National Immunization Strategy

2017-2022

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Foreword

There have been many transformations to the NIP in the recent years. New vaccines were added to the vaccination schedule, the cohorts served by the public sector kept on expanding since the onset of the Syrian crisis, measures to consolidate the vaccine purchasing arrangements were adopted, and there was a leveraging up of the vaccinovigilance and its effective management. In 2016, the Ministry of health in Lebanon decided that it was the time to take stock, construct on the current NIP strengths and achievements and identify areas for further improvement. A strategy for the NIP for 2016-2020 was envisaged in agreement with the development partners. A detailed situation analysis assessment was initiated in October 2015 in two stages: at the initial stage, the country and health system contexts were analyzed, and immunization system performance was measured. In the second stage, a framework was developed in consultations with key stakeholders to define gaps in the evidence. Immunization coverage evaluation survey was conducted in 2016 and fed into filling the lacunas in information.

The present document expresses the country vision, goals and priorities of the national immunization program. It relies on a careful examination of the situation analysis, an assessment of the enablers and challenges facing the immunization services and defines the national immunization strategies addressing these contests. The strategies were formulated as informed choices across more than one solution deemed most feasible and efficient considering the country context.

The document is structured in three sections:

Section 1 “Situational analysis” presents briefly the organization and operation of the national immunization program as well as the recent achievements and remaining challenges,

Section 2 “Conceptual framework” describes the future vision of the country in regards to vaccine preventable diseases, the long term goals to be achieved and the more specific results – immunization system objectives and targets for 2020,

Section 3 defines the Strategies to address the bottlenecks and achieve immunization system objectives by 2020. Most of strategies (so called “immunization system specific” ones) are presented by relevant health system blocks. The focus of the NIP Strategy, is to assist the MOPH to meet international goals set by the World Health Organization (WHO) under the Global Immunization Vision and Strategy (GIVS). The Strategy articulates action areas to conserve the successful achievements of the last years, built on the current favoring momentum and propose solutions for the drawbacks

The Strategy comprises nine Strategic Priority Areas to complement and strengthen the NIP.

The matrix (Figure 2) in Annexes shows expected results of the immunization system development strategies by health system building blocks and links them to the root causes (weaknesses and treats) identified during the system analysis.

1 Situational analysis

1.1 Lebanon's health system is characterized by a dominant private for-profit sector, that offers around 40 to 50% of all health immunization services, while the public-private non-for-profit network covers the rest of the population, namely the economically deprived and the most vulnerable inhabitants. The private public partnership was developed over the past few decades. With the advent of the Syrian crisis and the influx of more than 1.5 million displaced persons from Syria, known for their internal and across the borders mobility, the national health system, and in particular the EPI program at the MOPH bearded a major financial burden and overstretching of its capability. The risk for VPD associated outbreaks has been magnified and efforts to reach every child with vaccination were multiplied.

Since its establishment in 1987, the EPI in Lebanon succeeded to introduce most of the WHO recommended antigens in the national immunization calendar, which to date includes: Polio (IPV, OPV), diphtheria, pertussis, measles, mumps rubella, tetanus, hemophilus, influenza, hepatitis B, and Pneumococcal vaccines; the private sector, offers additional vaccines such as: HPV, rota virus, hepatitis A, typhoid, meningitis, seasonal influenza and benefits from relative flexible regulations facilitating the introduction of new antigens.

The routine immunization services are offered by numerous unregulated private clinics, NGOS and public dispensaries. It is estimated that the MOPH provides vaccines to around 50 to 60 % of children residing in Lebanon; the Syrian are vaccinated through the MOPH supported network as well as through national or sub national focused campaigns.

Although administratively reported national immunization coverage rates have remained above 90% for most antigens except for measles containing vaccines for the last few years, coverage surveys have repetitively identified pockets of unprotected children since the onset of the Syrian crisis, along with improvement in the mechanisms to early detect and respond to VPD outbreaks. In addition, there are legitimate concerns about the sustainability of the achievements produced by the national immunization program in case the donor community reduces its financial support to the Syrian crisis.

A thorough analysis of the root causes of the Vaccine Preventible Diseases morbidity leads to the following three directions: "A. Unsatisfactory Coverage", "B. Low Protection against VPD among vaccinated children", and "C. Weak Outbreak prevention mechanism" (see detailed "problem tree" in Figure 1on page 14)

The following areas were revealed:

1) Immunization system specific challenges to be addressed by the immunization strategy[1]:

- Insufficient supportive supervision in peripheral areas (A.1.1.2.2)
- Limited functionality of existing management information system (MIS) for immunization (A.1.4.1)
- Low readiness for vaccination among certain population groups (A.2.0)
- Geographic barriers (A.2.2)
- Financial barriers to access few public (A.2.1), and private service outlets (A.2.3)

