



PUNJAB PUBLIC HEALTH SUPPLY CHAIN STRATEGY

2017-2022





CONTENTS

ACRONYMS	iii
VISION	v
OBJECTIVE	v
MESSAGE BY MINISTER FOR PRIMARY & SECONDARY HEALTHCARE	vii
MESSAGE BY MINISTER FOR POPULATION WELFARE	ix
ACKNOWLEDGEMENT BY SPECIAL SECRETARY PRIMARY & SECONDARY HEALTHCARE DEPARTMENT	xi
ACKNOWLEDGEMENT BY DIRECTOR GENERAL POPULATION WELFARE DEPARTMENT	xiii
OVERVIEW	1
SECTION 1: FORECASTING & SUPPLY PLANNING	7
SECTION 2: PROCUREMENT	13
SECTION 3: WAREHOUSING AND DISTRIBUTION	17
SECTION 4: INTEGRATED SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEM	23
SECTION 5: MONITORING AND EVALUATION	29
SECTION 6: HUMAN RESOURCES CAPACITY DEVELOPMENT	33
SECTION 7: FINANCING ENVIRONMENT - FP AND MNCH SUPPLY CHAINS	37
PUNJAB PUBLIC HEALTH SUPPLY CHAIN STRATEGIC PLAN	43
ANNEXURES	45
REFERENCES	65
KEY CONTRIBUTORS	67



ACRONYMS

ADP	Annual Development Plan	P&SHC	Primary and Secondary Healthcare
BHU	Basic Health Unit	PWD	Population Welfare Department
CPR	Contraceptive Prevalence Rate	PWMP	Population Welfare Monitoring & Performance
CW&S	Central Warehouse and Supplies	QCBS	Quality and Cost Based Selection
DHA	District Health Authority	RHC	Rural Health Centre
DHIS	District Health Information System	SCMIS	Supply Chain Management Information System
DHQ	District Head Quarters	SDG	Sustainable Development Goals
DoH	Department of Health	SHF	Static Health Facility
EPI	Expanded Program on Immunization	SNE	Statement of New Expenditure
FASP	Forecasting and Supply Planning	THQ	Tehsil Head Quarter
FP	Family Planning	TORs	Terms of References
GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management	TWG	Technical Working Group
GMP	Good Manufacturing Practices	U5MR	Under 5 years Mortality Rate
GOP	Government of Pakistan	UHS	University of Health Sciences
HISDU	Health Information and Service Delivery Unit	USAID	U.S. Agency for International Development
HR	Human Resource	VEML	Very Essential Medicines List
HRD	Human Resource Development		
IMR	Infant Mortality Rate		
IRMNCH & NP	Integrated Reproductive Maternal Newborn and Child Health & Nutrition Program		
ISCMIS	Integrated Supply Chain Management Information System		
LHW	Lady Health Worker		
LMIS	Logistics Management Information System		
M&E	Monitoring and Evaluation		
MEAs	Monitoring and Evaluation Assistants		
MIS	Management Information System		
MMR	Maternal Mortality Ratio		
MNCH	Maternal, Newborn, and Child Health		
MSD	Medical Store Depot		
NGO	Non-Governmental Organization		
PC-1	Planning Commission Performa-1		
PITB	Punjab Information Technology Board		



V I S I O N

To ensure uninterrupted supplies of health commodities to prevent suffering, save lives, and create a brighter future for the people of Punjab province.

O B J E C T I V E

A fully integrated, functional, optimized, interlinked, and robust public health supply chain for Punjab province with complete data visibility at each level aimed at availability of quality products at the last mile, with no stock outs. To develop supply chain systems in a manner that system components compliment and can be leveraged by larger landscape of health services.



MESSAGE BY MINISTER FOR PRIMARY & SECONDARY HEALTHCARE

The Punjab government places the areas of health and population welfare on the top of its priorities and has further focused its resources and energies in recent years on health and population sectors and introduced many important reforms which have resulted in clearly visible improvement in provision of quality healthcare for the people of the province. These reforms include numerous initiatives by the government in terms of increased financing, integration of latest technology with health systems, recruitment of quality human resource, enhanced & effective accountability and system strengthening in all spheres of healthcare.



I take this opportunity to congratulate Departments of Health and Population Welfare, Government of Punjab for devising this comprehensive, provincial supply chain strategy. This is a unique achievement, as it is the first ever supply chain management strategy, inclusive of a costed roadmap and implementation plan for both the departments.

The Government of Punjab stands committed to fully support both the departments in achieving their objectives and will extend every possible help in implementing the strategy which will certainly go a long way towards ensuring availability of quality products at health facilities for the people of Punjab.

A handwritten signature in blue ink, appearing to read "KIN".

Khawaja Imran Nazir
Minister for Primary & Secondary Healthcare, Punjab



MESSAGE BY MINISTER FOR POPULATION WELFARE

The Government of Punjab, under the dynamic leadership of Chief Minister, Mian Muhammad Shehbaz Sharif, is committed to provide the best possible Healthcare facilities to the people of Punjab through Health and Population Welfare Departments and is determined to ensure access to equitable and quality Healthcare even at the last mile which is fundamental right of the men, women and children of Pakistan. To achieve this objective and align with the National Health Vision 2025 and FP 2020 commitments and vision of the honorable Chief Minister, many important initiatives have been taken by the Punjab Government which also include development of five years Public Health Supply Chain strategy with technical support of USAID | Global Health Supply Chain Program. This strategy will certainly contribute tremendously in translating this vision into reality.



I congratulate both the departments of Health and Population Welfare for developing this important supply chain strategy and hope that the strategy will be implemented in true letter and spirit in larger interest of the people of Punjab.

A handwritten signature in black ink, appearing to read "Malik Mukhtar Ahmad Bherath".

Malik Mukhtar Ahmad Bherath
Minister for Population Welfare, Punjab



ACKNOWLEDGEMENT BY SPECIAL SECRETARY PRIMARY & SECONDARY HEALTHCARE DEPARTMENT

Primary & Secondary Healthcare department has taken many important initiatives during the past few years to protect and improve the health of the men, women and children of the province. Maternal, Newborn and Child health has not only been the top priority of the department but has also been very close to the heart of the Chief Minister Punjab.



As a result of the revolutionary reforms introduced by the government, Punjab has witnessed unprecedented improvements in the areas of routine EPI coverage and institutional deliveries conducted by skilled birth attendants. Every effort is being made to reduce MMR & IMR and improve CPR. The government is determined to ensure provision of healthcare facilities including medicines and family planning commodities even at the remotest service delivery points. For this purpose of ensuring commodity security at all levels, an effective system of supply chain management is rather the most important prerequisite. To meet this requirement, both the departments of Health and Population Welfare, with technical assistance of USAID | GHSC PSM Project have developed a five years comprehensive supply chain strategy for Punjab.

I believe the implementation of the strategy will result into visible improvements in all the important areas of healthcare in the province.

Dr. Faisal Zahoor

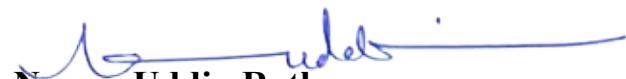
Special Secretary, Primary and Secondary Healthcare,
Punjab

ACKNOWLEDGEMENT BY DIRECTOR GENERAL POPULATION WELFARE DEPARTMENT

Population welfare Department, Punjab is determined to achieve SDG commitments related to universal health coverage aimed at general welfare of population. Moreover, in line with the vision laid down in Punjab Population policy 2017, PWD has focused on stabilizing the population growth and reduce fertility to contain population momentum. In order to meet the local and international commitments, the uninterrupted supplies of family planning products can play a vital role which needs a comprehensive supply chain strategy for the province.



Teams of both departments of Health and Population Welfare, with the technical assistance of USAID | GHSC-PSM Project, developed an integrated comprehensive five years supply chain strategy for Punjab which will be implemented in letter and spirit and consequently go a long way in ensuring system strengthening and commodity security at all levels.


Naeem Uddin Rathore
Director General Population Welfare Department,
Punjab



OVERVIEW

Health and Family Planning (FP) indicators in Pakistan have made escalating progress in recent decades¹. The public sector's performance in promoting accessibility to equitable health care to its population largely relates to a broader policy environment, including the government's priorities, commitment, security situation, and financing (*Figure-1*). However, improving maternal and child health remains a challenge attributable to the overall environment impacting the health of the people which includes accessibility, quality of services, infrastructure, availability of appropriate human resource (HR), demand creation, and individual behavior.



Figure 1: Access to Equitable Healthcare

From a logistics perspective, product availability lies at the heart of the entire health care milieu. The health sector stands out as a major priority for the government of Punjab, but there are certain challenges with timely availability of quality health commodities at the community level, which can be overcome by system strengthening.

Public health supply chains have historically been a complex and fragmented process within multiple public health programs running parallel to one another. Recently, it has emerged as a priority, due to growing realization of its significance for commodity security.

This strategy focuses on two supply chains that have direct bearing on maternal, infant, and under 5 mortality rates which are directly linked to Pakistan's commitments per FP 2020² and SDG-3³, however the recommendations are similarly applicable to other health commodities as well.

SDG Target by 2030	Current Standing
MMR: < 70 /100,000 live births	MMR: 170/100,000
IMR: < 12 / 1,000 live births	IMR 62/1000
U5MR: < 25 / 1,000 live births	U5MR 81/1000
FP2020 Target	
CPR: 55 %	35 %

The Punjab Government's commitment towards provision of improved health facilities for the people of the province is manifested in bold initiatives and massive reforms undertaken to repair supply chains (i.e. improved systems, restructuring, outsourcing, data visibility, capacity building and financing around supply chain functions by two major stakeholders including the Department of Health and Population Welfare Department). The DOH has prioritized

¹ PDHS reports (<http://www.nips.org.pk>)

² Economic Survey of Pakistan 2016-17

³ FP2020: <http://www.familyplanning2020.org/>

23 MNCH VEML products in 2017, considering low costs and high impact and disease burden considerations with a commitment to ensure full supplies.

It is an opportune time to transform, integrate, optimize, and promote the provincial policy environment towards sustainable and strengthened public health supply chain management systems in Punjab. The strategic and policy environment will help to ensure the timely and uninterrupted availability of good quality health commodities for the men, women, and children of the province. With this ultimate goal, this document developed by the departments of health and population welfare, with the technical assistance of USAID funded GHSC-PSM Project, aims to lay down a five-year strategy for public health supply chain improvement.

The strategic vision presented is the result of an in-depth current supply chain systems' analysis, focusing on each component of supply chain in shape of concept notes which identified the gaps and proposed strategies for sustainable strengthening of the supply chain system in an integrated and optimized manner.

These concept notes were based on series of consultations with relevant stakeholders and development partners.

The strategic vision in Punjab can be described as having four main pillars: emphasis on integration/ optimization of public health supply chains, focus on creating world-class integrated supply chain management information system (MIS), inter- and intradepartmental engagement, and sustainability. This vision will be carried out by implementation of systems that enable both the departments to manage forecasting and supply planning, procurement, warehousing, distribution, monitoring functions, human resource development, and high quality MIS data.

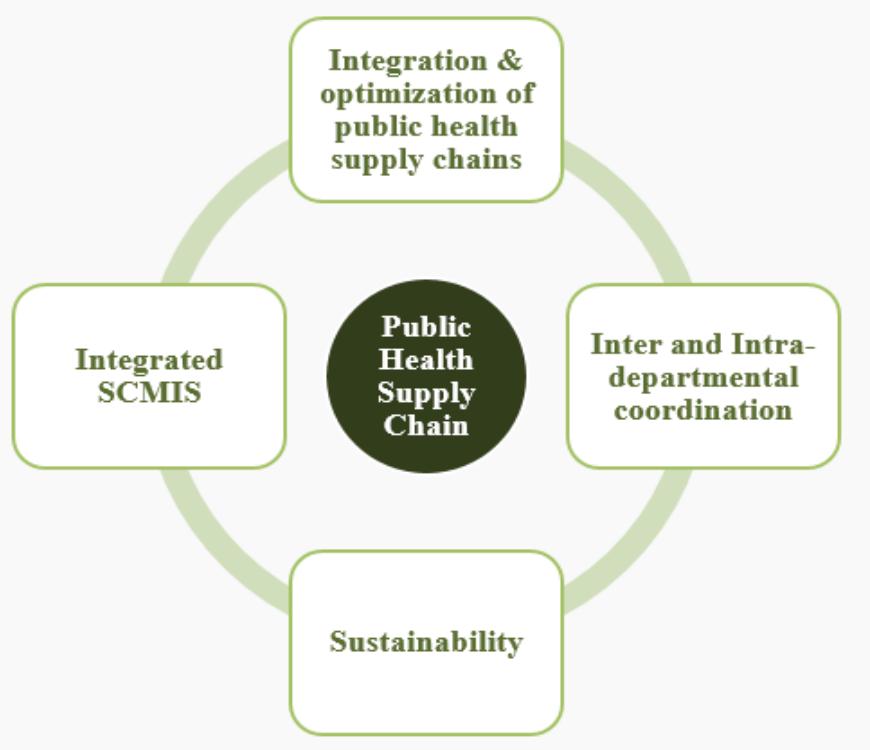


Figure 2: Public Health Supply Chain Pillars

It is imperative to align and integrate each supply chain function in a seamless manner to achieve cost efficiencies, ensure quality and stock sufficiency. Improving different function of supply chain as a single component in isolation will not achieve desired impact. The system must be taken as a whole, where all components facilitate and complement each other. This is a living document and is subject to change to respond to important developments in the policy environment, governance, and financing. The review of the strategy is expected to be undertaken by the end of June 2018 to be completed thereafter on an annual basis. At the end of FY 2021-22, a third-party assessment will be carried out to gauge the impact of supply chain strategy.

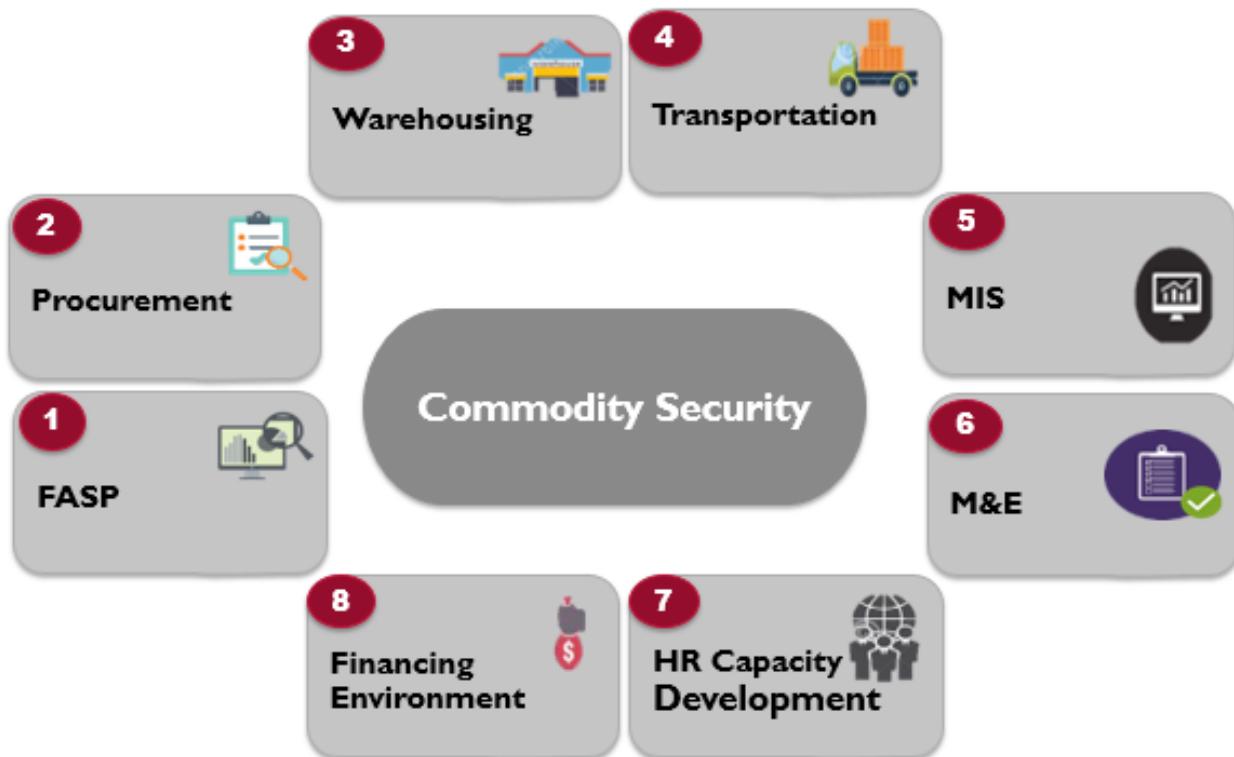


Figure 3: Public Health Supply Chain Components

An investment of approximately PKR 1736 million for strategy implementation and around PKR 25,900 million for FP and MNCH VEML commodities procurement by Punjab government in public health SCM interventions over the next five years will result in overall savings of an estimated PKR 5886 million.

