

**Assessment of Delivery of Routine Immunization in Kashmir: A Qualitative Study****Khalid Bashir<sup>1</sup>, Mariya Amin Qurieshi<sup>2</sup>, Zeenat Kausar<sup>3</sup>, S. Muhammad Salim Khan<sup>4</sup>**<sup>1</sup>Senior Resident, <sup>2</sup>Assistant Professor, <sup>4</sup>Professor & Head, Department of Community Medicine,<sup>3</sup>Senior Resident, Department of Anatomy, Government Medical College, Srinagar, India**Correspondence :** Dr. Khalid Bashir, Email: drkhalidbashir.s@gmail.com**Abstract:**

**Introduction:** Immunization is one of the splendid public health interventions that remarkably reduced child morbidity, mortality, and disability. Despite attaining substantial immunization coverage in Kashmir, assessment of the immunization system is quintessential for sustaining the gains and exploring the gaps.

**Objective:** To assess the gaps in the delivery of routine immunization services in Kashmir Valley. **Method:**

In-depth face-to-face interviews were conducted with thirty-two (32) important stakeholders, who were purposively selected as they play an active role in the planning and implementation of the Immunization Program and devise strategies at different levels of healthcare delivery. At the state level, SEPIO and SMO were interviewed at the District level, DIO/Deputy CMO was interviewed in all ten (10) districts of Kashmir Valley. From all ten Districts, two Medical-Blocks were selected from each District, and one Block Medical Officer and one Medical Officer were interviewed alternatively from each Medical-Block. **Results:** The thematic qualitative analysis approach was used and the analysis process generated five themes. Each of these themes included many sub-themes. 1. Factors facilitating the implementation of Routine Immunization (RI), 2. Limitations and deficits related to knowledge, attitude, monitoring, 3. Constraints encountered in the implementation of (RI) program, 4. Difficulties in the implementation of RI revealed by respondents, 5. Transformational steps to bridge gaps in the delivery of Immunization (RI) **Conclusion:**

There were visible deficits related to knowledge, attitude, and monitoring among health professionals. Certain constraints encountered in the implementation of the program were financial constraints in the training of health care professionals and human resources constraints. The study showed the need for transformational steps to bridge gaps in the delivery of the Immunization (RI), which included regular monitoring and review meetings, teamwork and peer learning, training, and improvement in cold chain maintenance.


**Key words:** Assessment, Cold Chain, Immunization, Kashmir

**Introduction:**

Immunization is one of the splendid public health interventions that remarkably reduced child morbidity, mortality, and disability. India has marched at a remarkable pace in improving immunization coverage in recent years.

Immunization has proved to be a cost-effective intervention against vaccine-preventable diseases that affect our health besides it being a sustainable intervention for achieving long-term health goals.<sup>[1]</sup>

As WHO statistics show immunization has been estimated to prevent 3 million deaths globally every

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year, although far more could be staved off through ideal use of currently available vaccines.<sup>[2-4]</sup> The Global Vaccine Action Plan (GVAP 2011–2020) sets the goal of 90% coverage at the national level and 80% in every district or equivalent administrative unit with all vaccines in national programs by 2020.<sup>[5]</sup> Immunizations are generally considered the most successful and cost-effective public health interventions employed today.<sup>[6-8]</sup> Successful immunization programs have achieved the global eradication of smallpox, elimination of polio from the world, and considerable depletion in illness and death due to diseases like measles, diphtheria, tetanus, and whooping cough. Despite attaining substantial immunization coverage in Kashmir, assessment of the immunization system is quintessential for sustaining the gains and exploring the gaps. The study aims in delving into the functional assessment of the immunization system in Kashmir. Therefore, this study was conducted to garner evidence and information on the factors that influence childhood immunization and factors that attribute to barriers and difficulties in the uptake of immunization in Kashmir.

### Method:

The study was conducted in the Kashmir valley which consists of ten Districts and each District is further divided into medical blocks of multiple sizes (2- 10 Medical Blocks). The study was conducted from March 2018 to March 2019. An explorative qualitative design using individual, face-to-face interviews with thirty two (32) different stakeholders from the State, District, Medical Block, and PHC levels. Purposive sampling was done, and Block Medical Officer (BMO) was taken from one medical block nearer to the District Headquarters as per convenience and Medical Officer (MO) was selected from the another far-off Medical Medical Block of the District.

