Comprehensive Multi-Year Plan (cMYP) for Immunization – Syria Arab Republic (2021-2023)

September 6 2020

Expanded Programme on Immunization
Ministry of Health
Syrian Arab Republic

cMYP 2021-2023

National Immunization Programme, Syrian Arab Republic

List of Tables and Figures

List of Abbreviations

AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
BCG	Bacillus Calmette-Guerin
CBAW	Childbearing Aged Women
CBS	Central Bureau of Statistics
CCE	Cold Chain Equipment
CCEOP	Cold Chain Equipment Optimization Plan
CDC	Communicable Disease Control
cMYP	Comprehensive Multi-Year Plan
DQS	Data Quality Self-Assessment
DT	Diphtheria Tetanus
DTP	Diphtheria Tetanus Pertussis
EPI	Expanded Programme on Immunization
EVM	Effective Vaccine Management
EVMIP	Effective Vaccine Management Improvement Plan
EWARN	Early Warning Alert and Response Network
GDP	Gross Domestic Product
GAVI	Global Alliance for Vaccines and Immunization
IEC	Information, Education and Communication
IPC	Inter-Personal Communication
IPV	Inactivated Polio Vaccine
ISC	Immunization System Component
M&E	Monitoring and Evaluation
MCV	Measles Containing Vaccine
MNT	Maternal and Neonatal Tetanus
MOH	Ministry of Health

NGO	Non-Governmental Organization
NITAG	National Immunization Technical Advisory Group
OPV	Oral Polio Vaccine
PHC	Primary Health Care
SIA	Supplementary Immunization Activities
SOPs	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities and Threats
Td	Tetanus Diphtheria
UNICEF	United Nations Children Fund
VPD	Vaccine Preventable Diseases
WHO	World Health Organization
MR	Measles Rubella
MMR	Measles Mumps Rubella
cVDPV	Circulating Vaccine-Derived Poliovirus
bOPV	Bivalent Oral Polio Vaccine
MCV	Measles Containing Vaccine
UNRWA	United Nations Relief and Works Agency
NIDs	National Immunization Days
SNIDs	Sub National Immunization Days
OBRA	Outbreak Response Assessment
IDPs	Internally Displaced Persons
AFP	Acute Flaccid Paralysis
CRS	Congenital Rubella Syndrome
JRF	Joint Reporting Form
CDC	Communicable Disease Control
ISCs	Immunization System Components
DQS	Data Quality Self-assessment
DQA	Data Quality Audit

cMYP Summary

cMYP Summary

Results: Immunization Situation Analysis Summary

Achievements

1. High political commitment
2. MOH commitment and well dedicated staff.
3. EPI is a high priority programme supported by law No. 238
4. Regular budget line for immunization programme
5. Functioning National Immunization Technical Advisory Group (NITAG) with regular meetings
6. Strong coordination and partnership with EPI partners (WHO, UNICEF, GAVI, NGOs)
7. Adequate qualified staff at national and governorates levels.
8. Highly dedicated staff at all levels, kept the programme running under the difficult situations over recent years
9. No stockout at national level with strong coordination between governorates
10. No differences between males and females vaccination
11. Achievement of high verification rates regarding the (DQA, 2019).

Immunization Coverage

1. The coverage of third dose of DPT containing vaccine had been 73% in baseline year 2019.

Immunization System Analysis

1. National immunization programme is one of the programmes under Primary Health Care Directorate (PHCD). The programme began in 1978 in six governorates by using six vaccines (tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles). In 1980, the programme covered all governorates of the country.
2. From 2002 to 2010 the administratively reported DTP3 coverage had been 98-99%, though the WHO-UNICEF best estimates for this period ranged from 79-84 %. Starting from 2011 DTP3 coverage was dropped from 95% to 66% in 2018. WHO-UNICEF estimated that DTP3 coverage has dropped to less than 50%.
3. Vaccine preventable diseases were at its lowest point before 2011 due to high routine vaccination coverage (more than 95%). EPI programme in Syria was very effective and Syria was declared a polio free country in 1999. The transmission of Measles virus reached zero in 2011. Neonatal tetanus was eliminated in Syria 1997.
4. After2011, polio outbreak occurred in Deir Ezzor at the end of 2013 and Circulating Vaccine-Derived Poliovirus (cVDPV) outbreaks in the same governorate in 2018. Tremendous efforts were made to control epidemics in a very short time. Moreover, outbreaks of other diseases such as measles, whooping cough also took place.
5.