[1] Colored in green or amber in the diagram

- Limited awareness of the importance of timeliness of vaccination (B.1.1)
- High immunization staff turn over; new staff with limited information regarding EVM practices in some PHCC (B.2.1)[2]
- Lacking information regarding EVM practices in private clinics
- Suboptimal coordination for an effective response to outbreaks) (C.1)
- Limited district capacity (C.2)

2) Health system specific challenges that require solutions beyond the scope of the immunization strategy, are considered as (health system) constraints:

- Weak enforcement mechanisms for the national health policy (A.1.1.2.3, A.1.4.2, B.1.2)
- Inconvenient modes of operation/service delivery of outpatient services (such as limited working hours for vaccination sessions (A.1.2)

1.2 SWOT analysis

The country strategy for the national immunization program is informed by:

- the root causes for the above challenges,
- the recognition of assets (strengths and opportunities of the EPI)
- The recognition of threats (external factors beyond the control of the EPI that might affect the performance if materialized)

as follows:

Strengths	Weaknesses
• Highly qualified and dedicated health workforce • A wide and functioning network of health facilities delivering outpatient services, including immunization • New vaccines are already included in the national immunization schedule • Integrated EPI into Primary health care • Dedicated EPI staff • Effective contracting out mechanisms to deliver outreach services for Syrian Displaced • Adequate cold chain capacity (at the national level to accommodate commodities purchased and supplied by the MoPH) • Well functioning integrated VPD surveillance integrated • Adequate demand for immunization by the population at large • Decrease in drop-out rates (DTP1 – DTP3) • Enhanced cooperation between the EPI and the private sector	• Limited routine data analysis and monitoring practices in immunization • Insufficient EPI management capacity at district levels • Conceptual gaps between the different schools in the private sector (e.g. different definitions of “fully immunized child”) • Vaccine stock-outs in the private sector • Suboptimal horizontal feedback mechanisms between VPD surveillance, EPI and response teams • Absence of a universal understanding of the importance for a unified immunization calendar coupled to limited mechanisms to impose a unified national vaccination calendar • Persistant financial access barriers to vaccination for few groups of the population • Short window for vaccination sessions in few outlets • Absence of facility or community based tracking systems to follow dropouts

[2] Strong evidence is missing pending an EVM assessment

Strengths

- Existance of solid technical immunization committee (EPI technical committee)

Weaknesses

- Absence of modern Integrated Child information system

Opportunities

- Accreditation Program of PHC Centers
- Non-governmental actors (non- or for-profit) capable of providing medical or managerial services
- Presence and commitment of all EPI national and international portners
- Active WHO and UNICEF in Lebanon
- Initiation of the Universal health Coverage for the most vulnerable population

Threats

- Uncontrolled movement of Syrian displaced across the borders
- Protracted stay of Syrian refugees with a beginning of a "Donor fatigue"
- Political division regarding the support to the Syrian crisis
- Gradual Paralysis of the political System, expected to increase.
- Deregulated market and liberal political system with low power to enforce policies and regulations

2 Conceptual framework

2.1 Vision, mission and goal of the national immunization program

Vision

By 2030: The risk of occurrence of vaccine preventable diseases (VPD) is reduced to the least possible, the country maintains its free polio status, and eliminates measles and neonatal tetanus.

Mission:

Ensuring and optimizing universal access to timely and complete vaccination to the totality of the population with a focus on the most vulnerable

Goal:

To improve health and well-being of the population through the reduction of VPD related morbidity and mortality, in line with the Sustainable Development Goal, namely target 3.2

Immunization program objectives and targets:

The primary objective of the national immunization program in next 4-years cycle is to achieve a 95% national coverage for all vaccines/antigens and a 90% coverage in all districts.

The national program success by 2020 is measured by the achievement of the following performance targets:

Expected result	Performance Indicator	Target
Immunization coverage is high and sustained	DTP3 containing vaccine coverage (national)	>95%
	Hep B birth dose coverage (national)	>97%
	BCG coverage (national)	>96%
	Pol3 coverage (national)	>95
	MCV2 coverage (national)	>95
	Rota coverage (national)	>95
Inequity in immunization is over	Percentage of districts or equivalent administrative area with DTP3 coverage ≥ 95%	90%
	Percentage of districts or equivalent administrative area with DTP3 coverage ≥ 80%	100%
	Difference in DTP3 coverage between the highest and lowest wealth quintiles	<2%
	DTP3 coverage difference between males and females	<2
	Penta3 coverage difference between the children of educated and uneducated mothers/care-takers	<2
Vaccines are administered timely as defined by the vaccination calendar	Fully immunized children	>92%
	DTP1-DTP3 drop-out rate	<3%
	MCV1-MCV2 drop-out rate	<3%
Effective vaccine management meets best international standards	The country scores against each EVM criteria above 80% at each level (national | sub-national)	100% | 90%

The following strategic program objectives are defined:

1 Vaccination coverage of underserved (or hard-to-reach) populations increased by 5 % per year

2 Access to and utilization of newly introduced & under-utilized Vaccines improved

3 VPDs surveillance strengthened to provide complete and timely information

4 EPI integrated within a more comprehensive CHILD HEALTH PROGRAM

Introduction of new vaccines

The following vaccination calendar will be used till 2020[3]

	At birth	2 months	4 months	6 Months	9 Months	12 Months	15-18
HepB	✓						
Penta		✓	✓	✓			✓
IPV		✓					
OPV			✓	✓			✓
Measles					✓		
MMR						✓	✓
PCV			✓	✓		✓	

- A fully immunized child (FIC) is defined as a child who has received at least: a birth dose of Hep B, three doses of polio including one dose of IPV, three doses of penta, three doses of PCV, two doses of measles vaccine, one dose of mumps and rubella vaccines before 12 months.
- Other vaccines will be introduced based oin the EPI technical committee consideration after thorough epidemiological and cost effective assessments

[3] Unless new vaccines against diseases with high burden in Lebanon are marketed to be considered for the introduction.

15 Key strategies

The country strategies to address the problems and achieve objectives are defined along health system building block. However, a few "universal" strategies outlined below will be applied irrespective of health system components. Although the current strategy is set to meet objective specific targets by 2020, there is a need to accelerate some interventions to address immunization coverage inequity gaps as soon as possible while investing in the system immunization system development in an incremental manner. Therefore, this strategy is about achieving some critical results in short-run while other axes will contribute to the immunization system performance, and sustainability improvements.

Universal strategies

Strategy A Promoting integrated, child-centered model of primary healthcare

An integrated, child-centered model of primary healthcare forms the main model that the national immunization program will strive to support, promote and consider while re-designing different elements of the national immunization system (such as service delivery, logistics and supply, advocacy, etc.). Using outreach and mobile teams for immunization for a wide range of interventions necessary for the integrated management of child illness among hard to reach population is one of the examples. As EPI can benefit from an integrated disease surveillance system, other public health program can benefit from the logistic capacity of the immunization system. This approach will be a cornerstone of the community mobilization and communication strategies (discussed below) required to secure sufficient demand not only for immunization, but other critical child health services.

Strategy B Reliance on public/consumer support to trigger desired changes in the healthcare market

Week enforcement mechanisms, namely the absence of direct administrative or financial instruments to secure desired behavior among key market actors on supply side leaves the national immunization program with only one choice: use demand side mechanisms to influence healthcare providers. This strategy is based on the concept that the population is not only a beneficiary of immunization, but also a consumer of the medical services and commodities in the market; if consolidated, it can become a powerful market force shaping the behavior of private healthcare providers for the benefit of the immunization program (or other health programs). Therefore, the future communication and social mobilization strategy will treat the population not as a passive beneficiary of immunization, but as aa active partner to achieve desired balance in the market. The fragmentation and chaotic use of vaccines and antigens is an example of the adverse behaviors that might be rectified through a strong partnership with the consumers.

Strategy C Rapidly increase immunity to selected VPDs in order to accelerate Reduction of morbidity and mortality from VPDs

The strategy implies a selective approach: the EPI management maintains its monitoring of low performing health facilities and areas with relatively low immunization coverage; supervision services might be contracted out to qualified agency (or agencies – depends on the geographic distribution and the scale of interventions needed), mainly if the recruitment of qualified staff continues to be a challenge. The EPI team (through supportive supervision) helps targeted health facilities to implement effectively micro-plans based on accelerated routine, outreach and focused mop up immunization services in order to contain pockets of low coverage by the end of 2017. A three years communication plan will assist the NIP to improve interactions at all levels leveraging the

coordination with the different stakedoldehrs and improve linkages with the local community and more specifically with the benficiaires.

Immunization system specific strategies

The following immunization specific strategies will be applied to produce desired results (that are summarized by Health system building blocks in Figure 2 on page 15):

Strategy D Institutional strengthening

The EPI governance or stewardship warrants strengthening the policy decision-making process, regulation and improving immunization intelligence. In the last few years, there have been sturdier tendency towards strengthening institutional mechanisms for strategic decision making in the immunization sector. Expanding and improving the skill and competence mix of the EPI technical committee, enlarging the public private cooperation, generation of evidence and translating it into programmatic interventions form the main blocs. Decision on inclusion of new vaccines in national schedule needs to be systematically informed through vigorous cost effective analysis.

Effective mechanisms (national and sub-national levels) are to be put in place to respond to VPD surveillance findings in order to early detect and prevent outbreaks. Scaling up the immunization information systems will help adequate planning and better management of the immunization activities. A well-functioning health information system is one that guarantees the production, analysis, dissemination and use of reliable and timely information on immunization.