**Data collection :-** In-depth interviews were conducted with stakeholders at all levels. Interviews were arranged by fixing prior appointments with the

participant. An interview guide focusing on the specific areas of interest was developed beforehand to facilitate the interviews and was used to ensure participants' opinions were investigated fully during the interview, each interview started with some "background characteristics questions", interviews provided an opportunity to probe and gain deeper insights on the major issues of the topic being studied. In this study, in-depth interviews were held with thirty-two(32) important stakeholders, interviews were audio-recorded after written informed consent was obtained from the respondents. The minimum & maximum duration for recording of Interview was 45 minutes & 1 hour respectively. The thematic qualitative analysis approach was used, all interview recordings were transcribed verbatim, the process of transcribing, reading, and rereading transcripts was continued till emerging key ideas, concepts, and themes were identified and made into a list. Voice recordings having Urdu or Kashmiri content were translated and transcribed verbatim into English. Transcripts were assigned in word files, and data analysis started as a process of carefully scrutinizing data by placing it into inductively created code structures, categories, sub-themes, and themes. The process of theme identification involved many stages.<sup>[9]</sup> 1. Acquaintance with the data, 2. Coding, 3. Discerning themes, 4. Analyzing themes, 5. Delineating and naming themes, 6. Write up.

### Results:

Five themes were generated and each of these themes included many sub-themes as shown in table as below (Table 2).

#### **Theme 1: Factors facilitating Implementation of Immunization**

The factors that have facilitated the implementation of the Universal Immunization Program revealed by respondents have been: planning and management; linking services with the community; supportive supervision; revitalized outreach and static vaccination services; monitoring and use of data for action; district level micro-plans for immunization.

**Table 1: Details of interviewed stakeholders**

Qualitative in-depth interviews (n=32)	Interviewee/ Stakeholder
State Level Incharge/Head (n=2)	SMO, SEPIO*
District Level Incharge/Head (n=10)	DIO*/Deputy CMO*
Block Level Incharge/Head (n=10)	BMO*(From one Block of the District)
PHC Level Incharge/Head (n=10)	MO*(From another Block of the District)

\*Surveillance Medical Officer (SMO), State Extended Program Immunization Officer (SEPIO), District Immunization Officer (DIO), Chief Medical Officer(CMO), Block Medical Officer (BMO), Medical Officer (MO)

**Table 2: Themes generated from qualitative analysis**

Themes	Sub-themes
1. Factors facilitating implementation of Immunization (RI).	1.1 Planning and management. 1.2 Linking services with the community. 1.3 Monitoring & use of data for action. Supportive supervision
2. Limitations and deficits related to knowledge, attitude, monitoring.	2.1 Knowledge. 2.2 Attitude. 2.3 Monitoring.
3. Constraints encountered in the implementation of (RI) programme.	3.1 Financial constraints in training. 3.2 Human resources constraint. 3.3 Deficiencies in training.
4. Difficulties in the implementation of RI revealed by respondents.	4.1 Lack of training. 4.2 Lack of coordination. 4.3 Cold chain maintenance. 4.4 Utilization of available human resources.
5. Transformational steps to bridge gaps in delivery immunization (RI)	5.1 Regular monitoring and review meetings. 5.2 Teamwork and peer learning, 5.3 Political commitment, training, 5.4 Improvement in cold chain maintenance.

It was revealed that planning was important for immunization of children and for outreach immunization sessions in order to reach every child with quality immunization services. Furthermore, various registers have been introduced from time to time, where children under five years are entered and other information related immunization is kept. Regular updates of the registers and feedback meetings with the Auxiliary Nurse Midwifery (ANM) & Accredited Social Health Activist (ASHA) are planned for including defaulter tracing and identifying newborn children in communities.

“..... we have district plans for immunization, then micro-plans, which envisage immunization requirements. Management of these planned activities is another activity that is very important which leads to the successful implementation of the planned activities. Without planning you are likely to fail in achieving what you want.”

“.....ASHA workers serve as agents of Communication, they are a link with community and help in community mobilization towards immunization.....”

“.....our ANM maintains various registers related to immunization, ANC and, RCH registers,apart from other registers.....”

“...We do some observations, collection, and examination of data which helps us to know whether we are progressing or not. It is from the same data that we are able to correct what is wrong in the immunization program and improve where we needed to do so.”

“.....We go to hospitals for monitoring of immunization, cold chain technician accompanies me. We go to districts, then blocks, talk to, DIO, BMO, and then move to 2-3 PHCs, in a month.”