This section outlines a brief strategy developed for each supply chain function in Punjab Province.

FORECASTING AND SUPPLY PLANNING

Objective: To improve and strengthen forecasting and supply planning (FASP) functions systematically to determine provincial health commodity requirements, estimate their financial costs, and coordinate fulfillment of projected needs to support the continuous availability of commodities.

Rationale: Forecasting and supply planning requires unique resources and skill sets. Room for improvement in terms of qualified and experienced human resources, structures, and tools to improve accuracy and timeliness of FASP for all medicines, particularly for FP and MNCH commodities was identified.

Strategy: The strategy will ensure an efficient and sustainable quantification mechanism for the province.

PROCUREMENT

Objective: To develop a fully integrated, responsive, efficient, transparent, and functional procurement management system ensuring availability of high quality health commodities.

Rationale: Challenges around procurement are ever-growing with increases in provincial commodity financing and volumes of procurement.

Strategy: The strategy will streamline procurement processes while building institutional capacity for a lasting change.

WAREHOUSING AND DISTRIBUTION

Objective: To establish a fully integrated, functional, optimized, interlinked, and robust storage and transportation mechanism for the province with complete data visibility at each level of the supply chain.

Rational: Current storage facilities at provincial and sub provincial levels are inadequate in terms of space and infrastructure to cater to storage needs vis-à-vis volumes of commodities procured. Inventory management at all levels of supply chain can be improved through the use of technology.

Strategy: The strategy will take the supply chain functions to the next level, ensuring a rationalized storage and transportation network to cater to provincial needs in the most efficient and cost effective manner.

INTEGRATED SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEM

Objective: Enable decision makers at all levels make evidence based, informed decisions for supply chain functions.

Rational: Different health programs maintain standalone MIS systems, most of which do not cover logistics functions including forecasting and supply planning, warehousing, stock requisitioning, etc. The LHW, MNCH, EPI, and Nutrition program MIS include logistics information exclusively which is insufficient to measure overall supply chain performance.

Strategy: The strategy envisages development of an integrated health information system policy framework, moving towards integration to achieve synergies and data sharing, while building in-house capacities.

MONITORING AND EVALUATION

Objective: To develop a comprehensive and sustainable supply chain M&E system linked with an overall provincial M&E framework for cost efficiency, data triangulation, and sustainable improvements.

Rational: Although there are quite a few information systems operative in the health sector, the current supply chain system lacks measurement and improvement of performance, transparency, accountability, and cost effectiveness as relevant information is either fragmented or absent in the system.

Strategy: The M&E strategy will harness the strengths of the existing M&E initiatives e.g Monitoring and Evaluation Assistants. (MEAs), Electronic Vaccination ((EVACCS), Punjab Information Technology Board (PITB) dashboard, District Health Information System (DHIS) Cell, etc. and go beyond by increasing its scope, operational and financial reforms for sustainability, and use of technology for transforming business intelligence and improving data use.

HUMAN RESOURCE CAPACITY DEVELOPMENT

Objective: To have a fully developed human resource capacity and institutionalized supply chain system that ensures a high performing professional and consumer-centered workforce capable of effectively and efficiently delivering health services and products.

Rational: The public health supply chain network does not have adequately trained professionals and technical human resources and lacks an appropriate service structure. This has led to an inherent and systemic weakness in the system.

Strategy: The province will develop a human resource strategy focused on creation of a fully-functioning supply chain professional cadre supported by service structure in Punjab. To create and foster a cadre of supply chain professionals within the province, activities carried out in this area will seek to integrate formal supply chain training at the University of Health Sciences (UHS) as well as other interested universities.



SECTION 1

FORECASTING & SUPPLY PLANNING



SECTION 1: FORECASTING & SUPPLY PLANNING

CURRENT LANDSCAPE

Forecasting and supply planning (FASP) is the foundation for all other functions of supply chain as over estimation or underestimation of commodities can have serious implications on health delivery systems. It is a highly scientific and complex process, wherein numerous factors have to be considered including demographic, morbidity and services data sets along with logistics data and requires special skill set. Currently, FASP for complete range of FP products and 23 MNCH Very Essential Medicines List (VEML) endorsed in 2017 (Annexure-I) for both the departments is being done with technical assistance of Global Health Supply Chain Program – Procurement and Supply Management (GHSC-PSM) Project on the basis of logistics indicators and enhancement in service delivery. Additionally, IRMNCH & NP exercises quota/target based forecasting and quantification as well for both FP and MNCH commodities. Availability of qualified and experienced human resources, structures, and tools remains a challenge for improved accuracy and timeliness of forecasting and supply planning for all medicines and supplies. Both departments realize the need of having a structured mechanism for accurate FASP with notified and dedicated trained HR. Due to gaps identified in FASP serious anomalies are experienced in district demands, which leads to differences in planned and actual requirements of health commodities.

Priority areas for improvement

- Reliable and quality data sets (demographic, disease prevalence/morbidity, and logistics) for accurate forecasting
- Dedicated resources (financial & trained HR) for FASP

FASP ROADMAP

The objective of the roadmap is to establish a fully functional and structured FASP mechanism that systematically determines province specific FP and MNCH commodity requirements, estimates their financial costs, and coordinates fulfillment of projected needs to support the continuous availability of commodities.

- Institutionalization of FASP through capacity building of the provincial departments on accurate and timely forecasting and quantification of FP & MNCH commodities and identify champions to form technical working groups. As FP supply chain has higher maturity than MNCH with respect to automation of procurement planning and monitoring functions, it is expected that, modelling FASP for MNCH supply chain will help in attaining departmental capacity within 2-3 years.
- Three data sets including logistics, services, and morbidity⁴ will be considered for forecasting and quantification of MNCH commodities depending upon availability and data quality. Knowledge and information of health departments' programmatic strategies will be important for accurate forecast and quantification of MNCH commodities. This needs to be ensured through document review and consultations with key informants and / or focal person/s of the department. For three data sets different data elements would be focused and acquired.
- Forecasting exercise for FP and MNCH VEML will be done for three to five years and reviewed annually for adjustments, as per recommended models. (Figure 4&5)

⁴ Upon publication of Population Census 2017 report, quantification will be based on updated demographic data

FORECASTING & SUPPLY PLANNING MODEL FOR MNCH COMMODITIES

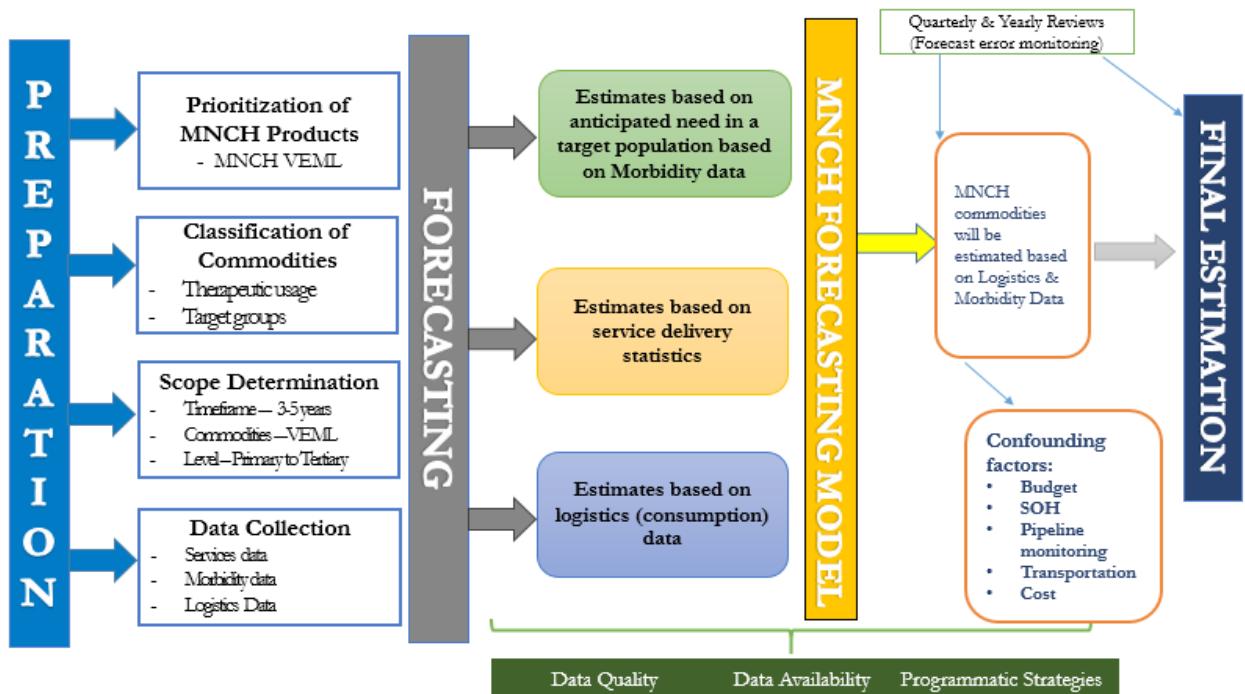


Figure 4:FASP Model for MNCH Commodities

FORECASTING & SUPPLY PLANNING MODEL FOR FP COMMODITIES

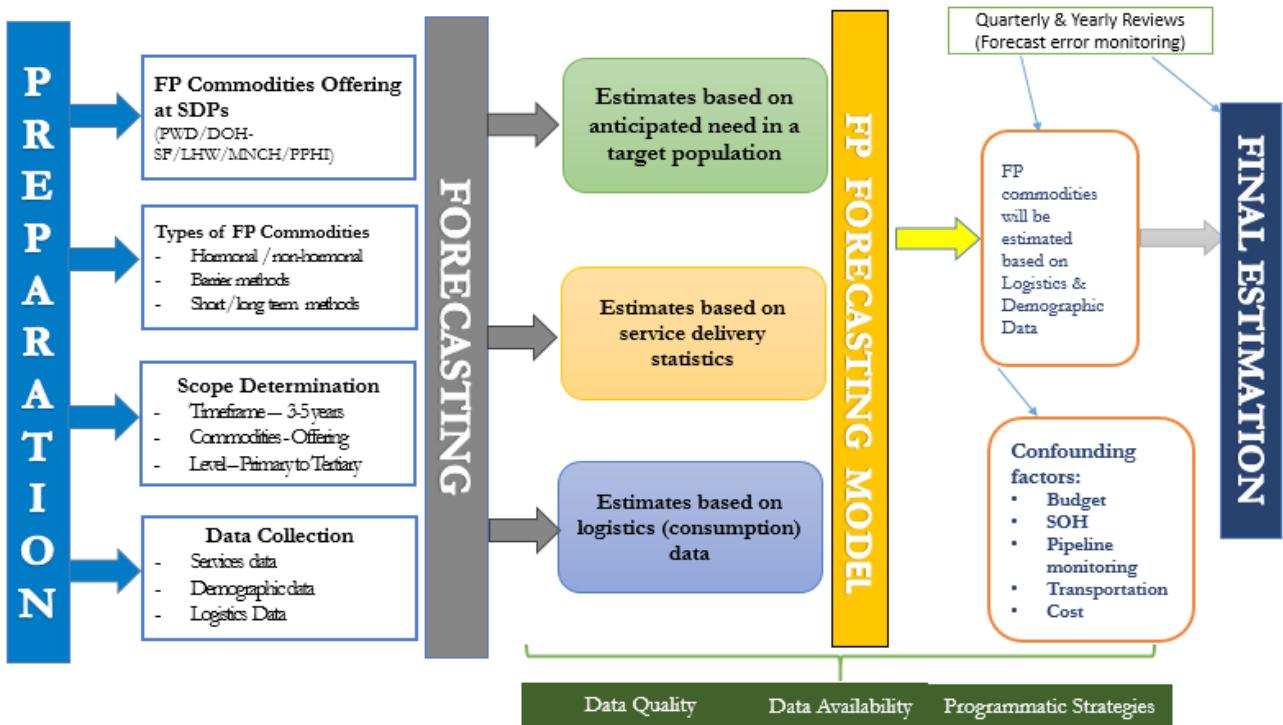


Figure 5: FASP Model for FP commodities

IMPLEMENTATION PLAN

The health and population welfare departments of the Government of Punjab will carry out following activities to achieve overall objectives.

i. Formation of Forecasting & Quantification Technical Working Group (TWG) at Provincial Level

Both health and population welfare departments will establish and notify a forecasting and quantification TWG at provincial level and will also develop the TORs. The TWG will systematically determines provincial FP and MNCH commodity requirements, estimates their financial costs, and coordinates fulfillment of projected needs to support the continuous availability of commodities. TWG will also analyze quantification figures related to MNCH commodity security issues and improve provincial capacity to perform this task independently. Improved inter-departmental coordination will facilitate consensus building on scope and assumptions for forecasting and quantification. It will also minimize duplication of efforts and wastage of resources.

ii. Create Professionalized and Trained Human Resources at The Provincial and District Levels

At the provincial level, the capacity of health and Population Welfare departments will be increased in forecasting and quantification of FP and MNCH commodities with the ultimate goal of independent function. Pre-and in-service training courses will be organized / arranged that will contribute and ultimately lead to building of institutional capacity on forecasting and quantification.

iii. Automation of Forecasting and Quantification Function into Integrated Web-based MIS

To reduce the likelihood of computational inaccuracies, forecasting and supply planning functions will be automated incrementally and made part of integrated Logistics management information system. The province will design a VEML specific forecasting and supply planning module in web based integrated MIS and will also train users on FASP module. As a result, forecasting and supply planning will be graduated from manual to automated function. The automation will help in timely and accurate forecasting and supply planning, which will in turn assist in procurement and commodity security.

iv. Include FASP Related Initiatives and Costs in PC-Is

To cater for financing of implementation plan of FASP, dedicated funding should be included in PC-1s.

Outcome

Fully structured, established and functional FASP mechanism for timely and accurate forecasting and supply planning of provincial FP and MNCH commodity requirements.



SECTION 2

PROCUREMENT



SECTION 2: PROCUREMENT

CURRENT LANDSCAPE

Current procurement mechanisms in both the departments are highly mature and are fully aligned with the Punjab Public Procurement Rules, 2014. Procurement budgets have witnessed a surge over last five years, rising from PKR 3 billion to PKR 9 billion as of 2016-17.

The departments have been proactively responding to evolving needs with an increase in budgets by developing corresponding HR capacities and improving procurement procedures. However, with donors' time bound commodity financing and procurement support ending in 2020, the government's internal procurement functions must be upgraded in line with envisaged volumes of procurement.

The procurement cell at the Primary and Secondary Healthcare department, which is a very well established entity with qualified staff, looks after procurement functions of all health commodities including FP and MNCH products for different primary health care components of the department i.e. Static Health Facilities (SHF), Lady Health Workers (LHW) and MNCH programs. District Health Authorities (DHA) also procure MNCH products for primary and secondary level healthcare facilities (DHQ, THQ, RHC and BHU). Recently, the department has decided to centrally procure on behalf of all DHAs, as compared to previous practice which was a central rate contract.

The Primary and Secondary Health Care (P&SHC) department has also taken several important steps which include the introduction of quality and cost based selection (QCBS) procurement methods, 2D barcode conditioned through standard bidding documents, staggered supply planning, declaration of quality control labs by pharmaceutical manufacturing units (mandatory from next financial year), and Good Manufacturing Practices (GMP) audits (pilot) for improved quality standards.

