At that time, six types of vaccine were introduced they are polio, diphtheria, pertussis, tetanus, tuberculosis and measles. In 2001 and 2008 hepatitis B and Haemophilus influenza type b vaccines were also added respectively<sup>5</sup>. Annually, the EPI target around 5.8 million children aged under 23 month are immunized against eight preventable diseases and protect 5.9 million pregnant women and their newborns from tetanus through immunization process<sup>8</sup>.

The population of Pakistan is round about 170 million in which Infant Mortality Rate (IMR) is 80/1000 live births and Child Death Rate (CDR) is 87/1000 live births before turning to five years old. IMR and CDR have been failing over's years but the movement has been slow. On the basis of these result, Pakistan will miss to achieve Millennium Development Goals (MDGs) of 2015: target of reducing less than 5 year children deaths rate to 52/ 1000 live births<sup>4</sup>. Pakistan is one of the countries where polio transmission is still endemic. The EPI coverage is 80% which is still very low. The coverage for BCG, DPT3 and polio is 65% and 67% for measles. In pregnant women the Tetanus Toxoid (TT) coverage is 57% which is reasonably low<sup>19</sup>.

Mal-practices are still followed in rural area of Pakistan for example after birth of a child the cow-dung is applied on the umbilical cord and cover them in sheepskin wrap. It is also presumed that the vaccines are anti-Islamic drugs which

hold contraceptive drugs. A study was carried out in Kyber Pukhtunkhwa (KP) stated that only 65% of children ( $\geq$  three year) is fully immunized<sup>19</sup>. Many deadly attacks were done on the polio campaign team and people afraid to visit the EPI centers. Furthermore, six health professional were killed in bombing of a clinic, where health care workers were administering polio vaccines in the northern city of Peshawar<sup>15</sup>.

## 2. Determinants of the Immunization Barriers in Pakistan

Age appropriate Immunization controlled and save millions of lives from infectious diseases. Unfortunately, after the discovery of vaccine many regions of the world are still facing the burden of infectious diseases. Although in public health sectors many areas needs to be addressed in future in Pakistan like sanitation, safe water, nutrition, and maternal health. However, immunization is the most cost effective strategy that deserves prompt attention of the health ministry. The barriers of immunization in rural population was identified which were health professional shortage, negative beliefs and attitude, accessibility problems, and lack of awareness<sup>17</sup>. In Pakistan, the barriers are poor polices, mismanagement, shortage of vaccination center and resource allocation, cold chain failure, staff shortage, lack of community participation, misconception, and security situation.

### 2.1 Poor Polices and Management

Pakistan is an unstable country and the government is changing frequently, which have a bad impact on health sector organizations. The political influences delay and disrupt the health budget, policy, planning, effective strategies, implementation, and evaluation<sup>10</sup>. According to the 18<sup>th</sup> amendment in the government, the federal government has no governor over the four provinces. On the basis of 18<sup>th</sup> amendment, provincial government policies are inconsistent, and policies are not directed toward the goal,

population, and resources. Policies are prepared and followed superficially and not documented properly. Health policies maker are not updated from the population growth and needs, because they have no proper system for feedback and review. The health policies maker are influenced by the official government, therefore, the MDG is far away from our country Pakistan. In Pakistan, the corruption also makes the health policies unproductive. Corruption initiates low quality in the human resources, finance, and materials which result implementation failures in the health policies and programs<sup>20</sup>.

Furthermore, unsatisfactory management skills, low pay scale of staff, lack of incentives, insufficient resources, and supervision are the portion of poor policies and management. Many health policies and programs are condemned to fail because of the shortage of resources and management<sup>10</sup>.

## 2.2 Shortage of Vaccination Center and Resources

In Pakistan, population is much dispersed and proper mapping is not available. In some areas basic health units (BHU), primary health care (PHC), and EPI centers are far away from the local population. The inflexible working hours of the vaccinator team also affect the vaccination. It is concluded from all the surveys and reports from 2006 to 2007 in Pakistan, that half of the children are fully immunized. Limited resources and difficulty to reach EPIs center were the main reason of failure<sup>8</sup>. For example, in Baluchistan and KP the people are living in the desert and mountains where it is difficult for the EPIs team to reach and immunized the children. The people are unaware from the important of immunization: therefore they do not visit the far away EPI center. According, to the documented cases of polio, Pakistan is the leading country among the endemic countries<sup>18</sup>. In 2013, only Afghanistan, Nigeria and Pakistan remain polio-endemic countries. If, a single child is remains infected from polio virus, it is the possibilities to spread the virus in all children of the world<sup>16</sup>.

The resources are distributed unequally in the communities due to which the vaccination centers are facing the problem in vaccines, syringes, vaccination cards, power failure, and vaccination refrigerators. The unequal delivery of resources and inadequate number of vaccinators has left a great number of the union council uncovered.

