# Draft Comprehensive Multi Year Plan

## (2014-2018)

## Expanded Program on Immunization
## Department of Health
## Government of Azad Jammu & Kashmir

# Comprehensive multi-Plan

## Immunization Program of Azad Jammu and Kashmir

## List of figures

## Acronyms

| | |
|---|---|
| AD | Auto-destruct |
| AEFI | Adverse Events Following Immunization |
| AFP | Acute Flaccid Paralysis |
| AJK | Azad and Jammu Kashmir |
| AJKHDS | Azad and Jammu Kashmir demographic and Health Survey |
| BCG | Bacillus Calmette-Guerin |
| BHU | Basic Health Unit |
| BPS | Basic Pay Scale |
| CD | Civil Dispensary |
| CMH | Combined Military Hospital |
| cMYP | Comprehensive Multi-year Plan |
| DGHS | Director General Health Services |
| DHO | District Health Officer |
| DHQH | District Headquarters Hospital |
| DPT | Diphtheria Tetanus Pertussis |
| DQS | Data Quality Self-Assessment |
| DSV | District Superintendent Vaccination |
| EPI | Expanded Program on Immunization |
| EVM | Effective Vaccine Management |
| FAP | First-Aid Post |
| FMT | Female Medical Technician |
| FTE | Full Time Equivalent |
| GAVI | Global Alliance for Vaccines and Immunization |
| GAVI HSS | GAVI Health System Strengthening |
| GAVI ISS | GAVI Immunization Services Support |
| GAVI NVS | GAVI New Vaccine Support |
| GDP | Gross Domestic Product |
| GGE | General Government Expenditure |
| GGHE | General Government Health Expenditure |
| GHE | Government Health Expenditure |
| HMIS | Health Management Information System |

| | |
|---|---|
| HR | Human Resources |
| ICC | Inter-agency Coordinating Committee |
| ICS | Immunization-system-component-specific |
| IEC | Information, Education and Communication |
| ILR | Ice-Lined Refrigerator |
| IP | Immunization Practices |
| IPV | Inactivated Polio Vaccine |
| JICA | Japanese International Cooperation Agency |
| KAP | Knowledge, Attitude and Practice |
| KM | Kilometer |
| LHS | Lady Health Supervisor |
| LHV | Lady Health Visitor |
| LHW | Lady Health Worker |
| LoC | Line of Control |
| M&E | Monitoring and Evaluation |
| MCHC | Maternal and Child Health Center |
| MDG | Millennium Development Goal |
| MIS | Management Information System |
| MLM | Mid-Line Manager |
| MMR | Measles, Mumps, and Rubella |
| MNCH | Maternal Neonatal and Child Health |
| MT | Medical Technician |
| NIPS | National Institute of Population Studies |
| NITAG | National Immunization Technical Advisory Group |
| OPV | Oral Polio Vaccine |
| P&D | Planning and Development |
| PC-1 | Planning Commission Performa No.1 |
| PCV-10 | Pneumococcal Conjugate Vaccine - 10 |
| PEI | Polio Eradication Initiative |
| PKR | Pakistani Rupee |
| POL | Patrol Oil Lubricants |
| PSDP | Public Service Development Program |
| RED | Reaching Every District |

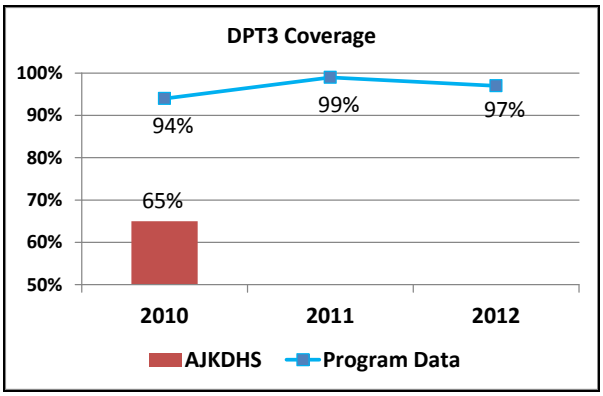
| | |
|---|---|
| RHC | Rural Health Center |
| SIA | Supplementary Immunization Activity |
| SIS | Skilled Immunization Staff |
| SOPs | Standard Operating Procedures |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| THE | Total Health Expenditure |
| THQH | Tehsil Headquarters Hospital |
| TPM | Third Party Monitoring |
| TT | Tetanus Toxoid |
| UC | Union Council |
| UK | United Kingdom |
| UNICEF | United Nations Children's Fund |
| USD | United States Dollar |
| VPD | Vaccine Preventable Disease |
| WHO | World Health Organization |

# Immunization Situation Analysis Summary 2010-2012

## Immunization Achievements

- No case of Polio in the last three years
- 94% fully immunized children
- 97% coverage in Polio Eradication campaigns
- Negligible turnover rate of vaccinators

## Immunization Coverage




## Immunization System Analysis

- No AJK-specific immunization policy
- Target setting primarily limited to passing on immunization targets set by Federal EPI Cell
- Absence of qualified technical staff for surveillance, monitoring and evaluation and cold chain management
- Outdated cold chain equipment

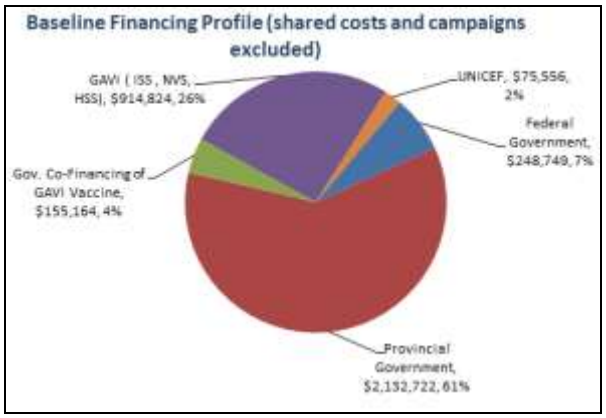
## Health System Constraints

- No practice of developing annual health plans
- Health department's contribution to revenue generation remained 0.08%
- Fragmented health information system
- No policy for human resource management
- Lack of integration between vertical health programs

## Baseline Costing Profile

| Baseline Indicators | 2012 |
|---|---|
| Total Immunization Expenditures (USD) | 4,766,837 |
| Campaigns (USD) | 1,239,822 |
| Routine Immunization only | 3,527,015 |
| per capita (USD) | 0.85 |
| per DTP3 child (USD) | 40.41 |
| % Vaccines and supplies | 37% |
| % Government funding | 68% |
| % Total health expenditures | 3% |
| % Gov. health expenditures | 28% |
| % GDP | 0.07% |
| Total Shared Costs (USD) | 1,953,184 |
| % Shared health systems cost | 29% |
| TOTAL (USD) | **6,720,021** |

## Baseline Financing Profile



# cMYP Summary: 2014 - 2018

## Immunization Priorities

- Polio eradication
- Increasing immunization coverage and reducing vaccine preventable disease
- Increasing the share of immunization through fixed EPI centers
- Extending the reach of immunization services to remote area populations
- Improving the quality of immunization through improved cold chain and logistics
- Introducing new vaccines (IPV/Rotavirus)

## Immunization Goals &Objectives 2014-18

- Measles incidence reduced to less than 5 case per million population by 2018 with optimally functioning surveillance system
- Sustaining zero polio case status in the state
- Neonatal death caused by neonatal tetanus reduced to less than 1 case per 1000 live birth by 2018
- Increase DPT3 coverage to 83% by 2018
- Increase the proportion of children fully immunized to 80% by 2018

## Programme Monitoring Framework

| Indicator | 2012 | 2018 |
|---|---|---|
| DTP3 coverage | 65% | 83% |
| Measles 1 coverage | 64.5% | 80% |
| PCV-10 coverage | 0 | 83% |
| % of children fully immunized | 45.6% | 80% |
| % of districts that have at or above 80% DTP3 coverage | 60% | 80% |
| Dropout rate - % point difference between DTP1 and DTP3 coverage | 14.8% | 4% |

## Priority Immunization Programme Strategies

- Develop and institutionalize performance management system
- Introduce mechanisms of accountability through third party monitoring
- Increase the number of skilled immunization staff
- Upgrade/maintain adequate cold chain equipment
- Develop and implement evidence based communication strategies

## Partnerships & Sustainability Strategy

- Enhance efficient utilization of human resources by developing synergies with other health initiatives
- Minimize wastage of resources under immunization program
- Advocacy for ensuring financial sustainability of immunization program
- Introduce mechanisms of accountability through third party monitoring

## Health and Development Impacts

- Reduce funding gap for immunization
- Improve child survival through contribution to achievement of MDG Goal 5
- Reduced disability in the community associated with vaccine preventable disease (Polio)
- Contribute to poverty reduction goals through reduction of preventable hospitalization for childhood illnesses

## Cost and Financing projections

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Total Resources Required | 16,240,813 | 13,878,158 | 12,836,501 | 14,891,245 | 15,225,438 |
| per capita | 3.07 | 2.78 | 2.48 | 2.69 | 2.84 |
| Total Secure Financing | 10,790,649 | 10,346,213 | 5,534,210 | 5,905,211 | 6,171,291 |
| Funding Gap | 5,450,164 | 3,531,945 | 7,302,291 | 8,986,035 | 9,054,148 |
| Total probable Financing | 618,136 | 1,977,405 | 5,686,172 | 6,377,583 | 6,920,898 |
| Funding Gap | 4,832,028 | 1,554,540 | 1,616,119 | 2,608,451 | 2,133,249 |

# 1 Situational Analysis

## 1.1 Background information

### 1.1.1 Administrative and political structure

Azad Jammu and Kashmir (AJK) is one the four federally administered territories in Pakistan. It is located in the northeast of the Capital Islamabad and separated from Indian-occupied Jammu and Kashmir by the Line of Control (LoC). The Ministry of Kashmir Affairs and Gilgit-Baltistan, the Government of Pakistan looks after the matters pertaining to AJK government.

Since 1975, AJK is governed under the Parliamentary democracy system.[1] The President is the constitutional head of the State, while the Prime Minister is the Chief Executive. The Members of AJK Legislative Assembly are elected on the basis of adult franchise and they in turn elect the Prime Minister. The Prime Minister is supported by a Cabinet of Ministers and Advisers which are assigned different portfolios, for example, health, education, finance etc.

Administratively, AJK is divided into multiple levels of administrative units each comprising a specific geographical jurisdiction (Figure 1).

**Figure 1: Details of the administrative units in AJK**

| Administrative Unit | Number | Average Population (2012) |
|---|---|---|
| Division | 3 | 1,384,333 |
| District | 10 | 415,300 |
| Sub-division (Tehsil) | 32 | 138,544 |
| Union Council | 203 | 20,458 |

The decision making process is largely centralized at the State level among political and technical leadership. Authority and powers are decentralized largely through de-concentration of management functions from center towards the districts. The district level officers mostly execute the responsibilities that are entrusted upon them by their superiors and have limited role in policy making and planning processes. The government line-departments including health department have established their organizational structures in line with the broader government system establishing a vertical chain of command with limited horizontal linkages, from center down to the union council level.

### 1.1.2 Landscape and climate

The territorial boundaries of AJK are spread over a long C-shaped geographical area, 13,297 square kilometers, where topography is mainly hilly and mountainous with valleys, terraces and plains at some places. Nearly 13% of the total area is cultivable and remains largely dependent upon rain water.

[1] Web Portal Management Team. Government System. Muzaffabad: Information Technology, Government of AJ&K; 2014 [cited 2014 5 January]; Available from: http://www.ajk.gov.pk/index.php?option=com_content&view=article&id=23&Itemid=7

The climate ranges from sub-tropical to temperate highland type in southern and northern districts respectively. The temperature ranges from -2.6°C in winters to 45°C in summers.

**Figure 2: Map of Azad Jammu and Kashmir**


The average yearly rainfall is 1300 mm. Road infrastructure was severely damaged during earthquake disaster in 2005. The overall condition of the roads is gradually improving; however, often heavy seasonal rains lead to massive landslides. Nearly 47% roads are fair-weather roads that are suitable under good weather conditions.

The geographical and climatic characteristics pose challenges to the health care delivery including immunization services. The long C-shaped structure results in long distances to be covered for monitoring and supervision especially for the program managers who are mostly based at the Capital, Muzaffarabad. The hilly and mountainous terrain requires additional manpower for outreach health services. Harsh winters and heavy rains during monsoon season create problems in maintaining supply chain system. Similarly, maintaining cold chain becomes difficult in hot summers especially when confronted with frequent power breakdown.

### 1.1.3 Demographic

According to the 1998 census, the total population of AJK was 2.973 million. In 2012, as per the projections estimated by AJK's Planning and Development (P&D) department, the total population has grown up to 4.153 million. It is pertinent to highlight that this population projection is different from the estimates (3.629 million) that have been projected by National Institute of Population Studies (NIPS). The main reason is that NIPS and P&D have used different population growth rates,

1.78% and 2.41% respectively. In order to maintain consistency with the AJK government's demographic profile, the population figures used in this document are based on the population projections estimated by P&D department.[2] The average population density has been estimated as 312 persons per square kilometer, ranging from 50 persons/sq.km to 658 persons/sq.km in Neelum and Poonch districts respectively. Eighty-eight percent population lives in rural areas where as remaining 12% is settled in urban areas. Further details are presented in Figure 3.

**Figure 3: Demographic profile of AJK for the year 2012 (baseline)**

| Demographic Profile | Urban | Rural | Total |
|---|---|---|---|
| Population | 498,758 | 3,657,561 | 4,156,319 |
| Surviving Infants | 17,457 | 128,014 | 145,471 |
| Pregnant Women | 17,806 | 130,575 | 148,381 |
| Women of Child Bearing Age | 109,727 | 804,663 | 914,390 |

Birth registration is essential for maintaining accurate vital statistics. In AJK, the department of Local Government and Rural Development is responsible for birth registration at the union council (UC) level. The data collected from UCs is collated at district level for onward submission to the provincial authorities. Birth registration is not mandatory; however, the trend has improved over the years because birth registration certificates are required for admissions in schools. Although multiple health service delivery programs also record data on births but it is not used for or integrated with the official birth register maintained in the union council office.

Jammu and Kashmir is one of the long-standing conflicts between India and Pakistan since 1947. Seven of the AJK districts are located adjacent to the Line of Control which separates AJK from Indian-occupied Jammu and Kashmir. Escalation of tension between border security forces often results in cross-border shelling and firing leading to internal migration of the local population to the settled areas. This population migrates back to their native villages and towns after the ceasefire. It is estimated that nearly 10% of the population is at risk of migration in case of border security conflicts. This situation creates problems for district health authorities to provide health services in the conflict affected areas.

### 1.1.4 Social and political context

#### (1) Poverty

The majority of the rural population depends on forestry, livestock, agriculture and non-formal employment for its living. The unemployment rate ranges from 35 to 50%. There are no official estimates available on poverty line or poverty trends. However, on the whole, indicators of social sector improvement, particularly health and population welfare have not shown much improvement. The districts located in southern part, especially Mirpur, are considered well off because a large

[2] This decision was made by the AJK Team during cMYP workshop at Islamabad.

number of families have their members settled abroad especially in the UK. The remittance from overseas contributes towards better economy in these districts. It is widely believed that the earthquake disaster in 2005 has contributed towards more poverty on account of widespread loss of homes and other infrastructure.

On account of their poor socio-economic status, the general population in AJK is vulnerable to health-related financial catastrophes. In addition, it makes them more dependent upon public sector health services.

#### (2) Education

Education has been a priority in AJK as nearly one-third of the recurrent budget is allocated for education sector. In addition, 7% of the total development budget is also spent in this sector. AJK's literacy rate is 65% which is significantly higher than the national average of Pakistan. Literacy rate is more than 62% in all the districts except Neelum (42%). The official figures indicate high gross enrollment rate of more than 90% at primary level, both for boys and for girls.

Maternal education is considered a cornerstone in health and development. Therefore, better literacy rates in AJK provide an opportunity to utilize demand generation and social mobilization campaigns to promote health related awareness and practice in an effective manner.

#### (3) Culture and traditions

The people of AJK are almost entirely Muslim. The territory is far from ethnically homogenous and comprises diverse tribal clans. The clan-system (biradari) is the overriding determinant of identity and power relationships within the Azad Kashmiri sociopolitical landscape.[3] Although *Gujjars* are the largest clan in AJK, historically the two most influential biradaris have been the Sudhans from the southeast (concentrated in Bagh and Rawalakot districts) and the Abbasis, and Rajputs who are spread out across the territory. Almost all of Azad Kashmir's politicians and leaders come from one of these two groups.

The natives of AJK speak Urdu, Hindko, Potwari, Gojri and the Pahari languages. The dialect of the latter two languages has close resemblance to Punjabi language spoken in upper Punjab and eastern Khyber-Pakhtunkhwa provinces. Their cultural practices have more in common with the Punjab province in Pakistan.

For the health program designers, it is important to account for these social and cultural power structures which could provide potential areas to influence for acceptance of health care interventions.

### 1.1.5 Public expenditure management

The preparation of annual budgets is primarily a responsibility of the Finance Department which also supervises and controls State finances. The duration of a fiscal year is spanned over 12 months, from 1st July to 30th June. Generally, the process of preparation of annual budget starts 5-6 months before the start of a fiscal year. The State budget in AJK comprises two components: recurrent (non-development) budget and non-recurrent (development) budget. The former is utilized for meeting expenditures of the on-going government operations whereas the latter is allocated to finance new development schemes.

