

**National Strategic Framework
for
Public Health Laboratories Network in Pakistan**

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I. General Information:

PAKISTAN- essential data:

Pakistan is a country of about 160 million population spread over an area of 852,392 square Kilometres. The country is administratively divided into four provinces i.e. Punjab, Sindh, NWFP and Balochistan, Federally controlled Northern & Tribal Areas (FANA & FATA) and Islamabad Capital Territory (ICT). The state of Azad Jammu and Kashmir (AJK) adjoins Pakistan in the northeast and works jointly with the Federal Government of Pakistan for all the development schemes. Each province consists of districts, which are subdivided administratively into tehsil/ talukas (sub districts).

Pakistan has primarily an agrarian economy with about 70% of population living in rural areas where socio-economic conditions are generally not conducive to development. With per capita income of about 420 US\$; the country is classified among the low-human development index countries of the world.

The health and population scenario in the country is characterized by high fertility, low life expectancy, young age structure, high maternal and child mortality, high incidence of communicable diseases and malnutrition "Health" in Pakistan is a provincial subject and is independently dealt by provinces. Federal Ministry of Health is responsible for area/ institutions governed by federation. Capital investment in health is financed through Annual Development Programme (ADP) that also includes external funding. The federal Government also substantially finances provincial development budgets.

Existing health services in Pakistan have been inadequate with respect to coverage and effectiveness. The resources have mostly been skewed towards curative services rather than the preventive. Some Federal Programmes do have a large/ essential component of preventive health care but they lack in horizontal coordination. The private sector's role despite of its enormity is generally deficient on preventive side.

Framework of Public Health Laboratories Network:

An analysis of the existing situation about the infrastructural strengths and weaknesses, human resource, lab practices, standards etc. of the medical laboratories was carried out through review of various reports/ documents and discussions with the provincial colleagues/ counterparts and working specialists.

A comprehensive draft document to this effect was developed by the National Institute of Health Islamabad for presentation and through discussions with the relevant experts in the disciplines of laboratory medicine and public health for a workable strategic framework on public health laboratories network in Pakistan.



II. An Overview

1. Background:

The communicable diseases (CD) and public health threats have always posed mammoth challenges for the health authorities and governments all over the world. Only a few of CDs hang about in the country where detected first; the majority of micro-organisms cross geographical barriers, producing mutant and more resistant strains. The global traffic and trade, catastrophes, wars, urbanization, poor water management, inadequate waste disposal and sanitation systems, ecological changes and droughts are paving ways for appearance of new microbes and re-emergence of old diseases. The preventable health risks like antimicrobial resistance, food-borne illness and environmental threats also merit full attention.

The focused surveillance and control measures can effectively check the spread of CDs and public health threats. This would however be effective only if complemented by timely and accurate laboratory diagnoses and reporting. Good quality laboratory results are also critical for establishing readily available information data base about the occurrence and pattern of communicable diseases to ensure the success of disease surveillance, forecasting, planning, resource allocation, preparedness, prevention and control by the relevant health authorities and disease control programmes functional at national and international levels.

The laboratory data originate mainly from the clinical diagnostic settings for the communicable diseases and other public health threats. A vibrant public health disease surveillance system will however require an active and dedicated support from the laboratory for integrated, concerted, cost-effective and eventful control measures that mandates establishment of public health laboratories networks across the country. Quite meaningfully, to deliver its best, the public health laboratories network also needs to work for and with a fully alert disease surveillance system. The enhanced version of international health regulations (IHR) 2005 will be enacted by the dead line of May 2010 and all member states should be able to rely on a functional and quality controlled surveillance network at this stage. The member states therefore need to improve their surveillance systems, including the laboratory confirmation component, which is crucial for early identification and characterization of any causative agent, making further rapid notification possible.

There is a need to conceptualize a national network of the public health laboratories in Pakistan for prompt and efficient service delivery that could support the routine and emergency requirements regarding lab diagnosis of the communicable diseases and other public health risks/ threats. The provincial and AJK governments and other stakeholders have to be involved in various loops of development cycle of this system for generating ownership and mobilizing resources and developing required human resource.

The national strategic plan will describe the current status, identify priority areas and key activities provide with guiding principles along with costing tools for public health laboratories network in Pakistan.