Health System Analysis

1. Syria's health system is relatively decentralized and focuses on offering primary healthcare at three levels: village, health area, and provincial. According to WHO, in 1990 Syria had 41 general hospitals (33 public, 8 private), 152 specialized hospitals (16 public, 136 private), 391 rural health centers, 151 urban health centers, 79 rural health units, and 49 specialized health centers; hospital beds totaled 13,164 (77 percent public, 23 percent private), or 11 beds per 10,000 inhabitants. The MOH is the main health care provider for both curative and preventive services. The curative services are also provided by the private sector. Almost all private health facilities are located in large urban areas such as Damascus, Aleppo, Tartus, and Latakia.
2. WHO reported that in 1989, Syria had a total of 10,114 physicians, 3,362 dentists, and 14,816 nurses and midwives; in 1995 the rate of health professionals per 10,000 inhabitants was 10.9 physicians, 5.6 dentists, and 21.2 nurses and midwives. Despite overall improvements, Syria's health system exhibits significant regional disparities in the availability of healthcare, especially between urban and rural areas.

Strategic Plan: Summary 2021 -2023

National Immunization Priorities

1. Healthy children in the Syrian Arab Republic free of diseases or defects and to follow their healthy development avoiding child mortality from birth until the age of 5 years.
2. Provide efficient and equitable vaccination services, to all target population in Syria especially children, using safe, affordable and effective vaccines in order to reduce VPD burden in the country.
3. Achieve the goals of Global vaccine action plan and subsequent related global plans.

Immunization Priority Objectives

1. The overall goal of the National Immunization Programme is to protect children from vaccine preventable diseases (VPD) associated morbidity, disability and mortality including:
   a. Sustain polio free status.
   b. Eliminate measles and rubella by the earliest possible date.
   c. Sustain neonatal tetanus elimination in the country.
2. Increasing the coverage rate of all vaccines to more than 95%

National Programme Monitoring Framework

Indicator (Coverage)	2018 Baseline	2024 Target
BCG	86.0%	99.0%
bOPV0	81.0%	99.0%
Hep-B (Birth dose)	77.0%	97.0%
Penta1 (DTP-Hib-HepB)	83.0%	99.0%
IPV1	82.0%	99.0%
Penta2 (DTP-Hib-HepB)	77.0%	97.0%
IPV2	77.0%	97.0%
Penta3 (DTP-Hib-HepB)	73.0%	95.0%
bOPV1	76.0%	95.0%
MMR1	82.0%	95.0%
bOPV2	80.0%	95.0%
MMR2	71.0%	90.0%
bOPV3	70.0%	90.0%
Penta4 Booster (DTP-Hib-HepB)	70.0%	90.0%
DT Children 6 years	73.0%	95.0%
Td Children 12 years age	76%	95.0%

Priority Immunization Programme Strategies

1. Involving decision makers in immunization programme activities
2. Improved coordination and collaboration among national immunization programme partners.
3. Availability of updated law for the mandatory vaccination
4. Conducting a census or any other population survey to identify real population figures
5. Allocating sufficient budget to support 100% of the planned vaccination activities
6. Capacity building of workers at all levels
7. Retaining the qualified staff
8. Effective and efficient vaccine procurement and supply system
9. Reducing vaccines wastage rates to the minimum
10. Introduction of new vaccines
11. Developing and updating annual plans at all levels and micro-plans at health facility level
12. Expansion of vaccination services/network including hard to reach children/areas
13. Establishing and strengthening immunization in second year of life and school children
14. Strengthening monitoring, surveillance, data quality and reporting system.
15. Building the capabilities of the laboratories
16. Ensure epidemic preparedness, early detection of diseases and effective response to epidemics with VPDs.
17. Increasing awareness regarding importance of vaccination in the community.
18. Conducting research studies regarding communications and demand generation.