Strategy E Program management support

The reliance for many tasks on the central team places additional burdens on the staff, which already lacked enough dedicated time and had sharing of responsibilities. The monitoring aptitude to conduct regulatory visits is limited. A plan to strengthen managerial and technical capacities and capabilities of the central and district EPI teams is crucial to improve the supportive, managerial and supervisory roles of the EPI team. Outsourcing the activities to a qualified body for a short term until recruitment and capacity building are accomplished might be envisaged.
The recruitment of public health officers with specialization or post graduate training/experience in VPDs management

Strategy F Focus on quality in rolling out immunization services

A golden standard for immunization is developed and included in all primary health care policies and might be reinforced by the PHC accreditation vehicle. Investments to improve the legal guardian's perception and built public trust in the safety of the vaccines supplied by the government. Parents / caregivers feedback or share concerns must be taken into consideration through new communication channels (based on immunization MIS Platform). Conduction of post vaccine introduction assessment and improvement of the AEFI reporting mechanism will be envisioned.

Strategy G Advancing public-private partnership for immunization

Public private partnership is considered as one of the top priorities in the immunization sector. When the health market fails to provide health benefits to the children mostly in need—especially to poor people in marginalized areas—partnerships between public and private organizations offers a groundbreaking mode with a good chance of producing improvement in immunization outcomes.

These partnerships need to be carefully managed as it might divert resources from public actions and distort public agendas in ways that favor private for profit sector.
Support will be provided to the EPI staff in order to strengthen and scale up necessary skills for them to negotiate successfully with the private sector. A public private platform will be created to exchange information, improve data transfer and feedback; and heighten the collaboration

Strategy H Widening the opportunity window

Missed opportunities for children to be adequately vaccinated will be addressed. Those missed occasions were found mainly to be due to failure to administer simultaneously all vaccines for which a child was eligible; false contraindications; health workers' practices, including not opening a multidisc vaccine vial for a small number of persons to avoid vaccine wastage; and logistical problems. To eliminate missed opportunities for immunization, programmed should accentuate routine supervision and periodic training of health workers to improve health workers' practices. Assessment of the dispensaries operating hours and availability of the immunization services will be carried out to better respond to beneficiaries needs.

Strategy I Development of a child centered health information system on based on modern ITC platforms and solutions

Efforts towards the development of a unified child health information system are envisaged. EPI program / the MoPH to generate complete and timely immunization performance reports regularly with a capacity for collecting real time information from the primary health care centers, and districts.

Expansion towards the private sector is warranted with the creation of formal incentives for physicians to adhere.

Strategy J Initiation of a national debate around adult vaccination

Vaccination rates for Lebanese aged 65 and over for influenza and pneumococcal disease have improved over time but remain relatively low. Efforts towards acquiring the knowledge to initiate an adulthood vaccination program are demanded: Transfer of the “know how” from NIP that have already instituted adult vaccination.

15.1 Governance

Immunization becomes integral part of PHC quality standard and/or accreditation mechanisms

Under Strategy A, The EPI management and partners contribute to the policy dialogue, design and implementation promoting a patient/child centered model of primary healthcare using immunization as a cornerstone of the model.

In addition, the EPI management and partners are actively involved in the development of any public health policy that (by changing directly or indirectly the delivery of primary health care services, supply of commodities or healthcare-seeking behavior of different population groups) can affect or benefit immunization system performance.

A EPI Technical Committee serves as an advisory board (assuming the functions of NITAG)

Under Strategy D, the MoPH to reinforce the role of the EPI Technical Committee by rejuvenating its membership and expanding its scope of expertise. The committee members will bring expertise from a wide range of disciplines: epidemiology, laboratory and surveillance, immunization specialists, financial specialist, and others upon need basis.

The Committee assumes the responsibilities of National Immunization Technical Advisory Group (NITAG); WHO will support the MoPH to align the Committee statute and operational procedures to international standards and best practices.

Effective mechanisms (national and sub-national levels) are in place to respond to VPD surveillance findings in order to prevent VPD outbreaks

Under the same strategy, the MoPH to reinforce the implementation of the elaborated operational procedures that defines how VPD surveillance results are communicated weekly to EPI teams at national and sub-national levels, what type of response from EPI team is required based on VPD surveillance findings (type of intervention, time scale, resources, etc.), how and whom the EPI team reports to about the outbreak prevention measures, etc.

A plan to strengthen managerial and technical capacities of the EPI team developed and implemented.

Under Strategy E, the MoPH together with EPI partners will seek expertise to assess the EPI management capacity and define needs followed by the development and implementation of a capacity strengthening plan, with focus on the district level.

Lessons are learned from each vaccine introduction (after conducting post-introduction evaluations) to inform planning in the future.

Under Strategy E, the MoPH and partners conduct a post-introduction evaluation (if a new vaccine is introduced by 2020), and generate evidence on the effectiveness, efficiency and quality of vaccine introduction (i.e. adherence to defined principles and an original plan) to inform future new vaccine introduction. by the end of 2017, a thorough assessment of the PCV introduction is needed.