The PWD procurement profile has also witnessed a phenomenal increase after the closure of USAID contraceptive commodity support in 2015. The first ever procurement of FP commodities by the provincial PWD was done in 2014-15, to the tune of PKR 400 million, which continues with significant improvements in HR capacity and procurement procedures. Recently, the Chief Minister, Punjab has approved a summary for the establishment of an Integrated Logistics & Procurement Cell (LPC) under

Priority areas for improvement

- Procurement performance management automation
- A professionalization and human resource capacity building plan for sustainability

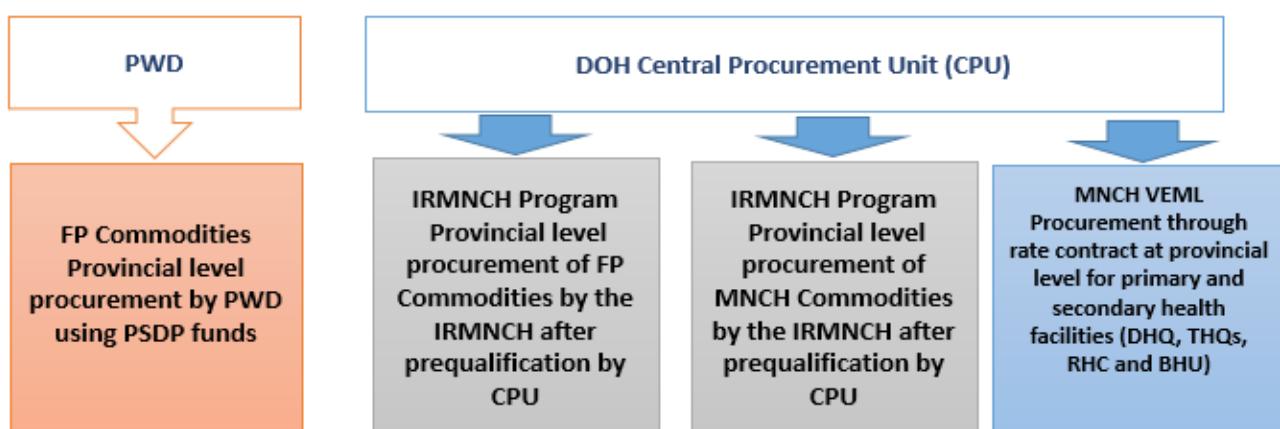


Figure 6: Current Procurement Environment

the lead of PWD for procurement of contraceptives for the public sector, however, the mechanism for private sector as well as tertiary care hospitals is yet to be finalized. A similarly integrated mechanism like LPC for FP commodities will have to be adopted for other products being procured by the vertical programs of P&SHC department.

PROCUREMENT ROADMAP

The objective of this roadmap is to improve and make the current procurement systems more efficient and transparent through sustainable solutions of integrated procurement models and automation that can cost effectively satisfy the mounting demands of public health programs with ensured high quality health commodities to the last mile.

- Procurement processes and procedures are to be made more visible through introduction of procurement performance management tool, followed by linking the tool with an integrated supply chain MIS.
- Human resource capacity building is a continuous process which need to be strengthened. In this regard, both the departments will devise and implement medium to long term human resource capacity building plan in consultation with development partners, where required.
- Considering changing in procurement related policy environment in the province, both the departments will review and update its procurement documentations including standard bidding documents, evaluation criteria, and procurement manuals etc. to align them with the applicable rules.

IMPLEMENTATION PLAN

The following interventions are proposed to be carried out by the P&SHC and Population Welfare departments of the Government of Punjab for efficient and sustainable procurement system:

i. Select, Adapt, and Implement Procurement Performance Management Tool

In order to avoid delays and create visibility into the procurement process of FP and MNCH commodities, the available standard procurement performance management tool will be adapted according to the needs of DOH and PWD. DOH and PWD will build a consensus and may engage relevant development partners for technical support to identify the tool and help for adaptation and implementation. The finalized tool will further be linked with online MIS to make it accessible and user friendly and relevant staff will be trained.

ii. Develop and Implement Comprehensive Medium to Long-term Procurement related Human Resource Capacity Development Plan

Procurement related HR issues in terms of capacity and strength prevail in both health and population welfare departments. Both the departments will overcome HR issues through joint efforts which include; developing procurement professionalization plan through consultative process and nomination of relevant procurement staff at provincial and district levels for in-service training on procurement procedures.

Outcome

Efficient and transparent procurement systems within the health and population welfare departments implemented with sustainable solutions for integrated procurement models and automation.

SECTION 3

WAREHOUSING AND DISTRIBUTION



SECTION 3: WAREHOUSING AND DISTRIBUTION

CURRENT LANDSCAPE

Primary and Secondary Healthcare (P&SHC) department Punjab has a provincial warehouse (Medical Store Depot – MSD) in Lahore which is being reconstructed as purpose built warehouse with a storage capacity of approximately 40,000 sq. feet. Considering the volume of procurement for health commodities, the available storage space at MSD will still be insufficient to accommodate the entire range of products. To address this, DOH plans to stagger their annual procurement delivery schedules from one-time to thrice in a year. Financial regulations have also been altered to align with the new staggered delivery mechanism. FP commodities for DOH are primarily being stored at the Central Warehouse & Supplies (CW&S) Karachi, while some locally procured commodities are stored at MSD/Sub-MSD. However, the department intends to receive all FP commodities at the newly reconstructed MSD from FY 2017-18. MNCH commodities procured by the IRMNCH program and DHAs are stored at MSD and district stores respectively. From these facilities, the products are further distributed to the lower tiers. Recently, the DoH has outsourced its warehousing and transportation functions to TCS (courier company) for management of MSD operations. TCS is also responsible for arranging additional warehouses required for enhancing provincial storage capacity. From MSD, the FP & MNCH commodities are directly being supplied to the secondary level health facilities (DHQ and THQ) and LHWs by TCS. FP commodities procured by PWD and DOH stored at CW&S, Karachi are distributed to respective district stores. DOH and PWD both manage transportation of FP commodities from CW&S to district stores through private goods transport agencies. The current health commodities storage and distribution structure and mechanism is given in figure 7.

Priority areas for improvement

- Purpose built storage facilities at sub provincial level (sub MSDs, district stores) to ensure availability of quality health commodities for end users
- A structured mechanism for the storage and transportation of commodities from districts stores to health facilities

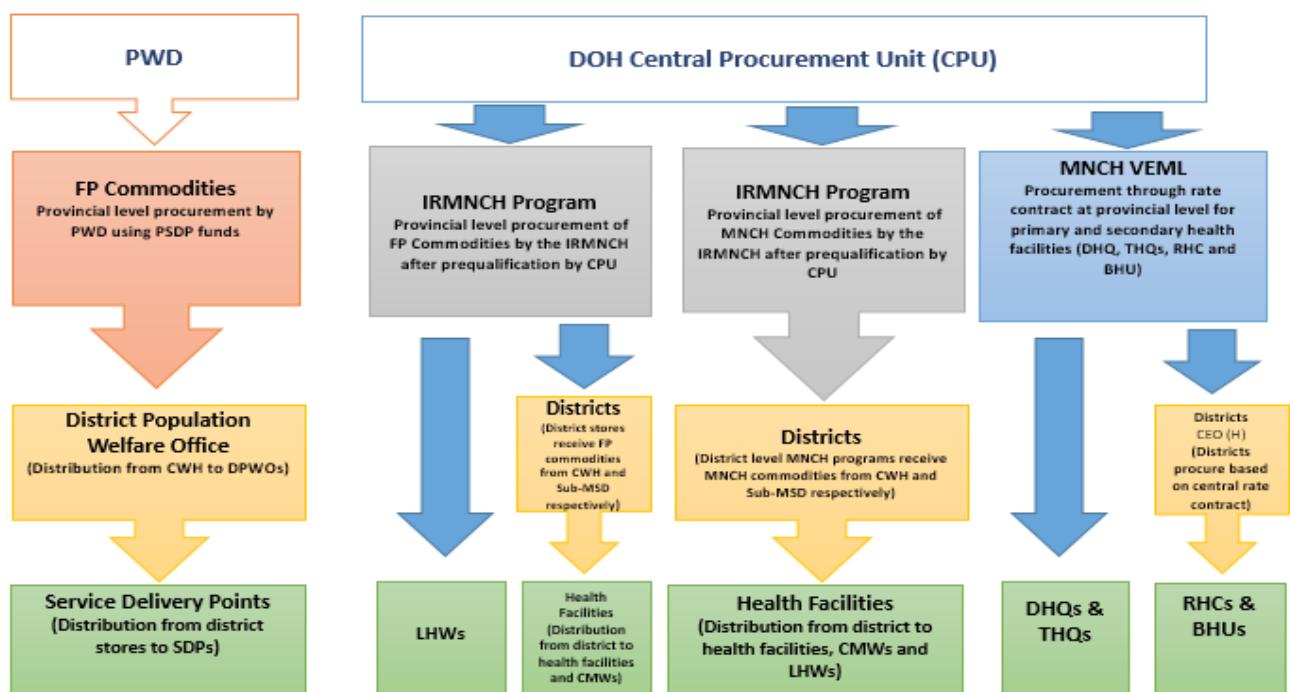


Figure 7: Current Warehousing and Distribution Environment

WAREHOUSING AND DISTRIBUTION ROADMAP

The overall objective of the warehousing and distribution roadmap is to instill cost effective, efficient and integrated transportation mechanisms with sufficient storage at provincial and sub-provincial levels, enabling the government to adopt best international practices for inventory management. This would require structural changes, infrastructure development, recruitment of trained personnel, and financing as per below model:

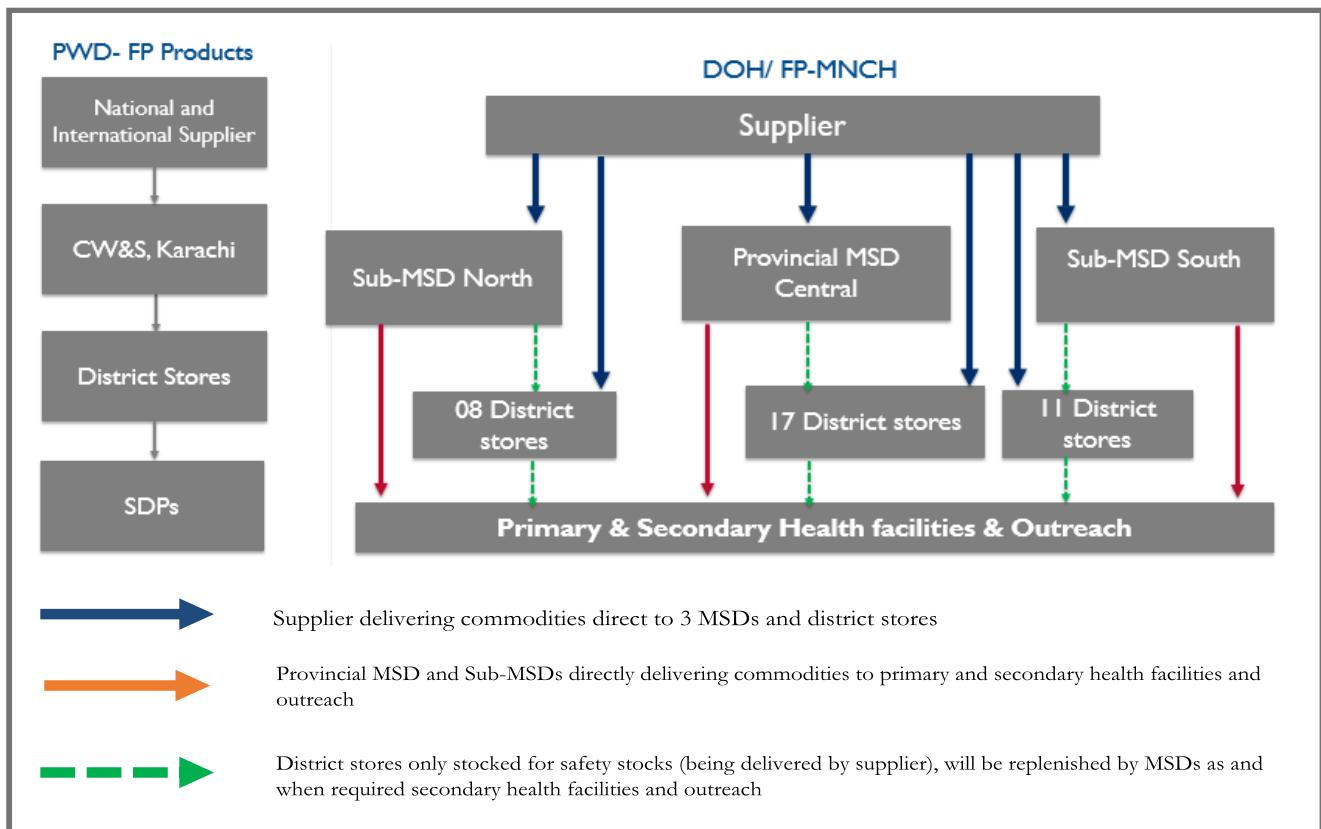


Figure 8: Warehousing Model

IMPLEMENTATION PLAN

The warehousing and distribution strategy will be implemented through joint efforts of health and population welfare departments.

i. Determine Storage and Space Requirements of MSD, Sub-MSDs and District Stores

The storage space needs for provincial and sub- provincial MSDs will be assessed to correspond their dependent districts (primary and secondary healthcare facilities). For district stores, the storage space will be determined only to cater for safety stocks to meet the emergency requirements to prevent stock outs. The new infrastructures (sub-MSDs) will be purpose built as per warehousing standards, including automated inventory management through integrated SCMIS.

ii. Allocation of Funds or Establishments of New Warehouses

Based on the storage and space assessment, PC-1s/ ADP schemes/ SNEs will be developed to ensure adequate financing for construction/rehabilitation, equipment, and additional HR.

iii. Human Resource Hiring and Capacity Building

A professionalization plan will be developed and implemented including recruitment of staff needed for sub-MSDs. Capacity building around warehousing and distribution planning at all

levels will be focused for in-service staff, based on current/ adapted warehousing guidelines.

iv. Determine Transportation Needs and Resources including Outsourcing

Distribution planning and transportation will be re-configured and implemented to complement warehousing and storage model being adopted. Sub-MSDs and district stores will develop efficient and robust district specific distribution plans and transportation down to facility level.

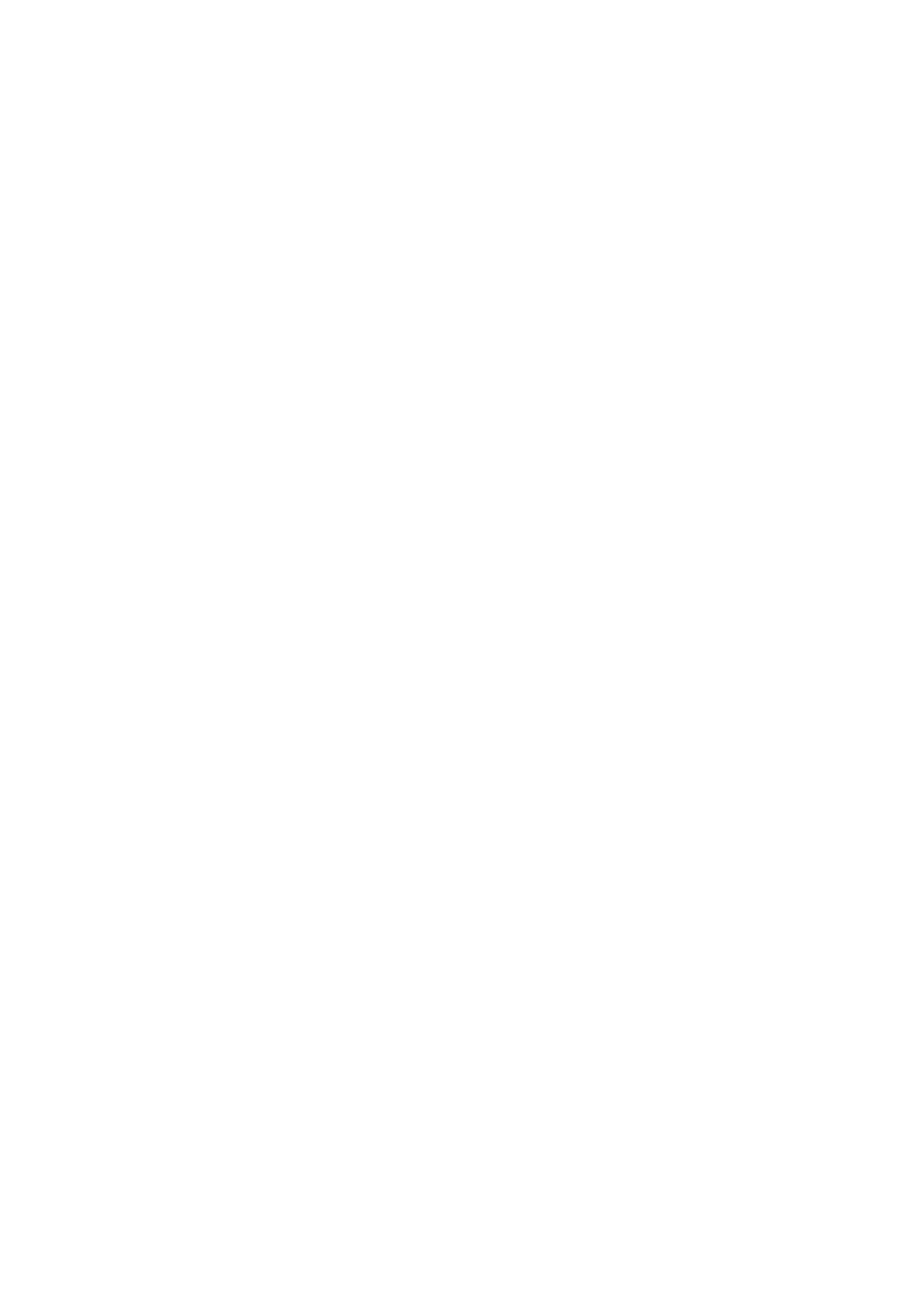
Outcome

Warehousing infrastructure at provincial and sub-provincial levels established backed up by technically qualified HR; best international practices for inventory management and integrated transportation mechanism implemented



SECTION 4

INTEGRATED SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEM



SECTION 4: INTEGRATED SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEM

CURRENT LANDSCAPE

Punjab has taken a definite lead and edge over others in optimizing technology for improved health outcomes, giving greater visibility to program managers and provincial health leadership. This has resulted in increased surveillance and accountability around all streams of healthcare. There are around 30 Management Information Systems (MIS) in use by both departments.