Major risks and challenges

1. Economic crisis and high inflation in the country
2. Presence of IDPs, hard to reach areas and mobile community
3. Emergencies, outbreaks, crisis, etc.
4. Lack of awareness among community regarding the importance of immunization.
5. Uncertain security conditions.
6. Manual reporting system and unavailability of data from insecure areas

Health and Development Impacts

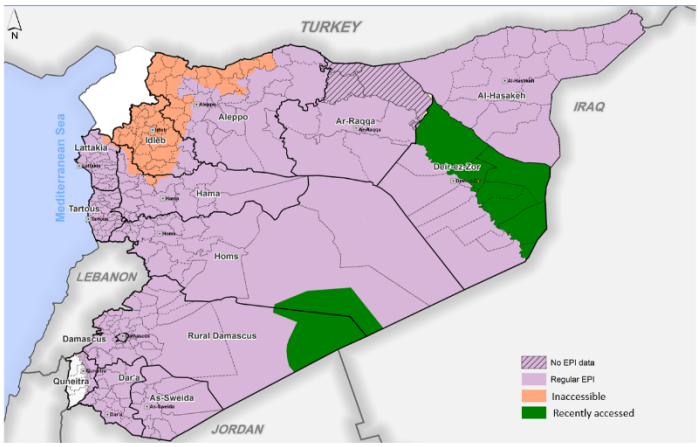
1. To reduce sickness and death resulting from vaccine preventable diseases through safe and effective vaccines which are available currently or likely to be available in future.
2. Reduced disability in the community associated with vaccine-preventable disease.
3. Improve child survival.

1 Situation Analysis

1.1 Country Context

Syrian Arab Republic (Syria) is located in Southwestern Asia, at the eastern end of the Mediterranean Sea. It is bordered by Turkey to the north, Lebanon and Palestine to the west and southwest, Iraq to the east, and Jordan to the south. Syria is divided into fourteen governorates, and 106 health area. The capital city Damascus is the largest city in Syria. Syria has an area of 185,180 km². It has a coastline of 183 km on the Mediterranean Sea. The population of Syria is about 21 million.

As shown in Table 1, the Gross Domestic Product (GDP) per capita was $2,782 in 2010. There is no authoritative GDP data available after 2012, due to Syria's civil war. Total expenditure on health per capita was USD51.0. The total expenditure on health as percentage of GDP was 3.5%.



EPI accessibility map in Syria, 2019

Table 1: Health and Economic Statistics

Indicator	Data
Gross domestic product per capita (2010)	$2,782
Life expectancy at birth m/f (2010)	73.1
Probability of dying under five (per 1 000 live births, 2010)	21.4
Total expenditure on health per capita (Intl $, 2010)	$51.0
Total expenditure on health as % of GDP (2010)	3.5%

1.2 Demography

Syria's population was 20,619 Million in 2010 reaching 21,391 Million in 2019. It is estimated that 46.5% of the population live in rural settings, 37.2% is under the ages of 15 (2010), 13% are children under-age of 5, 2.6% are infants under the age of 1 and life expectancy at birth is 73.1 years.

1.2.1 Total Population by Year

The total population of 21,391,220 was estimated in 2019, which is being considered as the baseline population for this Comprehensive Multi-Year Plan (cMYP). As shown in Table 2 below, the population projections for the future years from 2021 to 2023 were made at the rate of 2% annual growth.

Table 2: Total Population 2019 (Baseline) and Future Years 2020-23

Year	Population

2019	21,391,220
2020	21,810,656
2021	22,238,315
2022	22,674,361
2023	23,118,956

1.3 Health Sector Analysis

1.3.1 Health Indicators

Since 2011 Syria is in crisis, due to this situation many changes are faced every day regarding hot spots and movement of people which led to difficulty in proper planning and implementation. The health sector was greatly affected due to this war 27% and 40% of the health centers and public hospitals are out of service respectively. Also, health staff was affected tremendously either by quitting or moving to other areas; this led to a drop in health services provision. As conflict continues, large numbers of the workers in the health facilities left work altogether, leading to a considerable deterioration in the quality of health services provided in those health facilities.

The diseases covered by the EPI was at its lowest point before the crisis due to high coverage of routine vaccines (more than 95%); some have begun to emerge as a result of low rates of routine vaccination coverage; the most important amongst are Polio and Measles.

Dangerously low vaccination rates in some areas, combined with a breakdown of water and sanitation systems and pockets of malnutrition, are making disease outbreaks in Syria more frequent and deadly.

Detecting outbreaks early and responding quickly saves lives. The Ministry of Health has an established routine VPI surveillance system since the 90's which was sensitive enough to detect recent outbreaks of Measles and Polio.