[3] "With Friends Like These…" Human Rights Violations in Azad Kashmir New York: Human Rights Watch, 2006

As a general practice, the recurrent budget is allocated for meeting the recurring expenses such as wages, allowances, operational costs and utilities. All the government departments prepare and submit their sector-specific budgets to the finance department. Generally, the estimates for wages and allowances are accepted as such. However, budgetary allocations requested for operational costs and utilities often face cuts depending upon the fiscal space the government has under its revenue collection.

Both recurrent and development budgets are presented before AJK Legislative Assembly for approval. Once approved, the sector-specific funds are released to the concerned government departments.

The P&D department plays a key role in allocation of funds for the development schemes. Its main function to execute and process all development schemes, programs and proposals (in the form of PC1s) submitted by other government departments, and to coordinate the work related to the preparation of Annual Development Plan. In addition, P&D is also responsible for oversight and monitoring of the development schemes.

For the financial year 2012-13, AJK government approved a total budget of PKR 49,597 million with a revenue deficit of 13%. The donor funded projects contributed 2% to the total development budget. Further details are presented in Figure 4.

**Figure 4: Details of budgetary allocations under AJK government budget for the year 2012-13**

| Details | Allocation (PKR in Millions) | % |
|---|---|---|
| **Total Budget** | **49,597** | |
| Recurrent Budget | 40,050 | 81 |
| Development Budget | 9,547 | 19 |
| **Revenues** | | |
| AJK Own Sources | 15,310 | 38 |
| Water Charges from Mangla Dam | 840 | 2 |
| Kashmir Council | 7,400 | 18 |
| Federal Taxes Share | 11,400 | 29 |
| Revenue Deficit | 5,100 | 13 |
| **Budget for Social Sector** | | |
| **Total Allocation** | **19,186** | **39** |
| Recurrent Budget | 17,285 | 90 |
| Development Budget | 1,901 | 10 |
| **Foreign Aided Projects** | **148** | **2** |

Given the limited fiscal space available under development budget for social sector, health sector has to compete with other government departments in order to increase its share for non-recurrent expenditures.

## 1.2 Health Sector Analysis

### 1.2.1 Governance

The governance structure of health department can be divided into three tiers: provincial, district and sub-district level.

At the provincial level, under the political leadership of the Health Minister, health department is headed by the Secretary Health. While reporting to the Secretary Health, the Director General Health Services (DGHS) is responsible for overseeing the implementation of health care services across AJK. He is supported by provincial managers of vertical health programs including EPI, LHW Program and MNCH Program.

At the district level, a District Health Officer (DHO) is responsible for the management of health care services through an extensive network of primary[4] and secondary[5,6] health facilities. In addition, s/he also supervises the implementation of vertical health programs.

At the sub-district level, mostly at union council level, the health facility in-charges are responsible for provision of clinic-based and outreach health services within their allocated catchment areas.

The organizational hierarchy is structured with a top-down approach. The power and authority is centralized at the provincial level. For example, the district health officers are only authorized to recruit staff up to Basic Pay Scale 6. Similarly, they have limited powers in staff relocation within a district. Consequently, the office of DGHS is overburdened by dealing with day-to-day routine matters and has limited focus on strategic planning and active monitoring.

Policy making, planning and monitoring and supervision are the weak links at provincial level. There is no practice of developing annual health plans. On account of not setting sector-specific targets, it is difficult for the provincial authorities to review the overall performance objectively.

Planning process is generally driven by the needs of federal government and donor agencies. Recently, the AJK health department, under the health sector reform unit, has started a policy process towards an integrated approach in service delivery. Despite being at its initial design stage, this initiative carries high hopes towards developing and implementing an integrated model of healthcare in AJK.

### 1.2.2 Health workforce

The quantity and quality of the health workforce are positively associated with various health service outcomes, for example, immunization coverage, outreach of primary healthcare, and child and

[4] Rural Health Center (RHC), Basic Health Unit (BHU), Maternal and Child Health Center (MCHC) and First-Aid Posts (FAP)
[5] Tehsil Headquarters Hospital (THQH)
[6] District Headquarters Hospital (DHQH) does not fall under the jurisdiction of DHO and is directly responsible to DGHS at provincial level.

maternal survival.[7] Pakistan is listed among 'Low-density-high-mortality' countries and the overall density of the workforce is well below the threshold level of 2.5 workers per 1,000 population.[8]

As of 2012, there were 864 doctors working in AJK. The doctor to population ratio in AJK (one doctor for every 4807 person) is much higher than the national average (one doctor per 1206 persons). There is no data available on urban/rural distribution but it is widely believed that more doctors are available in urban areas, especially specialist doctors. There is no policy on human resource management. However, the opening of three medical colleges indicates that the government is inclined towards producing more doctors. On the whole, AJK health sector is facing shortage of health workforce but this deficiency is more severe in terms of availability of female paramedical staff. Figure 5 presents further details about availability of workforce.

**Figure 5: Availability of healthcare providers in AJK for the year 2012**

| Type of Healthcare Provider | Number | Availability per 10,000 population |
|---|---|---|
| Doctors (Medical Officers) | 502 | 1.21 |
| Nurses/Female Health Technicians | 512 | 1.23 |
| Lady Health Visitors | 325 | 0.78 |
| Midwives | 100 | 0.26 |

The selection criteria for recruitment against different cadres of staff (doctors, nurses, lady health visitors) require certification from a recognized training institute. These procedural protocols are followed at the time of induction in service. However, the appointments and relocations are often influenced by politicians. There is no culture of conducting formal performance appraisals.

### 1.2.3 Finance

The General Government Health Expenditure (GGHE) incurred by the AJK government during 2012-13 was PKR 2835.18 million, 7.7% of the total General Government Expenditure (GGE). Out of the total GGHE, 85% of the budget was to meet the recurring costs comprising: salaries, allowances and operational costs. Remaining 15% was spent on development schemes. For the year 2012-13, GGHE per capita was PKR 11,942. Further details are presented in Figure 6.

**Figure 6: Comparison of Government Expenditures for the years 2011-14**

| | | 2011-12 PKR in Millions | 2012-13 PKR in Millions | 2013-14 PKR in Millions |
|---|---|---|---|---|
| **General Government Expenditure (GGE)** | *Recurrent* | 36,265 | 40,050 | 45,185 |
| | *Development* | 8,284 | 9,547 | 10,500 |
| | *Total* | 44,549 | 49,597 | 55,685 |
| | | | | |
| **General Government Health Expenditure** | *Recurrent* | 2,709 | 3,248 | 3,570 |
| | *Development* | 266 | 587 | 300 |

[7] The world health report 2006: working together for health.
[8] Joint Learning Initiative Report 2004. Human Resources for Health: Overcoming the Crisis

| | | | | |
|---|---|---|---|---|
| **(GGHE)** | *Total* | 2,975 | 3,835 | 3,870 |
| | | | | |
| **GGHE as % of GGE** | | 6.7 | 7.7 | 6.9 |
| **Annual increase in GGE (%)** | | | 11.3 | 12.3 |
| **Annual increase in GGHE (%)** | | | 28.9 | 0.9 |

In 2012-13, different government departments generated 38% of the total revenue. Health department's contribution to revenue generation remained 0.08%. This scenario clearly highlights that the public health sector is solely dependent upon government funding for its operations.

### 1.2.4 Medical products and Technology

The health department has established a standardized system for purchasing medical products and other supplies. The provincial authorities have notified a list of drug supplying companies. Rate contracts for different medicines are negotiated on annual basis and district health offices are informed accordingly. The district health officers and medical superintendents of district health quarters hospitals are authorized to purchase medicines and other supplies from the notified suppliers as per their requirement. The district drug inspector is responsible for quality insurance and laboratory testing of the supplied items.

### 1.2.5 Service delivery

The provincial health services comprise of an extensive network of health service delivery that is organized into a 3-tiered health service delivery system: primary, secondary and tertiary health services.

As per the geographic distribution and administrative organization, the health services in AJK are grouped under provincial and district levels. At the provincial level, the Provincial Health Department is responsible for the management of tertiary healthcare services consisting of major tertiary hospitals, medical colleges and paramedical training schools. These institutions are mainly established in big cities.

The district health department is a blend of district health services through primary and secondary healthcare facilities and federal or provincial vertical health programs. The primary healthcare facilities[9] are primarily established in the rural areas including: Basic Health Units (BHU), Rural Health Centres (RHC), Maternal and Child Health Centres and First Aid Posts (FAP). There are 35 RHCs and 217 BHUs established across AJK.

The BHU is located in a union council (the lowest administrative unit in a district) and provides basic curative and preventive services to a population of 10,000 to 15,000. It also serves as the administrative arm for implementation of the national vertical preventive health programs. For example, 217 BHUs in AJK are utilized for training and supervision of 3,068 Lady Health Workers (LHW) who are deputed at village level under the Lady Health Workers program – a federal government initiative. Every LHW is responsible for establishing a Health House in her community and acts as bridge between communities and the first level care facilities.

[9] The Primary Health Care Facilities are also known as First Level Care Facilities.

The RHC is established at intermediate level between a union council and a tehsil. This 8-20 bedded unit provides basic curative, basic surgical and dental services to a population of 50,000 to 75,000.

The Secondary Healthcare Services comprise of Tehsil Head Quarters (THQH) hospitals and District Health Quarters (DHQH) hospitals at the tehsil and district levels respectively. Located in the tehsil headquarters' city, THQH is the largest secondary care hospital in a tehsil. The number of THQH hospitals in a district depends upon the number of tehsils. It is also considered a First Level Referral facility for the BHUs and RHCs in their respective tehsil. In comparison to THQH, a District Headquarters hospitals is located at the district headquarter city. It is the largest secondary care hospital in a district.

**Figure 7: Service delivery capacity by type of public healthcare providers - static**

| Type of service | Number of facilities | | |
|---|---|---|---|
| | Required | Functional | Delivering EPI |
| **Public** | | | |
| **1. DHQH** | 10 | 06 | 06 |
| **2. THQH** | 30 | 09 | 09 |
| **3. RHC** | 35 | 35 | 34 |
| **4. BHU** | 217 | 217 | 180 |
| **5. Civil Dispensaries** | No information | 86 | 59 |
| **6. First Aid Posts** | No information | 337 | 40 |
| **7. MCH Centers** | No information | 39 | 2 |

**Figure 8: Service delivery capacity per type of healthcare professional – community level**

| Type of service | Number of facilities | | |
|---|---|---|---|
| | Required | Functional | Delivering EPI |
| **1. LHWs** | 4153 | 3068 | 0 |
| **2. LHSs** | 166 | 138 | 0 |
| **3. LHVs** | No Information | 325 | 0 |
| **4. Vaccinators** | 461 | 365 | 365 |

### 1.2.6 Health Information management

A reliable information system is considered the backbone of any health system because it provides the required information to analyze any gaps between health needs and health service provision. It helps the leadership and governance at different levels to analyze the effectiveness and efficiency of the existing service delivery apparatus. In a way, the information flow provides a tool to integrate all the system building blocks for achieving the health system objectives and goals.

The health information system in AJK is quite fragmented. Although the national health policies emphasize upon strengthening and integration of existing health information systems, these policies are yet to be translated into action. The information gathered is primarily utilized to produce program-specific periodic reports for onward submission to higher levels, but the utilization of this information at the local level is quite limited.

Established in 1994, the National Health Management Information System (HMIS) covers a comprehensive network of primary healthcare clinics but its scope could not be extended to secondary and tertiary health services.

In order to respond to the limitations of the HMIS, a new information system, the District Health Management Information System, was developed in 2006, with support from the Japan International Cooperation Agency and is under implementation in rest of the country. However, it is yet to replace the existing HMIS in AJK districts. In addition, different vertical health programs have developed their own information systems that are not integrated with the HMIS.

Periodic reports are generated at health facility or community level by the front line workers including LHWs, vaccinators and health facility staff. These reports are consolidated at the district level for onward submission to the provincial authorities. With the passage of time, the district health managers have developed reservations about using this data due to the poor quality of recording and reporting, inadequate capacity in data analysis, lack of information on management issues, and lack of timely reporting and feedback from higher levels.

## 1.3 Immunization system

### 1.3.1 Routine Immunization

**Figure 9: Situational Analysis – routine immunization**

| Indicators | 2010 | 2011 | 2012 |
|---|---|---|---|
| **Official Coverage Estimates** | | | |
| DTP1 | 98% | 103% | 100% |
| DTP3 | 94% | 99% | 97% |
| Measles 1 | 94% | 98% | 94% |
| Measles 2 | 80% | 89% | 90% |
| OPV0 | 67% | 68% | 68% |
| Most Recent Survey Coverage % DTP3[10] | 68% | | |
| % Fully Immunized Child | 94% | 98% | 94% |
| **Access and demand** | | | |
| % Drop Out DTP1 - DTP3 | 4% | 3% | 3% |
| % Drop Out DTP1 - Measles (1st dose) | 4% | 5% | 5% |
| % Drop out Measles 1st and 2nd dose | 14% | 8% | 5% |
| **Immunization Equity** | | | |
| % gap in DTP3 between highest and lowest socio economic quintiles | 27% | | |
| Number and proportion of districts with DTP3 coverage > 80% | 10 (100%) | 10 (100%) | 10 (100%) |
| **New vaccines introduced into the routine schedule in the last plan period** | | | |
| PCV10 (2013) | No started | No started | No started |

[10] AJK Demographic and Health Survey 2010

**Level of Program Coverage**

The official reports reflect very high coverage rates for the last three years (2010-12). These high coverage rates are uniformly achieved across AJK as none of the districts is reporting below 80% coverage for DPT3. However, achievement reported as more than 100% cast doubts over the reliability of report. Similarly, more than 90% children are being reported as fully immunized. In practice, coverage for Measles-I is reported as fully immunized children which is not in line with the laid down criterion. This aspect is further substantiated by the reality that the reported data is not validated both at provincial and district levels. In comparison, the survey reports show a lower coverage when compared with official reports. The AJK Demographic and Health Survey 2010 reports DPT-3 coverage of 68%.[11] Another survey, National Nutrition Survey 2011, has reported 90% coverage for DPT-3.[12] The findings of AJKDHS 2010 also reveal that there exists a wide gap (27%) of vaccine coverage between poor and rich households.[9]

The government officials and other stakeholders who participated in cMYP planning workshop were cognizant of this discrepancy in reporting and with a consensus decided that the findings of the AJK Health and Demographic Survey 2010 will be used as baseline for cMYP planning process.

**Program effectiveness**

The findings presented in Figure 9 reflect that a small proportion of children is lost before they become due for next dose of an antigen. On average 3% children are lost between DPT1 and DPT3 and further 1% before receiving Measles-1. The drop out percentage not only continues but the gap further increases between Measles-1 and Measles 2. Persistent dropout has implications in terms of more chances of morbidity and mortality but also for wastage of resources. These gaps are the key areas to be addressed in order to achieve effective and efficient vaccine coverage and outcomes.

### 1.3.2 Accelerated Disease Control Initiatives

**Figure 10: Situational Analysis - by accelerated disease control initiatives**

| Indicators | 2010 | 2011 | 2012 |
|---|---|---|---|
| **Polio** | | | |
| OPV3 coverage | 94% | 99% | 97% |
| Number of rounds and sub-national rounds per year | 4 | 4 | 4 |
| Coverage Range | 98% | 98% | 97% |
| **MNT** | | | |
| TT2+ coverage | 63% | 76% | 74% |
| | | | |
| Number and proportion of districts reporting >1 case of neonatal tetanus per 1000 live birth | 10 (0%) | 10 (0%) | 10 (0%) |
| Was there an SIA? (Y/N) | No | No | No |
| Neonatal deaths reported and investigated | - | - | - |
| Delivery at Facility Rate | - | - | 24% |
| **Measles & Rubella** | | | |
| Measles / MR vaccination coverage (1st dose) | 94% | 98% | 94% |

[11] National Institute of Population Studies: AJK Health and Demographic Survey 2010
[12] Aga Khan University, Pakistan Medical and Research Council & Nutrition wing, Cabinet Division, Government of Pakistan: National Nutrition Survey 2011

| | | | |
|---|---|---|---|
| Measles / MR vaccination coverage (2nd dose) | 80% | 89% | 90% |
| Number of lab confirmed measles/rubella outbreaks | - | - | - |
| Geographic extent National Immunization Day | - | - | - |
| Age Group (in months) | 0-60 | 0-60 | 0-60 |
| Coverage | - | - | - |
| Total Measles Cases (Lab/Clinical/epidemiological) | - | - | 137 |
| Total Rubella Cases (Lab/Clinical/epidemiological) | - | - | 10 |

The overall situation for accelerated disease control initiatives indicates high vaccine coverage and almost negligible morbidity levels for vaccine preventable diseases. However, poorly functioning surveillance system is an accepted reality in Pakistan. Therefore, the participants of cMYP workshop decided that it would be unwise to use the presently reported figures as baseline for morbidity and mortality. The targets for reducing vaccine preventable morbidity and mortality will be revised once a fully functional surveillance system is in place.