These MIS were developed using government core funding as well as with the technical assistance from development partners. However, there is room for improvement in terms of integration of various systems and developing dashboards that serve as decision making tools at different levels of health management. The quality of data and reporting rates also need attention. Data management in PWD is quite satisfactory, while indicators around MNCH supply chain need improvement. Initiatives like HISDU and close cooperation with Punjab Information Technology Board (PITB) empowers department of health to further improve the systems.

Various standalone MIS are available and functional within the department of health and population welfare department which give basic reports and capture data related to program activities as shown in MIS availability matrix below (table 1).

Table 1: MIS Availability Matrix

PROGRAM	DOMAIN SPECIFIC MIS	FASP	PROCUREMENT MIS	WAREHOUSING MIS	M&E MIS	HRM-MIS	TRANSPORT-MIS
DOH							
MNCH	√				√	√	
LHW	√				√	√	
STATIC HEALTH FACILITIES	√		√		√	√	
*NUTRITION	√				√	√	
EPI	√			√	√	√	
PWD							
PWD	√			√	√	√	

*Nutrition MIS is being developed by P&D

These MIS are focused on services data, however, reporting of logistics indicators are present in some systems (LHW, MNCH, EPI, and Nutrition). The PWD is using two systems (Logistic Management Information System (LMIS) and Population Welfare Monitoring & Performance System (PWMP)). This software was initially developed for monitoring. The PWD is already reporting logistics indicators

Priority areas for improvement

- Health information systems policy
- Integration of various vertical MIS for developing provincial supply chain indicators
- Sustainability of donor supported MIS in terms of hosting, maintenance and enhancement
- Data utilization for evidence based decision making
- Data quality of reporting on different MISes which would enable evidence based decision making at different levels
- Data quality

in LMIS and PWMP is capturing HR, procurement, and M&E along with logistics data. Hence, there is a duplication in logistics indicator reporting in these two systems as outlined in Figure 9 below.

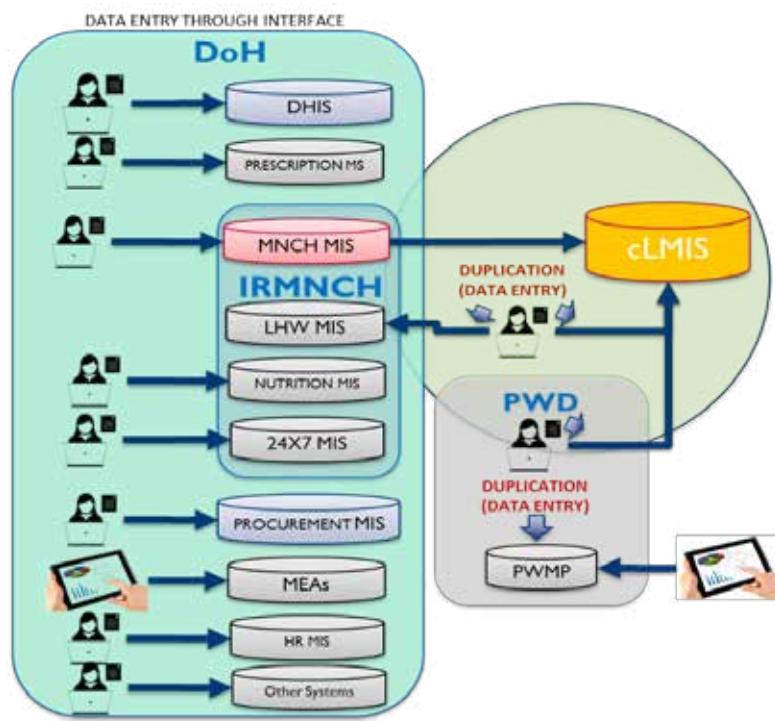


Figure 9: Current Environment for FP & MNCH Supply Chain Data

SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEM ROADMAP

The objective of an integrated supply chain MIS is the availability and across the board accessibility of quality and accurate logistics information as the basis for informed decision making and to improve visibility, efficiency, accuracy, and timeliness of supply chain functions.

A sustainable MIS is dependent on three areas: ownership, hosting /maintenance, and use of data. Ideally, MIS must have an owner within the department of population and health to update MIS vision, scope, plan MIS improvement, and protect data by hosting in government data center. MIS owners must coordinate with a software development team (i.e. government in-house developers or outsourced entities) to make it more user friendly and complete, responsive to user need.

IMPLEMENTATION PLAN

The approach for Integrated SCMIS (ISCMIS) is to interface, connect, and integrate all supply chain data into a single platform. In order to achieve the overall objective of the supply chain integrated MIS, the following activities should be carried out:

i. Creation of an ISCMIS to Embed Indigenous MISes into One SCM Platform

Build synergies amongst all stakeholders, to remove duplications and overlapping work related to MIS development. Use of integration bus (an optional technique used for integrating different MIS) is one of the recommended data sharing methods. The proposed method is to isolate/identify logistical functionalities in various and disparate applications with the stakeholders and matching those functionalities with the LMIS either through a data sharing mechanism or through hard coded interfaces. An integrated supply chain MIS will encompass not only logistics data, but all functions around supply chain management (i.e. FASP, procurement, warehousing, distribution



Figure 10: ISMIS Model

planning, M&E, and HR development) providing end to end visibility for provincial decision makers and district level health managers. For integration of logistics data streams being reported in various MIS into SCMIS, collaborative efforts incorporating development partners and public sector organizations will be undertaken. MNCH VEML commodities reporting and visibility will be ensured through interfacing of the MNCH-MIS with the current LMIS. In this regard, the DOH will collaborate with the USAID GHSC-PSM Program for LMIS enhancement. ISCMIS will, however, cover a complete range of MNCH products.

ii. Sustainability of ISCMIS

To strengthen government's in-house capacity for future hosting, maintenance, and change management of SCMIS, Health Information System Development Unit (HISDU) will gradually take on responsibility and ownership. Strengthen integrated MIS efforts through research, technical assistance, on the job trainings, and capacity building workforce.

iii. Development of a Provincial Health Management Information System Policy

Development of a policy to define different procedures regulating all functions related to MIS currently utilized within the DOH and its implementation across the province with the assistance of all stakeholders.

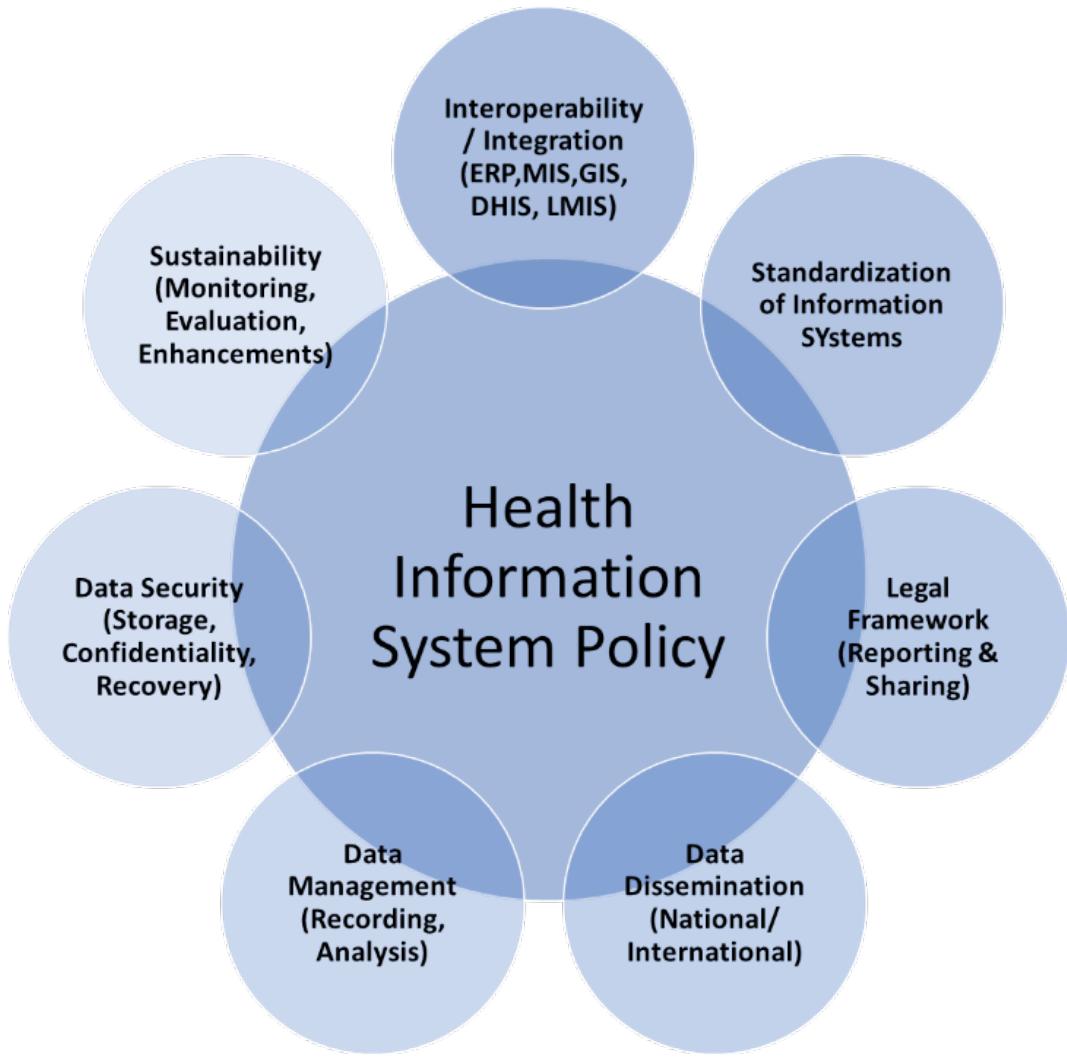


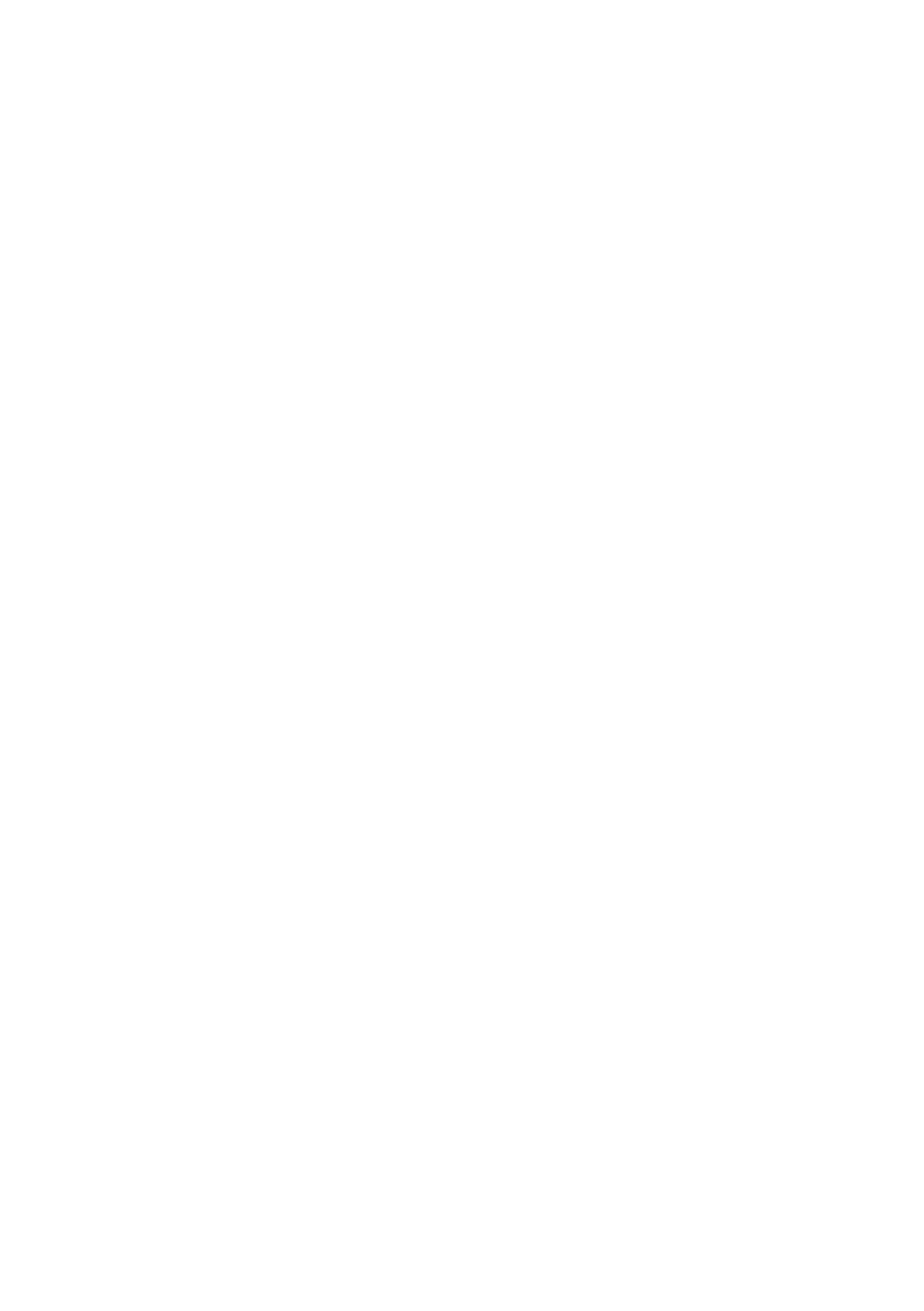
Figure 11: Components of Health Information System Policy

Outcome

Quality and accurate logistics information data is consolidated into a single, sustainable platform (ISCMIS) that is visible, forming the basis for informed decision making for all supply chain functions at the provincial and sub-provincial levels.

SECTION 5

MONITORING AND EVALUATION



SECTION 5: MONITORING AND EVALUATION

CURRENT LANDSCAPE

Monitoring and Evaluation is the cornerstone for improving performance in supply chains. While there are significant costs in setting up and implementing a M&E system, these are offset by the gains in commodity availability and reduced wastages, expiries, and pilferage. A comprehensive M&E system covers all levels of the supply chain and all technical areas from procurement to facility level distribution.

Priority area for improvement

M&E framework for enhanced logistics data quality and subsequent usage for evidence-based decisions around SCM functions.

There is significant variability in supply chain systems integrity, depth, and efficiency across stakeholders and across various supply chains in Punjab. The family planning supply chain is comparatively mature under PWD. Population Welfare Officers regularly visit health facilities randomly to monitor stock and MIS reporting on structured checklists. However, visibility of Supply Chain M&E data and follow-up through actions is limited. Apart from monitoring efforts conducted by the Government of Punjab supported Monitoring and Evaluation Assistants (MEAs), the current SC monitoring system of DOH (MNCH) is limited.

SUPPLY CHAIN MONITORING AND EVALUATION ROADMAP

The objective of this strategy is to have a comprehensive, sustainable, and cost-efficient supply chain M&E system for the Punjab Health and Population Welfare departments. While the M&E strategy is focused on the supply chain, it is also designed to establish important linkages with the overall M&E system for cost efficiency, data triangulation, and sustainable improvements. The M&E strategy also rests on the existing M&E initiatives e.g. MEAs, EVACCS, PITB dashboard, DHIS Cell, etc. However, it goes many steps beyond by increasing length and breadth of scope (province to district and across various technical areas), conducive policy, operational and financial reforms for sustainability, and use of technology linking with existing information systems for transforming business intelligence and improving data use.