2. Medical Laboratory Services:

The medical laboratories mainly provide the following types of services:

- 2.1. Clinical diagnostic services: (hospital-based labs): These services are hospital-based and mainly provide foundations for making diagnosis and clinical decisions and therefore are focussed on individuals referred by the out patient departments or admitted in the hospitals.
- 2.2. Private sector Labs: These labs are similar to clinical diagnostic labs and deal with the referred patients both from public/ private practitioners/ hospitals. These work on commercial basis.
- 2.3. Public health lab services: These services are meant to identify measure and monitor the biological and environmental markers/ health threats under ordinary and outbreak conditions. These also detect health risks or events threatening the human life.

3. Clinical Diagnostic vis-à-vis Public Health Labs:

	Clinical Diagnostic Labs	Public Health Labs
Technical roles	<ul style="list-style-type: none"> • Clinico-pathological interpretation of mainly non-communicable disease states: malignancies, metabolic disorders etc. • application of lab results on the patients in association with the clinical colleagues 	<ul style="list-style-type: none"> • Lab diagnosis of communicable, emerging/ easily preventable diseases, environmental & bioterrorism threats. • Correlate diagnosis with source/ spread of infection and evidence for timely response.
Core capabilities	Chemistry (<u>emergency</u> tests e.g. LFT, RFT etc), Hormones, Haematology, Histopathology, Microbiology, Cytogenetics, Tumours markers etc.	Microbiology, Virology, Molecular Biology, Cell & Tissue culture, BSL-3 & 4, NTCC, Vector Biology, Parasitology, Entomology, Immunology, Haematology, Clinical Chemistry Pathology and Field Epidemiology, BSL-3&4 Facilities.
Staff requirements	Mainly medical Pathologists: having training tilted towards clinical side	Mix of Pathologists (training tilt towards basic/ applied research) Epidemiologists, Biomedical Scientists, PH specialists, Bio statisticians

4. Range of Laboratory Tests:

Waived Tests	Provider Performed Microscopy (PPM) Tests	Moderate Complexity Tests:	High Complexity Tests	Reference Laboratory Tests
(1)	(2)	(3)	(4)	(5)
<ul style="list-style-type: none"> • Urine R/E (dipstick) • Faecal (Occult Blood) • Urine (Pregnancy Test) • Glucose • Cholesterol • HDL • Triglycerides • Hb/ ESR 	<ul style="list-style-type: none"> • 1 + Microscopic Procedures like: -Urine RE & -Stool RE -Staining (Gram & ZN) -Blood smear -MP 	<ul style="list-style-type: none"> • 1+2, and All routine Haematology Tests • All routine Chemical Path Tests • Basic Microbiology • Serology • Viral -Hepatitis -HIV/AIDS 	<ul style="list-style-type: none"> • 1+2 +3, and Multitude of Tests for -Histopathology -Cytology -Bone Marrow Studies -Virology 	<ul style="list-style-type: none"> • 1+2+3+4, and • Multitude of Tests for - Molecular Diagnosis - Cell Cultures - Biosafety level-3 Tests

5. Public Health Laboratory Practice:

5.1. The public health laboratory (PHL) practice as a well-known discipline exists only in the United States, Canada and the Western European countries. The availability of the earliest laboratory tests in the late 17th and early 18th centuries for identification of bacteria causing common ailments by yielding growth on culture media and using the microscopes were revolutionary since that proved the hypotheses regarding sheer presence of so called invisible microbes, which remained under discussion for centuries.

5.2. The epidemics have haunted the humans forcing them to face death, hunger, agony and to leave their territories and belongings. The consciousness about public health laboratory testing for control and prevention of communicable diseases dates back to the mid-19th century when repeated cholera epidemics overran Europe (1830–47). The famous Spanish flu (influenza pandemic) of autumn 1918 and spring 1919 presumably caused 50 million deaths. These colossal human and economic losses urged the governments and medical profession to devise PHL networks and systems.