In addition, in 2017, a case of circulating vaccine-derived poliovirus type 2 was identified in Deir-ez-Zor governorate and Raqua. In response, MOH and partners meticulously tracked the outbreak, engaged all parties in affected areas and organized mass polio vaccination campaigns that reached 2.6 million children - even in areas of active war. In late 2018, the outbreak was declared over. This achievement would not have been possible without the bravery and dedication of tens of thousands of local health workers.

Prior to the unfortunate events in the country, the level of immunization for the different antigens included in "The National Programme of Immunization" had coverage of 95%.

Health indicators improved considerably in the Syrian Arab Republic over the past three decades according to data from the Syrian Ministry of Health with life expectancy at birth increasing from 56 years in 1970 to 73.1 years in 2009; infant mortality dropped from 132 per 1000 live births in 1970 to 17.9 per 1000 in 2009; under-five mortality dropped significantly from 164 to 21.4 per 1000 live births; and

maternal mortality fell from 482 per 100,000 live births in 1970 to 52 in 2009. The Syrian Arab Republic was in epidemiological transition from communicable to non- communicable diseases with the latest data showing that 77% of mortalities were caused by non-communicable diseases. Total government expenditure on health as a percentage of GDP was 2.9 in 2009. Despite such low public investment access to health services increased dramatically since the 1980s, with rural populations achieving better equity than before.

Very few assessments were taken place to assess the status of health care services at the war areas; the World Health Organization (WHO) completed a rapid assessment in late June to assess the availability and functionality of health services and resources in affected areas. The survey included 342 primary health care centers (PHC) and 38 hospitals in several affected provinces: Rural Damascus, Homs, Hama, Idleb, Der El Zor, Dara'a, and Tartous. The first six provinces were selected to assess the effect of the current unrest on health services, while Tartous was selected to assess the degree of overburdened health facilities, due to high numbers of internal refugees from other affected provinces.

There is a need for a larger assessment and evaluation of health services in the affected areas. Prompt coordinated efforts and proactive solutions of health care services for displaced people are necessary in order to mitigate the serious and negative outcomes. Multiple interventions have been attempted by the WHO in response to the crisis including the distribution of surgical kits and equipment of mobile health units in Homs and rural Damascus.

In the post-crisis phase, there will be an urgent need for a development process designed to examine and assess the health situation in the country using a holistic approach; one that encompasses the health sector, socioeconomic status, the determinants of health, and upstream national policies and strategies that have a major bearing on health.

From another perspective, refugees are very much affected by the situation and often have complex medical problems including physical injuries and psychological trauma. In host countries, they often face poor housing and sanitary environments, difficult labor conditions, inadequate nutrition, and inaccessible medical care.

1.3.2 Health Care Delivery System

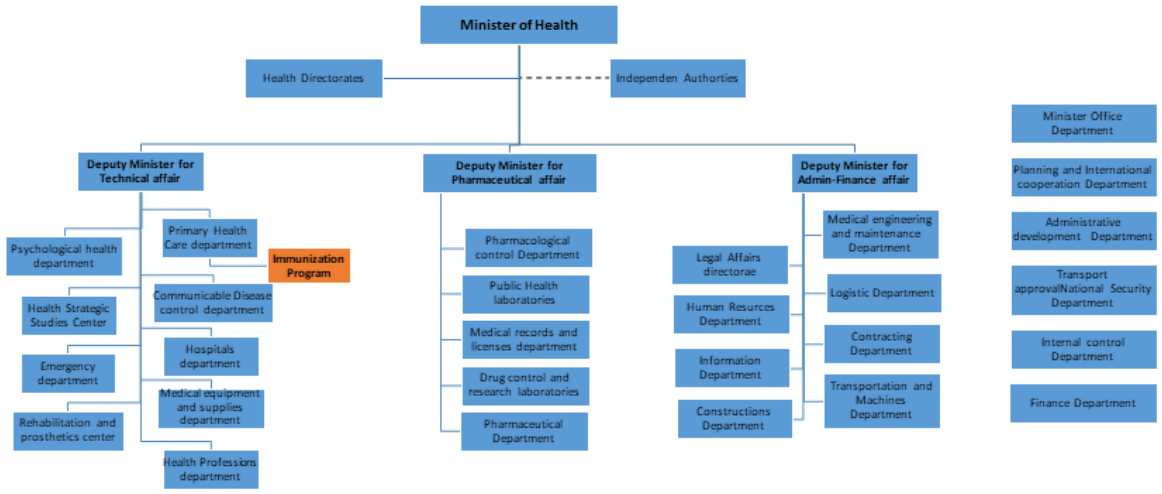
(SARA study 2017 (anex1)