Support the EPI / MoPH designated staff in strengthening / scaling up necessary skills to negotiate successfully with private sector

Under Strategy G, the MoPH together with partners to provide on job support (complemented by a training course if needed) to improve EPI team's negotiating skills and apply them during the consultations and/or interaction with private sector. The same skill-set can benefit other teams within the MoPH and can be scaled up accordingly.

Immunization committee is reinstituted in the order of physicians and is effective interface for a policy dialogue with the EPI team

Under Strategy G, the MoPH will convince the Order of Physicians to re-establish the immunization scientific committee that will be used by policymakers as a main interface to discuss issues, gain understanding and support from healthcare professionals playing a key role in immunization.

EPI program / the MoPH generates immunization performance reports instantly and defines areas for the improvement

Under Strategy I, the EPI team and relevant units of the MoPH use the evidence generated by the modern immunization management information system to identify performance gaps, modify the immunization program design or adjust its implementation as needed.

15.2 Service delivery

A task based teams are established to deliver required services in response to emergencies / outbreaks

Under Strategy D, WHO to support the EPI in establishing and training perfectas based teams in case of emergency and outbreak responses;, reserves and resources to be ensured by MOPH with the support of UNICEF and WHO through the Syrian crisis fund opportunities.

All PHCC &Disp use micro-plans to meet the vaccination targets

Under Strategy E, the EPI team together with an outsourced contractor (in charge of supportive supervision) to help the health facilities in areas with low coverage rates to adequately develop and implement micro-planning to minimize missed opportunities and meet the coverage targets.

A golden standard for immunization practices is developed and included in all relevant public health policies / initiatives including the PHC provider accreditation

Under Strategy F, the MoPH supported by WHO and UNICEF develops "a golden standard for immunization" that will be used as a reference point for quality, and safety. a benchmark for health facilities vaccinating children interlinked to the primary health care accreditation, a guide for training healthcare professionals, and a source to design and implementation of PHC/MCH policies and programs.

Outreach service delivery capacity (for a target population of 90,000 per year) is established and covers the target population in accordance with an operational plan approved in advance.

Under Strategy G, the MoPH identifies hard-to-reach population groups , catchment areas of low performing health facilities, and supports in the development of microplans and monitoring their implementation. . The EPI team develops a system to count each beneficiary using unique identifiers to avoid duplication (and over-reporting) and links it to the immunization MIS platform whenever feasible.

Opinions between physicians and EPI teams are exchanged at regular meetings at district levels

Under Strategy G, the EPI teams at district level organize and conduct bi annual meetings with physicians vaccinating children to identify challenges and opportunities, or to discuss policy or programmatic initiatives of the MoPH. District EPI teams report to the national EPI team summarizing key issues, action points and/or the progress achieved through the regular interaction with physicians.

Healthcare providers are encouraged to propose alternative (additional) working hours to vaccinate children (linked to Strategy I for micro-planning and patient's flow management)

Under 0, the MoPH discuss the possibility of introducing flexible working hours for vaccination. Different modalities would be offered, such as a concept of "Clinic on Duty" – the population will be informed that every Monday a designated provider in the neighborhood offers vaccination afterhours. This can be combined with home-visiting and other outreach immunization activities (part of health facility micro-plans)

Under Strategy I, the new immunization information system will have bi-directional communication functionality: parents/caregivers will be able to make an appointment (or change it), while healthcare providers can manage the patient flow (minimizing waiting times) and ensure the availability of vaccines accordingly.

15.3 Human resources

A voluntary base group of individuals at the district level are trained and ready to be mobilized by the EPI management when needed (for instance, to conduct national immunization days).

Under Strategy D, the EPI team secures in advance a group of volunteers, who are willing to support the national immunization program; the EPI conducts basic trainings to volunteers, complemented by special and refreshing trainings as needed. volunteers can be identified in nursing schools, health related institutes and youth groups.

Supportive supervision of health facilities is outsourced to highly qualified bodies.

Under Strategy E, one of the core functions of the EPI team will be outsourced to a qualified entity while the capacity gaps of the EI teams at district levels are addressed. The EPI team will oversee the performance of the contractor to ensure that health facilities receive the required support.

A plan to train EPI existing or newly recruited staff is implemented

Under Strategy E, while supportive supervision is outsourced to a qualified entity, the EPI develops and starts the implementation of a plan to recruit critical district level staff and train them; to enable the EPI team on the long run to carry out supportive supervision.

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Physicians at hospitals are aligned with EPI objectives through sensitization sessions conducted regularly

Under Strategy G, the EPI team organized sensitization sessions for physicians in hospitals to align them with EPI program objectives, targets, approaches, ongoing or pending initiatives.