5.3. In the USA public health testing historically is a responsibility of the state where it has a history of more than 100 years. There were 174,000 operative laboratories by Jan 2002 consisting of diverse groups and institutions operative at federal, state and local levels. The private sector is engaged enormously in laboratory testing of public health importance. Following is the list of core functions of PH labs proposed by the American Association of Public Health Labs:



- 5.3.1. Disease prevention, control & surveillance
- 5.3.2. Integrated data management
- 5.3.3. Reference & specialized testing
- 5.3.4. Environmental health & protection
- 5.3.5. Food safety
- 5.3.6. Laboratory improvement & regulation
- 5.3.7. Policy development
- 5.3.8. Emergency response
- 5.3.9. Public health-related research
- 5.3.10. Training & education

5.4. In Canada, four levels of public health laboratories system are operational. These are private, local and hospital laboratories, provincial public health laboratories, national laboratories and international laboratory networks. In some provinces, hospital and provincial laboratories are integrated. These different levels of laboratories function as a hierarchy, although there are no formal reporting relationships or requirements. Usually, the sophistication and breadth of diagnostic capacity and scientific expertise increases at higher levels in the system. In an epidemic or an emergency, these different levels of laboratories may be supplemented or complemented by laboratories that are primarily based in academic institutions and whose primary role is research. The list of activities performed by these laboratories is as follows:

- 5.4.1. Diagnosis of infections
- 5.4.2. Characterization of micro-organisms
- 5.4.3. Reference services
- 5.4.4. Support to epidemiologic surveillance and epidemic investigation
- 5.4.5. Participating in, conducting or coordinating lab surveillance of infectious diseases
- 5.4.6. Environmental surveillance
- 5.4.7. Emergency preparedness and response
- 5.4.8. Applied research and development
- 5.4.9. Fundamental research

5.5. Even older than American and Canadian PHL systems, but similar models exist in Western European countries especially France, Germany, Holland and the United Kingdom (UK). The famous public health service of Colindale, now known as Health Protection Agency is the nucleus of public health laboratory testing in the UK. All these systems work according to the mandates and envision to be technically able to deal thoroughly with all public health threats; whether existing, new, emerging or re-emerging, in a timely and befitting manner thus minimizing the morbidity and mortality.

6. Status of laboratory services (including public health labs) in Pakistan:

6.1. Background:

The laboratory services in Pakistan were present as part of the public and private sector hospitals at the time of independence. Most of the districts had the government

hospitals while a very few private sector hospitals existed only in major cities of the country and were mostly owned by the charitable organizations, philanthropists and missionaries. With the passage of time, the health facilities in the private sector expanded because of increasing demands and lesser response by the public sector to meet the ever growing needs for the state-of-art, reliable and quick pathology services. Barring few, almost all laboratories were severely deficient in equipment, pathologists and qualified technicians.

6.2. Categories of laboratory services

The laboratories functional at various levels in Pakistan could be summarized as follows:

6.2.1. Public sector clinical diagnostic laboratories:

These laboratories are based at the health units, tehsil, district, tertiary & teaching hospitals and are providing laboratory feed back for clinical management of the referred outdoor and indoor patients. The laboratory investigations of public health importance are also carried out by these labs but in an unrecognised manner and are neither properly documented nor adequately reported to the authorities.

6.2.2. Private sector laboratories:

In Pakistan a large number of pathology labs are operational in the private sector, which deals with the referred patients both from the outdoor and indoor departments of public/private hospitals. The private sector labs have flourished rampantly in the past two decades. These labs are also engaged in investigations of public health importance, which again are not reported to the relevant authorities. Sometimes these communicate with media without informing health authorities causing public outcry. Besides this, a number of private sector hospitals have their own laboratory set-ups.

6.2.3. Public health laboratories:

Only two dedicated public health laboratories are identifiable in Pakistan: namely the Public Health Laboratories Division (PHLD) of the National Institute of Health (NIH) Islamabad (referral lab) and the Microbiology Lab of the Institute of Public Health (IPH), Lahore. The public health testing of the food, water and medicines/drugs is also available in the Nutrition Division and Drugs Control & Traditional Medicine Division of the National Institute of Health Islamabad. The public health laboratories perform the testing in three stages as follows:

- *Presumptive Diagnosis*
- *Suspected Diagnosis*
- *Confirmatory Diagnosis*

6.3. Laws /Regulations & Registration:

The laboratories in Pakistan are not regulated by any law except in Balochistan where the law exists for the medical laboratories. The Pakistan Association of Pathologists through its Academic Arm the “College of Pathologists Pakistan” has embarked on this area and worked out some practical solutions to initiate regulated medical laboratory

practices in Pakistan. There is no registration system in place for the laboratories in the absence of specific laws. The National Accreditation Council of Pakistan of Ministry of Science and Technology, again in collaboration with the “College of Pathologists Pakistan” has started preparatory work for accreditation of medical laboratories as well as an External Quality Assurance Programme.