### 1.3.3 Analysis of Immunization system performance

#### (1) Program Management

| Program management | 2010 | 2011 | 2012 |
|---|---|---|---|
| 1. Law & Regulation | | | |
| 1.1 Is there legislation or other administrative order establishing a line item for vaccines? | No | No | No |
| 1.2 Is the line item for vaccines in regular / recurrent Budget | No | No | No |
| 1.3 Are regulations revised in the province to implement national or provincial policies? | Yes | Yes | Yes |
| 2. Planning | | | |
| 2.1 Does the country/Province have an annual work plan for immunization funded through Health Authorities budgeting processes? | No | No | No |
| 2.2 What is the number of UC with an annual micro-plan for immunization? (Please indicate denominator – Number of UC per province/area) | None out of 203 | None out of 203 | None out of 203 |
| 2.3 Number of planned supervision visits conducted vs. the number of planed visits | No data | No data | No data |
| 3. Coordination and advocacy | | | |
| 3.1 What were the Number of ICC (or equivalent) meetings held last year at which routine immunization was discussed? | Not established | Not established | Not established |
| 3.2 What were the Number of NITAG (or equivalent) meetings held last year? | Not established | Not established | Not established |
| 3.3 How many presentations on immunization performance, expenditures, were made to Parliament? | None | None | None |

The AJK health department follows National Immunization Policy and no AJK-specific policy has been developed so far. However, some administrative orders have been issued to improve the service delivery coverage: (1) Appoint two vaccinators per union council, (2) Vaccinators should be a permanent resident of the union council of appointment. Immunization delivery is an established component of the health care delivery system. Budgetary allocation for immunization services

primarily covers salaries and overhead expenses. There is no budget line item for vaccine procurement because vaccines and other related materials are directly supplied by the Federal EPI cell.

Planning is one of the weak areas in immunization system in AJK. Largely, these plans are limited to implementation of policy and program directives disseminated from the Federal EPI cell. There is no culture of developing and implementing annual plans, both for implementation and monitoring and supervision. One of the major reasons is that the provincial team is not formally trained in developing annual health plans. Similar is the situation at the district level.

Apart from Provincial Steering Committee on Polio Eradication Initiative (PEI), no other supervisory body has been established for overseeing the progress of the immunization system. Biannual reviews are conducted by the Secretary Health where EPI Program manager presents updates on the program activities. By and large, the opportunities to present EPI program achievements come across when such presentations are demanded by the non-health stakeholders including politicians. In 2013, one presentation was made to the Members of Legislative Assembly.

The present provincial management structure is an established entity but inadequately staffed. The overall management activities are managed by a provincial manager and a data processing officer. They are well versed with the program modalities on account of their extensive work experience in health department; however, they are not formally trained in managing an immunization system. In addition, no standard operating procedures (SOPs) are being followed under program management. Surveillance and logistics management require specialized expertise. These aspects are not supported by the existing management structure.

The program managers are well aware of the importance of linking cMYP with other government documents. Therefore, the activities and targets of this cMYP are being aligned with two key documents: PC1 (under process) and Plan of Action (agreed upon in February 2013).

The planning processes are largely limited to development of PC1, mostly driven by donor-led initiatives and Federal EPI cell. Development and approval of PC1 is a lengthy process and often leads to frustration among the program managers on account of level of effort they have to make every time. The main reason is absence of an integrated planning approach that is essential for developing long-term strategic plans with clear objectives. In addition, traditionally, planning remained a centralized feature where provinces were informed about their EPI targets by the Federal. The role of provincial department was largely limited to rolling out these plans. Hence, planning remained a weak aspect at the local level.

Target setting is primarily limited to passing on the immunization targets set by the Federal EPI cell down to the district level. These targets are not matched with resource requirement estimates.

The 18th amendment has not modified the relationships between the federal government and AJK government. However, the development taking place in other provinces has provided an opportunity to the AJK government to develop its own EPI policy and plans.

### (2) Human Resource Management

| Human Resource Management | 2010 | 2011 | 2012 |
|---|---|---|---|
| 4. Availability of qualified workforce: | | | |
| 4.1 Number of healthcare skilled immunization staff per 10,000 population | | | 0.9 |
| 4.2 % of vaccinator posts currently vacant | | | 0% (notified by |

| | | | |
|---|---|---|---|
| | | | government) |
| 4.3 Turnover rate of SIS (or vaccinators specifically) | Negligible | Negligible | Negligible |
| 5. Capacity building | | | |
| 5.1 Number (and proportion) of immunization program staff trained in immunization services through MLM, IP or other training modalities per year: | | | |
| a) Mid-wives and LHS | | | None |
| b) Nurses | | | None |
| c) Other Skilled immunization staff (vaccinators) | | | None |
| d) Managers | | | None |
| e) Technicians | | | None |
| f) Other | | | |
| 5.2 % of immunization health workers Refreshing trained in immunization in the last two years (data from PIE and EPI reviews) | | | 95% (vaccinators only) |
| 5.3 Curriculum review for pre-service medical and nursing immunization education conducted | | | None |

The available health force formally trained on immunization comprises vaccinators only. There are 365 vaccinators available and 90% of them have undertaken refresher trainings in the past one year. However, it is pertinent to mention that these training were mostly based on theory and classroom training. Skill development, for example, training in injection giving technique is not a core focus of these refresher courses. Except vaccinators, no other health care providers have been trained in injection giving technique especially in relation to immunization. As a consequence, vaccinators are running static vaccination centers with very limited outreach service delivery. Non-availability of motorbikes and POL is an addition factor that will be discussed in a subsequent section separately.

**Figure 11: Availability and workload of skilled immunization staff (2012)**

| **Accredited EPI Service Providers** | Posts occupied (in FTE) | Share of Total Operation Time allocated to Immunization | Share of immunization time spent on PEI | FTE spent on PEI | Available (FTE) for EPI | **Total FTE spent on immunization** |
|---|---|---|---|---|---|---|
| **Vaccinators** | 365 | 100% | 20% | 73 | 292 | 365 |
| **Nurses** | 371 | 0% | 0% | 0 | **0** | **0** |
| **Dispensers** | 0 | 0% | 0% | 0 | **0** | **0** |
| **Lady Health Visitors (LHVs)** | 325 | 2% | 40% | 3 | **4** | **7** |
| **Medical Technicians (MT)** | 2,260 | 2% | 90% | 41 | **4** | **45** |
| **Female Medical Technicians (FMT)** | 141 | 2% | 40% | 1 | **2** | **3** |
| **Mid-wives** | 100 | 0% | 0% | 0 | **0** | **0** |
| **Lady Health Workers (LHWs)** | 3,068 | 1% | 90% | 28 | **3** | **31** |
| | | | | **146 (32%)** | **305 (68%)** | **451 (100%)** |
| **Total FTE available for EPI (except PEI)** | | | | | | **305** |
| **Total FTE Needed for EPI (except PEI)** | | | | | | **782** |
| **Deficit** | | | | | | **470 (61%)** |

The existing staff strength shows that 100% of vacancies of vaccinators are filled.[13] However, these figures take into account the notified positions only which are being financed through the recurrent budget of the AJK government. As per the current practice of placing two vaccinators in every union council, 41 additional vaccinators are required to cover 21 UCs where there is no approved EPI center in place. However, this number is well short of the total requirement (782 vaccinators) if the criterion under National EPI Policy is followed. On the other hand, the existing number of EPI centers is also considered insufficient to meet the requirement on account of difficult terrain. However, any expansion in the existing network of static EPI centers will also require induction of additional vaccinators.

The problems of human resource management in AJK are not limited to availability of Skilled Immunization Staff (SIS) only. There is also severe shortage of human resources in the management structure both at provincial and district levels. There is no surveillance officer, epidemiologist, monitoring and evaluation officer, cold chain manager and communication officer available at provincial level. Majority of these positions even do not exist in the present hierarchy of the provincial management. Similarly, at district level, there is no surveillance officer or epidemiologist in place for supervising surveillance activities. It becomes very difficult for the district health officer to perform all these roles with the help of a single district superintendent vaccination (DSV). Moreover, training for Midline Managers (MLM) is not a regular feature of human resource management.

### (3) Costing and Financing

| Costing and financing | 2010 | 2011 | 2012 |
|---|---|---|---|
| 6. Financial sustainability | | | |
| 6.1 What percentage of total routine vaccine spending was financed using government funds? (including loans and excluding external public financing) | 0% | 0% | 0% |
| 6.2 What proportion of the line item in the provincial budget for immunization was actually funded (actually allocated / planned)? | 100% | 100% | 100% |
| 6.3 What % of immunization resources are being met by the domestic health budget (as identified in the annual budget plan) | 100% (for notified HR only) | 100% (for notified HR only) | 100% (for notified HR only) |
| 6.4 Government expenditures on routine immunization per surviving infant | | | USD40.41 |
| 6.5 Are provincial immunization budgets and expenditures monitored and reported at national level? | No | No | No |

Historically, vaccine procurement has remained a responsibility of the Federal EPI cell. Therefore, no budget has been earmarked by the AJK government to date. The expenditure for vaccine procurement is met from Federal Public Service Development Program (PSDP) which is directly transferred from federal government to the Federal EPI Cell.

The AJK government provides funds for immunization services through its non-recurrent annual budget. This budgetary allocation is segregated under two separate budget heads: budget for the office of Provincial EPI Manager and separate budgets for 10 district health offices. The district level staff is

[13] It is pertinent to mention that the AJK government had regularized the services of vaccinators who were initially recruited on contractual basis under a GAVI grant. However, they have been placed under a lower pay scale (BPS 5) as compared to the other government vaccinators who are working under BPS 9.

directly paid from the district level budget. The main components include salaries and allowances[14] (against notified vacancies only) and operations cost.

Resource allocation processes are generally linked with the available staff positions. In the absence of a formal activity-based implementation and monitoring plan, it is difficult for the program managers to negotiate additional funds to meet their operational costs. In addition, the budget allocation for district levels covers all other health programs including EPI; therefore, it is difficult to rationalize the required costs for EPI related operations within a district.

Some of the additional costs are also met by developing special PC1. However, the procedural protocols are complex and require longer durations for negotiations. Even after approval, the budget releases are seldom in time and consequently, hamper the pace of program activities.

### (4) Vaccine, Cold Chain and Logistics

| Vaccine supply, quality and logistics | 2010 | 2011 | 2012 |
|---|---|---|---|
| 7. Transport / Mobility | | | |
| 7.1 Percentage of districts with a sufficient number of supervisory/EPI field activity vehicles /motorbikes/bicycles (based on their need) in working condition | | | 100% for DHO, 70% for DSVs |
| 7.2 Number of UC with vaccinators using transportation means for outreach | | | 20 |
| 8. Vaccine supply | | | |
| 8.1 Was there a stock-out of any antigen at provincial or district level during 2012? | | | Yes |
| 8.2 If yes, specify duration in months | | | September and October (Stock outs in Federal EPI Store) |
| 8.3 If yes, specify which antigen(s) | | | BCG & Measles |
| 9. Cold chain / logistics | | | |
| 9.1 Number of UC with adequate numbers of appropriate and functional cold chain equipment vs. Number of UC with functioning health facilities | | | 182/203 |
| a) With ILR | | | 122 |
| b) With any kind of refrigerators | | | 60 |
| 9.2 Availability of a cold chain replacement plan | | | Partially info |
| 10. Waste disposal | | | |
| 10.1 Availability of a waste management policy (guidelines/SOP) | | | Yes |
| 10.2 Number of districts implementing waste management policy | | | Yes |

Uninterrupted supply of vaccine, proper maintenance of cold chain and availability of other logistics are the key components of a functional immunization program.

There is no central storage system for vaccines in AJK. All the districts collect their vaccines and other supplies directly from the Federal EPI Cell almost every two months. In 2013, with support from UNICEF, two cold rooms have been installed in Bagh and Kotli districts but are yet to be used as main storage centers. The geographical landscape of AJK makes it difficult to maintain a single warehouse for immunization system. It requires a careful planning and mapping exercise to choose suitable

[14] Allowances include multiple items: house rent, professional allowance, medical allowance, conveyance allowance etc.

places for installing cold rooms. The EPI managers prefer to establish their own warehouse within AJK because sometimes they have to face difficulties in receiving their stocks from the Federal EPI warehouse.

Majority of the cold chain equipment was replaced after the earth quake in 2005. However, it is important to develop a comprehensive plan for timely replacement of the existing equipment.

AJK has hilly terrain that is difficult to cover. Supervisory vehicles are available for the provincial management staff and district health officers. Seven out of ten DSVs have motorbikes for their supervisory visits within a district. However, only 20 functional motorbikes are available for 365 vaccinators. Absence of transport for outreach activities provides an easy excuse to them in order to limit their activities within the static EPI centers. Majority of the motorbikes that were provided in the last 5-7 years are out of order and could not be repaired due to lack of funds for repair and maintenance.

Mere presence of a vehicle or motorbike is not sufficient for conducting program activities. It requires provision of POL according to the needs. At present, no criterion has been developed to work out the amount of POL required for daily visit at any level (provincial EPI manager, DHO, DSV or vaccinator). In the absence of such a criterion, it is difficult to rationalize the overall POL requirements.

### (5) Immunization Services Delivery

| Immunization services | 2010 | 2011 | 2012 |
|---|---|---|---|
| 11. Geographical access: | | | |
| 11.1 Number of population per each EPI fixed sites | 11259 | 11530 | 11808 |
| 11.2 Proportion of area covered by immunization service to the total populated area | | | |
| 11.3 Proportion of UC not having EPI centers | | | 10% (21 out of 203) |
| 11.4 Proportion of UC not having Skilled Immunization Staff (SIS) | | | 10% (21 out of 203) |
| 12. Efficiency of service delivery | | | |
| 12.1 Share of immunization services delivered by EPI centers | | | No data |
| 12.2 Average time EPI Centers provide immunization service per day | | | 6 hours |

There are 352 EPI centers established in 182 (out of 203) union councils. Out of these 228 EPI centers are categorized as approved EPI centers on account of being formally notified by the provincial government. In addition, there are 124 unapproved EPI centers. These centers are categorized as unapproved because these have not been formally approved by the provincial government and are established on demand of local population or a politician. For the unapproved EPI centers, the local district officer provides vaccine, cold chains system and deputes a vaccinator for immunization. The operational costs are born by the local politician.

There are 21 union councils where a public health sector facility exists but not manned by a vaccinator. If provided with 42 vaccinators, these 21 union councils can also be covered. An estimated population of 450,000 can potentially be covered by provision of addition vaccinators. Another possible strategy is to expand the existing network of EPI centers by establishing EPI centers in those health facilities which are already providing health services except immunization. There are 96 health

facilities[15] that have been identified as capable of being used as EPI center subject to provision of a vaccinator and cold chain equipment (Annex 1).

It is important to understand that the immunization service delivery is largely limited to provision of vaccination services within the static EPI centers through vaccinators alone. The reasons for this limitation have r been discussed under the sections 'human resource management' and 'vaccines, cold chain and logistics'.

### (6) Surveillance and Reporting

| Surveillance and Reporting | 2010 | 2011 | 2012 |
|---|---|---|---|
| 13. Routine Surveillance | | | |
| 13.1 Percentage of integrated VPD surveillance reports received at provincial level from districts compared to number of reports expected: | | | 100% |
| a) Timeliness | | | 50% |
| b) Completeness | | | 100% |
| 13.2 AFP detection rate/100,000 population under 15 year of age | 2.4 | 3 | 2.3 |
| 13.3 % suspected measles cases for which a laboratory test was conducted | | | 30%[16] |
| 13.4 Number of neonatal deaths for which a follow up investigation was conducted | | | 0 |
| 13.5 Sentinel Surveillance for Rotavirus established | | | No |
| 13.6 Sentinel Surveillance for meningitis (Hib/PCV) established | | | No |
| 13.7 % of suspected meningitis cases tested for Hib/pneumococcal disease according to standard protocol | | | 0% |
| 14. Coverage monitoring | | | |
| 14.1 % gap in match between DTP3 survey coverage and officially reported figures | 36% | 9% | No data |
| 15. Immunization safety | | | |
| 15.1 % of districts (or UC?) that have been supplied with adequate (equal or more) number of AD syringes for all routine immunizations | 100% | 100% | 100% |
| 16. Adverse Events | | | |
| 16.1 National AEFI System is Active with a designated national/provincial committee | | | No |
| 16.2 Number of serious AEFI cases reported and investigated | | | No |

Surveillance is very important for monitoring the status of vaccine preventable diseases. It requires that all reports are received complete and timely, from health centers to the central level. In practice, surveillance reports are received from all the health centers but their timeliness is well below par. Although these reports are considered complete, no validation is carried out at district level. There are 64 active surveillance sites established across AJK but there functionality is compromised on account of multiple reasons. One of the major reasons is non-availability of qualified staff (surveillance officer or epidemiologist) both at provincial and district levels. The World Health Organization has appointed three surveillance officers at the divisional level but they primarily look after polio

[15] Combined Military Hospital (01), RHC (01), BHUs (36), Civil Dispensaries (7) and First Aid Posts (47), MCH Centers (02) and Others (02)

[16] This information is a subjective assessment by the provincial staff because on account of non-availability of reliable data

surveillance activities. Under the present situation, it is not possible to conduct outbreak investigations or any epidemiological analysis for improving immunization service delivery.