15.4 Vaccine supply and Vaccine Quality

Switch of vaccine distribution from "pull" to "push" modes in selective districts, proper buffer stock management and vaccine logistic information system (see Strategy I below) are in place

Under Strategy E, the EPI team selectively switches from "pull" to "push" mode of vaccine distribution to enable health facilities to better manage buffer stocks and prevent vaccine stock-outs. a vaccine logistics information system that allows to perform real time tracking of vaccine utilization by health facilities

The public trust in quality and safety of vaccines supplied by the government is regained.

Under Strategy F, the MoPH ,partners and other stakeholders to design and implement a communication plan displaying the quality and safety of vaccines to the general population . In addition to that, the MoPH to ensure that all parents/caregivers who bring children to PHHC & Dispensaries see the actual market price of vaccines administered to their children free of charge.

A new vaccine is introduced in accordance with a detailed "vaccine introduction plan"

Under Strategy F, the MoPH to ensure that all safety standards are respected when a new vaccine is introduced. The training of healthcare providers on one side, and communication activities on the other ensures to gain the trust in vaccines among health professionals and parents/caregivers respectively.

Vaccine logistic information system is developed and linked with Immunization MIS system (bridging supply and actual consumption at health facility level)

Under Strategy I, the MoPH considers the feasibility of the procurement of "off-shelf software package" (with further customization capabilities) or revisiting the current software for vaccine stock and flow management. Once introduced, the EPI team will detect stock-out risks timely and reacts correspondingly.

15.5 Information management

The strategies related to information management are all based on the assumption, that the MoPH commissions the development and introduction of an immunization MIS that is built upon a modern ITC platform and meets essential functional requirements:

- Web (cloud) based unified register of immunization
- A dynamic system of detecting defaulters and tracking them
- A system for planning/managing patients flow (for immunization and/or other services)
- Real time reporting on vaccination coverage

The system will have potential to be linked with vaccine logistics information systems in order to match administration/consumption of vaccines with the vaccine movements in the stock.

Parents / caregivers provide feedback or share concerns about the quality and safety of vaccines through new communication channels (based on immunization MIS Platform)

Under Strategy F, the EPI team will establish a system to receive feedback from end users and critical actors in immunization: parents and/or caregivers. The feedback mechanism will be built in the immunization MIS, but can be complemented by other (more traditional) communication channels.

The EPI team will analyses feedback and take remedial actions as needed (not limited to the revision of the communication strategies/messages).

Physicians providing immunization either in private or non-for-for profit facilities use actively immunization register (based on the new immunization MIS platform)

Under Strategy G, the MoPH will introduce the new immunization register (web-based software) in PHHC & Dispensaries gradually making it one of key requirements for accreditation. Through a systematic social marketing combined with a regular dialogue with private doctors, the EPI team will encourage private practitioners to enroll into the immunization MIS to register vaccination cases (and to use other functionalities free of charge such as patient flow management).

Parents / caregivers having access to the immunization MIS platform schedule and carry out a vaccination visit in convenient time window

Under 0, the EPI team will promote the immunization MIS to be used by parents/caregivers as an interface to plan/schedule vaccination visits, receive reminders, or guidance/advise.

15.6 Immunization financing and sustainability

Cost implications of the implementation of the strategy are estimated and the burden on public sources of financing is reflected in the MoPH budget adequately

Under Strategy D, the EPI team will carry out costing exercise to project the future resource requirements for the implementation of the strategies b 2020, and will identify financial sources and funding gaps (if any).

Financial implications of vaccine introduction (including investment in cold chain & supply chain capacity) and supply recurrent costs are adequately reflected in the MoPH budget