## 2.3 Cold Chain Failure

In Pakistan, the electricity fall down is very high, in some areas of the country the load shedding cross 20 hours per day. Power failures are likely to be a reality for every health facility in Pakistan and it is very difficult for the health professional to keep the cold chain for vaccines. The situation has been worsened by power failure and frequent load shedding in both rural and urban regions, damage the efficacy and quality of vaccine<sup>14</sup>. To maintain the efficacy of the vaccines a back-up plan for power failures should be available. Vaccine should be store under the range of 2 to 8 centigrade for one to 3 month<sup>21</sup>. Cold chain maintenance charts are important tools at low cost to monitor and evaluate the efficacy of vaccines. In rural area of the country

the vaccinators to do not give important to the cold chain and administered the expired vaccine to children.

## 2.4 Staff Shortage

In Pakistan, the other barrier for EPI is shortage and unavailability of trained staff (nurses, paramedics, lady health workers, and doctors). Most of the employees are ghost staffs, present in records but in reality they are not on duty. Therefore, absenteeism and ghost staff are the most serious concern in immunization. The vaccinators are over burden in their duty and they do not find time for awareness and education. Due to staff shortage, it is a common complaint about the health professional that they do not work properly and do not maintain professional attitude and behaviors which enhance the negative behavior of the parents regarding immunization<sup>6</sup>.

## 2.5 Lack of Community Participation

In Pakistan, 70% of the populations are living in the rural region<sup>3</sup>. The elder member of the families control all the function and activities of the family. The family elders are unaware from the effectiveness of the vaccines; therefore, they do not encourage the vaccination. They do not think that regular follow up or immunization is necessary for the children<sup>18</sup>. In certain families, the male members are working in the overseas to feed their family members and due to unavailability of male, the female are not empower to vaccinate their children.

Family size or increase numbers of children lead to burden on the families which make the vaccination on lower priority. The births of children are not taking place in the health care facilities. The traditional dais and untrained traditional birth attendants (TBAs) do the deliveries in small cities and villages, who do not give important to educate the people for the effectiveness of vaccination<sup>1</sup>. Furthermore, community does not aware from the benefits and importance of vaccination, that's why when they migrate from one place to another place they do not keep their record with them. It adds to the issues of record and their record is maintained in many centers. It is the possibilities that the children may be vaccinated many times or remains unvaccinated.

The education level in the community is low which impact on the awareness regarding the vaccine schedule and follow-up. The polio campaigns are regular and frequently, the community refuses and show resistance to receive vaccinations. The community assumes that the given doses of vaccines are sufficient for their children. Around 63.3% of the mother came with the problem that their children have missed 1 or 2 doses, and one third of the females think if their children missed the dose it will have no effect on their children<sup>18</sup>.

## 2.6 Misconception about Immunization

Knowledge, awareness and attitude of the families show an important role in the decision making, whether to vaccinate their children's are not. The vaccination teams are not well qualified and the motivational factor is lacking among them. They do not have enough knowledge about disease and

vaccines to build trust<sup>6</sup>. The local religious scholars take the advantage of it and develop misconception about the vaccines and other medical act. In KP and Federally Administered Tribal Area (FATA) some of the traditional religious clerics claimed that vaccines are infidel. It is also explained that it is not in Islam to vaccinate their children and those who dies from these disease will be martyrs. Due to lack of education and awareness of the parents, 24,000 children were not vaccinated<sup>12</sup>. It was difficult for the government official to run and organize the vaccination program freely. Specially, the polio teams were targeted and the employees were killed.

### 2.7 Lack of Security

In Pakistan, terrorism has converted into a major and destructive matter in last few years. Pakistan is the single endemic country where immunization contact with children has been banned in certain zones. Most of the refusal came from FATA and KP, the main reason is the influence of the Taliban<sup>16</sup>. The people afraid to visit the immunization centers because they think if they do not immunize their children it will cause no disease and they have no courage to face the Taliban.

The activists showed resistant and banned the EPI workers to function in their controlled areas and have also discouraged local population from availing the services. They claimed that these types of campaigns are used by the intelligence agencies to gather data against them and it was shown in the case of Osama bin Laden<sup>11</sup>. The result of this refusals becoming evident in the area, and 90 percent of the polio cases are identified in KPK and FATA<sup>18</sup>. An ongoing attack on the polio campaign team and lady health workers in Pakistan appears that militants do not want to continue the immunization campaign in different zones<sup>7</sup>.

### 3. Recommendations/Conclusion

Government and health ministry need to develop policies with the collaboration of non-governmental organizations (NGOs) and these policies should be based on evidence and representation of the community. Pakistan is a developing country; MDGs should be the part in our policies. It is necessary to modify the policies according to the population growth and difficulties.