### (7) Demand Generation, Communication and Advocacy

| Demand Generation and Communication | 2010 | 2011 | 2012 |
|---|---|---|---|
| 17. Communization strategy | | | |
| 17.1 Availability of a routine immunization communication plan | No | No | No |
| 17.2 KAP Study conducted in relation to immunization | No | No | No |
| 18. Evidence based communication | | | |
| 18.1 % of government funds on demand generation / communication: EPI and PEI | 0 | 0 | 0 |
| a) EPI (without PEI) | 0 | 0 | 0 |
| b) PEI | 0 | 0 | 0 |

Demand generation, communication and advocacy are importance for multiple reasons. These provide an opportunity to use EPI data as evidence to create awareness on importance of immunization for reducing morbidity and mortality due to vaccine preventable diseases. These activities not only enhance acceptability of immunization services but also create opportunities to tap support from communities and other stakeholders like political leadership. There is no communication strategy in place in AJK. There are examples of organizing special walks for raising awareness against Polio; however, these are not a part of a well chalked out communication plan.

## 1.4 Summary – SWOT

| **Program Management** | |
|---|---|
| **Strength** | **Weaknesses** |
| • Immunization a recognized government responsibility<br>• National immunization policy and schedule in place<br>• Provision of issuance of local administrative orders for modifying selection criteria of vaccinators<br>• Separate management structure for immunization program at provincial level<br>• An extensive network of immunization system in place across AJK | • No AJK-specific EPI policy<br>• Weak planning and monitoring processes<br>• Absence of annual development plans<br>• Absence of bottom-up planning system (from UC upwards)<br>• Available tools and guidelines for monitoring and supervision not in use<br>• EPI not integrated with other MCH programs |
| **Opportunities** | **Threats** |
| • Involvement of top political leadership in PEI<br>• AJK government's initiative on developing an integrated approach in health service delivery<br>• Support from external partners<br>• Devolution | • Escalation of border security issues across LoC<br>• Natural disasters<br>• Lack of involvement in broader policy processes can sideline immunization system<br>• Repetition of planning workshops without yielding tangible outcomes can lead to demoralization |

| **Human Resource Management** | |
|---|---|
| **Strength** | **Weaknesses** |
| • Availability of fulltime dedicated EPI program manager at provincial level<br>• All notified positions of vaccinator are filled<br>• Negligible turnover of vaccinators<br>• Focus on long-term staff retention through recruitment of vaccinators from union councils of their residence | • No human resource management policy<br>• Poor capacity of provincial EPI office due absence of qualified technical staff for surveillance, monitoring and evaluation, cold chain management<br>• Paramedical staff not trained in immunization protocols<br>• Inadequate refresher trainings for vaccinators<br>• Program managers not formally trained in MLM trainings<br>• Lack of clarity in roles and responsibilities |
| **Opportunities** | **Threats** |
| • Presence of other paramedical staff (nurses, LHV, health technicians) for involvement in vaccination activities | • Political interference in staff relocation |
| **Costing and Financing** | |
| **Strength** | **Weaknesses** |
| • EPI staff is paid through non-recurrent annual budget | • EPI managers not trained in costing and financing<br>• No rationalization of operation expenditures by determining unit costs<br>• No budget line item for vaccine procurement |
| **Opportunities** | **Threats** |
| • Donor support | • Limited fiscal space due to revenue deficit<br>• Donor fatigue |
| **Vaccine supply, quality and logistics** | |
| **Strength** | **Weaknesses** |
| • Availability of functional cold chain equipment in a large majority of union councils<br>• Proximity to Federal EPI Cell for collecting vaccines | • Low storage capacity for vaccine and other logistics<br>• Chances of stock outs due to low storage capacity<br>• Inadequate planning for effective vaccine management<br>• Inadequate transport facility for vaccinators<br>• Weak rationalization of POL for district staff<br>• Lack of technical expertise for repair and maintenance |
| **Opportunities** | **Threats** |
| • Donor support available for installing cold rooms | • Geographical landscape not suitable for maintaining a single warehouse for vaccine storage<br>• Frequent power breakdowns |
| **Immunization Services** | |
| **Strength** | **Weaknesses** |
| • Availability of fixed EPI centers in high proportion of union councils<br>• Relatively high coverage rates in comparison | • A substantial number of health facilities operating without EPI services leading to high dependence on outreach immunization |

| | |
|---|---|
| to other provinces | services<br>• Poorly functioning outreach immunization services<br>• EPI service provision limited to fixed centers<br>• Difficulty in target setting for union councils<br>• Lack of UC level micro planning<br>• Lack of focus on dropout from vaccination<br>• Discrepancy in estimating target population |
| **Opportunities** | **Threats** |
| • Donor support for RED strategy<br>• Availability of a large number of paramedical staff who can be trained in vaccination | • Escalation of border security issues across LoC<br>• Hilly and difficult terrain |
| **Surveillance and Reporting** | |
| **Strength** | **Weaknesses** |
| • Availability of up-to-date guidelines and standardized case definitions and reporting forms<br>• Formal reporting system in place | • No use of surveillance data for program management<br>• Absence of feedback mechanism from provincial and district levels<br>• Lack of staff qualified in surveillance<br>• Irregular reporting from health facility level<br>• Lack of validation of reported data |
| **Opportunities** | **Threats** |
| • Involvement of district bureaucracy in monitoring of polio eradication activities<br>• Donors are willing to support strengthening of surveillance system | • Limited fiscal space for recruitment of surveillance staff |
| **Demand Generation and Communication** | |
| **Strength** | **Weaknesses** |
| • Flexibility to meet public demand for establishing EPI centers | • No context specific communication strategy is available<br>• Immunization staff not trained in social mobilization and communication<br>• Lack of advocacy to policy makers and other stakeholders |
| **Opportunities** | **Threats** |
| • Availability of multiple mechanism for communication (radio, TV, print media)<br>• Involvement of political leadership | • Media hype created by incorrect reporting of morbidity and mortality by vaccine preventable diseases<br>• Social barriers against immunization |

# 2 Immunization objectives and strategies

## 2.1 Program objectives and milestones

Goal of the AJK Immunization Plan is to decrease VPD associated morbidity and mortality:

- Measles incidence reduced to less than 5 case per million population by 2018 with optimally functioning surveillance system
- Sustaining zero polio case status in the state

- Neonatal death caused by neonatal tetanus reduced to less than 1 case per 1000 live birth by 2018

The objective of the AJK Immunization Plan is to improve performance of the immunization system that is measured in terms of coverage and equity as listed below:

| Indicators | 2012 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| **1. Increase DTP3 coverage** | 65% | 67% | 71% | 75% | 79% | 83% |
| **2. Increase Measles 1 coverage** | 64.5% | 67% | 70% | 73% | 76% | 80% |
| **3. Increase the proportion of population protected at birth from neonatal tetanus** | 63.5% | 67% | 70% | 73% | 76% | 80% |
| **4. Increase OPV3 coverage** | 81.7% | 67% | 71% | 75% | 79% | 83% |
| **5. Increase PCV10** | | 67% | 71% | 75% | 79% | 83% |
| **6. Increase IPV coverage** | | | 40% | 75% | 79% | 83% |
| **7. Increase Rota vaccine coverage** | | | | 40% | 60% | 80% |
| **8. Increase the proportion of children fully immunized –(% of children aged 12-23 months who receive all basic vaccinations in country's routine immunization program)** | 45.6% | 67% | 70% | 73% | 76% | 80% |
| **9. Improve geographical equity - % of districts that have at or above 80% DTP3 coverage** | 60% | 60% | 70% | 70% | 70% | 80% |
| **10. Improve socio-economic equity - DTP3 coverage in the lowest wealth quintile is +/- X % points of the coverage in the highest wealth quintile** | 27.1% | 25% | 22% | 18% | 14% | 10% |
| **11. Decrease dropout rate - percentage point difference between DTP1 and DTP3 coverage** | 14.8% | 13% | 10% | 8% | 6% | 4% |
| **12. Increased demand - % of children whose mothers intend to vaccinate children** | No Data | Increased by 5% from the baseline | Increased by 10% from the baseline | Increased by 15% from the baseline | Increased by 20% from the baseline | Increased by 25% from the baseline |

## 2.2 Strategies and main activities

### 2.2.1 Program Management

The objective of the immunization system component is to increase program management performance. It means that by 2018:

- Immunization program planning is integrated into provincial budgeting, namely:

  - EPI annual plans are developed and consistent with the provincial cMYP
  - PC1 are adjusted as needed and aligned with the EPI annual plans
- One implementation annual progress report is produced and discussed with key stakeholders every year
- The provincial cMYP is updated regularly reflecting either changes in the context (epidemiological, vaccine availability, etc.), resource availability or immunization system outcomes (achievements)
- At least 2 meetings demonstrating contribution of EPI partners to the decision-making are held every year

Strategies and activities to achieve the component objective are as follows:

ISC Objective 1: **Increase program management performance**

Strategy 1.1: Develop AJK-specific Policy/guidelines on EPI

Activity 1.1.1: Review existing EPI policy and guidelines

Activity 1.1.2: Develop AJK-specific EPI policy and guidelines

Activity 1.1.3: Align cMYP, PC1 and EPI annual plans with EPI policy and guidelines

Strategy 1.2: Develop and institutionalize performance management system

Activity 1.2.1: Set performance standards for immunization system

Activity 1.2.2: Select indicators for measuring performance standards

Activity 1.2.3: Implement performance standards

Activity 1.2.4: Mobilize Technical support as needed (e.g. for Policy development, cMYP revision and development of performance management system)

Strategy 1.3: Review and develop effective and efficient management structure and procedures

Activity 1.3.1: Review and analyze existing EPI management structure at provincial and district levels

Activity 1.3.2: Identify gaps in availability of human resources and skill mix required for implementation of performance management system

Activity 1.3.3: Re-align/re-organize existing management structure at provincial and district levels

Activity 1.3.4: Revise job descriptions

Activity 1.3.5: Revise or introduce new standard operating procedures

Activity 1.3.6: Revise or introduce new reporting mechanisms

Activity 1.3.7: Conductive regular review meetings at provincial and district levels

Strategy 1.4: Introduce mechanisms of accountability through third party monitoring

Activity 1.4.1: Revise government rules and regulations for introducing a monitoring of immunization system through an external institution

Activity 1.4.2: Engage external institution through formal advertisement

Activity 1.4.3: Identify and finalize indicators for assessment

Activity 1.4.4: Conduct bi-annual performance reviews through selected institution

Strategy 1.5: Streamline business processes

Activity 1.5.1: Assess competencies of key EPI management staff on a regular basis

(1) Develop assessment criteria/methodology

(2) Adjust regulations (introducing competency assessment as a mandatory procedure)

(3) Carry out assessments

Activity 1.5.2: Develop capacity building plan for EPI program managers at provincial and district levels

Activity 1.5.3: Develop emergency plan to deal with disaster like situation

Strategy 1.6: Advocacy and partnership building

Activity 1.6.1: Produce regularly policy briefs/advocacy materials to share with high level officials

Activity 1.6.2: Attend high level meetings and present immunization program achievements, challenges and solutions

Activity 1.6.3: Organize consultations meetings with EPI partners and follow up implementation of decisions and actions agreed in the past

### 2.2.2 Human Resource Management

The objective of the immunization system component is to increase the availability of qualified human resources for the immunization program. It means that by 2018:

- Proportion of population served to skilled immunization staff (SIS) increases from 39% to 89%
- 95% of managerial and technical positions are staffed with qualified human resource

Strategies and activities to achieve the component objective are as follows:

ISC Objective 2: **Increase the availability of qualified human resources for the immunization program**

The availability of qualified human resources for the immunization program will be improved by: hiring technical and managerial staff at provincial and district levels, hiring new vaccinators, integrating available qualified health professionals in delivery of immunization services at health

facility level, training and capacity building and enhancing staff motivation through provision financial and non-financial incentives.

**Figure 12: Availability and workload of SIS (Baseline and Different Scenarios)**

| | Total FTE spent on immunization | FTE spent on PEI | Total FTE available for EPI (except PEI) | Total FTE Needed for EPI (except PEI) | GAP (in FTE and %) | |
|---|---|---|---|---|---|---|
| **Baseline** | 451 | 146 | **305** | 782 | **477** | 61% |
| **Scenario 1** | 544 | 146 | **398** | 782 | **384** | 49% |
| **Scenario 2** | 781 | 146 | **635** | 782 | **147** | 19% |
| **Scenario 3** | 843 | 146 | **697** | 782 | **85** | 11% |

For Strategy 2.3: and Strategy 2.4:, three scenarios were developed by using HR Modelling Tool (Figure 12). It was realized that proceeding ahead with the policy of two vaccinators per union council is one of the available options. However, expanding coverage of immunization services by increasing number of EPI centers will require a further increase in the number of vaccinators to man these EPI centers. In order to meet this target, 96 additional vaccinators will be recruited (Strategy 2.3:). This strategy will reduce the gap in %FTE from 61% to 49%. This gap will further be reduced to 19% by involving other paramedical staff in immunization services through training on Immunization Practices and communication (Strategy 2.4:). Although LHWs have been involved under Scenario 1 & 2, their role is largely limited to Polio Eradication Initiatives. In Scenario 3, LHWs will be actively involved in routine immunization after training on immunization practices and communication strategies and the gap in FTE will be reduced down to 11%. Scenario 3 was found to be more logical and will be followed under the current cMYP.

Strategy 2.1: Increase the number of technical staff for surveillance, logistics and cold chain management, monitoring and evaluation, and communication at provincial level

Activity 2.1.1: Advertise positions for a provincial epidemiologist/surveillance officer, cold chain and logistics manager and monitoring and evaluation officer, and communication manager

Activity 2.1.2: Conduct interviews and select appropriate technical staff

Strategy 2.2: Increase the number of technical staff for surveillance and cold chain repair and maintenance at district level

Activity 2.2.1: Advertise positions for district epidemiologist/surveillance officers and cold chain technicians for all ten districts

Activity 2.2.2: Conduct interviews and select appropriate technical staff

Strategy 2.3: Increase the number of SIS by recruiting 96 more vaccinators

Activity 2.3.1: Advertise vaccinator positions in provincial/local media

Activity 2.3.2: Conduct meetings with local authorities/communities promoting job of vaccinators and identification of potential candidates

Activity 2.3.3: Select and contract new vaccinators preferably from the union councils where they will appointed to

Activity 2.3.4: Explore and provide professional/carrier growth opportunities to vaccinators

Strategy 2.4: Increase the number of SIS by integrating available qualified health professionals in the delivery of immunization services:

Activity 2.4.1: Assess opportunities (availability, readiness/willingness) for engagement of different categories of SIS into immunization program

Activity 2.4.2: Carry out consultations with relevant health authorities (vertical program management) and agree on feasible and sustainable arrangements

Activity 2.4.3: Revise the regulatory framework (standards/guidelines, scope of work) in order to ensure the engagement of SIS in the immunization as planned

Activity 2.4.4: Carry out trainings in immunization for dispensers, medical technicians, lady health visitors and midwives

Strategy 2.5: Increase effectiveness of trainings of EPI medical and managerial staff:

Activity 2.5.1: Carry out refreshing training for each SIS at least once in 2 years

Activity 2.5.2: Carry out MLM training of managerial staff in planning (e.g. vaccine forecasting, budgeting), reporting, decision making and advocacy at least once in two years

Activity 2.5.3: Assess periodically competency of selected category of healthcare professionals involved in immunization

Activity 2.5.4: Introduce a system of pre and post trainings assessment of the knowledge of trainees

Activity 2.5.5: Train immunization staff in medical, surveillance and logistics required for the introduction of new vaccines

Strategy 2.6: Increase motivation of key staff of the immunization program

Activity 2.6.1: Assess regularly motivations of selected category of HR of the immunization system

Activity 2.6.2: Develop and implement non-financial incentives (carrier growth opportunities, promotion, recognition/awards, etc.)

Activity 2.6.3: Explore possibilities for financial incentives (bonuses, performance based payments, etc.) and implement whenever feasible

### 2.2.3 Costing and Financing

The objective of the immunization system component is to increase financial efficiency and sustainability of the immunization program. It means that by 2018:

- Cost per DPT3 child will be increased from USD62.8 to USD103
- Immunization system outcome targets are balanced with the financial resources available:
  - 90% of financial resources (secure + probable) mobilized vs. planned
  - Coverage targets revised/adjusted to the availability of funding

ISC Objective 3: Increase financial efficiency and sustainability of the immunization program.

The objective of increasing financial efficiency and sustainability will be achieved by: developing synergies between EPI and other health programs, minimizing wastage of resources and advocacy for ensuring availability of funds.