IMPLEMENTATION PLAN

The following interventions will be carried out for developing sustainable supply chain M&E systems:

i. Strengthen M&E and MIS Cells through Regular Review & Use of Data

At the provincial level, M&E cell will strengthen monitoring activities, through regular review and use of supply chain data. M&E staff at both departments will jointly review ISCMIS data every quarter in order to identify gaps, validate data quality and recommend corrective actions. Follow-up will be done every month for implementation of action points. Capacity building/trainings will also be conducted for M&E cell staff members to increase their use of data for decision making.

The M&E cell at DGHS office will work in close coordination with the IRMNCH's planned E-Monitoring and MIS systems as they develop gradually. This will involve engaging with M&E staff of IRMNCH, and working with their e-monitoring system, and MIS systems⁵. Wherever possible, all M&E activities will

⁵ Pages 38,40 of Punjab IRMNCH PC-I (July 2016-June 2018)

be integrated with existing government health supply chain M&E systems and planned interventions; in order to optimize strategic planning for supply chains in Punjab.

ii. Develop a Comprehensive Supply Chain M&E Framework

A comprehensive supply chain results framework have been developed in consultation and coordination with all relevant Punjab stakeholders (Annex: Punjab Supply Chain Results Framework). The results framework links the overall goal of all Punjab supply chain health and population programs (focused on FP and MNCH) with all activities and outputs in a logical manner. Key performance indicators were also developed in agreement with all stakeholders, to measure the progression from outputs to goals. For each of the developed indicators, the elements to be analyzed and documented are indicator definition, data collection, compilation and analysis, disaggregation, reporting frequency, data validation, baseline and targets and cost of data collection and reporting. The performance indicators will aim to gauge outputs from key technical areas e.g. forecasting and supply planning, procurement, warehousing, distribution, and facility level availability of health products.

iii. Create Integrated M&E Strategy for Health and Population Welfare Departments and NGOs with Harmonized and Uniform Key Performance Indicators

The strategy will propose a model of integrated supply chain M&E for Health and Population Welfare departments. The design will harmonize key performance indicators across all supply chains and stakeholders. This will enable not only performance management but will also provide a comparison amongst various stakeholders and ensure the achievement of common goals.

iv Capacity Building of Staff involved in M&E at Provincial and District Level

The strategy will focus on building and enhancing the capacity of the concerned HR at provincial and district level to ensure the quality of reported data so that a reliable foundation is available for evidence based decisions.

Outcome

A comprehensive, sustainable, and cost efficient supply chain M&E system incorporated within both Health and Population Welfare Departments.

SECTION 6

HUMAN RESOURCES CAPACITY DEVELOPMENT



SECTION 6: HUMAN RESOURCES CAPACITY DEVELOPMENT

CURRENT LANDSCAPE

Although there is a large number of healthcare professionals working in the health and population sectors of Punjab, there is a definite need of professionalization of logistics cadre, with well-defined skill mix at all levels of supply chain. Currently SCM oriented training is not part of health managers' professional development plan which needs to be introduced through this strategy. In public sector universities, absence of public health supply chain certification and degree courses hampers availability of health supply chain specialists both in public and private sectors. To address this, recently the DOH and PWD collaborated with the GHSC-PSM Project for introduction of a three-credit hour SCM course as part of degree programs offered at the prestigious University of Health Sciences, Lahore, starting fall 2017. There is a need to analyze current supply chain workforce trends and conduct a future needs assessment in order for the health and population welfare departments to effectively and systematically manage human resource development needs around the health supply chain. In addition, there is also a need to create a competent cadre of health supply chain professionals for managing/providing services efficiently, through human resource development and capacity building of service providers.

Priority areas for improvement

- Induction of skilled supply chain human resources at all tiers of public health supply chains based on scientific situational analysis.
- A supply chain professionalization and human resource capacity building plan for both pre-service and in-service professionals.

SUPPLY CHAIN HUMAN RESOURCE DEVELOPMENT ROAD MAP

The objective of the road map is to create and foster a cadre of supply chain professionals for health and population welfare departments. In order to develop this cadre of professionals, the HRD interventions will seek to evaluate human resources in Punjab to articulate supply chain personnel needs at all levels of supply chain while also expanding supply chain pre-service and in-service coursework options through increasing the number and depth of supply chain offerings at the university.

IMPLEMENTATION PLAN

The following activities will be undertaken to achieve objective outlined in SC HRD road map:

- i. **Needs Assessment of Current Human Resource Capacity of Health and Population Welfare Departments:**
Evaluate current human resources in order to develop a professionalization plan for the development of a cadre of supply chain professionals. This activity will involve working with both departments as well as the institutions offering courses on Supply Chain like University of Health Sciences to map current human resource levels in the area of supply chain management.
- ii. **Development and Implementation of Professionalization Plan:**
Both health and population welfare departments, based on needs assessment results, will develop a comprehensive SCM professionalization plan for each level of the supply chain. Develop/

introduce government policies which emphasize and accentuate the critical role of the supply chain workforce in the health system, in addition to introducing policies which make supply chain training a mandatory requirement for entry into certain public health jobs and/or promotions. Develop a conducive financing environment for sustaining regular SCM trainings, both for pre-service and in-service trainings. In order to establish a sustainable supply chain workforce in the health sector, and to expand the supply chain curriculum in line with best practices, work with different stakeholders to foster partnerships and create linkages with public and private sector universities. This will also increase the number of supply chain course offerings at public sector institutions in the province.

Outcome

Establishment of a fully functional system for the creation of a cadre of supply chain professionals for improved supply chain efficiency on sustainable basis.

SECTION 7

FINANCING ENVIRONMENT - FP AND MNCH SUPPLY CHAINS



SECTION 7: FINANCING ENVIRONMENT - FP AND MNCH SUPPLY CHAINS

Traditionally, supply chain management has received comparatively less financing when compared to other systems of healthcare, hence, there is a need to dedicate funds for implementation of SCM strategy through PC-1s, ADPs, and SNEs. Simultaneous efforts in designing the detailed deployment plan and consequent identification of financial gaps will be undertaken in 2018. An implementation and deployment plan will be disseminated with a wider audience including development partners to explore the avenues of co-financing.

FASP, M&E, and HR capacity building around supply chain management are high priority areas as currently there is no or very little budgetary support. This section analyses annual prospective funds availability, recommends funds needed for implementation of strategies outlined above and identifies gaps for each component for the DOH and PWD from FY 2017-18 to FY 2021-22.

Table 2: Costed Roadmap- Implementation of Punjab Public Health Supply Chain Strategy

S. No	PKR in Millions	2017-18		2018-19		2019-20		2020-21		2021-22	
		DOH	PWD								
	Forecasting and Supply Planning										
1	Formation of forecasting & quantification Technical Working Group (TWG) at provincial level, including design and development of implementation plan	0.75	0.50	0.30	0.20	0.30	0.20	0.30	0.20	0.30	0.20
2	Create professionalized trained human resource at provincial and district level	0.00	0.00	2.00	1.00	2.00	1.00	2.00	1.00	2.00	1.00
3	Automation of Forecasting and Quantification Function (Cost covered under MIS strategy)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Year wise Budget	0.75	0.50	2.30	1.20	2.30	1.20	2.30	1.20	2.30	1.20
	Total										15.25
	Procurement										
1	Select, adapt and implement procurement performance management tool (Automation related cost covered under MIS)	3.00	1.00	0.40	0.20	0.40	0.20	0.40	0.20	0.40	0.20
2	Develop and implement comprehensive medium to long term procurement related human resource capacity development plan	3.00	1.00	3.00	1.00	3.00	1.00	3.00	1.00	3.00	1.00
	Year wise Budget	6.00	2.00	3.40	1.20	3.40	1.20	3.40	1.20	3.40	1.20
	Total										26.40
	Warehousing & Distribution										
1	Determine storage and space requirements of MSD, sub-MSDs and district stores	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

S. No	PKR in Millions	2017-18		2018-19		2019-20		2020-21		2021-22	
		DOH	PWD	DOH	PWD	DOH	PWD	DOH	PWD	DOH	PWD
2	Allocation of funds for establishments of new warehouses*	0.00	0.00	531.40	300.00	200.00	10.00	200.00	10.00	200.00	10.00
3	Human Resource fresh hiring and capacity building	0.00	0.00	10.00	5.00	10.00	5.00	10.00	5.00	10.00	5.00
4	Determine transportation needs and resources including outsourcing	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Year wise Budget		4.00	2.00	541.40	305.00	210.00	15.00	210.00	15.00	210.00	15.00
Total											1527.40
* The cost will be reviewed in light of Activity 1 results											
Integrated Management Information System											
1	ISCMIS; embedding indigenous MISes as one SCM platform (integration, enhancements to include FASP, procurement, inventory management and M&E modules, including capacity building of operators, managers at provincial, district and sub-district level)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	Sustenance of ISCMIS *	1.00	1.00	10.00	1.00	10.00	1.00	10.00	1.00	10.00	1.00
3	Development of Provincial Health Management Information Systems' Policy	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Year wise Budget		4.00	3.00	12.00	3.00	12.00	3.00	12.00	3.00	12.00	3.00
Total											67.00
* Includes cost of server and hosting											
Monitoring and Evaluation											
1	Strengthen Punjab M&E and DHIS Cells through regular review & use of data	8.00	4.00	9.00	5.00	10.00	6.00	13.00	7.00	16.00	8.00
2	Develop a comprehensive Punjab specific supply chain M&E strategy based on results framework	0.80	0.50	0.30	0.20	0.30	0.20	0.30	0.20	0.30	0.20
3	Integrated M&E strategy for health and population welfare departments and NGOs with harmonized and uniform key performance indicators	2.00	1.00	0.50	0.20	0.50	0.20	0.50	0.20	0.50	0.20
Year wise Budget		10.80	5.50	9.80	5.40	10.80	6.40	13.80	7.40	16.80	8.40
Total											95.10
Human Resource Capacity Development											
1	Need Assessment of current human resource capacity of Health and Population Departments	0.75	0.50	0.30	0.20	0.00	0.00	0.00	0.00	0.00	0.00
2	Development and implementation of Professionalization plan	0.80	0.50	0.30	0.20	0.30	0.20	0.30	0.20	0.30	0.20
Year wise Budget		1.55	1.00	0.60	0.40	0.30	0.20	0.30	0.20	0.30	0.20
Total											5.05
Year wise Grand Total		27.10	14.00	569.50	316.20	238.80	27.00	241.80	28.00	244.80	29.00
Grand Total - FY 2018-22											1736.20

FINANCIAL LANDSCAPE – PUNJAB INTEGRATED SUPPLY CHAIN STRATEGY (MNCH & FP)

The table below summarizes total anticipated investment requirements from FY 2017-18 to FY 2021-22, associated with implementation of strategy, prospective funds availability, and gaps that needs to be filled through PC-1s, ADP, SNEs and/or technical and financial support by development partners.

An investment of approximately PKR 1322 million by DOH and PKR 414 million by PWD in SCM interventions over the next five years will result in overall estimated savings of PKR 5407 million and PKR 480 million respectively.

Table 3: Punjab Integrated Supply Chain Strategy (MNCH & FP) financial landscape

Punjab Integrated Supply Chain Strategy (MNCH & FP) Financial Landscape						
Cost (PKR in millions)	DOH			PWD		
	Strategy Implementation Cost	Prospective Funds availability	Gaps	Strategy Implementation Cost	Prospective Funds availability	Gaps
Forecasting & Supply Planning	9.95	0.00	9.95	5.30	0.00	5.30
Procurement	19.60	0.00	19.60	6.80	0.00	6.80
Warehousing & Distribution	1175.40	1606.29	569.11	352.00	0.00	352.00
Integrated Supply Chain MIS	52.00	0.00	52.00	15.00	0.00	15.00
Monitoring & Evaluation	62.00	0.00	62.00	33.10	0.00	33.10
Human Resource development	3.05	0.00	3.05	2.00	0.00	2.00
Total	1322.00	606.29	715.71	414.20	0.00	414.20

¹ Allocation for re-construction of Warehouse at Medical Store Depot, Lahore through a supplementary grant of PKR 398 m approved by the Punjab Government FY 2017-18, in addition to PKR 208 m spent during FY2016-17

Table 4: Projected FP Commodities procurement and transportation costs and prospective financing

S. No	Cost (PKR in millions)	Projected FP Commodities procurement and transportation costs and prospective financing									
		2017-18		2018-19		2019-20		2020-21		2021-22	
		DOH	PWD	DOH	PWD	DOH	PWD	DOH	PWD	DOH	PWD
1	FP Commodities procurement estimate	68.9	² 284.43	975.06	327.1	1326.2	376.16	1458.82	432.58	1604.7	497.47
2	FP Commodities transportation	6.89	28.443	97.506	32.71	132.62	37.616	145.882	43.258	160.47	49.747
	Year wise Required Budget	75.79	312.87	1072.57	359.81	1458.82	413.78	1604.70	475.84	1765.17	547.22
	Prospective Funds availability	³ 367.32	⁴ 350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			⁵ 480.00		114.00		1750				
	Variance	-291.53	⁶-37.13	1072.57	359.81	1458.82	413.78	1604.70	475.84	1765.17	547.22

Note: The costing is for ten FP commodities

² PWD has sufficient stock available for four methods (Condoms, COC, 3 Month Injectable and IUD) proposed funds may be utilized for other commodities

³ Allocation for procurement of FP commodities, as per IRMNCH PC-1 (2016-18)

⁴ Allocation for procurement of FP commodities FY 2017-18 for PWD main program.

⁵ PWD is going to submit PC-I for PSDP allocation to Federal Government for FY 2017-20 for new initiatives, however, actual allocation may vary from the proposed budget.

⁶ This variance excludes prospective funding for PSDP

Table 5: MNCH VEML Commodities procurement and transportation costs and prospective financing

MNCH VEML Commodities procurement and transportation costs and prospective financing						
S. No	Cost (PKR in millions)	2017-18	2018-19	2019-20	2020-21	2021-22
		DOH	DOH	DOH	DOH	DOH
1	MNCH Commodities procurement estimate	2652.48	2917.73	3209.50	3530.45	3883.50
2	MNCH Commodities transportation	265.25	291.77	320.95	353.05	388.35
	Year wise Budget	2917.73	3209.50	3530.45	3883.50	4271.85
	Prospective Funds availability	71115.54	0.00	0.00	0.00	0.00
	Variance	1802.19	3209.50	3530.45	3883.50	4271.85

⁷ Allocation for procurement of FP commodities, as per IRMNCH PC-1 (2016-18)

Table 6: Cost Savings Analysis

Cost (PKR in millions)	DOH					PWD			
	Strategy Im- plementation Cost	Prospec- tive Funds availability	Gaps	Potential Cost Sav- ing in FP Commod- ties	Potential Cost Saving in MNCH Commod- ties	Strategy Im- plementation Cost	Prospec- tive Funds availability	Gaps	Potential Cost Saving in FP Com- modities
Forecasting & Supply Planning	9.95	0.00	9.95	815.05	2429.05	5.30	0.00	5.30	287.66
Procurement	19.60	0.00	19.60			6.80	0.00	6.80	
Warehousing & Distribution	1175.40	606.29	569.11	271.68	809.68	352.00	0.00	352.00	95.89
Integrated Supply Chain MIS	52.00	0.00	52.00			15.00	0.00	15.00	
Monitoring & Evaluation	62.00	0.00	62.00	271.68	809.68	33.10	0.00	33.10	95.89
Human Resource development	3.05	0.00	3.05			2.00	0.00	2.00	
Total	1322.00	606.29	715.71	1358.42	4048.42	414.20	0.00	414.20	479.44

Note:

Forecasting & Supply Planning: Estimated 15% saving out of all commodity cost in terms of over or under ordering because of inaccurate forecast & quantification

Warehousing & transportation: Estimated 5% saving out of all commodity cost in terms of efficient warehousing and transportation which leads to decreased wastages, expiries etc.