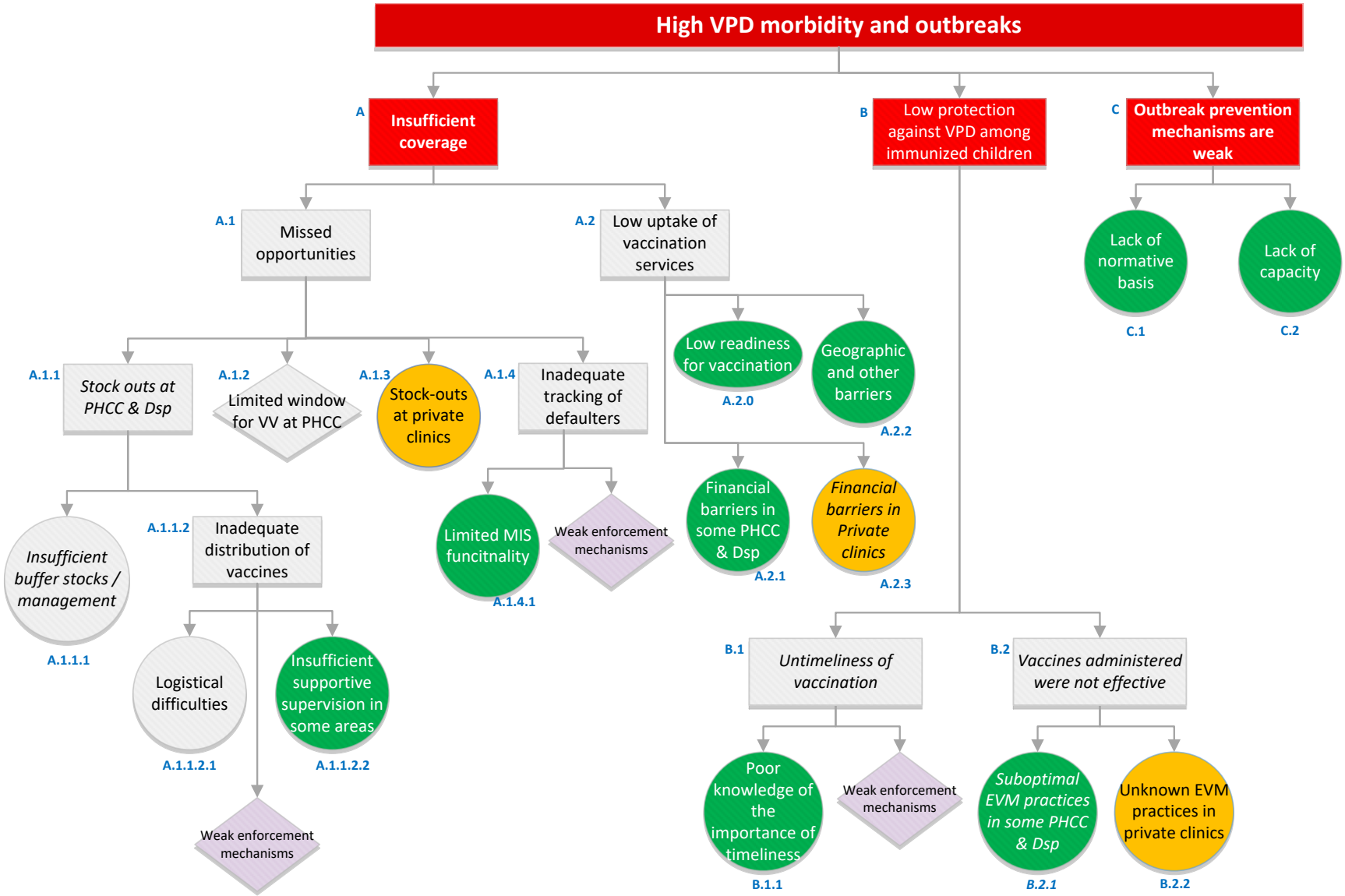
Under Strategy F, the EPI team assess accurately resource requirements for the introduction of a new vaccine (including one-time investment costs or incremental recurrent costs) and secures sufficient funds to ensure quality and safety of the new vaccine introduction.

Social protection mechanisms (social assistance) and other means (charity or outreach services) are used to target the poorest households who cannot afford immunization (or visiting PHCC &Disp)

Under 0, the MoPH in cooperation with the Ministry of Social Affairs elaborates and introduces mechanisms to target the poorest households experiencing financial barriers to immunization in non-for-profit health facilities and to improve the financial protection from immunization related financial risks.

16 Annexes

Figure 1: Problem tree analysis – the current situation



Note: Colored round boxes depict "basic" or "root causes" to be addressed by the strategy: green – issues specific for public sector, amber – private sector.

16.Annexes

Figure 2 A matrix of expected results by Immunization strategies and Health System building blocks

Strategies	Health System Components						Root causes addressed
	Governance	**Service Delivery**	**Resource mobilization**	**Vaccine Supply**	**Information system**	**Financing**	
Strategy A **Promoting integrated, child-centered model of primary healthcare**	Immunization becomes integral part of PHC quality standard and/or accreditation mechanisms	Outreach / mobile immunization teams are trained and equipped to deliver essential maternal and child health services to hard-to-reach population	Healthcare professionals working in PHC are shared efficiently between immunization and other PHC interventions	Capacity to store and transport vaccines are used whenever needed for other medical commodities (based on clearly defined standard operational procedures).	Immunization register / MIS either (a) serves as a basis for additional layers for data management (capturing MCH services important from a public health point of view), or (b) will be integrated into existing or emerging electronic medical records or other health information systems		A.1.2
Strategy B **Reliance on public/consumer support to trigger desired changes in the healthcare market**		Parents / caregivers are informed about the importance of vaccination timeliness and request healthcare providers to schedule next vaccination visit Parents / Caregivers inform about missed vaccination due to the absence of healthcare providers or vaccines (presumably via Immunization MIS platform)		Parents / caregivers are informed about the market prices of vaccines provided by the government free of charge			A.2.0 A.2.2 A.2.3
Strategy C **Rapidly increase immunity to selected VPDs in order to accelerate Reduction of morbidity and mortality from VPDs**	Supportive supervision provided intensively to selected low performing health facilities	Micro-plans developed and used by health facilities (with supportive supervision). Outreach services delivered wherever	Wherever feasible, supportive supervision is contracted out qualified non-government actors	No stock out vaccines experienced in selected low performing facilities	Regular reports on the performance of immunization from selected facilities delivered.	Financial resources needed for accelerated implementation of core strategies estimated and secured.	A.2.2 A.2.3 B.1.1 A.1.2