1.4 National Immunization Programme

1.4.1 Historical Background (general overview)

National immunization programme is one of the programmes under Primary Health Care Directorate (PHCD). Some other related programmes such as Pharmaceutical Department, Medicinal Control Directorate, Public Health Labs and Logistics are under other sectors with a high level coordination between all. Figure 3 shows organogram of the MOH.

Figure 3: Organogram of the Ministry of Health



The national immunization programme began in 1978 in six governorates by using six vaccines (tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles).

In 1980, the programme covered all governorates of the country. In 1993 the hepatitis-B vaccine was introduced. The first MR campaign was implemented in 1998 and in 1999 the MMR vaccine was introduced. In 2001 the Hib vaccine was introduced, and in 2008 the IPV was introduced.

First MMR campaign was done in 1999. Pentavalent acellular vaccine was introduced in 2011 followed by Hexavalent vaccine introduced in 2015. In 2019 Tetanus Toxoid vaccine was replaced with Td vaccine.[1]

Vaccine preventable diseases were at its lowest point before 2011 due to high routine vaccination coverage (more than 95%). EPI programme in Syria was very effective and Syria was declared a polio free country in 1999 (Last NSL in Syria was in 1995; in 1999 there was one imported case of NSL1 from India; which did not affect the Polio Free status of Syria declared in 1999.
. The transmission of Measles virus reached zero in 2011. Maternal and newborn tetanus was eliminated in Syria many years ago.

After 2011, polio outbreak occurred in Deir Ezzor at the end of 2013 (Total of 36 cases of NSL1 were detected in 2013 and Jan 2014 : 35 confirmed cases in 2013 and 1 in 2014) ,and Circulating Vaccine-Derived Poliovirus (cVDPV) outbreaks in the same governorate in 2018(. In 2017, 74 cVDPV2 cases were identified with the same epicenter in Der Ez Zor. Both have been dealt with timely and the outbreaks were successfully controlled in due time). . Tremendous efforts were made to control epidemics in a very short time. Moreover, outbreaks of other diseases such as measles, whooping cough also took place.[2]

Syria was one of the earliest countries who adapted a national decree on compulsory immunization against Epidemics in 1952 (Decree No. 114/1952).

The vaccination programme depends on its decisions on the following committees:

[1] cMYP, Syria 2016-2018
[2] EPI review 2019

- The Polio follow-up committee which was established in 1993
- The Measles follow-up and documentation committee which was established in 2009
- The certification committee of Polio eradication which was established in 1999
- The environmental surveillance committee which was established in 2018
- The NITAG committee, which is the highest committee of the programme, was established in July 21, 2007. [3]

1.4.2 Programme Objectives (2016-2018)

The vision of EPI was:

Healthy children in the Syrian Arab Republic free of diseases or defects and to follow their healthy development avoiding child mortality from birth until the age of 5 years.

Message:

Providing free, preventive and curative health services of high quality in health units for all children.

Overall Goals:

- Reducing the mortality rate of children under five years of age
- Reducing the morbidity rate of children under five years of age

Objectives:

- Increasing the coverage rate of all vaccines to more than 95% on the smallest population settlement using all doses
- keeping Syria polio-free
- eliminating measles and rubella
- maintaining the elimination of neonatal tetanus

1.4.3 Immunization Schedule

Table 4: Immunization Schedule for children in Syria 2019

Age	Antigen	Dose	Administration
Birth	bOPV-0	2 drops	Oral
	BCG	0.05ml	Intradermal
	Hep-B birth dose**	0.5 ml	Intramuscular
	Penta-1***	0.5 ml	Intramuscular

[3] EPI Strategy

2 months	IPV-1	0.5 ml	Intramuscular
4 months	Penta-2	0.5 ml	Intramuscular
	IPV-2	0.5 ml	Intramuscular
6 months	Penta-3	0.5 ml	Intramuscular
	bOPV-1	2 drops	Oral
12 months	bOPV-2	2 drops	Oral
	MMR-1	0.5 ml	Subcutaneous
18 months	bOPV-3	2 drops	Oral
	Penta-4	0.5 ml	Intramuscular
	MMR-2	0.5 ml	Subcutaneous
1st grade school children (6 years)	DT	0.5 ml	Intramuscular
	bOPV	2 drops	Oral
	MenAcyw135	0.5 ml	Subcutaneous
2nd grade school children (12 years)	Td	0.5 ml	Intramuscular

**Hep-B birth dose to preferably be given within first 24 hours after birth.
***Penta (Pentavalent) includes DTP+Hib+HepB.