M&E: Estimated 5% saving out of all commodity cost in terms of effective M&E which ensures smooth supply chain function and minimizes pilferage

PUNJAB PUBLIC HEALTH SUPPLY CHAIN – STRATEGIC PLAN

Table 7: Strategy Overview

Supply Chain Functions	Priority Areas for Improvement	Proposed Strategy	Expected Outcome
Forecasting and Supply Planning	<ul style="list-style-type: none"> Reliable and quality data sets (demographic, disease prevalence/morbidity, and logistics) for accurate forecasting Dedicated resources (financial & trained HR) for FASP 	<ul style="list-style-type: none"> Formation of Forecasting & Quantification Technical Working Group (TWG) at provincial level Create professionalized trained human resource at provincial and district level Automation of Forecasting and Quantification Function into Integrated web-based MIS Include FASP related initiatives and costs in PC-Is 	<ul style="list-style-type: none"> Fully structured, established and functional FASP mechanism for timely and accurate forecasting and supply planning of provincial FP and MNCH commodity requirements
Procurement System Strengthening	<ul style="list-style-type: none"> Procurement performance management automation A professionalization and human resource capacity building plan for sustainability 	<ul style="list-style-type: none"> Select, adapt and implement procurement performance management tool Develop and implement comprehensive medium to long term procurement related human resource capacity development plan 	<ul style="list-style-type: none"> Efficient and transparent procurement systems of health and population welfare departments Implemented with sustainable solutions for integrated procurement models and automation in place
Warehousing and Distribution	<ul style="list-style-type: none"> Purpose built storage facilities at sub provincial level (sub MSDs, district stores) to ensure availability of quality health commodities for end users A structured mechanism for storage and transportation of commodities from districts stores to health facilities 	<ul style="list-style-type: none"> Determine storage and space requirements of MSD, sub-MSDs and district stores Allocation of funds or establishments of new warehouses Human Resource fresh hiring and capacity building Determine transportation needs and resources including outsourcing 	<ul style="list-style-type: none"> Warehousing infrastructure at provincial and sub-provincial levels established backed up by technically qualified HR ; best international practices for inventory management and integrated transportation mechanism implemented
Integrated Supply Chain Management Information System	<ul style="list-style-type: none"> Health information systems policy Integration of various vertical MISes for developing provincial supply chain indicators Sustainability of donors' supported MISes in terms of hosting, maintenance and enhancement Data utilization for evidence based decision making Data quality 	<ul style="list-style-type: none"> ISCMIS; embedding indigenous MISes as one SCM platform Sustenance of ISCMIS Development of Provincial Health Management Information Systems' Policy 	<ul style="list-style-type: none"> Quality and accurate logistics information data on a single platform (ISCMIS) visible, forming the basis for informed decision making for all supply chain functions at provincial and sub provincial levels in sustainable environment.
Monitoring and Evaluation	<ul style="list-style-type: none"> M&E framework for enhanced logistics data quality and subsequent usage for evidence based decisions around SCM functions 	<ul style="list-style-type: none"> Strengthen M&E and MIS Cells through regular review & use of data Develop a comprehensive supply chain M&E framework Integrated M&E strategy for health and population welfare departments and NGOs with harmonized and uniform key performance indicators 	<ul style="list-style-type: none"> Comprehensive, sustainable, and cost efficient supply chain M&E system incorporated within both the departments

Supply Chain Functions	Priority Areas for Improvement	Proposed Strategy	Expected Outcome
Human Resources Capacity Development	<ul style="list-style-type: none"> • Induction of skilled supply chain human resource at all tiers of public health supply chain based on the scientific situational analysis. • A supply chain Professionalization and human resource capacity building plan for both pre-service and in-service professionals. 	<ul style="list-style-type: none"> • Need assessment of current human resource capacity of health and population welfare departments • Development and implementation of Professionalization plan 	<ul style="list-style-type: none"> • A fully functional system for creation of cadre of supply chain professionals for improved supply chain efficiency on sustainable basis established.

ANNEXURES



ANNEXURE I: FP AND MNCH VEML PRODUCT LIST

Table 8: FP Products List

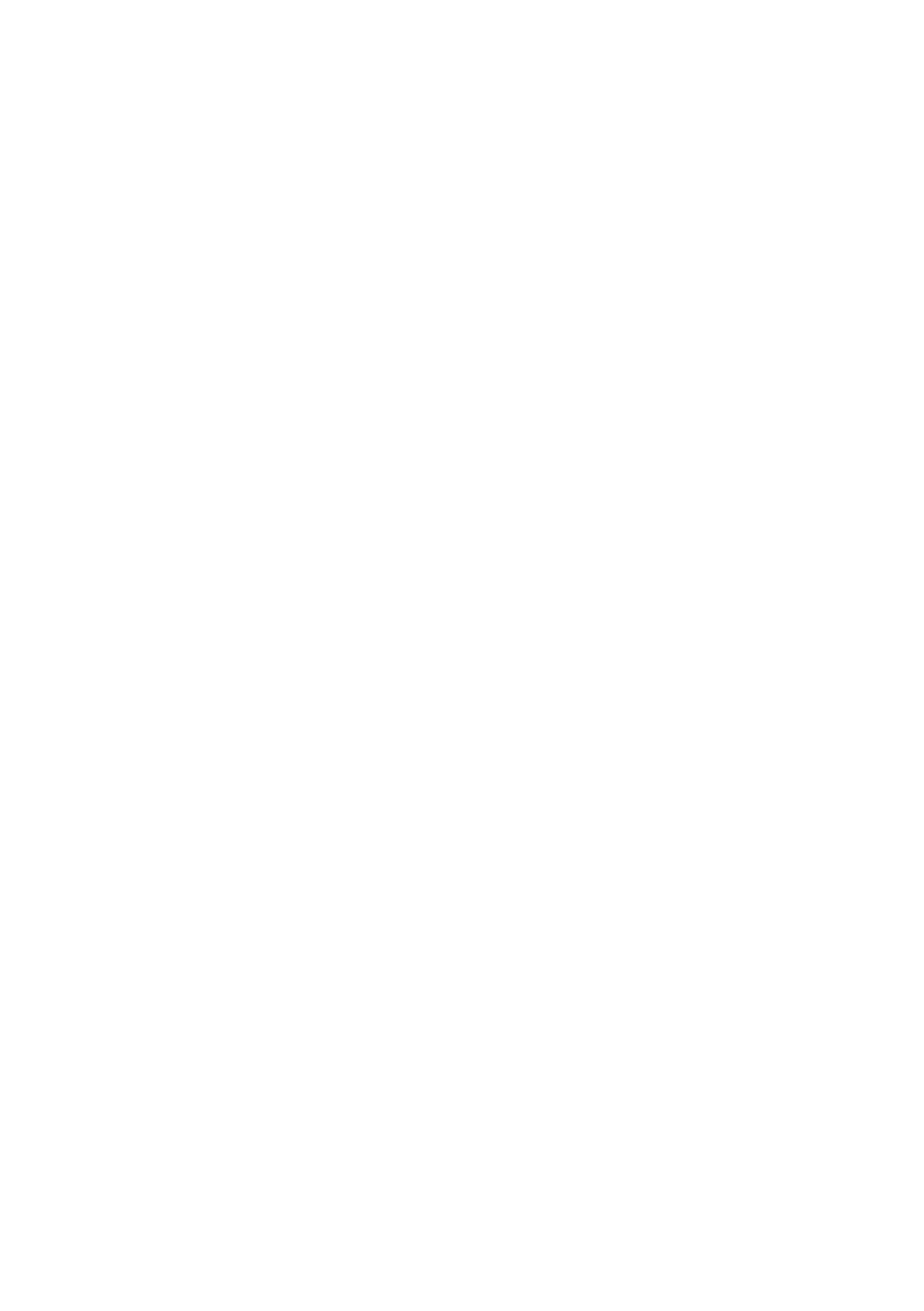
Sr. #	FP Products List
1	Male Condoms
2	Implantable Contraceptives – Etonogestrel 68 mg/rod (1 rod Implant) and Levonorgestrel 75mg/rod (2 rod Implant) ⁶
3	Copper-bearing Intrauterine devices
4	Injectable Contraceptives - Depot Medroxyprogesterone Acetate 150 mg Vial, SR
5	Combined Oral Contraceptives - Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Fe 75 mg, 28 Tablets/Cycle
6	Emergency oral contraceptives - Levonorgestrel 0.75 mg Tablet
7	Progestin Only Pills - Levonorgestrel 30 mcg 35 Tablets/Cycle ⁷

Table 9: MNCH VEML- 2017

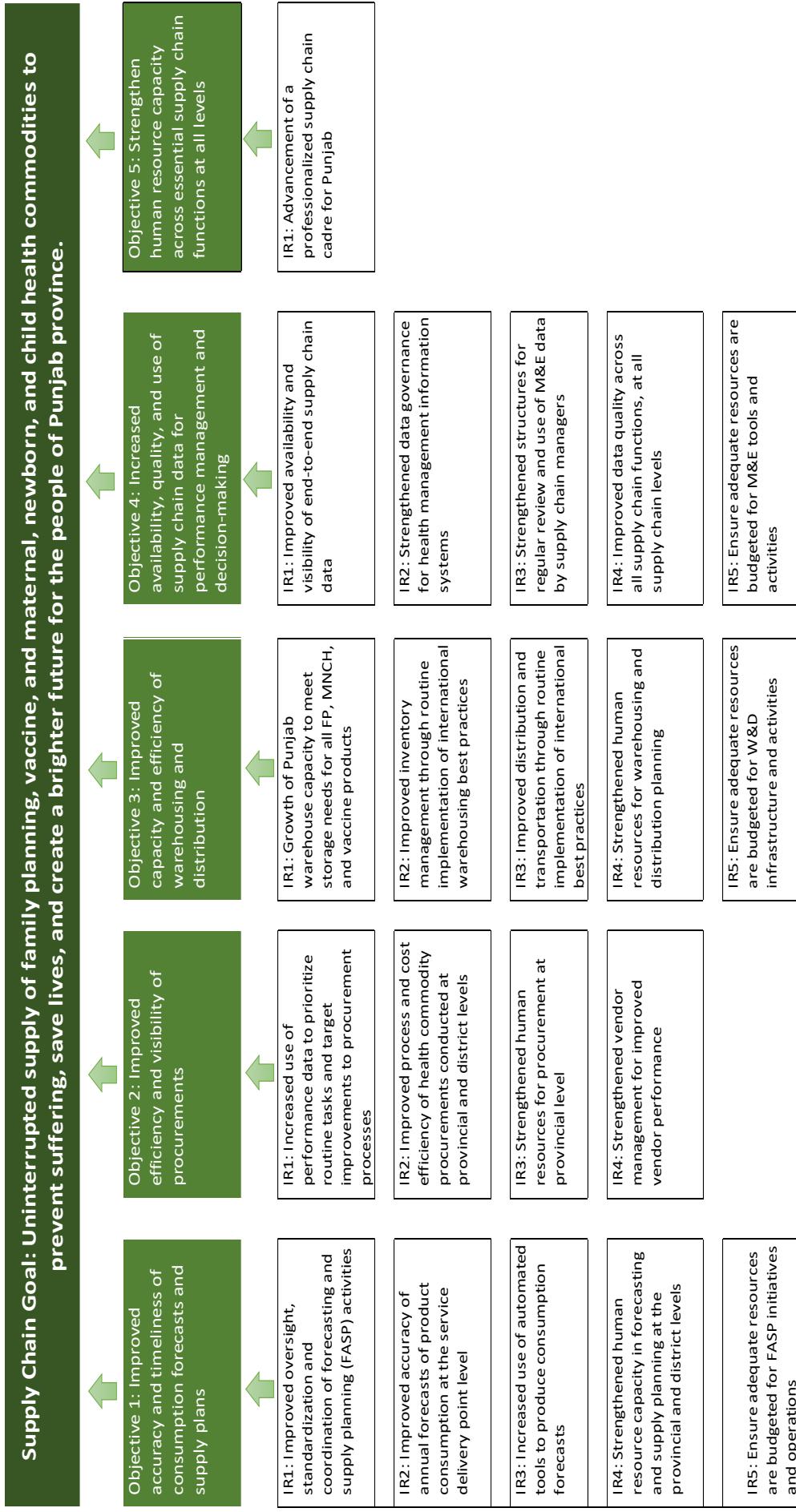
MNCH Very Essential Medicines List – 2017				
Sr. #	Generic Drug Name	Form	Strength	Indication
1	misoprostol	tablets	200 mcg	prevention of post-partum hemorrhage
2	oxytocin	injection	10 IU in 1-ml	treatment of post-partum hemorrhage
3	tranexamic acid	injection	1 gm	
4	plasma substitute	infusion	polygenine 3.5/4 % + dextran 6 % w/v,	
5	sodium lactate	ringer's lactate infusion	infusion,1000ml contains calcium chloride 0.2gm; potassium chloride 0.3gm; sodium chloride 6 gm; sodium lactate 3.1gm; sterile water for injection	severe pre-eclampsia and eclampsia
6	magnesium sulphate	injection	500mg/ml	
7	calcium gluconate	injection	100 mg/ml in 10-ml	management of severe hypertension
8	hydralazine (hydrochloride)	injection	powder for injection 20 mg	
9	methyldopa	tablet	250 mg	maternal sepsis; neonatal pneumonia
10	ampicillin (as sodium salt)	injection	500 mg	
11	cefotaxime	injection	250 mg; 500 mg	maternal sepsis
12	metronidazole	injection	500 mg in 100-ml	
13	gentamycin	injection	40 mg /ml in 2ml	neonatal pneumonia
14	amoxicillin	dispersible tablets	125 mg; 250 mg	
15	dexamethasone (disodium phosphate)	injection	4 mg (as disodium salt) in 1-ml	improvement of fetal lung maturity
16	nifedipine*	softgel capsules	10 mg	
17	low osmolarity oral rehydration salts	dry mixture (low osmolarity formula) in sachet for 1 liter of solution	each sachet contains glucose anhydrous 13.5gm , trisodium citrate dihydrate 2.9 gm, potassium chloride 1.5gm, sodium chloride 2.6gm B.P.	diarrhea
18	zinc sulphate	scored dispersible tablets	20 mg	
19	vitamin K1* (phytonadione)	injection	10 mg	prematurity
20	diazepam*	rectal gel / solution		palliative care
21	chlorhexidine digluconate (7.1%)	gel	equivalent to 4 % chlorhexidine	antiseptic for cord care
22	folic acid	tablets	5 mg	antenatal care
23	ferrous salt + folic acid	tablets	equivalent to 60 mg iron + 400 mcg folic acid	

⁶DRAP issued NOC for the import of Implanon NXT

⁷POP has been registered by DRAP, hopefully the departments will start procurement from FY 2017-18 onwards



ANNEXURE II: PUNJAB SUPPLY CHAIN RESULTS FRAMEWORK



ANNEXURE III: DETAILED SUPPLY CHAIN RESULTS FRAMEWORK

Global Goals and Initiatives			
Sustainable Development Goal 3: Ensure health lives and promote well-being for all at all ages			
National Immunization Support Program (NISP) Commitment: Increase equitable coverage of services for immunization against vaccine preventable diseases (VPD), including poliomyelitis, for children between 0 and 23 months in Pakistan			
Family Planning 2020 Commitment: Increase Pakistan's contraceptive prevalence rate to 50% by 2020			
Provincial Goals			
Punjab Health Sector Strategy (2012-2020), Outcome 6: Uninterrupted supply of quality essential drugs for healthcare facilities and outreach workers.			
Primary and Secondary Health Care Department, IRMNCH & NP PC-I (July 2016-June 2018) Goal: To improve maternal, newborn, and child health in Punjab, especially of the poor, thereby making progress towards achieving health related MDGs			
Costed Implementation Plan for Family Planning in Punjab, Strategic Area 3: Ensuring contraceptive security to the last mile including distribution and availability of full range of contraceptives through multiple service delivery points (SDPs)			
Supply Chain Goal: Uninterrupted supply of family planning, vaccine, and maternal, newborn, and child health commodities to prevent suffering, save lives, and create a brighter future for the people of Punjab province			
Objective 1: Improved accuracy and timeliness of consumption forecasts and supply plans Objective 2: Improved efficiency and visibility of procurements Objective 3: Improved capacity and efficiency of warehousing and distribution Objective 4: Increased availability, quality, and use of supply chain data for performance management and decision-making Objective 5: Strengthen human resource capacity across essential supply chain functions at all levels	Supply Chain Strategy Activities	Indicators	Data Sources
	Strategic systems strengthening initiatives related to: -> Forecasting and Supply Planning -> Procurement -> Warehousing and Distribution -> Integrated Management Information Systems -> Monitoring and Evaluation -> Human Resources Capacity Development	Stockout rate at service delivery points for essential contraceptives, MNCH, and vaccine products	cLMIS vLMIS MEAs
Objective 1: Improved accuracy and timeliness of consumption forecasts and supply plans			
Intermediate Result 1: Improved oversight, standardization and coordination of forecasting and supply planning (FASP) activities	Supply Chain Strategy Activities	Indicators	Data Sources
	Formation of Forecasting & Quantification Technical Working Group (TWG) at provincial level	Existence of functional FASP TWG for DoH and PWD	TORs, meeting minutes, key informants
	Routine Activities	Indicators	Data sources
	Convening of annual quantification activity	Number and percentage of annual quantification activities conducted as planned	Meeting minutes, key informants, quantification reports
	Routine review and update of forecast/supply plan (quarterly)	Number and percentage of quarterly FASP reviews conducted as planned	Meeting minutes, key informants, supply plans
Intermediate Result 2: Improved accuracy of annual forecasts of product consumption at the service delivery point level			
Intermediate Result 2: Improved accuracy of annual forecasts of product consumption at the service delivery point level	Routine Activities	Indicators	Data sources
	Data quality assurance of the datasets used for FASP inputs (demographic, logistic, service, morbidity, etc.), especially SDP-level consumption data	Data quality rating for service delivery points consumption data (accuracy, completeness, timeliness)	LMIS, data quality field monitoring
	Regular review of FASP assumptions and models to adjust for changes in targets, program strategy, patterns, trends, etc.	Mean absolute percent error (MAPE) for annual forecasts, per product	Annual forecasts, LMIS