### **Theme 2: Limitations and deficits related to knowledge, attitude, monitoring.**

The respondents revealed, that there is insufficiency of knowledge and attitude among health care workers and Medical officers, like lack of knowledge of micro-plan for immunization, lack of knowledge of VVM & open vial policy. They noted the need of improvement in monitoring of immunization.

“..... We give vaccination to children, our ASHA worker sometimes accompanies them, there is no micro-plan, we know our population, I mean eligible children. We don't watch immunization sessions at PHC, as we are busy with OPD.”

“We must make field staff accountable, you can't blame administrative staff. We have to see OPD, make FMPHW, MPHWH, CHO, accountable and see improvement in immunization.”

“ .... there are some people ,like nursing orderly, they have been promoted to ANM, JHI, CHO they don't have proper knowledge of immunization, knowledge of micro-plan, open vial policy, VVM etc.....”

“.....those hard to reach areas which have ANM there, they are not well monitored, and well taken care of ,so problem is like either ANM is not coming for duties or cold chain maintenance is not proper.

“.....We have hard to reach areas like Dignibal,Bachpathri, Baltal, etc, I don't remember all names, in those areas we conduct outreach immunization sessions, response is good people come with children, but it should be a monthly affair at least.

### **Theme 3: Constraints encountered in implementation of UIP**

It was reflected by one of the key respondent that there are not adequate funds available for regular training of health personnel; they are utilizing National Health Mission (NHM) funds for training. Some respondents referred to the shortage of health personnel, especially in hard to reach rural areas. This deficit in human resources affects the delivery of vaccination and the immunization program as a whole. The interviewees described training is not being given effectively to health personnel involved in immunization (RI).

“ ..... I can give you an example of Srinagar district, if there are 100 Sub-Centres, there must be 200 ANMs, working there, each ANM should be trained once in a year 2-3 days, but since 2-3 years, I am getting funds from NHM only, which is not sufficient, so I am training only 25 ANMs, what about 175 remaining ANMs in Srinagar.....”

“.....Every health worker wants to work in the urban areas and towns. We have a shortage of ANMs at certain places, although NHM has given a big boost, certain places are there which lack staff.”

“..... We need training in Universal Immunization Programme (UIP), on job training should be given , I haven't received any training till date in UIP.”

Another respondent described how the 'cascade' model of training was partly responsible for the training gap. The respondent described how dilution occurred, with the quality of the training declining at each stage, leading to poor training outcomes:

“.....Let me tell you, they sent one medical officer along with H.E(health educator) to attend some

training, then they were told to train health personnel at block level, they were not able to reproduce it, they couldn't disseminate information, fact is, medical officer or H.E, himself is not retaining full information.....

.....CHOs (Community health officers), H.E (health educators) are not able to transfer updated information regarding immunization, as some of them are less qualified and lack communication skills. So you end up training and training and training. Some people are not just trainable.”

**Theme 4: Difficulties in the implementation of RI revealed by respondents**

It was noted by the respondent that we need to utilize available human resources in a more planned way, and train more Para-medics in immunization, so that, they can become a backup staff in an exigency.

They highlighted the lack of well-trained health personnel as a barrier to effective immunization,

“....our health workers need training, some of them have been promoted from nursing orderlies, and they are not well versed. These things hamper effective immunization.

“....if we have Block, PHC or Sub-Centre where ANM is not posted, sessions are missed and immunization is not possible..”

“... As per guidelines you have to take vaccines in the morning and return them on the same day, what has been seen, they don't return it on the same day, what happens to vaccines, we don't know, where they keep it, we don't know, on what temperature they keep them, we don't know....”

“....in hard to reach area like Gurez, where snowfall is heavy around twelve (12) feet snow gets accumulated there, it remains cut off for six months. Our cold chain gets hiccups there, our Deep freezers, ILR, etc, get defunct due to power curtailments, they don't work when 12 feet snow is there, they have a problem in maintaining cold chain, ....”

A difficulty encountered in taking vaccines to hard to reach areas was described by one of the respondents:-

“.....there are hard to reach areas, we have one area like Chuttali, Chuttali is nearer to Gulmarg, but road is through Boniyar, from Boniyar, our workers go through by foot, vaccines remain overnight with them, they don't open it(vaccines), possibly cold chain remains. They do their drills in 15 days. I have been to this place, we don't have alternative to it, we have separate micro action plans for them.....regarding cold chain, it's as long as ice remains in pack, possibly it remains up to second day, condensed ice packs are given.”