According to the recommended schedule as shown in Table 4, all 0 – 23 months children will receive one dose of BCG vaccine, 4 doses of bOPV, 2 doses of IPV vaccine, 4 doses of Pentavalent vaccine and 2 doses of MMR vaccines.

Table 5: Td immunization schedule for pregnant and child bearing age women in Syria

Vaccine	When to give	Dose & site	Expected duration of protection
Td 1	at first contact CBAW or during the first pregnancy		None
Td 2	at least 4 weeks after Td 1		1-3 years
Td 3	at least 6 months after Td 2		5 years
Td4	at least 1 year after Td 3		10 years

Td 5	at least 1 year after Td 4	0.5 ml intramuscular injection on upper left arm	During child bearing age

- All women in the CBA are entitled for 5 doses of TT (currently dT) taking into consideration of their earlier childhood and adolescent doses, if completed, then no further doses are recommended at adulthood
- The 2nd dose or any subsequent dose of Td vaccine (if due) is given to a pregnant lady preferably at least 2 weeks before delivery.
- After delivery these women complete the 5 dose Td vaccination schedule with remaining doses at appropriate interval irrespective of their pregnant status.

1.4.4 EPI Performance in Syria

From 2002 to 2010 the administratively reported DTP3 coverage had been 98-99%,. Starting from 2011 DTP3 coverage was dropped from 95% to 66% in 2018.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Estimate	80	79	80	80	72	45	41	43	41	42	48	47
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	99	98	99	99	91	64	60	62	60	61	67	66
Administrative	99	98	99	99	91	64	60	62	60	61	67	66
Survey	NA	82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

For the same reasons, measles vaccine coverage (MCV1) has also dropped. Administrative numbers show a drop from 97% to 80% in 2018.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Estimate	81	81	82	82	80	61	58	54	53	62	67	63
Estimate GoC	•	•	•	•	•	•	•	•	•	•	•	•
Official	98	98	99	99	97	78	83	71	70	79	84	80
Administrative	98	98	99	99	97	78	83	71	70	79	84	80
Survey	NA	82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.4.5 Immunization Programme Stakeholders

The vaccination programme is affiliated with the Child Health and Vaccine Department of the Primary Health Care Directorate and their partners are as follows[4]:

Ministry of Health	Governmental entities	

[4] EPI Strategy, Syria

		International organizations
- Directorate of Communicable and Chronic Diseases - Supply Directorate - Directorate of Public Health Laboratories - Directorate of Preparedness, Ambulance and Emergency - Pharmaceutical Affairs Directorate - Medicine Control Directorate	- Ministry of Education - Ministry of Interior - Ministry of Information - Ministry of Water Resources - SARC Syrian Arab Red Crescent(NGO).	- WHO - UNICEF - GAVI - UNRWA

1.4.6 Current Situation of Immunization and Vaccine Preventable Diseases in Syria

Vaccination rates declined sharply when the difficult situation started in 2011. According to the MOH, DTP3-containing vaccine coverage has dropped from 95% to around 66% in 2018.

Before the current difficult situation, the immunization programme in Syria was strong. Syria was declared polio-free since 1999 and measles endemic virus transmission reached zero level in the years 2011. Maternal and neonatal tetanus was eliminated in Syria since 1997.