Intermediate Results 3: Increased use of automated tools to produce consumption forecasts	Supply Chain Strategy Activities	Indicators	Data Sources
	Automation of Forecasting and Quantification Function into Integrated web-based MIS	Existence of FASP module in ISCMIS	ISCMIS
		Number and percent of products forecasted using automated tool	ISCMIS, annual quantification reports
	Routine Activities	Indicators	Data sources
	Training of FASP specialists in use of MIS module	Number of users trained in use of FASP module	Training registration and attendance records
		Number and percent of users accessing FASP module at least quarterly	MIS administration data
	Application management for FASP MIS module	Page load time for FASP module	MIS administration data
		Volume of user interactions for FASP module	MIS administration data
	Supply Chain Strategy Activities	Indicators	Data Sources
	Create professionalized trained human resource at provincial and district level		
Intermediate Results 4: Strengthened human resource capacity in forecasting and supply planning at the provincial and district levels	Routine Activities	Indicators	Data sources
	In-service training for FASP personnel at provincial and district levels	Number of people trained in forecasting and supply planning skills at provincial and district levels	Training registration and attendance records
	Recruitment of HR with FASP expertise	Vacancy rates for FASP positions	Workforce survey
	Pre-service training courses in FASP	Number of students completing pre-service FASP training courses	University and training institute registration records
	Supply Chain Strategy Activities	Indicators	Data Sources
Intermediate Result 5: Ensure adequate resources are budgeted for FASP initiatives and operations	Include FASP related initiatives and costs in PC-Is and other budget documents	Percentage of departmental budget dedicated to FASP	CIPs, CP-Is, other budget documents; Expenditure records
	Routine Activities	Indicators	Data sources
	Monitoring spending and implementation of FASP activities	Percentage of approved budget that was actually spent	CIPs, CP-Is, other budget documents; Expenditure records
Objective 2: Improved efficiency and visibility of procurements			
Intermediate Result 1: Increased use of performance data to prioritize routine tasks and target improvements to procurement processes	Supply Chain Strategy Activities	Indicators	Data Sources
	Select, adapt and implement procurement performance management tool	Existence of a performance management tool (Excel)	Excel-based procurement performance management tool
		Existence of an automated performance management tool (Integrated SCMIS)	Web-based procurement performance management tool (ISCMIS)
	Routine Activities	Indicators	Data Sources
	Daily use of performance data to manage workflow	# and % of procurement personnel who are accessing procurement performance management tool at least weekly	Survey of procurement staff (for Excel tool) MIS user administration data (for Integrated SCMIS)
	Structured analysis and review of procurement performance data to identify improvement actions	Number of performance review meetings including review of performance data	Meeting minutes, key informants

	Routine Activities	Indicators	Data Sources
Intermediate Result 2: Improved process and cost efficiency of health commodity procurements conducted at provincial and district levels	Continually improve tools, processes, and capacity to complete procurements more quickly	Average procurement cycle time (overall) Average procurement cycle time (with process detail)	Procurement performance management tool
	Use of pooled procurement mechanisms to achieve economies of scale and secure better prices with vendors	% of total commodity value purchased through pooled procurement mechanisms % price variance of median price paid per product in Punjab compared to median price paid across all provinces	Procurement performance management tool
Intermediate Result 3: Strengthened human resources for procurement at provincial level	Supply Chain Strategy Activities	Indicators	Data Sources
	Develop and implement comprehensive medium to long term procurement related human resource capacity development plan		
	Routine Activities	Indicators	Data Sources
	Conduct in-service procurement training for current staff	Number and % of procurement personnel who have received in-service training, at provincial and district level	Training registration and attendance records
	Evaluate procurement HR capacity and performance	Average procurement volume per procurement specialist (PKP/person)	Procurement performance management tool
	Additional procurement recruitment as necessary	Vacancy rate for procurement positions	Workforce survey
Intermediate Result 4: Strengthened vendor management for improved vendor performance	Routine Activities	Indicators	Data Sources
	Collect and routinely review data on vendor performance	Existence of a database or other centralized repository for vendor performance data	Vendor performance database
	Share feedback to vendors on their performance through a structured, predictable, and transparent process	Percent of orders delivered on time, according to contracted delivery dates (per vendor) Percentage of orders complying with all contract terms (per vendor) Percentage of orders that failed QA testing (per vendor)	Contracts, proofs of delivery, vendor performance database Contracts, vendor performance database QA testing certificates, vendor performance database
	Adjust prequalifications, contract terms, evaluation criteria, bidding documents, etc. as needed in response to vendor performance trends	Percentage of procurement volumes awarded to high-performing vendors	Vendor performance database, Procurement performance management tool
Objective 3: Improved capacity and efficiency of warehousing and distribution			
Intermediate Result 1: Growth of Punjab warehouse capacity to meet storage needs for all FP, MNCH, and vaccine products	Supply Chain Strategy Activities	Indicators	Data Sources
	Determine storage and space requirements of MSD, sub-MSD and district stores	Total cubic meters of purpose-built storage capacity available for FP, MNCH, and vaccines in Punjab	Warehouse specifications
	Routine Activities	Indicators	Data Sources
	Construction and maintenance of purpose-built storage infrastructure for FP, MNCH, and vaccine commodities	Percentage of FP, MNCH, and vaccine storage capacity need met through purpose-built storage	Warehouse specifications, LMIS

Intermediate Result 2: Improved inventory management through routine implementation of international warehousing best practices	Routine Activities	Indicators	Data Sources
	Inventory monitoring according to min/max levels	% of products stocked within min/max levels at MSD, sub-MSD, and district levels	Warehouse management system
	Routine receiving, pick-and-pack, dispatch	Inventory turns	Warehouse management system
	Implementation of safety and security best practices	Percent of product loss due to theft, damage, and other causes	Warehouse management system, Incident reports
	Barcodeing, documentation, and other data management	Inventory accuracy rate	Warehouse management system, physical stock count
	Monitoring of shelf life and expiries; First expired, first out issuing	Average shelf life remaining per product	Warehouse management system
		Percent of product loss due to expiries	Warehouse management system
Intermediate Result 3: Improved distribution and transportation through routine implementation of international best practices	QA best practices (temperature control, cold chain requirement, quarantine and waste management procedures, etc.).	% of temperature readings within acceptable range	Temperature monitoring records
		Percent of product loss due to temperature excursions	QA incident reports
	Supply Chain Strategy Activities	Indicators	Data Sources
	Determine transportation needs and resources including outsourcing; Design transportation network to complement adopted warehousing model	% of deliveries to SDPs shipped from MSD and sub-MSD storage	Warehouse management systems
	Routine Activities	Indicators	Data Sources
Intermediate Result 4: Strengthened human resources for warehousing and distribution planning	Develop distribution plans and conduct quarterly deliveries to district and health facility levels	On time delivery rate to service delivery points	Requisitions, warehouse management systems, Proofs of delivery
		Order fill rate	Requisitions, warehouse management systems, Proofs of delivery
	Management of 3PL contract(s)		
Intermediate Result 5: Ensure adequate resources are budgeted for W&D infrastructure and activities	Supply Chain Strategy Activities	Indicators	Data Sources
	Human resource fresh hiring and capacity building	Vacancy rates for warehousing and distribution positions	Workforce survey
		Number of W&D personnel who receive training on current/adapted warehousing guidelines	Training registration and attendance records
Intermediate Result 5: Ensure adequate resources are budgeted for W&D infrastructure and activities	Supply Chain Strategy Activities	Indicators	Data Sources
	Allocation of funds for establishments of new warehouses	Percentage of departmental budget dedicated to W&D (infrastructure, equipment, maintenance, labor, etc.)	PC-Is, ADPs, SNEs
	Routine Activities	Indicators	Data Sources
	Annual planning and budgeting exercises for W&D	Percentage of approved budget that was actually spent	PC-Is, ADPs, SNEs; Expenditure records
	Monitoring spending and implementation of W&D activities and contracts	Average warehousing cost per unit stored	Expenditure records; Warehouse management systems
		Average transportation cost per unit delivered	Expenditure records; Warehouse management systems, LMIS

Objective 4: Increased availability, quality, and use of supply chain data for performance management and decision-making			
Intermediate Result 1: Improved availability and visibility of end-to-end supply chain data	Supply Chain Strategy Activities	Indicators	Data Sources
	Integrated Supply Chain Management Information System (ISCMIS); embedding indigenous MISes as one SCM platform	% of planned modules that have been integrated into SC MIS	ISCMIS
	Sustenance of ISCMIS (hosting, maintenance, change management)	ISCMIS page load time by module	ISCMIS administration data
		Volume of user interaction per ISCMIS module	ISCMIS administration data
Intermediate Result 2: Strengthened data governance for health management information systems	Supply Chain Strategy Activities	Indicators	Data Sources
	Development of Provincial Health Management Information Systems policy	Existence of an approved Health Management Information Systems Policy for Punjab	Health Management Information Systems Policy
	Routine Activities	Indicators	Data Sources
	Interoperability, Integration (ERP, MIS, GIS, DHIS, LMIS)		
	Standardization of Information Systems		
	Legal Framework (Reporting & Sharing)		
	Data Dissemination (National/International)		
	Data Management (Recording, Analysis)		
	Data Security (Storage, Confidentiality, Recovery)		
Intermediate Result 3: Strengthened structures for regular review and use of M&E data by supply chain managers	Supply Chain Strategy Activities	Indicators	Data Sources
	Strengthen M&E and MIS cells through regular review and use of data	% of improvement actions that have been completed	Meeting agenda and minutes
	Implement comprehensive supply chain M&E framework	% of M&E indicators that are fully operationalized and routinely reported	M&E plan, M&E report, MIS dashboards
	Integrated M&E strategy for health and population welfare departments and NGOs with harmonized and uniform key performance indicators	Number of joint PWD/DoH data review meetings conducted	Meeting agenda and minutes
	Routine Activities	Indicators	Data Sources
	Maintain Supply Chain M&E Plan	Completion of annual review of supply chain M&E plan	Supply Chain M&E Plan
	Provide M&E training to data collectors and data end-users	Number of data collectors trained in M&E data collection	Training registration and attendance
	Convene quarterly and/or monthly data review meetings to identify performance challenges and conduct root cause analysis	Number of data review meetings convened	Meeting agenda and minutes
	Identify and follow up actions to improve performance	% of improvement actions that have been completed	Meeting agenda and minutes; other verification activities as necessary
Intermediate Result 4: Improved data quality across all supply chain functions, at all supply chain levels	Routine Activities	Indicators	Data Sources
	Routine data quality assessments for all supply chain data, at provincial, district, and service delivery point levels	Data quality ratings for FASP, Procurement, W&D, MIS and logistics data	Data quality assessments of data sources used for other supply chain indicators (LMIS, WMS, Procurement management tool, etc.)
	Implementation of data quality improvement initiatives, including data entry training and upgrades to MIS tools	Number of data collectors trained in M&E data collection	Training registration and attendance

Intermediate Result 5: Ensure adequate resources are budgeted for M&E tools and activities	Routine Activities	Indicators	Data Sources
	Advocacy for the inclusion of financial resources for M&E in PC-Is, ADPs, SNEs	Percentage of departmental budget dedicated to monitoring and evaluation initiatives	CIPs, PC-Is, other budget documents
	Annual planning and budgeting exercises for MIS/M&E activities	Percentage of approved budget that was actually spent	CIPs, PC-Is, other budget documents Expenditure records
Objective 5: Strengthen human resource capacity across essential supply chain functions at all levels			
Intermediate Result 1: Advancement of a professionalized supply chain cadre for Punjab	Supply Chain Strategy Activities	Indicators	Data Sources
	Needs assessment of current human resource capacity of Health and Population Welfare Department		
	Development and implementation of professionalization plan		
	Routine Activities	Indicators	Data Sources
	Activities to be identified in Professionalization Plan. May include:		Human Resource Needs Assessment HRIS Workforce surveys
	Develop job descriptions for supply chain positions	Number of positions with supply chain responsibilities	
	Update HRIS to facilitate tracking of supply chain workforce	Vacancy rate for supply chain positions	
	Develop and implement training and/or certification requirements for supply chain positions	% of supply chain workers who have received in-service training	
	Develop and implement in-service and pre-service supply chain training courses	% of supply chain workers who have received pre-service training	
	Evaluate supply chain staff capacity and performance		
	Support on-going professional development and advancement for supply chain workforce	Supply chain workforce loss ratio	

ANNEXURE IV: PUNJAB SUPPLY CHAIN M&E INDICATOR MATRIX

Supply Chain Goal: Ensure the uninterrupted supply of family planning methods, vaccines, and maternal, newborn, and child health commodities to prevent suffering, save lives, and create a brighter future for the people of Punjab province.

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Stockout rate at service delivery points for essential contraceptives, MNCH and vaccine products	Numerator: Number of SDPs that were stocked out of the tracer product according to the ending balance of the most recent logistics report Denominator: Number of SDPs that offer the tracer product that reported on the product	a) Health element (FP, MNCH, vaccines) b) Tracer product c) Department (PWD, DoH) d) District e) SDP type (BHU, RHC, THQ, DHQ, LWH, CMW, etc.)	cLMIS vLMIS MEAs	Monthly

Objective 1: Improved accuracy and timeliness of consumption forecasts and supply plans

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Existence of functional FASP TWG for DoH and PWD	Number of forecasting and supply planning technical working groups that exist and are considered functional	a) Department (PWD, DoH) b) Health element (FP, MNCH, vaccines)	TORs, meeting minutes, key informants	Annual
Number and percentage of annual quantification activities conducted as planned	Numerator: Number of annual quantification activities conducted during the year Denominator: Number of annual quantification activities required to be conducted during the year	a) Department (PWD, DoH) b) Health element (FP, MNCH, vaccines)	Meeting minutes, key informants, quantification reports	Annual
Number and percentage of quarterly FASP reviews conducted as planned	Numerator: Number of FASP reviews conducted during the quarter Denominator: Number of FASP reviews required to be conducted during the quarter	a) Department (PWD, DoH) b) Health element (FP, MNCH, vaccines)	Meeting minutes, key informants, supply plans	Quarterly
Number and percentage of annual forecasts and supply plans jointly reviewed by PWD and DoH	Numerator: Number of joint reviews of forecasts and supply plans conducted during the year Denominator: Number of joint reviews of forecasts and supply plans required to be conducted during the year	a) Health element (FP, MNCH, vaccines) b) FASP activity (forecast, supply plan)	Meeting minutes, key informants	Annual
Data quality rating for service delivery points consumption data (accuracy, completeness, timeliness)	Numerator: Sum of all service delivery point data quality ratings Denominator: Total number of service delivery points rated	a) Health element (FP, MNCH, vaccines) b) Tracer product c) Department (PWD, DoH) d) District e) SDP type (BHU, RHC, THQ, DHQ, LWH, CMW, etc.) f) Data quality element (accuracy, completeness, timeliness)	LMIS, data quality field monitoring	Annual
Mean absolute percent error (MAPE) for annual forecasts, per product	Numerator: Absolute value of the difference between the actual quantities of products consumed at service delivery points during the year minus the quantities forecasted to be consumed Denominator: Sum of the actual quantities of products consumed at service delivery points	a) Tracer product b) Department (PWD, DoH)	Annual forecasts, LMIS	Annual
Existence of FASP module in ISCMIS	FASP module is built, released, and accessible to users (Yes/No)		ISCMIS	Annual
Number and percent of products forecasted using automated tool	Numerator: Total number of products that were forecasted using an automated tool for in the most recent annual quantification report Denominator: Total number of products included in the most recent annual quantification report	a) Tracer product b) Health element (FP, MNCH, vaccines) b) Department (PWD, DoH)	ISCMIS, annual quantification reports	Annual