6.4. Human resource/ workforce:

Both over and under staffing is not uncommon in the public sector labs. Excellent training facilities for the laboratory medicine/pathology are available within Pakistan. The career development of pathologists is generally at par with other specialties of medical profession. However, education and training of lab technologists needs to be improved a lot.

6.5. Reagents, Kits & consumables:

These are arranged generally by the hospitals. Some provincial Governments do have centralized system of procurement. Unlike drugs, there are no laws/bodies to control quality of lab reagents and chemicals. This has lead to flooding of market with substandard/ adulterated products.

6.6. Equipment:

The need for lab equipment is assessed and purchases are managed by the respective hospitals at the district, provincial and federal levels. The guidelines for standardized purchase of the lab-ware and equipments are not in place. After sale service calibration and check is also lacking for most of the available equipments.

6.7. Maintenance of lab-ware & equipment:

This is generally managed by the suppliers of the equipment and leaves lot to be desired in place.

6.8. Standard operational procedures (SOPs) & Equipment operating procedures (EOPs):

Few labs have SOPs and EOPs and even fewer observe these properly.

6.9. Quality assurance:

The quality assurance (QA) practice as a concept is very limited. All reputed public and private sector laboratories are linked with some international quality assessment schemes and observe internal QA protocols. Almost all medium to small scale labs are not maintaining satisfactory standards of QA. There has been a significant awareness however about the need of good and standardized QA systems in the country during recent years. The national external quality assessment scheme in Chemical Pathology is functional now in Pakistan with its hub at the Armed Forces Institute of Pathology, Rawalpindi. The National Institute of Health is also conducting training workshops regularly on QA for various categories of health care persons. The Public Health Laboratories Division, NIH has published the National Guidelines on Quality Assurance & Biosafety.

6.10. Computers and computerization:

The tertiary level and teaching hospitals in public sector manage data and issue lab results using computer based systems. The IT use as a culture does not exist.

6.11. Funds/ resource allocation

The respective hospital/institution identifies and allocates funds for functioning of the laboratories and their maintenance, civil work etc. as part of their overall non-development budget on yearly basis. While allocating funds emphasis is usually on provision of medicine and therapeutic devices thus neglecting laboratories.

6.12. Number of Laboratories in Pakistan:

The exact number of pathology laboratories is not known because of the absence of laws for mandatory registration and regulation of pathology laboratory practices. The National Institute of Health, Islamabad has however contacted the provincial and district health authorities to collect data on laboratories for the polio virus containment purposes, which shall be direly needed after reaching zero case status for polio. The status of information received so far is as follows:

Province	Districts	Received	Awaited
Punjab	34	14	20
Sindh	33	18	15
NWFP	31	15	16
Balochistan	26	10	16
AJK	7	3	4
FANA	5	2	3
Islamabad	1	-	1
FANA	5	2	3
TOTAL	142	64	78

Status-Punjab			
S.	District	Public Sector	Private
01	Attock	17	29
02	Bahawalpur	6	25
03	Bhakkar	Nil	27
04	Dera Ghazi Khan	13	23
05	Faisalabad	75	100
06	Gujarat	1	6
07	Jhang	20	28
08	Khushab	14	34
09	Lahore	6	3
10	Mianwali	4	15
11	Rajanpur	Nil	Nil
12	Rawalpindi	31	227

13	Sahiwal	29	9
14	Sialkot	1	2
Status-Sindh			
S. #	District	Public	Private
01	Badin	8	4
02	Dadu	Nil	35
03	Ghotki	2	3
04	Jacobabad	3	11
05	Khi Baldia Town	Nil	1
06	Khi Bin Qasim Town	Nil	10
07	Khi Jamshed Town	Nil	8
08	Khi Kornagi Town	Nil	6
09	Khi Lyari Town	2	15
10	Khi Landhi Town	Nil	17
11	Khi North Town	2	21
12	Khi Shah Faisal Town	Nil	3
13	Khi Site Town	Nil	4
14	Larkana	3	10
15	Mirpurkhas	3	12
16	Nawabshah	8	22
17	Shikarpur	7	13
18	Sukkur	9	12