Strategies	Health System Components						Root causes addressed
	Governance	**Service Delivery**	**Resource mobilization**	**Vaccine Supply**	**Information system**	**Financing**	
		needed to meet coverage targets.					
Strategy D **Institutional strengthening**	EPI Technical Committee serves as an advisory board (assuming the functions of NITAG) Effective mechanisms (national and sub-national levels) are in place to respond to VPD surveillance findings in order to prevent VPD outbreaks	A Task based teams are established to delivery required services in response to emergencies / outbreaks	A voluntary base group of individuals at the district level are trained and ready to be mobilized by the EPI management when needed (for instance, to conduct national immunization days).			Cost implications of the implementation of the strategy are estimated and the burden on public sources of financing is reflected in the MoPH budget adequately	A.1.1.2.2 C.2
Strategy E **Program management support** The reliance for many tasks on the central team places additional burdens on the staff, which already lacked enough dedicated time and had sharing of responsibilities. The monitoring aptitude to conduct regulatory visits is limited. A plan to strengthen managerial and technical capacities and capabilities of the central and district EPI teams	A plan to strengthen managerial and technical capacities of the EPI team developed and implemented.	All PHCC &Disp use micro-plans to meet the vaccination targets	Supportive supervision of health facilities is outsourced to highly qualified bodies. The Implementation of a plan to train existing or recruit new staff enabling in long-run the EPI team to carry out supportive supervision has started	No vaccine stock-out has been reported thanks to switch of vaccine distribution from “pull” to “push” switch in selective districts, as well as proper buffer stock management and vaccine logistic information system (see Strategy I below)			C.1
Strategy F **Focus on quality in rolling out**	Lessons are learned from each vaccine introduction (after	A golden standard for immunization practices is developed and		The public trust in quality and safety of vaccines supplied by	Parents / caregivers provide feedback or share concerns about	Financial implications of vaccine introduction (including investment	A.1.1.2.3 A.1.4.2

Strategies	Health System Components						Root causes addressed
	Governance	**Service Delivery**	**Resource mobilization**	**Vaccine Supply**	**Information system**	**Financing**	
immunization services	conducting post-introduction evaluations) to inform planning in the future.	included in all relevant public health policies / initiatives including the PHC provider accreditation		the government is regained. A new vaccine is introduced in accordance with a detailed "vaccine introduction plan"	the quality and safety of vaccines through new communication channels (based on immunization MIS Platform)	in cold chain & supply chain capacity) and supply recurrent costs are adequately reflected in the MoPH budget	B.1.2
Strategy G **Advancing public-private partnership for immunization**	Support the EPI / MoPH designated staff in strengthening / scaling up necessary skills to negotiate successfully with private sector Immunization committee is reinstituted in the order of physicians and is effective interface for a policy dialogue with the EPI team	Outreach service delivery capacity (for a target population of 90,000 per year) is established and covers the target population in accordance with an operational plan approved in advance. Opinions between physicians and EPI teams are exchanged at regular meetings at district levels	Physicians at hospitals are aligned with EPI objectives through sensitization sessions conducted regularly		Physicians providing immunization either in private or non-for-for profit facilities use actively immunization register (based on the new immunization MIS platform)		A.2.2
0 **Support will be provided** to the EPI staff in order to strengthen and scale up necessary skills for them to negotiate successfully with the private sector. A public private platform will be created to		Healthcare providers are encouraged to propose alternative (additional) working hours to vaccinate children (linked to Strategy I for micro-planning and patient's flow management)			Parents / caregivers having access to the immunization MIS platform schedule and carry out a vaccination visit in convenient time window	Social protection mechanisms (social assistance) and other means (charity or outreach services) are used to target the poorest households who cannot afford immunization (or visiting PHCC &Disp)	A.1.2

Strategies	Health System Components						Root causes addressed
	Governance	**Service Delivery**	**Resource mobilization**	**Vaccine Supply**	**Information system**	**Financing**	
exchange information, improve data transfer and feedback; and heighten the collaboration **Widening the opportunity window**							
Strategy I Development of a child centered health information system on based on modern ITC platforms and solutions	EPI program / the MoPH generates immunization performance reports instantly and defines areas for the improvement	Parent's / caregivers are able to schedule vaccination appointments while health care providers manage patient's flows more efficiently		Vaccine logistic information system is developed and linked with Immunization MIS system (bridging supply and actual consumption at health facility level)			A.1.4.1