One respondent stated lapse in cold chain maintenance may be reason of measles cases in some Measles Containing Vaccine (MCV1) vaccinated children.

“.....I was thinking that there could have been a break down in the cold chain or something. It could have been low temperature or higher than the normal temperature or below. It could have affected the efficacy of the vaccine. I don't know if they did a follow up on this one. The problem was that we had 3 children at the age of nine plus months with measles, all were vaccinated with MCV1, and probably cold chain was not maintained.”

**Theme 5 : Transformational steps to bridge gaps in delivery UIP**

Many interviewees reported to doing regular performance reviews of health workers to assess coverage improvement, quality of immunization. They suggested adopting practices such as quarterly district-level program review meetings, regular supervision of health workers and monthly meetings among health workers at block level and district level. The performance review should be team-oriented and focused on problem solving. They also suggested encouraging constructive discussion, peer learning, and friendly competition to engender collective accountability for improving immunization (RI). Regular review and supervision of health workers will lead to improved service delivery, improvement in vaccine delivery and cold chain maintenance:-

“.....performance review of health workers can improve the delivery of immunization, we need to keep regular audit of immunization coverage, CHOs



need to go with checklists for supervision of immunization session,

“...I suggest improve monitoring of hard to reach areas, the cold chain needs to be maintained in these areas, some transformational measures need to be taken at the state level, political commitment is important again, for improvement in immunization”

#### **Discussion:**

Immunization service delivery is a multifarious and composite process that can break down at many stages which can propel the burden of morbidity and mortality of vaccine-preventable diseases in children. It is noteworthy that in our study respondents described the factors like, linking immunization services with the community, monitoring, and supportive supervision as facilitating factors in the implementation of immunization that directly influence immunization coverage. The study revealed that the RI (Immunization) program in the Kashmir Valley has involved ASHA workers and basic health workers as the link between community and immunization, aimed at strengthening routine immunization. The findings suggest the consequence of health system expansion and build-up as a key strategy for achieving results in specific health programs, including immunization as seen by Galichet et al. 2009,<sup>[10]</sup> in their study as well.

The study found that there was a lack of knowledge among health personnel regarding immunization implementation, monitoring by the health professional was not up to the mark especially in hard to reach areas, some health workers have not cultivated a positive attitude which becomes an impediment in the implementation of immunization (RI). The practice of monitoring, data-based performance review, development of the natural and safe culture of learning from peers, knowledge sharing by way of spot training can improve the attitude of health workers and bring motivation towards prosperous implementation of the immunization program. This culture can become normative and highly motivating over time to health workers. Fritzen et al,<sup>[11]</sup> found in their study

motivation, adequate skills, and community appreciation of village health teams, showed significant improvement in achieving universal access to primary health care. The study showed certain constraints in the implementation of RI, constraints, related to finance, human resources, logistics, and training, lack of health workers, especially in rural and hard-to-reach communities, have important impacts on the effective delivery of immunization. Human resource is an important factor found to contribute to factors affecting the implementation of the immunization program. This is in line with the explanation by Dussault et al,<sup>[12]</sup> that any workforce needs to be motivated, well-staffed, and appropriately skilled in order to do their job well.

In our study respondents suggested Immunization program like any other program needs adequate human resources for quality delivery of immunization (RI). Additionally, the absence of skilled personnel, especially at lower levels of the health system, hard to reach areas, may prove a limitation in the implementation of RI. Buchan (2004),<sup>[13]</sup> explains that the extent to which providers deliver services to patients depends on the workforce. Their findings are in line with our study. The training of health workers needs to be strongly addressed, so that health workers are well-skilled, which will improve immunization and child health in general.

The study brought attention to certain difficulties experienced by health workers in the implementation of immunization, which was lack of training, financial constraints to training, lack of coordination, cold chain maintenance/management, difficulties in utilization of available human resources. In the study some respondents alluded to the fact that there was an organized structure in the implementation of immunization(RI), other stakeholders pointed out that the structure on the ground did not translate into having trained health personnel at the grassroots level at all places to meet the objectives of the immunization program. They highlighted the lack of well-trained personnel as a barrier to effective immunization, especially in hard-to-reach areas.