Status-NWFP			
S. #	District	Public	Private
01	Bajour Agency	Nil	Nil
02	Bannu	Nil	23
03	Battagram	1	6
04	Bunir	Nil	Nil
05	Chitral	10	5
06	Dera Ismail Khan	11	5
07	Dir Lower	6	26
08	Haripur	Nil	23
09	Kurram Agency	Nil	24
10	Kohat	7	11
11	Malakand	Nil	14
12	Mardan	4	9
13	Orakzai Agency	5	Nil
14	Peshawar	16	72
15	Waziristan-S	6	25

Status-Balochistan			
S. #	District	Public	Private
01	Awaran	Nil	Nil
02	Bolan	Nil	Nil
03	Gawadar	Nil	7



04	K. Abdullah	4	3
05	Kalat	Nil	Nil
06	Kharan	Nil	3
07	Khuzdar	3	2
08	Kohlu	Nil	Nil
09	Lasbela	2	4
10	Mastung	1	Nil

Status-AJ&K			
S. #	District	Public	Private
01	Bagh	5	8
02	Bhimber	1	3
03	Kotli	Nil	Nil

Status-FANA			
S. #	District	Public	Private
01	Diamir	Nil	3
02	Gahanchi	1	Nil

Islamabad	
Islamabad	Pending

7. Planning process of Strategic Framework for PHLN:

In order to ensure a broad and sound planning, the strategic exercise process (SEP) for public health laboratories was envisaged in the MoH-WHO biennial workplan for Health Laboratory Support 2006-07. The SEP task was assigned to the Executive Director NIH and the Chief Public Health Laboratories Division NIH in April 2007 under well-defined TORs by the Ministry of Health. A systematic and participatory approach was adopted to ensure involvement of expertise from the public and private sectors, Armed Forces and development agencies.

8. Purpose of PHLN:

8.1. The basic purpose of this planning exercise is to formulate a national strategic framework for the development of Public Health Laboratories Network (PHLN) in Pakistan so as to provide accurate and timely laboratory support to the national disease surveillance system for its routine and emergency requirements and specialized activities like sentinel and 2nd generation surveillance to complement the operational needs of public health projects.

8.2. As a matter of fact the PHLN could only be optimally utilized by a vibrant disease surveillance system, which does not exist in Pakistan. It is apprehended that without such a system in place, the PHLN labs might be gradually converted in to typical clinical diagnostic laboratories, serving the routine needs of the referred patients at the cost of lab support for active, passive and 2nd generation surveillance requirements of communicable diseases in Pakistan. Because of divergence from purpose, PHLN may become a liability on the exchequer with the passage of time and might face an uneventful fate.

8.3. The communicable diseases account for 38% disease burden and 45% of mortality in Pakistan. Polio remains endemic and measles alone constitutes 8% of all under-five deaths. There is a high incidence of other vaccine-preventable diseases, including Hepatitis B and neonatal tetanus. Other communicable diseases, such as Tuberculosis, Malaria, Dengue fever, Congo Crimean Haemorrhagic Fever, Typhoid, Viral Hepatitis, Acute Respiratory Infections and Diarrhoea, are also of significant public health importance. The incidence of Tuberculosis is estimated at 177 cases per 100,000 per year, one of the highest in the world, while the incidence of Malaria cases ranges between 2 to 5 cases per 1000, 37% of which are of the Falciparum type. Drug resistant falciparum malaria is on the increase. There are estimates that 30% of the population suffers from some non-communicable diseases or conditions.

Causes	%age
Communicable Diseases	38
Reproductive Health Problems	12
Injuries	11
Cardiovascular Diseases	10
Nutrition Deficiencies	06
Others	23

8.4. The Dengue Fever (DF) and Dengue Haemorrhagic Fever (DHF) have registered their presence in Pakistan with country-wide epidemics during 2005-06. Crimean Congo Viral Haemorrhagic Fever poses a serious public health threat in Northern Balochistan, hilly areas of Punjab and AJK. An epidemic of cutaneous leishmaniasis is ongoing in south & south-west of Pakistan.