Strategy 3.1: Enhance efficient utilization of human resources by developing synergies with other health initiatives

Activity 3.1.1: Incorporate financial efficiency as a core component of MLM training

Activity 3.1.2: Train EPI program managers on developing mechanisms for financial efficiency

Activity 3.1.3: Increase number of SIS through integration of EPI with other PHC programs (for example, MNCH Program)

Strategy 3.2: Minimize wastage of resources under immunization program

Activity 3.2.1: Rationalize use of POL for monitoring and supervision by management staff at provincial and district level

Activity 3.2.2: Rationalize use of POL for travelling by vaccinators at union council level

Activity 3.2.3: Develop and introduce need-based supply of vaccines, syringes and other materials

Strategy 3.3: Advocacy for ensuring financial sustainability of immunization program

Activity 3.3.1: Assess the 'gap' between existing resources and future requirements

Activity 3.3.2: Inform political and technical leadership about the importance of funding gap

Activity 3.3.3: Mobilize political and technical leadership for increasing share for program-specific costs under non-recurrent budget

Activity 3.3.4: Develop financial projections for mobilizing external donors

Activity 3.3.5: Mobilize political and technical leadership for increasing share for program-specific costs under non-recurrent budget

Activity 3.3.6: Utilize cMYP, PC1 and Annual Plans as key instruments for ensuring resource allocation

### 2.2.4 Vaccine, Cold Chain and Logistics

The objective of the immunization system component is to improve/sustain uninterrupted supply of vaccines to immunization service delivery. It means that by 2018:

- Stock out at facility level is decreased to zero
- 100% districts with at least 01 month buffer stock available within the district
- 100% of districts with average EVM score above 80%

Strategies and activities to achieve the component objective are as follows:

ISC Objective 4: **Improve/sustain uninterrupted supply of vaccines to immunization service delivery**

Strategy 4.1: Upgrade/maintain adequate cold chain equipment

Activity 4.1.1: Assess of needs for cold chain update

Activity 4.1.2: Prepare cold chain replacement plan

Activity 4.1.3: Develop specifications and procurement plan (aligned with the availability of funding)

Activity 4.1.4: Purchase and install necessary activity

Activity 4.1.5: Provide maintenance services on a regular basis

Strategy 4.2: Improve vaccine management by implementing EVM Improvement plan

Activity 4.2.1: Carry out EVM assessment

Activity 4.2.2: Revise the annual work plan in accordance with the EVM improvement plan

Activity 4.2.3: Report on the progress of implementation of the EVM improvement Plan

Strategy 4.3: Prepare cold chain and vaccine management for the introduction of new vaccines

Activity 4.3.1: Establish one cold room for Muzaffarabad

Activity 4.3.2: Establish provincial EPI office and a provincial warehouse

Activity 4.3.3: Expand cold chain storage capacity at district level

Activity 4.3.4: Train vaccine management personnel in logistic management

### 2.2.5 Immunization Services Delivery

The objective of the immunization system component is to strengthen capacity of immunization service delivery. It means that by 2018:

- Proportion of UCs not having EPI centers decreased to zero
- Proportion of UCs not having Skilled Immunization Staff (SIS) decreased to less than 3%

Strategies and activities to achieve the component objective are as follows:

ISC Objective 5: **Strengthen and optimize capacity of immunization service delivery**

Strategy 5.1: Make existing 98 additional health facilities functional for EPI

Activity 5.1.1: Repair facility/infrastructure

Activity 5.1.2: Recruit qualified staff (see corresponding strategy 2.3 under component 2.2.2 "Human Resource Management")

Activity 5.1.3: Install cold chain equipment (see corresponding strategy 4.1 under component 2.2.4 "Vaccine, Cold Chain and Logistics")

Strategy 5.2: Increase performance/efficiency (effective coverage) of existing EPI Centers

Activity 5.2.1: Revise regulations

Activity 5.2.2: Mobilize additional qualified staff SIS (see corresponding strategy 2.4 under component 2.2.2 "Human Resource Management")

Activity 5.2.3: Improve micro-planning through regular supportive supervision of designated staff at EPI centers

Strategy 5.3: Increase vaccination coverage through effective outreach services

Activity 5.3.1: Identify geographical areas to be covered through outreach services through UC mapping

Activity 5.3.2: Prepare UC-specific outreach immunization plans

Activity 5.3.3: Monitor and supervise outreach immunization services

### 2.2.6 Monitoring, Surveillance and Reporting

The objective of the immunization system component is to increase performance of surveillance and routine monitoring/reporting. It means that by 2018:

- Reliability and accuracy of administrative data increased:
  - Discrepancy ratio (between administrative and survey data) decreases from 27% to 5%
  - 80% of reporting units receiving satisfactory DQS score
- Ability of surveillance to detect and report on certain cases increased:
  - At least 2 non-polio AFP cases per 100,000 population are detected and reported
  - At least 2 discarded measles cases per 100,000 population are detected and reported

Strategies and activities to achieve the component objective are as follows:

ISC Objective 6: **Performance of surveillance and routine monitoring/reporting improved**

Strategy 6.1: Streamline data collection and reporting practices (integrate EPI routine monitoring into data management mainstream)

Activity 6.1.1: Assess main causes of data quality flaws

Activity 6.1.2: Introduce regular system of formal feedback mechanism on the administrative reports of subordinated entities

Activity 6.1.3: Conduct bi-annual provincial program review

Activity 6.1.4: Conduct monthly district program reviews

Activity 6.1.5: Provide continuous supportive supervision

Activity 6.1.6: Conduct immunization coverage survey

Activity 6.1.7: Conduct DQS at regular interval

Strategy 6.2: Strengthen accuracy of reporting through validation in field

Activity 6.2.1: Recruit qualified staff (see corresponding strategy 2.1 and 2.2 under component 2.2.2 “Human Resource Management”)

Activity 6.2.2: Conduct data validation through field monitoring visits

### 2.2.7 Demand Generation, Communication and Advocacy

The objective of the immunization system component is improved knowledge and attitude toward immunization among target population. It means that by 2018:

- % of children whose mothers intend to vaccinate children is increased by 25% from than the baseline
- % of parents with children under 1 year of age aware of at least two benefits of immunization is increased by 25% from the baseline
- % of parents with children under 1 year of age who can identify the nearest immunization center is increased by 25% from the baseline

Strategies and activities to achieve the component objective are as follows:

ISC Objective 7: **Knowledge and attitude toward immunization improved among target population**

Strategy 7.1: Continue community mobilization and communication interventions that proved being effective:

Activity 7.1.1: Conduct advocacy meetings with community leaders and district administration to sensitize and motivate them regarding the routine immunization

Activity 7.1.2: Develop social mobilization plans at all levels

Activity 7.1.3: Capacity building of immunization staff involved in social mobilization

Activity 7.1.4: Conduct social mobilization activities as planned

Activity 7.1.5: Monitor social mobilization activities

Activity 7.1.6: Provide regular supportive supervision to social mobilization teams

Strategy 7.2: Develop and implement evidence based communication strategies

Activity 7.2.1: Conduct formative research of the target population regarding immunization

Activity 7.2.2: Develop communication plan in the light of formative research findings

Activity 7.2.3: Conduct communication activities as per plan

Activity 7.2.4: Assess the effectiveness of the communication strategies

## 2.3 Alignment with GVAP, Regional Targets and Health Sector Strategy

ONLY FOR NATIONAL cMYP

# 3 Implementation and M&E

## 3.1 Timelines for the cMYP

| Objective/strategies/activities | | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|
| ISC Objective 1: **Increase program management performance** | | | | | | | |
| Strategy 1.1: Develop AJK-specific Policy/guidelines on EPI | | | | | | | |
| | Activity 1.1.1: | Review existing EPI policy and guidelines | ■ | | | | |
| | Activity 1.1.2: | Develop AJK-specific EPI policy and guidelines | ■ | | | | |
| | Activity 1.1.3: | Align cMYP, PC1 and EPI annual plans with EPI policy and guidelines | ■ | ■ | ■ | ■ | ■ |
| Strategy 1.2: Develop and institutionalize performance management system | | | | | | | |
| | Activity 1.2.1: | Set performance standards for immunization system | ■ | | | | |
| | Activity 1.2.2: | Select indicators for measuring performance standards | ■ | | | | |
| | Activity 1.2.3: | Implement performance standards | ■ | ■ | ■ | ■ | ■ |
| | Activity 1.2.4: | Mobilize Technical support as needed (e.g. for Policy development, cMYP revision and development of performance management system) | ■ | ■ | ■ | ■ | ■ |
| Strategy 1.3: Review and develop effective and efficient management structure and procedures | | | | | | | |
| | Activity 1.3.1: | Review and analyze existing EPI management structure at provincial and district levels | ■ | | | | |
| | Activity 1.3.2: | Identify gaps in availability of human resources and skill mix required for implementation of performance management system | ■ | | | | |
| | Activity 1.3.3: | Re-align/re-organize existing management structure at provincial and district levels | ■ | | | | |
| | Activity 1.3.4: | Revise job descriptions | ■ | | | | |
| | Activity 1.3.5: | Revise or introduce new standard operating procedures | ■ | | | | |
| | Activity 1.3.6: | Revise or introduce new reporting mechanisms | ■ | | | | |
| | Activity 1.3.7: | Conductive regular review meetings at provincial and district levels | ■ | ■ | ■ | ■ | ■ |
| Strategy 1.4: Revise and introduce mechanisms of accountability through third party monitoring | | | | | | | |
| | Activity 1.4.1: | Revise government rules and regulations for introducing a monitoring of immunization system through an external institution | ■ | | | | |
| | Activity 1.4.2: | Engage external institution through formal advertisement | ■ | | | | |
| | Activity 1.4.3: | Identify and finalize indicators for assessment | ■ | | | | |
| | Activity 1.4.4: | Conduct performance reviews through selected institution | ■ | ■ | ■ | ■ | ■ |

| Objective/strategies/activities | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Strategy 1.5: Streamline business processes | | | | | |
| Activity 1.5.1: Assess competencies of key EPI management staff on a regular basis | | | | | |
| (1) Develop assessment criteria/methodology | | | | | |
| (2) Adjust regulations (introducing competency assessment as a mandatory procedure) | | | | | |
| (3) Carry out assessments | | | | | |
| Activity 1.5.2: Develop capacity building plan for EPI program managers at provincial and district levels | | | | | |
| Activity 1.5.3: Develop emergency plan to deal with disaster like situation | | | | | |
| Strategy 1.6: Advocacy and partnership building | | | | | |
| Activity 1.6.1: Produce regularly policy briefs/advocacy materials to share with high level officials | | | | | |
| Activity 1.6.2: Attend high level meetings and present immunization program achievements, challenges and solutions | | | | | |
| Activity 1.6.3: Organize consultations meetings with EPI partners and follow up implementation of decisions and actions agreed in the past | | | | | |
| ISC Objective 1: Increase **the availability of qualified human resources for the immunization program** | | | | | |
| Strategy 2.1: Increase the number of technical staff for surveillance, logistics and cold chain management, monitoring and evaluation, and communication at provincial level | | | | | |
| Activity 2.1.1: Advertise positions for a provincial epidemiologist/surveillance officer, cold chain and logistics manager and monitoring and evaluation officer, and communication manager | | | | | |
| Activity 2.1.2: Conduct interviews and select appropriate technical staff | | | | | |
| Strategy 2.2: Increase the number of technical staff for surveillance and cold chain repair and maintenance at district level | | | | | |
| Activity 2.2.1: Advertise positions for district epidemiologist/surveillance officers and cold chain technicians for all ten districts | | | | | |
| Activity 2.2.2: Conduct interviews and select appropriate technical staff | | | | | |
| Strategy 2.3: Increase the number of SIS by recruiting 96 more vaccinators | | | | | |
| Activity 2.3.1: Advertise vaccinator positions in provincial/local media | | | | | |
| Activity 2.3.2: Conduct meetings with local authorities/communities promoting job of vaccinators and identification of potential candidates | | | | | |

| Objective/strategies/activities | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Activity 2.3.3: | Select and contract new vaccinators preferably from the union councils where they will appointed to | | | | | |
| Activity 2.3.4: | Explore and provide professional/carrier growth opportunities to vaccinators | | | | | |
| Strategy 2.4: | Increase the number of SIS by integrating available qualified health professionals in the delivery of immunization services: | | | | | |
| Activity 2.4.1: | Assess opportunities (availability, readiness/willingness) for engagement of different categories of SIS into immunization program | | | | | |
| Activity 2.4.2: | Carry out consultations with relevant health authorities (vertical program management) and agree on feasible and sustainable arrangements | | | | | |
| Activity 2.4.3: | Revise the regulatory framework (standards/guidelines, scope of work) in order to ensure the engagement of SIS in the immunization as planned | | | | | |
| Activity 2.4.4: | Carry out trainings in immunization for dispensers, medical technicians, lady health visitors and midwives | | | | | |
| Strategy 2.5: | Increase effectiveness of trainings of EPI medical and managerial staff: | | | | | |
| Activity 2.5.1: | Carry out refreshing training for each SIS at least once in 2 years | | | | | |
| Activity 2.5.2: | Carry out MLM training of managerial staff in planning (e.g. vaccine forecasting, budgeting), reporting, decision making and advocacy at least once in two years | | | | | |
| Activity 2.5.3: | Assess periodically competency of selected category of healthcare professionals involved in immunization | | | | | |
| Activity 2.5.4: | Introduce a system of pre and post trainings assessment of the knowledge of trainees | | | | | |
| Activity 2.5.5: | Train immunization staff in medical, surveillance and logistics required for the introduction of new vaccines | | | | | |
| Strategy 2.6: | Increase motivation of key staff of the immunization program | | | | | |
| Activity 2.6.1: | Assess regularly motivations of selected category of HR of the immunization system | | | | | |
| Activity 2.6.2: | Develop and implement non-financial incentives (carrier growth opportunities, promotion, recognition/awards, etc.) | | | | | |
| Activity 2.6.3: | Explore possibilities for financial incentives (bonuses, performance based payments, etc.) and implement whenever feasible | | | | | |
| **ISC Objective 3:** | Increase financial efficiency and sustainability of the immunization program. | | | | | |
| Strategy 3.1: | Enhance efficient utilization of human resources by developing synergies with other health initiatives | | | | | |

| Objective/strategies/activities | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Activity 3.1.1: | Incorporate financial efficiency as a core component of MLM training | | | | | |
| Activity 3.1.2: | Train EPI program managers on developing mechanisms for financial efficiency | | | | | |
| Activity 3.1.3: | Increase number of SIS through integration of EPI with other PHC programs (for example, MNCH Program) | | | | | |
| Strategy 3.2: | Minimize wastage of resources under immunization program | | | | | |
| Activity 3.2.1: | Rationalize use of POL for monitoring and supervision by management staff at provincial and district level | | | | | |
| Activity 3.2.2: | Rationalize use of POL for travelling by vaccinators at union council level | | | | | |
| Activity 3.2.3: | Develop and introduce need-based supply of vaccines, syringes and other materials | | | | | |
| Strategy 3.3: | Advocacy for ensuring financial sustainability of immunization program | | | | | |
| Activity 3.3.1: | Assess the 'gap' between existing resources and future requirements | | | | | |
| Activity 3.3.2: | Inform political and technical leadership about the importance of funding gap | | | | | |
| Activity 3.3.3: | Mobilize political and technical leadership for increasing share for program-specific costs under non-recurrent budget | | | | | |
| Activity 3.3.4: | Develop financial projections for mobilizing external donors | | | | | |
| Activity 3.3.5: | Mobilize political and technical leadership for increasing share for program-specific costs under non-recurrent budget | | | | | |
| Activity 3.3.6: | Utilize cMYP, PC1 and Annual Plans as key instruments for ensuring resource allocation | | | | | |
| **ISC Objective 4:** | **Improve/sustain uninterrupted supply of vaccines to immunization service delivery** | | | | | |
| Strategy 4.1: | Upgrade/maintain adequate cold chain equipment | | | | | |
| Activity 4.1.1: | Assess of needs for cold chain update | | | | | |
| Activity 4.1.2: | Prepare cold chain replacement plan | | | | | |
| Activity 4.1.3: | Develop specifications and procurement plan (aligned with the availability of funding) | | | | | |
| Activity 4.1.4: | Purchase and install necessary activity | | | | | |
| Activity 4.1.5: | Provide maintenance services on a regular basis | | | | | |
| Strategy 4.2: | Improve vaccine management by implementing EVM Improvement plan | | | | | |
| Activity 4.2.1: | Carry out EVM assessment | | | | | |

| Objective/strategies/activities | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Activity 4.2.2: | Revise the annual work plan in accordance with the EVM improvement plan | | | ■ | | |
| Activity 4.2.3: | Report on the progress of implementation of the EVM improvement Plan | | | ■ | | |
| Strategy 4.3: | Prepare cold chain and vaccine management for the introduction of new vaccines | | | | | |
| Activity 4.3.1: | Establish one cold room for Muzaffarabad | ■ | | | | |
| Activity 4.3.2: | Establish provincial EPI office and a provincial warehouse | | ■ | | | |
| Activity 4.3.3: | Expand cold chain storage capacity at district level | ■ | ■ | | | |
| Activity 4.3.4: | Train vaccine management personnel in logistic management | | ■ | | | |
| **ISC Objective 5:** | **Strengthen and optimize capacity of immunization service delivery** | | | | | |
| Strategy 5.1: | Make existing 96 additional health facilities functional for EPI | | | | | |
| Activity 5.1.1: | Repair facility/infrastructure | ■ | ■ | | | |
| Activity 5.1.2: | Recruit qualified staff (see corresponding strategy 2.3 under component 2.2.2 “Human Resource Management”) | ■ | ■ | | | |
| Activity 5.1.3: | Install cold chain equipment (see corresponding strategy 4.1 under component 2.2.4 “Vaccine, Cold Chain and Logistics”) | ■ | ■ | | | |
| Strategy 5.2: | Increase performance/efficiency (effective coverage) of existing EPI Centers | | | | | |
| Activity 5.2.1: | Revise regulations | ■ | ■ | | | |
| Activity 5.2.2: | Mobilize additional qualified staff SIS (see corresponding strategy 2.4 under component 2.2.2 “Human Resource Management”) | ■ | ■ | | | |
| Activity 5.2.3: | Improve micro-planning through regular supportive supervision of designated staff at EPI centers | ■ | ■ | ■ | ■ | ■ |
| Strategy 5.3: | Increase vaccination coverage through effective outreach services | | | | | |
| Activity 5.3.1: | Identify geographical areas to be covered through outreach services through UC mapping | ■ | ■ | ■ | ■ | ■ |
| Activity 5.3.2: | Prepare UC-specific outreach immunization plans | ■ | ■ | ■ | ■ | ■ |
| Activity 5.3.3: | Monitor and supervise outreach immunization services | ■ | ■ | ■ | ■ | ■ |
| **ISC Objective 6:** | **Performance of surveillance and routine monitoring/reporting improved** | | | | | |
| Strategy 6.1: | Streamline data collection and reporting practices (integrate EPI routine monitoring into data management mainstream) | | | | | |
| Activity 6.1.1: | Assess main causes of data quality flaws | | ■ | | | |