The government needs to hire qualified managers and staff, and arrange training with their job description and goal of the EPI. Survey should be done to find out the actual population as well as find out the ghost staff. Extra incentives should be provide to increase the vaccination working time. The health professional needs to improve their communication, record, and behavior to convince the community for immunization. The government should provide enough budgets to develop medical informative system to check the performance and plan contingency strategies in emergencies. Resources allocation will be done according to the target population to maintain equity. The solar energy and generators should be the alternative for power to maintain the cold chain.

The EPIs management needs to communicate with the head and elder of the community and convince them for immunization. Female staff should be available to educate the female in the community. Dias and TBAs should be teach and trained relating to the immunization importance. The media, religious leaders should be involved to introduce the awareness campaign, and highlight the negative propaganda. Awareness program should be start through media, mosque, church, and schools etc. in high sensitive area. Beside these, the government needs to provide safety and security to the immunization team all over the country.

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### References

- [1] Ali, A. A., & Siddig, M. F. (2012). Poor practice and knowledge among traditional birth attendants in Eastern Sudan. *Journal of Obstetrics & Gynaecology*, 32(8), 767-769.
- [2] Azmi, M. A., Naqvi, S. N. H., Azmi, M. A., & Aslam, M. (2006). Effect of pesticide residues on health and different enzyme levels in the blood of farm workers from Gadap (rural area) Karachi—Pakistan. *Chemosphere*, 64(10), 1739-1744.
- [3] Bhutta, Z. A., Ali, S., Cousens, S., Ali, T. M., Haider, B. A., Rizvi, A., & Black, R. E. (2008). Alma-Ata: Rebirth and Revision 6 Interventions to address maternal, newborn, and child survival: what difference can integrated primary health care strategies make? *Lancet (London, England)*, 372(9642), 972-989.
- [4] Chandir, S., Khan, A. J., Hussain, H., Usman, H. R., Khowaja, S., Halsey, N. A., & Omer, S. B. (2010). Effect of food coupon incentives on timely completion of DTP immunization series in children from a low-income area in Karachi, Pakistan: a longitudinal intervention study. *Vaccine*, 28(19), 3473-3478.
- [5] Favin, M., Tyabji, R., & Mackay, S. (2001). Pakistan PEI/EPI Communication Review. *Management*, 7, 4-3.
- [6] Gulland, A. (2012). Polio vaccination worker is shot and killed in Pakistan. *BMJ: British Medical Journal*, 345.
- [7] Hasan, Q., Bosan, A. H., & Bile, K. M. (2010). A review of EPI progress in Pakistan towards achieving coverage targets: present situation and the way forward. *East Mediterr Health J*, 16, S31-S38.
- [8] Khan, M. M., Van Dijk, J. P., & Van den Heuvel, W. (2005). The impact of economic and socio-cultural context upon health policy outcome in Pakistan. *Eastern Mediterranean Health Journal*, accepted pending revisions.
- [9] Lenzer, J. (2011). Fake vaccine campaign in Pakistan could threaten plans to eradicate polio. *BMJ*, 343.

- [10] Lorenz, C., & Khalid, M. (2012). Influencing factors on vaccination uptake in Pakistan. *JPMA. The Journal of the Pakistan Medical Association*, 62(1), 59-61.
- [11] Owais, A., Khowaja, A. R., Ali, S. A., & Zaidi, A. K. (2013). Pakistan's expanded programme on immunization: An overview in the context of polio eradication and strategies for improving coverage. *Vaccine*.
- [12] Pakistan deadly bomb targets Peshawar polio campaign. (2013) Retrieved October 7, 2013, from
- [13] <http://www.bbc.co.uk/news/world-asia-24425441>
- [14] Rouhana, J. M. (2013). Polio Eradication: How the War on Terror Has Led to the Persistence of Polio in Afghanistan, Pakistan, and Nigeria.
- [15] Saleem, T. (2010). Improving childhood vaccination: roadblocks and hurdles. *J Pak Med Assoc*, 60(9), 791.
- [16] Shah, M., Khan, M. K., Shakeel, S., Mahmood, F., Sher, Z., Sarwar, M. B., & Sumrin, A. (2011). Resistance of polio to its eradication in Pakistan. *Virology*, 8, 457.
- [17] Siddiqi, N., Khan, A., Nisar, N., & Siddiqi, A. E. A. (2007). Assessment of EPI (expanded program of immunization) vaccine coverage in a peri-urban area. *JPMA*.
- [18] Vian, T. (2008). Review of corruption in the health sector: theory, methods and interventions. *Health Policy and Planning*, 23(2), 83-94.
- [19] Weir, E., & Hatch, K. (2004). Preventing cold chain failure: vaccine storage and handling. *Canadian Medical Association Journal*, 171(9), 1050-1050.