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Number of users trained in use of FASP module	Total number of users trained in the use of the FASP module of the integrated supply chain management information system	a) Department (PWD, DoH)	Training registration and attendance records	Quarterly
Number and percent of users accessing FASP module at least quarterly	Numerator: Total number of users who logged in and interacted with the FASP module in the last quarter Denominator: Total number of active users with access to the FASP module	a) Department (PWD, DoH)	MIS administration data	Quarterly
Page load time for FASP module	Total time for all FASP module content to load for a user		MIS administration data	Quarterly
Volume of user interactions for FASP module	Total number of user interactions with FASP module per week	a) Interaction type (login, run query, download report, etc.)	MIS administration data	Quarterly
Number of people trained in forecasting and supply planning skills at provincial and district levels	Total number of PWD and DoH staff trained in forecasting and supply planning skills during the quarter	a) Administrative level (provincial, district) b) District c) Department (PWD, DoH)	Training registration and attendance records	Quarterly
Vacancy rates for FASP positions	Numerator: Total number of unfilled positions with forecasting and supply planning responsibilities Denominator: Total number of positions with forecasting and supply planning responsibilities	a) Administrative level (provincial, district) b) District c) Department (PWD, DoH)	Workforce survey	Semi-annual
Number of students completing pre-service FASP training courses	Total number of students that completed pre-service FASP training courses in the last year	a) Training provider	University and training institute registration records	Annual
Percentage of departmental budget dedicated to FASP	Numerator: Total amount budgeted (PRK) for forecasting and supply planning activities Denominator: Total departmental budget (PRK) for the fiscal year	a) Department (PWD, DoH)	CIPs, CP-Is, other budget documents; Expenditure records	Annual
Percentage of approved budget that was actually spent	Numerator: Total spent on forecasting and supply planning activities during the fiscal year Denominator: Total amount budgeted for forecasting and supply planning activities for the fiscal year	a) Department (PWD, DoH)	CIPs, CP-Is, other budget documents; Expenditure records	Annual

Objective 2: Improved efficiency and visibility of procurements

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Existence of a performance management tool (Excel)	Excel procurement performance management tool has been developed and is available for use by procurement teams (Yes/No)		Excel-based procurement performance management tool	Annual
Existence of an automated performance management tool (Integrated SCMIS)	Procurement performance management tool has been built, released, and is available for use by procurement teams in the integrated supply chain MIS (Yes/No)		Web-based procurement performance management tool (ISCMIS)	Annual
# and % of procurement personnel who are accessing procurement performance management tool at least weekly	Numerator: Number of procurement personnel who use the procurement performance management tool at least once per week Denominator: Total number of procurement personnel	a) Department (PWD, DoH)	Survey of procurement staff (for Excel tool); MIS user administration data (for Integrated SCMIS)	Quarterly
Number of performance review meetings including review of performance data	Total number of procurement performance review meetings that include a review of procurement performance data	a) Department (PWD, DoH)	Meeting minutes, key informants	Quarterly

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Average procurement cycle time (overall)	Numerator: Total number of days from order specifications finalized to order delivered by vendor Denominator: Total numbers of orders delivered by vendors during the quarter	a) Department (PWD, DoH) b) Tracer product c) Contract mechanism	Procurement performance management tool	Quarterly
Average procurement cycle time (with process detail)	Numerator: Total number of days between the starting and ending milestones dates for key procurement processes Denominator: Total numbers of orders that completed procurement processes during the quarter	a) Department (PWD, DoH) b) Tracer product c) Contract mechanism		
% of total commodity value purchased through pooled procurement mechanisms	Numerator: Total value of purchase orders executed through pooled procurement mechanisms during the quarter (PKR) Denominator: Total value of all purchase orders executed during the quarter (PKR)	a) Department (PWD, DoH) b) Tracer product	Procurement performance management tool	Quarterly
% price variance of median price paid per product in Punjab compared to median price paid across all provinces	Numerator: Median price paid per product in Punjab during the reporting period Denominator: Median price paid across all provinces during the period	a) Department (PWD, DoH) b) Tracer product		Annual
Number and % of procurement personnel who have received in-service training, at provincial and district level	Numerator: Total number of procurement personnel who have received in-service training during the quarter Denominator: Total number of procurement personnel	a) Administrative level (provincial, district) b) District c) Department (PWD, DoH)	Training registration and attendance records	Quarterly
Average procurement volume per procurement specialist (PKP/person)	Numerator: Total value of all purchase orders executed during the year Denominator: Total number of procurement staff	a) Department (PWD, DoH)	Procurement performance management tool	Annual
Vacancy rate for procurement positions	Numerator: Total number of unfilled positions with procurement responsibilities Denominator: Total number of positions with procurement responsibilities	a) Administrative level (provincial, district) b) Department (PWD, DoH)	Workforce survey	Annual
Existence of a database or other centralized repository for vendor performance data	A database or other centralized repository for vendor performance data has been developed and is available for use by procurement teams (Yes/No)	a) Department (PWD, DoH)	Vendor performance database	Annual
Percent of orders delivered on time, according to contracted delivery dates (per vendor)	Numerator: Total number of orders delivered on time, according to contracted delivery dates Denominator: Total number of orders with contracted delivery dates during the quarter	a) Vendor b) Health element (FP, MNCH, vaccine)	Contracts, proofs of delivery, vendor performance database	Quarterly
Percentage of orders complying with all contract terms (per vendor)	Numerator: Total number of orders complying with all contract terms Denominator: Total number of orders delivered during the reporting period	a) Vendor b) Health element (FP, MNCH, vaccine)	Contracts, vendor performance database	Quarterly
Percentage of orders that failed QA testing (per vendor)	Numerator: Total number of orders that failed QA testing during the reporting period Denominator: Total number of orders tested during the reporting period	a) Vendor b) Health element (FP, MNCH, vaccine)	QA testing certificates, vendor performance database	Quarterly
Percentage of procurement volumes awarded to high-performing vendors	Numerator: Total value of orders awarded to high-performing vendors during the reporting period Denominator: Total value of all orders awarded during the reporting period	a) Department (PWD, DoH) b) Health element (FP, MNCH, vaccine)	Vendor performance database, Procurement performance management tool	Quarterly

Objective 3: Improved capacity and efficiency of warehousing and distribution

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Total cubic meters of purpose-built storage capacity available for FP, MNCH, and vaccines in Punjab	Total cubic meters of purpose-built storage capacity available for FP, MNCH, and vaccines in Punjab	a) Health element (FP, MNCH, vaccine) b) Department (FP, DoH)	Warehouse specifications	Semi-annual
Percentage of FP, MNCH, and vaccine storage capacity need met through purpose-built storage	Numerator: Total cubic meters of purpose-built storage space available for product storage Denominator: Total cubic meters required to store all FP, MNCH, and vaccine commodities	a) Health element (FP, MNCH, vaccine) b) Department (FP, DoH)	Warehouse specifications, LMIS	Semi-annual
% of products stocked within min/max levels at MSD, sub-MSD, and district levels	Numerator: Total number of products with a monthly ending balance (months of stock) within specified minimum and maximum levels Denominator: Total number of products observed	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District f) Stock status (stocked according to plan, overstocked, understocked, stocked out)	Warehouse management system	Monthly
Inventory turns	Numerator: Total value of items distributed during the period Denominator: Average inventory balance during the period	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District	Warehouse management system	Quarterly
Percent of product loss due to theft, damage, and other causes	Numerator: Total value of products lost due to theft, damage or other causes Denominator: Average inventory balance during the quarter	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District	Warehouse management system, Incident reports	Quarterly
Inventory accuracy rate	Numerator: Number of months with no inventory discrepancies Denominator: Total number of months in review period (A warehouse or tracer product has no inventory discrepancies when stock on hand according to the stock cards matches a physical count).	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District	Warehouse management system, physical stock count	Quarterly
Average shelf life remaining per product	Numerator: Total number of product shelf life days remaining (expiry date - current date) Denominator: Total expected shelf life of the product at the time of manufacture (expiry date - manufacture date)	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District	Warehouse management system	Quarterly
Percent of product loss due to expiries	Numerator: Total value of products lost due to expiry Denominator: Average inventory balance during the quarter	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District	Warehouse management system	Quarterly
% of temperature readings within acceptable range	Numerator: Total number of temperature readings within an acceptable range during the period Denominator: Total number of temperature readings recorded during the period	a) Supply chain level (MSD, sub-MSD, district) b) District	Temperature monitoring records	Quarterly
Percent of product loss due to temperature excursions	Numerator: Total value of products lost due to temperature excursions during the period Denominator: Average inventory balance during the period	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) Supply chain level (MSD, sub-MSD, district) e) District	QA incident reports	Quarterly

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
% of deliveries to SDPs shipped from MSD and sub-MSD storage	Numerator: Total value of deliveries shipped to service delivery points from MSD and sub-MSD storage sites Denominator: Total value of deliveries shipped to service delivery points from any storage site	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH)	Warehouse management systems	Quarterly
On time delivery rate to service delivery points	Numerator: Total number of deliveries to service delivery points that arrived on time Denominator: Total number of deliveries with planned delivery dates during the quarter	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) District e) Point of origin (MSD, sub-MSD, etc.)	Requisitions, warehouse management systems, Proofs of delivery	Quarterly
Order fill rate	Numerator: 1 - (Total quantity or items ordered - Total quantity of items received) Denominator: Total quantity of items ordered	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH) d) District e) Point of origin (MSD, sub-MSD, etc.)	Requisitions, warehouse management systems, Proofs of delivery	Quarterly
Vacancy rates for warehousing and distribution positions	Numerator: Total number of unfilled positions with warehousing and distribution responsibilities Denominator: Total number of positions with warehousing and distribution responsibilities	a) Department (PWD, DoH) b) Supply chain level (Provincial, MSD, sub-MSD, district)	Workforce survey	Annual
Number of W&D personnel who receive training on current/adapted warehousing guidelines	Total number of warehousing and distribution personnel who receive training on current or adapted warehousing guidelines	a) Department (PWD, DoH) b) Supply chain level (Provincial, MSD, sub-MSD, district)	Training registration and attendance records	Quarterly
Percentage of departmental budget dedicated to W&D (infrastructure, equipment, maintenance, labor, etc.)	Numerator: Total amount budgeted (PRK) for warehousing and distribution Denominator: Total departmental budget (PRK) for the fiscal year	a) Department (PWD, DoH)	PC-Is, ADPs, SNEs	Annual
Percentage of approved budget that was actually spent	Numerator: Total spent on warehousing and distribution during the fiscal year Denominator: Total amount budgeted for warehousing and distribution for the fiscal year	a) Department (PWD, DoH)	PC-Is, ADPs, SNEs; Expenditure records	Annual
Average warehousing cost per unit stored	Numerator: Average inventory balance during the period Denominator: Total spending on warehousing and storage expenses during the year	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH)	Expenditure records; Warehouse management systems	Annual
Average transportation cost per unit delivered	Numerator: Total value of all products delivered to service delivery points during the year Denominator: Total spending on warehousing and storage expenses during the year	a) Health element (FP, MNCH, vaccine) b) Tracer product c) Department (FP, DoH)	Expenditure records; Warehouse management systems, LMIS	Annual

Objective 4: Increased availability, quality, and use of supply chain data for performance management and decision-making

% of planned modules that have been integrated into SC MIS	Numerator: Total number of modules integrated into the supply chain management information system Denominator: Total number of modules planned to be integrated into the supply chain management information system		ISCMIS	Semi-annual
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ISCMIS page load time by module	Total time for all page content to load for a user, per module	a) ISCMIS module	ISCMIS administration data	Quarterly
Volume of user interaction per ISCMIS module	Total number of user interactions per ISCMIS module per week	a) ISCMIS module	ISCMIS administration data	Quarterly
Number and percent of Helpdesk tickets generated by type (System performance, change request, user error, etc.)	Numerator: Total number of Help Desk tickets generated by type Denominator: Total number of Help Desk tickets generated during the period	a) ISCMIS module b) Ticket type (system performance, change request, user error, etc.)	Helpdesk ticket system	Quarterly
Existence of an approved Health Management Information Systems Policy for Punjab	Health Management Information Systems Policy is completed and approved (Yes/No)		Health Management Information Systems Policy	Annual
% of improvement actions that have been completed	Numerator: Total number of improvement actions that have been completed during the period Denominator: Total number of improvement actions that were open at the start of the period	a) Department (PWD, DoH)	Meeting agenda and minutes	Quarterly
% of M&E indicators that are fully operationalized and routinely reported	Numerator: Total number of M&E indicators that are fully operationalized and reported in the current semi-annual report Denominator: Total number of M&E indicators planned for reporting this year		M&E plan, M&E report, MIS dashboards	Semi-annual
Number of joint PWD/DoH data review meetings conducted	Total number of joint PWD/DoH data review meetings conducted	a) Health element (FP, MNCH, vaccine)	Meeting agenda and minutes	Quarterly
Completion of annual review of supply chain M&E plan	Supply Chain M&E plan reviewed and updated (yes/no)		Supply Chain M&E Plan	Annual
Number of data collectors trained in M&E data collection	Total number of data collectors trained in M&E data collection	a) Department (PWD, DoH) b) Supply chain level (provincial, district, SDP)	Training registration and attendance	Quarterly
Number of data review meetings convened	Total number of data review meetings convened	a) Department (PWD, DoH)	Meeting agenda and minutes	Quarterly
% of improvement actions that have been completed	Numerator: Total number of improvement actions that have been completed during the period Denominator: Total number of improvement actions that were open at the start of the period	a) Department (PWD, DoH)	Meeting agenda and minutes; other verification activities as necessary	Quarterly
Data quality ratings for FASP, Procurement, W&D, MIS and logistics data	Numerator: Sum of all quality ratings per site or dataset assessed Denominator: Total number of sites or datasets rated	a) Data type (FASP, procurement, W&D, MIS, logistics) b) Health element (FP, MNCH, vaccines) c) Site type (warehouse, SDP, etc.)	Data quality assessments of data sources used for other supply chain indicators (LMIS, WMS, Procurement management tool)	Annual
Number of data collectors trained in M&E data collection	Total number of data collectors trained in M&E data collection	a) Department (PWD, DoH) b) Supply chain level (provincial, district, SDP)	Training registration and attendance	Quarterly
Percentage of departmental budget dedicated to monitoring and evaluation initiatives	Numerator: Total amount budgeted (PRK) for monitoring and evaluation Denominator: Total departmental budget (PRK) for the fiscal year	a) Department (PWD, DoH)	CIPs, PC-Is, other budget documents	Annual

Percentage of approved budget that was actually spent	Numerator: Total spent on monitoring and evaluation during the fiscal year Denominator: Total amount budgeted for monitoring and evaluation for the fiscal year	a) Department (PWD, DoH) CIPs, PC-Is, other budget documents Expenditure records	Annual
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Objective 5: Strengthen human resource capacity across essential supply chain functions at all levels

Indicators	Calculation	Disaggregation	Data Sources	Reporting Frequency
Number of positions with supply chain responsibilities	Total number of health sector positions with supply chain responsibilities	a) Department (PWD, DoH) b) Supply chain level (provincial, district, SDP) c) Health element (FP, MNCH, vaccines) d) Position type	Human Resource Needs Assessment	Annual
Vacancy rate for supply chain positions	Numerator: Total number of unfilled positions with supply chain responsibilities Denominator: Total number of positions with supply chain responsibilities	a) Department (PWD, DoH) b) Supply chain level (provincial, district, SDP) c) Health element (FP, MNCH, vaccines) d) Position type	HRIS	Annual
% of supply chain workers who have received in-service training	Numerator: Total number of supply chain workers who have received in service training Denominator: Total number of active supply chain workers	Department (PWD, DoH) b) Supply chain level (provincial, district, SDP) c) Health element (FP, MNCH, vaccines) d) Position type	Workforce surveys, Training and attendance records	Annual
% of supply chain workers who have received pre-service training	Numerator: Total number of supply chain workers who have received pre-service training Denominator: Total number of active supply chain workers	a) Department (PWD, DoH) b) Supply chain level (provincial, district, SDP) c) Health element (FP, MNCH, vaccines) d) Position type	Workforce surveys	Annual
Supply chain workforce loss ratio	Numerator: Total number of workers with supply chain responsibilities who left the active health labor force in the last year Denominator: Total number of workers with supply chain responsibilities at the beginning of the year	a) Department (PWD, DoH) b) Supply chain level (provincial, district, SDP) c) Health element (FP, MNCH, vaccines) d) Position type	Workforce surveys, HRIS	Annual

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The Department of Primary and Secondary Healthcare and Population Welfare Department, Government of the Punjab embarked upon the development of first ever Public Health Supply Chain Strategy in August/ September 2017. In this regard an expert group of logisticians from Global Health Supply Chain Program – Procurement and Supply Management (GHSC-PSM) Project and Government officials from both the departments jointly worked to formulate this strategy aligned with the National Health Vision 2025, FP2020 commitments, and vision of the honorable Chief Minister; Mr. Mian Muhammad Shahbaz Sharif; quality health care for all. This group includes the following:

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**Primary and Secondary Healthcare Department
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Government of the Punjab**



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