| Objective/strategies/activities | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Activity 6.1.2: | Introduce regular system of formal feedback mechanism on the administrative reports of subordinated entities | | ■ | | | |
| Activity 6.1.3: | Conduct bi-annual provincial program review | ■ | ■ | ■ | ■ | ■ |
| Activity 6.1.4: | Conduct monthly program reviews at district level | ■ | ■ | ■ | ■ | ■ |
| Activity 6.1.5: | Provide continuous supportive supervision | ■ | ■ | ■ | ■ | ■ |
| Activity 6.1.6: | Conduct immunization coverage survey | ■ | | | | ■ |
| Activity 6.1.7: | Conduct DQS at regular interval | | ■ | ■ | ■ | ■ |
| Strategy 6.2: | Strengthen accuracy of reporting through validation in field | | | | | |
| Activity 6.2.1: | Recruit qualified staff (see corresponding strategy 2.1 and 2.2 under component 2.2.2 “Human Resource Management”) | ■ | | | | |
| Activity 6.2.2: | Conduct data validation through field monitoring visits | ■ | ■ | ■ | ■ | ■ |
| **ISC Objective 7:** | **Knowledge and attitude toward immunization improved among target population** | | | | | |
| Strategy 7.1: | Continue community mobilization and communication interventions that proved being effective: | | | | | |
| Activity 7.1.1: | Conduct advocacy meetings with community leaders and district administration to sensitize and motivate them regarding the routine immunization | ■ | ■ | ■ | ■ | ■ |
| Activity 7.1.2: | Develop social mobilization plans at all levels | ■ | ■ | ■ | ■ | ■ |
| Activity 7.1.3: | Capacity building of immunization staff involved in social mobilization | ■ | ■ | ■ | ■ | ■ |
| Activity 7.1.4: | Conduct social mobilization activities as planned | ■ | ■ | ■ | ■ | ■ |
| Activity 7.1.5: | Monitor social mobilization activities | ■ | ■ | ■ | ■ | ■ |
| Activity 7.1.6: | Provide regular supportive supervision to social mobilization teams | ■ | ■ | ■ | ■ | ■ |
| Strategy 7.2: | Develop and implement evidence based communication strategies | | | | | |
| Activity 7.2.1: | Conduct formative research of the target population regarding immunization | | ■ | | | |
| Activity 7.2.2: | Develop communication plan in the light of formative research findings | | ■ | | | |
| Activity 7.2.3: | Conduct communication activities as per plan | | ■ | ■ | ■ | ■ |
| Activity 7.2.4: | Assess the effectiveness of the communication strategies | | | | ■ | |

## 3.2 Monitoring and Evaluation

### 3.2.1 M&E Framework for immunization


M&E Framework

File attached (click the icon to open it).

### 3.2.2 Monitoring and Evaluation Strategy and Plan

The M&E Framework is the essential instrument that the immunization program will use for tracking the performance of cMYP in AJK. The quantifiable indicators are grouped under three broad areas: impact, outcomes and immunization-system-component-specific (ICS) indicators.

The impact and outcomes indicators will facilitate in linking AJK cMYP with the broader national plans. These will reflect whether the planners and funders are getting value for money.

The ICS indicators will be used to link the inputs, processes and outputs. The source of information for ICS indicators is primarily based on EPI and administrative data. Authenticity and accuracy of program and administrative data is often questioned in Pakistan. Therefore, validation of cMYP results through third party monitoring (TMP) will ensure transparency and accountability within the reporting system.

The main sources of information include EPI MIS, Health Management Information System, MNCH MIS, LHW Program MIS and other administrative data. In addition to these health sector-specific data sources, AJKDHS and other periodic survey will provide the information that is not covered under public health sector.

The M&E Framework will be used in planning and decision making while developing PC-1, revisiting cMYP, and conducting periodic reviews at provincial and district level. It will also be used to negotiate the resource requirement from the AJK and Federal governments and donors.

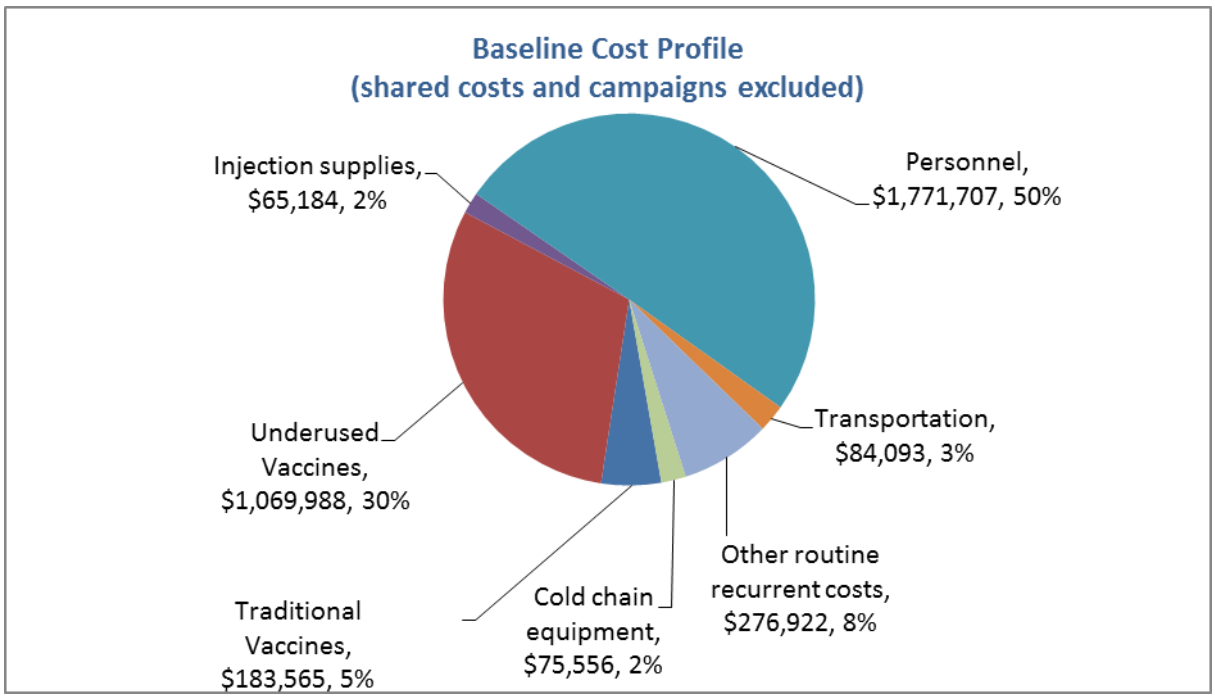
The provincial M&E Officer will be responsible for maintaining and updating the information required for M&E Framework.

# 4 Immunization Program Costing and Financing

cMYP Costing Tool

## 4.1 Current program costs and financing

**Figure 13: Baseline Cost Profile (shared costs and campaigns excluded)**




The baseline cost profile for AJK is grouped under 5 categories: Personnel, Transportation, Other routine recurrent costs, Cold Chain Equipment, Vaccines and Injection and supplies (Figure 13).

### 1. Personnel

The information pertaining to personnel consisted of three components: salaries and allowance for full-time EPI staff, per-diems for vaccinators and mobile teams and per-diems for supervisory and monitoring staff.

The baseline information was compiled on basis of standard government payment rates that are used for payment of salaries, allowances and per-diems. The EPI Provincial Office used this in consultation with the Provincial Health department.

The analysis of the baseline cost profiles (2012) shows that USD1.771 million was incurred on personnel cost which constituted to 50% of the total expenditure on immunization program. Further analysis shows that 65% of this cost was spent on payment of salaries and allowances. In comparison, 1% and 4% was spent on payment for per-diems for vaccinators and mobile teams and per-diems for supervisory and monitoring staff respectively. The incurred under 'Personnel' was borne by the provincial government. This analysis highlights that salaries and allowance were the major cost driver in 2012.

### 2. Transportation

The expenditure on transportation was based on the type and number of vehicles available at provincial, district and union council levels. In addition, information was collected regarding average

mileage per year of a given vehicle. The provincial EPI office provided the information on the quantity of fuel used per 100KM.

The analysis shows that the expenditure on transportation contributed to 3% (USD84,093) of the total expenditure in 2012. On the main reasons for less expenditure on transportation was non-availability of sufficient number of vehicles for the immunization staff. For example, only 30 motorbikes were available/in working condition for 365 vaccinators at the union council level. The provincial government was the sole contributor for the expenditure on transportation.

### 3. Other routine recurrent costs

The other routine costs comprised expenditures for cold chain maintenance and overheads. This information was populated by cMYP costing tool based on the standard inputs provided by the Federal EPI Cell. No such information, specific to EPI, is maintained and consolidated by the AJK health department.

The total expenditure against routine recurrent costs was estimated as USD276922 which was found 8% of the total baseline expenditure. The provincial government was the sole contributor for expenditure on the other routine recurrent costs.

### 4. Cold Chain Equipment

In 2012, UNICEF provided two cold rooms for AJK. The procurement rates provided by the Federal EPI Cell were used to estimate the costs incurred on the cold rooms. An amount of USD75756, 2% of the total baseline expenses, was spent on these two cold rooms.

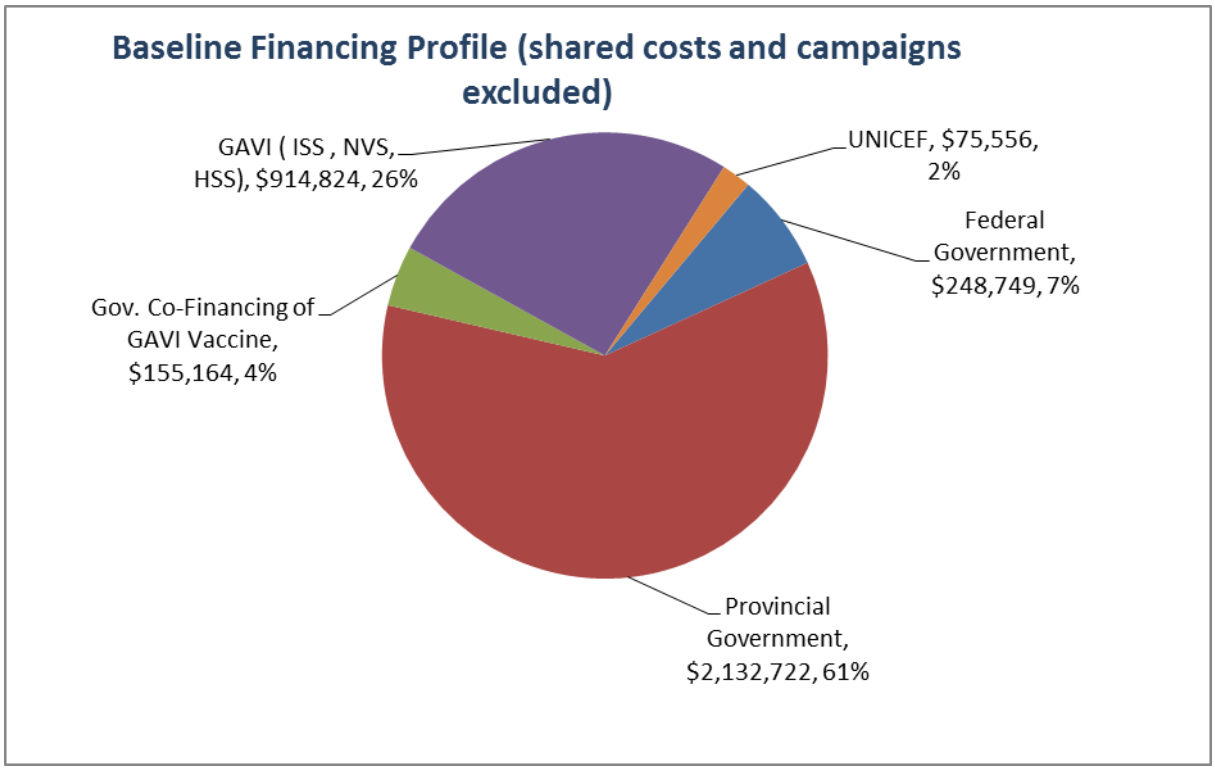
### 5. Vaccines, Injections and Supplies

This category consists of: Traditional Vaccines, Underused and New Vaccines, and Injections and supplies. The Traditional Vaccines include BCG, OPV, Measles and Tetanus Toxoid whereas Underused Vaccines include Pentavalent (DPT-HepB-Hib). New vaccines include IPV and Rota vaccine; however, the new vaccines were not introduced in 2012 and the government plans to introduce these vaccines from 2015 onwards. All the vaccines are procured at the Federal level and then supplied to the provincial governments.

The World Health Organization's forecasting tools was not used for estimating the expenditures made for procuring vaccines and injections. It was based on the information provided by the Federal EPI Cell on the number of doses per antigen supplied during 2012. The total expenditure was calculated by using the cost per dose per antigen provided in the costing tool.

In 2012, 37% of the total expenditure was incurred on vaccines, injections and supplies, a major driver of the costs required for EPI besides personnel. In the coming years, this cost will further increase because the government plans to introduce new vaccines, IPV and Rotavirus.

**Figure 14: Baseline Financing Profile (shared costs and campaigns excluded)**




In 2012, the total spending on EPI program in AJK was shared among the provincial government, Federal government, Federal Govt. Co-Financing of GAVI, UNICEF and GAVI (ISS, NVS, HSS) grant (Figure 14).

In 2012, the AJK government was the largest financer of the EPI program which provided 61% of the total resources. It included expenditure for payment of salaries and allowances (51%), transportation (2%) and maintenance of cold chains equipment and other recurring costs (8%). Despite spending nearly USD2.13 million on immunization, the AJK government remained heavily dependent upon the contributions from the Federal government, UNICEF and GAVI. This is a significant limitation in the contest of a narrow fiscal space for the health department (Figure 6).

GAVI (ISS, NVS, HSS) was the second largest financer of the EPI program which provided 26% of the total resources. This amount was spent on procuring underused vaccines.

In total, the federal government provided 11% of the total resource requirement, 7% of which were spent on procuring traditional vaccines and injection supplies. The breakdown of this expenditure is also presented in Figure 13. In addition, the federal government also provided 4% of the total resources through its share under Govt. Co-financing of GAVI vaccines.

The donor contribution (2%), from UNICEF, was mainly spent on supplying two cold rooms.

Figure 15 presents immunization program baseline indicators. Of the total immunization expenditure, 24% funds were spent on special immunization campaign, Polio Eradication Initiative (PEI). In comparison, the routine immunization activities consumed USD3.5 million (76%) of the total immunization expenditure excluding shared health system costs. The Provincial EPI management plans to highlight this important aspect at all forums including politicians, technocrats and donors in order to bring their focus more towards the significance of routine immunization services.

**Figure 15: Immunization program baseline indicators**

| Baseline Indicators | 2012 |
|---|---|
| Total Immunization Expenditures (USD) | 4,766,837 |
| Campaigns (USD) | 1,239,822 |
| Routine Immunization only | 3,527,015 |
| per capita (USD) | 0.85 |
| per DTP3 child (USD) | 40.41 |
| % Vaccines and supplies | 37% |
| % Government funding | 68% |
| % Total health expenditures | 3% |
| % Gov. health expenditures | 28% |
| % GDP | 0.07% |
| Total Shared Costs (USD) | 1,953,184 |
| % Shared health systems cost | 29% |
| **TOTAL (USD)** | **6,720,021** |

The analysis of the baseline indicators shows that, in 2012, the total expenditure of the immunization system was USD4.7 million (Figure 15). However, it is important to mention that besides this immunization-specific cost, the AJK government also contributed USD1.9 million as the Shared Health System costs which formed 29% of the total expenditure on immunization system.

The analysis of indicators reveals that the expenditure on routine immunization in 2012 was spent at an average of USD0.85 per capita or USD40.41 per DPT3 child. The future investments in human resources, cold chain equipment, vehicles and transportation will obviously increase per capita and per DPT3 child costs. In a situation where 68% of the total costs were borne by the public sector, both federal and provincial, the provincial managers will require to develop their skills in planning and management in order to compete with other government departments for allocation of additional resources but also to persuade the donor's for bridging the gaps in resource availability.

The provincial EPI management also plans to use these indicators as a demand creation tool to deliver general awareness messages to the general population highlighting how much government is spending on every child in AJK. For example, in 2012, the government spent on average Rs.4243 (USD40.41) on every child when he became 3 and a half month old. This expenditure rose up to Rs.5474 when the shared health systems were also accounted for.

The next section present details on future resource requirements.