8.5. The strategies and interventions for reduction of the burden of communicable and chronic diseases, morbidity and mortality must be evidence based and supported with sufficient data. A functional PHLN will meet this requirement by generating such evidence, which could guide the best utilization of funds/resources. The investment on strategizing, developing and sustaining a PHLN is therefore, in the long run will be cost-effective for countries having scarce resources like Pakistan.

8.6. To materialize the objective, the published literature on various aspects of disease prevention and control policies, international health regulations and WHO guidelines/books were reviewed. The international requirements and emerging national needs for



disease prevention and control were taken into account to develop such a document, which could effectively respond to the disease surveillance demands in Pakistan.

8.7. The Strategic Framework will identify the key Strategic Areas (SA) and the essential components of each SA of the PHLN. The document envisions guiding the wide range of partners who are or could be involved in the efforts underway for establishing a PHLN.

9. Guiding Principles for identification of Strategic Areas of PHLN Framework:

- 9.1 Constitutional obligations of Government of Pakistan (GoP)/ Ministry of Health regarding disease surveillance under Entry 22 of the Concurrent Legislative List of the Fourth Schedule to the Constitution of Pakistan.
- 9.2 Prevalence & endemicity of communicable and notifiable diseases
- 9.3 National & International needs for lab support for investigations of communicable diseases (EPI diseases, TB, HIV, Malaria etc.)
- 9.4 Preventable and readily treatable health risks involving behaviour/ migration, complex emergencies emerging and rare pathogens, antimicrobial resistance (AMR), food borne illness, environmental threats, terrorist events etc.
- 9.5 Geographical location and accessibility of the already existing laboratories, having potential to functional as regional PH Lab
- 9.6 Existing institutional support available to potential regional PH lab: its strengths & weaknesses
- 9.7 Administrative and financial arrangements.
- 9.8 The need for human resource, training/capacity-building, infrastructure, equipment, consumables, disposables and reagents etc.
- 9.9 Procurement policies and arrangements
- 9.10 The development of SOPs, EOPs etc.
- 9.11 Ownership issues and recurring costs.

10. Salient Features of National Strategic Framework for PHLN:

10.1. Objective:

Disease prevention and control using laboratory medicine tools according to the mandate and functions assigned to each level (district, province & national)

10.2. Mission Statement:

The PHLN would provide routine, specialized and reference laboratory services and investigation of disease outbreaks in country while taking in to account the highest possible quality assurance norms, policy issue and strategic guidelines and would function as research base for disease surveillance.

10.3. Strategic Areas & Goals:

The following nine (09) strategic areas are identified along with goals on the basis of situation analysis:

Area-1	Development, Organization, Management of PHLN at national and regional levels and define Role(s) of the Public & Private Sectors
Goal	<i>To establish a network of public health laboratories in Pakistan, sufficient to manage the operational requirements of lab-support for communicable diseases and able to deal and address the needs of all strategic areas identified for PHLN</i>
Area-2	Routine, Specialized & Reference Laboratory Services
Goal	<i>Provide accurate and precise analytical results in a timely manner through existing and new facilities for timely control of communicable diseases and combat new public health emergencies.</i>
Area-3	Public Health Related Research
Goal	<i>Provide research-based laboratory data to the health authorities & professionals and various public health programmes for evidence-based decision-making about specific interventions and resource allocation</i>
Area-4	Quality Management, Biosafety & Bio-security
Goals	<i>i. Ensure reproducibility of lab tests through observing principles of total quality management and adherence to national & international standards ii. Ensure safety of personnel, environment and equipment through observing national and international standards</i>
Area-5	Training / Education & Human Resource Development
Goal	<i>To continuously build-up capacity of various cadres of workforce on state of the art technologies, methodologies, research approaches and management</i>
Area-6	Policy development, Guidelines, SOPs, EOPs
Goal	<i>Produce consensus-based uniform and standard national policies, guidelines, instructions and operating procedures on matters related to public health laboratory practices to be observed uniformly throughout the country.</i>
Area-7	Integrated Data Management & Information Technology
Goal	<i>Ensure timely collection, compilation, processing, issuance and application of national and regional lab data on communicable diseases from the PHLN and other stakeholders including private sector</i>
Area-8	Equipment, reagents, consumables and engineering/ after-sale services
Goal	<i>To ensure uniformity and serviceability of equipment and provision of well tested quality reagents and chemicals throughout PHLN</i>