It was found that some hard-to-reach areas get cut off due to winter and heavy snowfall which leads to electricity outages making Deep freezers and ILRs defunct in these areas. Considering the potency of vaccines, the electricity outages probably have a negative effect on the potency of the vaccine which can have deleterious effects in controlling VPDs. Aduet al.(1992),<sup>[14]</sup> found in their study that the causes of the outbreak of measles were due to breakage in the cold chain, shortage of vaccine, and distance of villages from the health center. Therefore there is a need to ensure that the cold chain system is well monitored to ensure that the potency and safety of vaccines during transportation and distribution to the point of use are well preserved. In our study respondents suggested certain transformational steps improve the performance of immunization programs. It included practices such as regular monitoring and review meetings at district and Block levels, regular supervision of health workers, and meetings among health workers. Furthermore, respondents suggested peer learning among health workers, improvement in cold chain maintenance. Managers and supervisors should be employed in coaching and on-the-job training to guide and support workers.

The respondents precisely suggested certain steps should be included, like the use of data to assess performance through open discussion, and most importantly the sharing of experience and suggestions on how to improve performance. Furthermore, respondents had an unyielding belief that convergence of all these transformational steps is going to yield more positive results. The findings of our study go in line with the findings of the study by Naimoli et al 2008.<sup>[15]</sup> Lastly, the motivation and attitude of health personnel will provide the foundation for performance improvement, teamwork, and support coordination with district and block health officials with more refined strategies and practices that can drive performance improvement. Immunization(RI) performance is often hinged on the decisions and the behavior of teams and on their ability to creatively manage limited health system resources.

### **Conclusion:**

There were visible deficits related to knowledge, attitude, and monitoring among health professionals. Certain constraints encountered in the implementation of the program were financial constraints in the training of health care professionals and human resources constraints. The study showed the need for transformational steps to bridge gaps in the delivery of the Immunization (RI), which included regular monitoring and review meetings, teamwork and peer learning, training, and improvement in cold chain maintenance.

### **Declaration:**

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### **References:**

1. Awosika D. Access to immunization and other public health interventions through the pharmacists. *West Afr J Pharm.* 2012;23(1):3-11.
2. World Health Organization, 2020. Immunization coverage. Key facts. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage> Last accessed 17 April 2022
3. Vaccine preventable deaths and the Global Immunization Vision and Strategy, 2006-2015. *MMWR Morb Mortal Wkly Rep.* 2006; 55(18):511-5.
4. World Health Organization and United Nations Children's Fund. *Global Immunization Vision and Strategy, 2006-2015.* 2005.
5. WHO. *Global Vaccine Action Plan 2011-2020.* Geneva: World Health Organization; 2013. <https://www.who.int/.../global-vaccine-action-plan-2011-2020> Last accessed 17/04/2022
6. Laxminarayan R, Chow J, Shahid-Salles SA. Intervention Cost-Effectiveness: Overview of Main Messages. In: Jamison DT, Breman JG, Measham AR, et al., eds. *Vol Washington (DC); 2006.*
7. *Vaccines for Your Children: Protect Your Child at Every Age;* 2012. <https://www.cdc.gov/vaccines/parents/by-age> Last accessed 17/04/2022
8. *Achievements in Public Health, 1900-1999: Control of Infectious Diseases.* *MMWR Morb Mortal Wkly Rep.* 1999; 48(29):621-629.
9. Maguire M , Delahunt B. *Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars.* *AISHE-J.* 2017; 3(11); 8:3351-3354.
10. Galichet B, Goeman L, Hill PS, et al. Linking programmes and systems: lessons from the GAVI health systems strengthening window. *Tropical Medicine International Health.* 2009;2:208-15.

11. Fritzen S. Strategic management of the health workforce in developing countries: what have we learned? *Human Resources for Health*, 2007 February (26);5:4.
12. Gilles Dussault and Carl-Ardy Dubois Human resources for health policies:a critical component in health policies *Human Resources for Health* May 20031(1):1DOI: 10.1186/1478-4491-1-1
13. Buchan J. What difference does (“good”) HRM make? *Human Resource for Health*, 2004 June (7); 2:6.
14. Adu F D, Akinwolere, O A, Tomori O, Uche L N. Low sero conversion rates to measles-vaccine among children in Nigeria. *Bulletin of the World Health Organisation*. 1992 February;70(4):457-60
15. Naimoli JF, Challa S, Schneidman M, Kostermans K. Toward agrounded theory of why some immunization programmes in sub-Saharan Africa are more successful than others: a descriptive and Exploratory assessment in six countries. *Health Policy and Planning* 2008 November (1); 23: 379–389