## 4.2 Future resource requirements

**Figure 16: Future resource requirements by cost categories**

| COST CATEGORY | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| | USD | USD | USD | USD | USD |
| ROUTINE IMMUNIZATION COSTS | | | | | |
| Traditional Vaccines | 161,447 | 172,276 | 184,562 | 291,002 | 282,508 |
| Underused Vaccines | 841,659 | 912,353 | 986,270 | 1,063,219 | 1,143,305 |
| New Vaccines | 2,254,650 | 2,068,248 | 3,022,895 | 3,437,890 | 3,958,762 |
| Injection supplies | 103,226 | 117,083 | 129,884 | 142,376 | 148,028 |
| Personnel | 2,593,051 | 2,800,495 | 3,024,535 | 3,266,498 | 3,527,818 |
| Transportation | 446,162 | 519,395 | 560,974 | 605,881 | 654,385 |
| Other routine recurrent costs | 864,880 | 1,080,506 | 953,871 | 1,114,538 | 1,016,287 |
| Vehicles | 1,583,400 | 155,520 | - | - | - |
| Cold chain equipment | 2,317,383 | 544,950 | - | - | - |
| Other capital equipment | 93,443 | - | - | - | - |
| RI Costs (Sub-Total) | 11,259,301 | 8,370,826 | 8,862,991 | 9,921,404 | 10,731,093 |
| CAMPAIGN COSTS | | | | | |
| Campaigns | 2,872,072 | 1,460,458 | 1,513,060 | 2,312,556 | 1,624,479 |
| **GRAND TOTAL** | 14,131,373 | 9,831,284 | 10,376,051 | 12,233,960 | 12,355,572 |

Figure 16 presents details of the projected resource requirement for 5 years, from 2014 to 2018. The same information is also presented in Pakistani Rupees in Figure 17. The future resource requirement is separately presented under routine immunization costs and campaigns.

**ROUTINE IMMUNIZATION COSTS**

The routine immunization costs are further divided in seven categories: Vaccines and Injection Supplies, Personnel, Transportation, Vehicles, Cold chain equipment, other Capital equipment and other routine recurrent costs.

### 1. Vaccines and Injection Supplies

In the next 5 years, the AJK health department plans to improve the coverage rate of different vaccines (Annex 1). The financial projections for vaccines and injection supplies are based on the number of doses required per antigen including wastage rates and the price list provided available in the costing tool.

The Federal Government will provide resources for traditional vaccines and injection supplies. The underused vaccines and one new vaccine (PCV 10) will be financed through GAVI and Federal governments share of co-financing for GAVI vaccines. In addition, the government also plans to introduce two new vaccines: IPV and Rotavirus vaccines in 2015 and 2016 respectively. Both of these vaccines will be financed through GAVI; however, Rota vaccine will also be supported by Federal government's share of co-financing for GAVI vaccines. The introduction of new vaccines will have financial implications not only for the resource requirement for procurement of vaccines and injection supplies but also for cold chain equipment, overhead costs and training of personnel.

In order to achieve the immunization coverage targets, the additional resource requirement for purchasing vaccines and injection supplies will increase by 4.2 times in 2018. In comparison to the

expenditure of USD1318737 in 2012, the resource requirement will increase to USD 5,532,603 by the year 2018.

### 2. Personnel

The provincial EPI office plans to increase the availability of qualified human resources for the immunization program at provincial, district and union council levels (ISC Objective 2:).

At provincial level, new positions of provincial epidemiologist, surveillance officer, logistics and cold chain management officer and communication officer will be created. It will also include increasing the number of support staff in provincial EPI office.

At district level, one position each for district surveillance officer and data entry operator will be created in all 10 districts. Further, vacant positions of the district superintendent vaccination (3) and assistant superintendent vaccination (16) will also be filled.

At UC level, 96 vaccinators will be recruited to man 98 new fixed EPI centers across AJK.

The addition of new staff will require a substantial increase in resource allocation for immunization program. By 2018, the funds required for payment of salaries and allowances will be nearly doubled as of 2012. The provincial government will require USD3.5 million in 2018 as compared to USD1.77 million in 2012.

### 3. Transportation

Expansion in the EPI program coverage will result in increase in demand for resources for transportation. In 2012, USD84093 were spent on transportation. By 2018, the immunization system will require to increase this expenditure by 6.1 times from 3% to6.1%. In absolute numbers, USD654385 will be required to meet the transportation needs. This requirement is closely linked with the increase in POL prices. Despite the costing tool has accounted for inflation in POL prices, the provincial EPI office will revise these estimates on yearly basis in order to ensure realistic projections for resource requirement.

### 4. Vehicles

The immunization system will require an amount of USD1.7 million to procure vehicles required for the immunization staff and supply of vaccines. These projections are based on the price list provided by Federal EPI Cell and the total number of vehicles that are planned to be hired. The immunization program also plans to replace the existing vehicles that have completed their on-road life. The provincial and district level staff will be provided 4-wheel drive vehicles for monitoring and supervision whereas motorbikes will be procured for 448 vaccinators for outreach services.

### 5. Cold chain equipment

The immunization program plans to enhance the capacity of the cold chain system in order to meet the needs when new vaccines will be introduced in 2015 and 2016. It includes installation of an additional cold room, and supply of new ILRs/Freezer to district offices and ILRs to fixed EPI centers. It also includes supply of power generators and other cold chain equipment. The provincial EPI office has estimated these projections by using the information on number of items required and the price list provided by the Federal EPI Cell. It is estimated that USD2.85 million will be required to meet the needs of cold chain equipment.

## 6. Other capital requirements

The immunization system will USD93,443 for supplying other capital equipment (laptops, computers, photocopiers, furniture etc.) for one provincial office and 10 district offices. These projections are estimated by using average unit costs as per the prevailing market rates.

## 7. Other recurrent costs

Other recurrent costs consists of funds required for cold chain maintenance and overheads, maintenance of other capital equipment, utility bills, short-term training, IEC/social mobilization, disease surveillance, programme management and other routine recurrent costs. The provincial EPI office has estimates the resource requirement under this category by breaking down each component into activities and determining the average cost per activity.

The financial projections indicate that the immunization program will require USD5 million to meet the expenditure planned under other recurrent costs. In total, immunization system in AJK will require USD49 million to meet the needs of routine immunization system over a period of 5 years (2014-18) which is 83% of the total resource requirement.

### CAMPAIGN COSTS

The AJK government plans to conduct special immunization campaigns (SIAs) in the next 5 years. Majority of the campaign costs will be incurred on SIAs for Polio eradication - four rounds of polio vaccination per year with an average coverage of 95%. In addition, the government plans to conduct two measles campaigns with an average coverage of 95%, one each in 2014 and 2017. In order to achieve these coverage targets, the immunization system will require USD9.7 million.

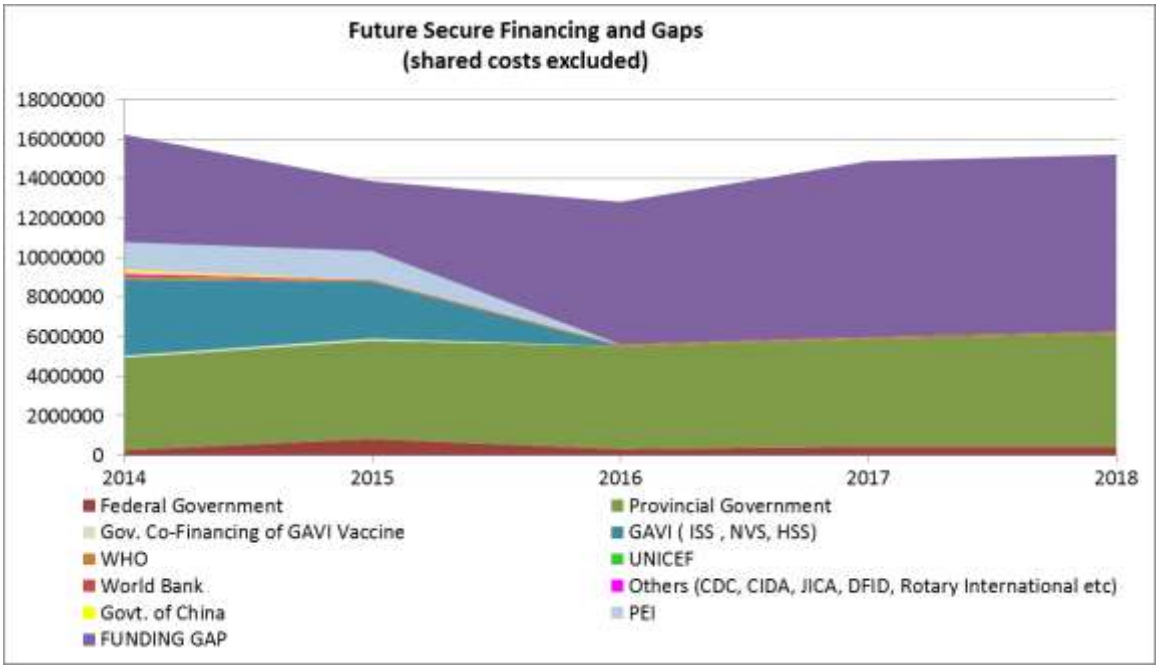
**Figure 17: Future resource requirements by cost categories (in Pakistani Rupees)**

| COST CATEGORY | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| | PKR (millions) | PKR (millions) | PKR (millions) | PKR (millions) | PKR (millions) |
| ROUTINE IMMUNIZATION COSTS | | | | | |
| Traditional Vaccines | 17.0 | 18.1 | 19.4 | 30.6 | 29.7 |
| Underused Vaccines | 88.4 | 95.8 | 103.6 | 111.6 | 120.0 |
| New Vaccines | 236.7 | 217.2 | 317.4 | 361.0 | 415.7 |
| Injection supplies | 10.8 | 12.3 | 13.6 | 14.9 | 15.5 |
| Personnel | 272.3 | 294.1 | 317.6 | 343.0 | 370.4 |
| Transportation | 46.8 | 54.5 | 58.9 | 63.6 | 68.7 |
| Other routine recurrent costs | 90.8 | 113.5 | 100.2 | 117.0 | 106.7 |
| Vehicles | 166.3 | 16.3 | - | - | - |
| Cold chain equipment | 243.3 | 57.2 | - | - | - |
| Other capital equipment | 9.8 | - | - | - | - |
| Routine Immunization Costs (Sub-Total) | 1,182.2 | 878.9 | 930.6 | 1,041.7 | 1,126.8 |
| CAMPAIGN COSTS | | | | | |
| Campaigns | 301.6 | 153.3 | 158.9 | 242.8 | 170.6 |
| **GRAND TOTAL** | **1,483.8** | **1,032.3** | **1,089.5** | **1,284.6** | **1,297.3** |

The next section presents an analysis on future financing and funding gaps of the immunization program.

## 4.3 Future financing and funding gaps of the immunization program

**Figure 18: Future Secure Financing and Gaps (shared costs excluded)**




The financial projections presented in Figure 18 indicate that the provincial and Federal governments are the main sources of secure financing for immunization program in the next five years. Further, their contribution will gradually increase from USD4.9 million in 2014 to USD6.1 million in 2018. In addition, Federal government will provide USD217251 under co-financing for GAVI vaccines.

Although secure financing under GAVI (ISS, NVS, HSS) is available for 2014-15 only, it remains a substantial amount in terms of absolute numbers. GAVI will provide USD6.69 million for procuring underused and new vaccines. The contribution from the Government of China (USD188096) will be in providing cold chain equipment. In addition, UNICEF will provide USD60981 for fixed-site strategy, program management and social mobilization activities.

The financial analysis indicates that USD2.8 million is available for activities under PEI. In 2014-15, 4 rounds of Polio SIAs per year are planned for AJK. It is expected that zero incidence of Polio will be sustained by the end of 2015. In 2014, GAVI will provide USD0.72 million for conducting a measles vaccination campaign among children below 10 years of age with a coverage target of 95%. JICA will also provide USD150028 for this campaign.

Considering only the secure funds, there is a substantial funding gap of USD34.3 million for the period of 5 years. The overall volume of the funding gap remains almost the same except a decrease in 2015. The main drivers of this funding gap are the costs required for hiring additional staff, their salaries and allowance, additional transport costs, cold chain equipment, other capital equipment and some aspects of program management. It also includes the resources required for conducting SIAs for Polio eradication and measles control from 2016 onwards.

It clearly highlights that for immunization services in AJK, EPI will remain highly dependent upon foreign assistance and will have to ensure that these funds are available in future.

**Figure 19: Future Secure and Probable Financing and Gaps (shared costs excluded)**

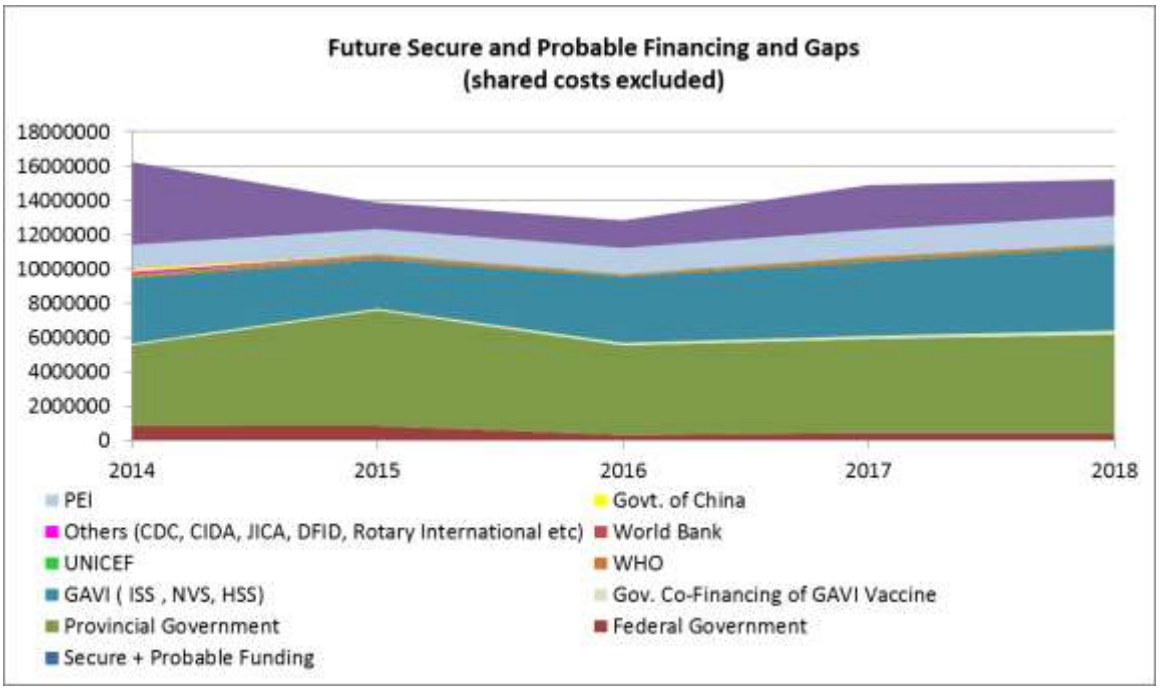



Figure 19 shows that the probable funding has some potential to bridge the funding gap highlighted in Figure 18. If the probable funding is secured by taking necessary measures, the funding gap will be further reduced by almost 63%. The major contributions to probable funding are from GAVI for vaccine procurement, Federal Governments co-financing for GAVI vaccines, potential financers of Polio SIAs, WHO, World Bank and UNICEF for social mobilization, program management and other recurrent costs.

The financial projection indicates that considering both secure and probable funding, there will remain a funding gap of USD12.7 million primarily required for meeting the needs pertaining to salaries and allowances, logistics (cold chain equipment and vehicles), other recurrent costs.. It also includes financing for measles vaccination campaign for children below five years of age that has been planned for the year 2017.