Area-9	Coordination and National & International Networking/ Liaison
Goal	<i>Develop and maintain close technical networking with approved/ designated national and international institutions, organizations, technical agencies and private sector</i>

11. Key Partners:

The following partners are required to play the proactive role for the establishment and strengthening of PHLN in Pakistan:

- 11.1 Ministries of Health, Finance, Law & Justice, Interior, Communication, Information Environment, EAD and the Planning Division of Pakistan.
- 11.2 Provincial Health Departments and all related Departments like Finance, Planning & Development and Information etc.
- 11.3 District Governments/ Health Departments and other related Departments
- 11.4 Armed Forces Institute of Pathology (AFIP) and DMS-5, Medical Directorate, GHQ
- 11.5 Private Sector Laboratories and Organizations
- 11.6 Non-Governmental Organizations
- 11.7 International technical and development organizations

12. Implementation Arrangements:

Implementation of the Strategic Framework for PHLN would be the joint responsibility of Federal Ministry of Health and Provincial/Area Health Departments. The National Institute of Health Islamabad shall be leading the process because of being the apex and the only public health lab in Pakistan.

Due to the multidimensional nature and requirements of PHLN Framework, other Ministries, Departments and organizations as stated above will have to play important role(s) in their relevant areas. The Coordination/Steering Committees will be established both at federal and provincial levels in order to ensure effective link between the Federal and Provincial Units, Government and private sector national and international partners.

13. Barriers:

- 13.1 Lack of clear understanding of the scope of the public health laboratories
- 13.2 Absence of physical structures for Reference PHLN labs at regional levels
- 13.3 Technical and manpower gaps at all levels
- 13.4 Commitment for funds availability on regular basis
- 13.5 Ownership and sustainability issues
- 13.6 Constrained human resource in public health laboratories discipline
- 13.7 Absence of a structured & institutionalised disease surveillance programme
- 13.8 Dearth of field epidemiologists
- 13.9 Absence of legal framework for disease notification
- 13.10 Communication issues

14. Opportunities:



- 14.1 Enhanced awareness about effective prevention and control of communicable diseases.
- 14.2 Burgeoning national needs for laboratory backup for disease surveillance and evidence-based data collection
- 14.3 Availability of a core group of technical experts within the Country
- 14.4 Availability of an apex national public health laboratory (Public Health Laboratories Division NIH/WHO Reference Centre for Training in Research & Diagnostics in Virology)
- 14.5 International linkages with WHO (various centres worldwide), CDC-Atlanta, Naval American Medical Research Unit-3 (NAMRU-3), National Institute of Virology South Africa
- 14.6 External quality assessment linkages with WHO international and regional external quality assessment scheme (REQAS)
- 14.7 Ongoing National External Quality Assessment Scheme Pakistan (NEQASP)
- 14.8 Field Epidemiology & Laboratory Training Programme (FELTP), Pakistan at Public Health Laboratories Division NIH.
- 14.9 Available National Guidelines on Quality Assurance and Biosafety
- 14.10 Development of the National Strategic Planning Framework for the PHLN

15. Future Course of Action:

The following course would be adapted for the transformation of Strategic Framework Document in to action and implementation:

- 15.1 National meeting of the relevant policy-makers and experts for deliberations on the National Strategic Framework document
- 15.2 Expert feedback from the Moderators of all of the nine Groups constituted for Strategic Planning Workshop.
- 15.3 Feedback from selected national and international experts on the subject.
- 15.4 Official views of all the Provincial, AJK and FANA Governments.
- 15.5 Views and guidance from the Planning Commission of Pakistan.
- 15.6 Presentation before the Ministry of Health
- 15.7 Provision/hiring of a suitable person for preparation of a suitable PC-1 and costing of the interventions/needs identified under various Strategic Areas of this PHLN Framework
- 15.8 Approval and implementation of the PC-1.