## 4.4 Funding gap analysis

**Figure 20: Composition of the Funding Gap with Secure Funding only**

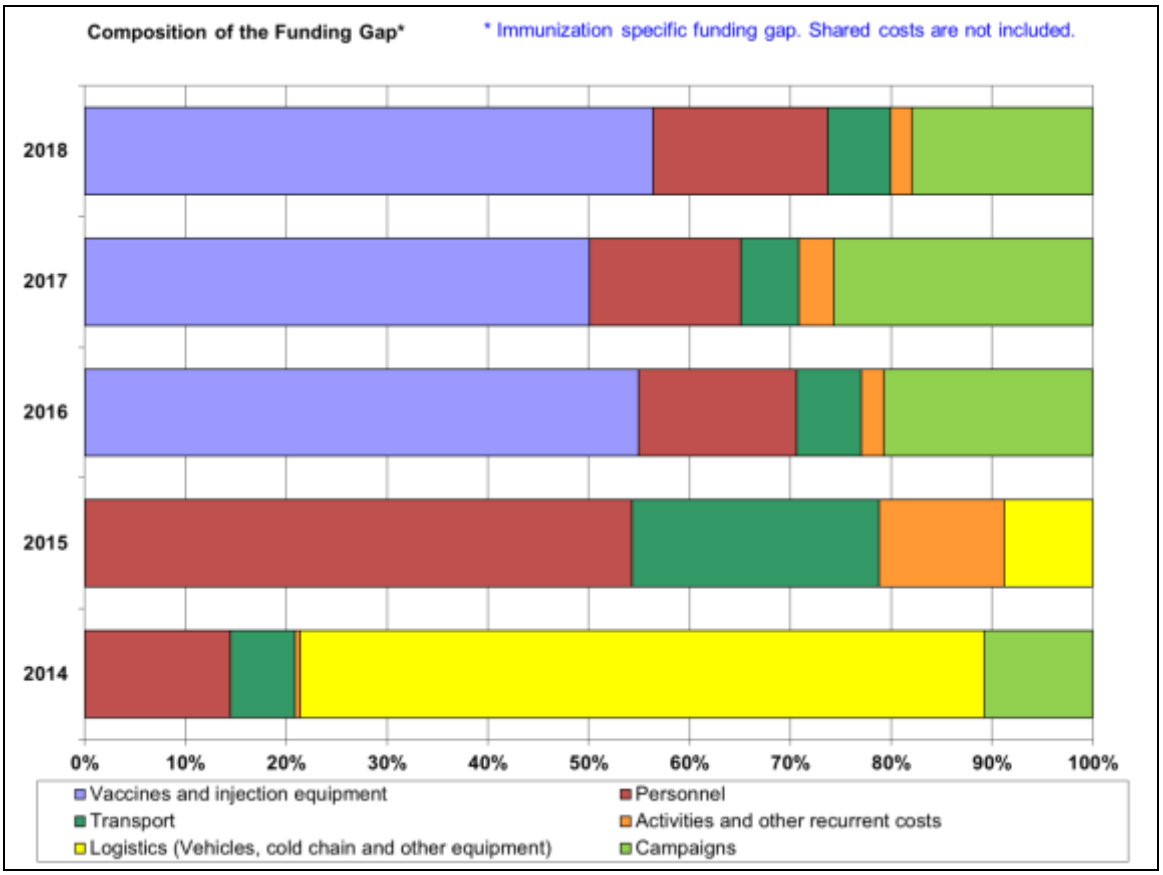



Figure 20 highlights the composition of the funding gap with secure funding only. It is quite evident that the composition of the funding gap remains almost same in terms of categories except 2014 and 2015 where costs for logistics (vehicles, cold chains and other equipment) are also required and GAVI will provide support for vaccine procurement. This funding gap is further analyzed under 6 categories: Vaccines and Injection equipment, Personnel, Transport, Activities and other recurrent costs, Logistics and Campaigns.

### 1. Vaccines and injection equipment

The immunization program is highly dependent upon GAVI for financing procurement of vaccines, especially underused and new vaccines. In addition it requires funding from the Federal government for traditional vaccines, co-financing for GAVI vaccines and injection equipment. The current fiscal situation of immunization system does not allow the provincial government to provide additional resources to the required extent without an external support. If these required resources are not provided, it is not possible to achieve the potential gains by decreasing disease burden due to VPD. This situation clearly highlights that the continuity of immunization program is closely interlinked with Federal government's support in terms of in-country financing but also success in mobilizing out-country resources from GAVI and other potential donors. In order to meet its requirement of vaccines and injection equipment, EPI in AJK requires an additional USD13.6 million for the period 2014 to 2018.

### 2. Personnel

The provincial EPI program is facing severe shortage of qualified technical staff for the management and implementation of immunization activities (Availability of qualified workforce:). In addition, 112 vaccinators cannot meet the immunization demands in AJK where population is thinly distributed and geographical accessibility becomes difficult on account of hilly and mountainous terrain. The expansion in the existing network of EPI centers demands hiring of new 96 vaccinators. However, the AJK government is largely dependent upon the Federal government for resource allocation. The current fiscal situation does not allow the AJK government to provide additional resources without an external support. However, if these requires are not provided, it is not possible to achieve the potential gains by decreasing disease burden due to VPD. In order to meet the requirement for hiring new human resources, the AJK government requires an additional USD5.8 million for the period 2014 to 2018.

### 3. Transport

The AJK government will also face a shortfall of USD465884 per year on average from 2014 to 2018 after increasing the number vehicles both for the managerial staff and vaccinators. It will also include supply of vaccines and other logistics from the provincial warehouse to district and sub-districts levels. Without a functional supply chain system, achievement of the planned targets will be hard to imagine.

### 4. Activities and other recurrent costs

Besides other expenditures, this category requires resource allocation for Technical Assistance for developing Performance Management System, Technical Assistance for Third Party Monitoring, Formative research and EPI Coverage Survey. These activities are essential for developing and strengthening EPI in AJK. Under this category, the AJK government will face a shortage of USD0.916 million over the next five years. It is expected that World Bank, WHO and UNICEF will support the AJK government for these initiatives. However, without these important activities it will be impossible to improve the quality of immunization services through establishing performance-based practices and ensuring accountability in management practices.

### 5. Logistics (vehicles, cold chain and other equipment)

Presently, there is severe shortage of vehicles required for EPI activities. This requirement will further increase with hiring of new human resources. Although, the AJK government will get a support for logistics, USD297496 from GAVI HSS and the Government of China, it still faces a shortfall of USD3.85 million to be incurred on procurement of vehicles, cold chain equipment and other logistics. It also includes a shortfall of USD93443 that will be required to provide computers and accessory and other capital items for the existing and newly recruited staff. If the funding gap related cold chain management is not addressed, it will delay the expansion in immunization coverage and also increase vaccine wastage rates due to poorly functioning old cold chain equipment. Similarly, if the funding gap related to vehicles and other logistics is not addressed, it will affect monitoring and supervisory system which has already been identified as a significant weakness under program management.

### 6. Campaigns

The funding gap under the category of campaigns can be further subdivided into two sub-groups. Firstly, from 2016 onwards, Polio SIAs will also require mobilization of additional resources because

the current PEI program covers the costs up to 2015 only. In order to conduct 4 rounds of Polio SIAs every year during 2016-18, the immunization program will require USD4.7 million. If funding gap for polio campaigns remains, it increases likelihood of polio transmission and undermines previous investments in polio eradication.

Secondly, the government has planned for Measles campaigns in 2014 and 2017. GAVI and JICA will fund for procurement of vaccines and injection supplies in 2014. In addition, GAVI will also provide USD448778 for the operational costs. It is expected that the Federal government will also provide USD587536 for the operational costs in 2014. However, there is no secured or probable funding available for the measles campaign in 2017. Consequently, EPI in AJK is facing a shortfall of USD744850 which is required both for procurement of vaccines and injection supplies and operational costs.

If funding gap of these campaigns remains, it increases likelihood of Measles epidemics.

## 4.5 Financial sustainability

**Figure 21: Macroeconomic and Sustainability Indicators**

| Macroeconomic and Sustainability Indicators | 2012 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Per capita GDP (USD) | 1256 | 1332 | 1372 | 1414 | 1456 | 1500 |
| Total health expenditures per capita (THE per capita USD) | 30 | 32 | 33 | 34 | 35 | 36 |
| Population (in millions) | 4.16 | 4.36 | 4.46 | 4.57 | 4.68 | 4.79 |
| per DTP3 child (USD) | 62.8 | 141.2 | 122.6 | 101.9 | 103.6 | 103.0 |
| **RESOURCE REQUIREMENTS FOR IMMUNIZATION AS % OF TOTAL HEALTH EXPENDITURES** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 5.39% | 11.64% | 9.42% | 8.26% | 9.09% | 8.82% |
| Routine Only | 4.40% | 9.58% | 8.43% | 7.28% | 7.68% | 7.88% |
| Funding Gap | | | | | | |
| With Secure Funds Only | | 3.91% | 2.40% | 4.70% | 5.48% | 5.25% |
| With Secure and Probable Funds | | 3.46% | 1.06% | 1.04% | 1.59% | 1.24% |
| **RESOURCE REQUIREMENTS FOR IMMUNIZATION AS % OF GOVERNMENT HEALTH EXPENDITURES** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 53.89% | 105.85% | 85.64% | 68.82% | 75.73% | 67.85% |
| Routine Only (Includes Vaccines and Operational Costs) | 43.95% | 87.13% | 76.63% | 60.71% | 63.97% | 60.61% |
| Funding Gap | | | | | | |
| With Secure Funds Only | | 35.52% | 21.80% | 39.15% | 45.70% | 40.35% |
| With Secure and Probable Funds | | 31.49% | 9.59% | 8.66% | 13.27% | 9.51% |
| **RESOURCE REQUIREMENTS FOR IMMUNIZATION AS % OF GDP** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 0.13% | 0.28% | 0.23% | 0.20% | 0.22% | 0.21% |
| Routine Only (Includes Vaccines and Operational Costs) | 0.10% | 0.23% | 0.20% | 0.18% | 0.18% | 0.19% |
| **RESOURCE REQUIREMENTS FOR IMMUNIZATION PER CAPITA** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 1.62 | 3.73 | 3.11 | 2.81 | 3.18 | 3.18 |
| Routine Only (Includes Vaccines and Operational Costs) | 1.32 | 3.07 | 2.78 | 2.48 | 2.69 | 2.84 |

The macroeconomic indicators listed in Figure 21 highlight that sustainability of immunization system is closely linked with resource allocation from the government health expenditures. The current financial projections indicate that the cost per DPT3 child will rise from USD62.8 in 2012 to USD103 in 2018.

It is expected that the government will continue its funding for immunization system. However, the resource requirement for immunization program as percentage of the government health expenditure will increase from nearly 54% in 2012 to 67.85% in 2018. High dependence on government funds is likely to reduce the available fiscal space for immunization system. Therefore, the immunization program plans to ensure financial efficiency and sustainability by employing the following strategies:

1. Enhance efficient utilization of human resources by developing synergies with other health initiatives (Strategy 3.1:)

2. Minimize wastage of resources under immunization program (Strategy 3.2:)

3. Advocacy for ensuring financial sustainability of immunization program (Strategy 3.3:)

4. Introduce mechanisms of accountability through third party monitoring (Strategy 1.4:)

# 5 Annexes

## Annex 1: District-wise requirement of new EPI Centers in AJK (2014)

| District | Type of Health Facility | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | CMH | RHC | BHU | CD | FAP | MCHC | Others | |
| Muzaffarabad | - | - | 11 | - | 12 | 1 | - | 24 |
| Neelum | - | - | 2 | - | 8 | | - | 10 |
| Hattian Bala | - | - | 3 | 2 | 1 | - | - | 6 |
| Bagh | - | - | 4 | 1 | 5 | - | - | 10 |
| Haveli | - | - | - | 1 | 2 | - | 1 | 4 |
| Poonch | 1 | 1 | 8 | - | 5 | 1 | - | 16 |
| Sudhnoti | - | - | 2 | - | 1 | - | - | 3 |
| Kotli | | | | 1 | 9 | | - | 10 |
| Mirpur | | | 5 | | 1 | | 1 | 7 |
| Bhimber | | | 2 | 2 | 4 | | | 8 |
| Total | 1 | 1 | 37 | 7 | 48 | 2 | 2 | 98 |

## Annex 2: Immunization coverage targets for cMYP 2014-18

| Type of Vaccine | Baseline | Coverage Targets | | | | |
|---|---|---|---|---|---|---|
| | 2012 | 2014 | 2015 | 2016 | 2017 | 2018 |
| BCG | 83% | 85% | 87% | 90% | 93% | 95% |
| Measles | 65% | 67% | 70% | 73% | 76% | 80% |
| OPV | 82% | 67% | 71% | 75% | 79% | 83% |
| Pentavalent | 65% | 67% | 71% | 75% | 79% | 83% |
| TT | 64% | 67% | 70% | 73% | 76% | 80% |
| Pneumococcal (PCV10) | 0% | 67% | 71% | 75% | 79% | 83% |
| Rota vaccine | 0% | 0% | 0% | 40% | 60% | 80% |
| IPV | 0% | 0% | 40% | 75% | 79% | 83% |
| OPV0 | 68% | 69% | 70% | 73% | 76% | 80% |

## Annex 3: Expenditures and future resource requirements by cMYP components

| cMYP Component | Expenditures | Future Resource Requirements | | | | | |
|---|---|---|---|---|---|---|---|
| | USD | USD | USD | USD | USD | USD | USD |
| | 2012 | 2014 | 2015 | 2016 | 2017 | 2018 | Total 2014 - 2018 |
| Vaccine Supply and Logistics (routine only) | 1,671,215 | 8,035,907 | 4,732,716 | 5,101,143 | 5,727,570 | 6,341,547 | **29,938,883** |
| Service Delivery | 1,855,800 | 3,039,213 | 3,319,890 | 3,585,508 | 3,872,379 | 4,182,202 | **17,999,193** |
| Advocacy and Communication | - | 11,220 | 11,673 | 12,140 | 12,633 | 13,472 | **61,139** |
| Monitoring and Disease Surveillance | - | 76,500 | 79,591 | 82,806 | 86,151 | 89,632 | **414,680** |
| Programme Management | - | 96,461 | 226,956 | 81,393 | 222,671 | 104,239 | **731,721** |
| Supplemental Immunization Activities (SIA) (includes vaccine and operation costs) | 1,239,822 | 2,872,072 | 1,460,458 | 1,513,060 | 2,312,556 | 1,624,479 | **9,782,625** |
| Shared Health Systems Costs | 1,953,184 | 2,109,439 | 4,046,874 | 2,460,449 | 2,657,285 | 2,869,868 | **14,143,915** |
| **GRAND TOTAL** | **6,720,021** | **16,240,813** | **13,878,158** | **12,836,501** | **14,891,245** | **15,225,438** | **73,072,155** |

## Annex 4: Composition of the Funding Gap with only Secured Financing (Immunization Specific Only)

| Composition of the funding gap | 2014 | 2015 | 2016 | 2017 | 2018 | Sum: 2014 - 2018 |
|---|---|---|---|---|---|---|
| | USD | USD | USD | USD | USD | USD |
| Vaccines and injection equipment | 0 | 0 | 4,009,165 | 4,501,110 | 5,102,067 | 13,612,342 |
| Personnel | 785,910 | 957,212 | 1,144,386 | 1,348,745 | 1,571,710 | 5,807,963 |
| Transport | 349,387 | 431,904 | 471,733 | 514,856 | 561,539 | 2,329,419 |
| Activities and other recurrent costs | 30,600 | 218,630 | 163,946 | 308,768 | 194,353 | 916,297 |
| Logistics (Vehicles, cold chain and other equipment) | 3,696,731 | 155,520 | 0 | 0 | 0 | 3,852,251 |
| Campaigns | 587,536 | 0 | 1,513,060 | 2,312,556 | 1,624,479 | 6,037,630 |
| **Total Funding Gap*** | **5,450,164** | **1,763,265** | **7,302,291** | **8,986,035** | **9,054,148** | **32,555,902** |

** Immunization specific resource requirements, financing and gaps. Shared costs are not included.*

## Annex 5: Sustainability indicators

| Macroeconomic and Sustainability Indicators | 2012 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Per capita GDP (USD) | 1256 | 1332 | 1372 | 1414 | 1456 | 1500 |
| Total health expenditures per capita (THE per capita USD) | 30 | 32 | 33 | 34 | 35 | 36 |
| Population | 4.16 | 4.36 | 4.46 | 4.57 | 4.68 | 4.79 |
| GDP (USD) | 5220336664 | 5806278053 | 6124774200 | 6464392929 | 6816823951 | 7192077000 |
| Total Health Expenditures (THE USD) | 124689570 | 139490163 | 147315998 | 155438020 | 163865960 | 172609848 |
| Government Health Expenditures (GHE USD) | 12468957 | 15343918 | 16204760 | 18652562 | 19663915 | 22439280 |
| **Resource Requirements for Immunization** | | | | | | |
| Routine and Campaigns (USD) | 6720021 | 16240813 | 13878158 | 12836501 | 14891245 | 15225438 |
| Routine Only (USD) | 5480199 | 13368741 | 12417700 | 11323441 | 12578690 | 13600960 |
| per DTP3 child (USD) | 62.8 | 141.2 | 122.6 | 101.9 | 103.6 | 103.0 |
| **Resource Requirements for Immunization as % Total Health Expenditures** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 5.39% | 11.64% | 9.42% | 8.26% | 9.09% | 8.82% |
| Routine Only | 4.40% | 9.58% | 8.43% | 7.28% | 7.68% | 7.88% |
| **Funding Gap** | | | | | | |
| With Secure Funds Only | | 3.91% | 2.40% | 4.70% | 5.48% | 5.25% |
| With Secure and Probable Funds | | 3.46% | 1.06% | 1.04% | 1.59% | 1.24% |
| **Resource Requirements for Immunization as % Government Health Expenditures** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 53.89% | 105.85% | 85.64% | 68.82% | 75.73% | 67.85% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Routine Only (Includes Vaccines and Operational Costs) | 43.95% | 87.13% | 76.63% | 60.71% | 63.97% | 60.61% |
| **Funding Gap** | | | | | | |
| With Secure Funds Only | | 35.52% | 21.80% | 39.15% | 45.70% | 40.35% |
| With Secure and Probable Funds | | 31.49% | 9.59% | 8.66% | 13.27% | 9.51% |
| **Resource Requirements for Immunization as % GDP** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | 0.13% | 0.28% | 0.23% | 0.20% | 0.22% | 0.21% |
| Routine Only (Includes Vaccines and Operational Costs) | 0.10% | 0.23% | 0.20% | 0.18% | 0.18% | 0.19% |
| **Resource Requirements for Immunization Per Capita** | | | | | | |
| Routine and Campaigns (Includes Vaccines and Operational Costs) | **1.62** | **3.73** | **3.11** | **2.81** | **3.18** | **3.18** |
| Routine Only (Includes Vaccines and Operational Costs) | **1.32** | **3.07** | **2.78** | **2.48** | **2.69** | **2.84** |