Table 6: Routine Immunization Coverage Estimates in Syria, 2019[5]

Vaccine/Dose	Coverage
BCG	86%
bOPV0	81%
Hep-B (Birth dose)	77%
Penta1 (DTP-Hib-HepB)	83%
IPV1	82%
Penta2 (DTP-Hib-HepB)	77%
IPV2	77%
Penta3 (DTP-Hib-HepB)	73%
bOPV1	76%
MMR1	82%
bOPV2	80%
MMR2	71%
bOPV3	70%
Penta4 Booster (DTP-Hib-HepB)	70%
DT Children 6 years	73%
Td Children 12 years age	76%

1.4.7 Target Population Baseline (2019) and Future Years (2021-23) and Vaccine Schedule

[5] WHO-UNICEF Joint Reporting Form 2019

Syria has estimated total population of 21,391,220 in 2019, which is being considered as the baseline population of this Comprehensive Multi-Year Plan (cMYP). In consultation with Central Bureau of Statistics, the Ministry of Health (MOH) has made population projections for the future years from 2021 to 2023 through applying projections based on an average annual growth of 2%.

Table 7: Target Population Baseline (2019) and Future Years (2021-23) and Vaccine Schedule

Target Group	Vaccine doses	Target Population Size*				
		2019	2020	2021	2022	2023
Target Groups for Routine Immunization						
Total Population		21,391,220	21810656	22,23831	22,6743	23,118956
(0-1 week) Births	BCG, Hepatitis-B Birth Dose and bOPV0	547,158	575000	588,064	599,825	611,821
2 months (Surviving infants)	Penta 1, IPV1	547,158	575000	588,064	599,825	611,821
4 months (Surviving infants)	Penta 2, IPV2	547,158	575000	588,064	599,825	611,821
6 months (Surviving infants)	Penta3, bOPV1	547,158	575000	588,064	599,825	611,821
12 months (Surviving infants)	MMR 1, bOPV2	547,158	575000	588,064	599,825	611,821
18 months (Surviving infants)	Penta 4, MMR 2, bOPV 3	547,158	575000	588,064	599,825	611,821
6 years (1st grade school children)	DT, bOPV 4.	547158	575000	588,064	599,825	611,821
12 years (6th grade school children)	DT	547158	575000	588,064	599,825	611,821
Pregnant women	Two doses of Td	547,158	575000	588,064	599,825	611,821
Target groups for Campaigns						
Children < 5 years	bOPV	2,774,310	2804278	2,860,365	2,917,572	2,975,923
Children 6 months to 12 years	Measles				6,800,000	

*National Immunization Programme is using the same number of children as a target for all antigens (primary and booster doses) in routine immunization.

1.5 Immunization System

1.5.1 Routine Immunization

Table 8: Situational Analysis – Routine Immunization

Indicators	2017	2018	2019
Immunization coverage			
DTP3 official coverage estimates	67%	66%	73%
Measles 1 official coverage estimates	84%	80%	82%
DTP3 most recent survey coverage	No data	No data	No data
% Fully Immunized Child (completed all antigens up to DTP4)	70%	70%	69%
Access and demand			
% Drop Out DTP1 - DTP3	12%	15%	12%
% Drop out BCG - Measles	5%	1%	5%
Immunization Equity			
% gap in DTP3 between highest and lowest socio economic quintiles	No data	No data	No data
Number and proportion of districts with DTP3 coverage > 80%	24(29%)	56(54%)	65(82%)
Proportion of children vaccinated by sex	No data	49.7%/ 50.3%	49.8%/ 50.2%
Number of high risk population identified for accelerated routine immunization programming	No data	No data	No data

As previously discussed, the achieved DTP3 coverage that officially reported by the MOH is somewhat low,. The most recent survey was conducted in 2015 .

Data on High Risk Population and inaccessible is collected at the district level and share with the higher levels; based on which the outreach/mobile activities are planned and conducted

Availability of coverage data by gender is one of the strengths of EPI programme in Syria. The results of this indicator show that the coverage between male and female vaccinated children is equitably distributed.

1.5.2 Accelerated Disease Control Initiatives

Table 9: Situational Analysis - accelerated disease control initiatives

Indicators	2017	2018	2019
Polio			
Polio SIA coverage	91%	96%	93%
Non-polio AFP rate per 100,000 children under 15 years of age	4	4.4	4.8
Number of rounds of national and sub-national immunization days	NIDs 3, SNIDs 5	NIDs 2, SNIDs 2	NIDs 2, SNIDs 2
Coverage Range NIDs	78-91%	83-96%	88-93%
Coverage Range SNIDs	46-114%	79-88%	62-85%
MNT			

TT2+ coverage	11%	10%	13%
% target population protected at birth from neonatal tetanus	94%	94%	94%
Number and proportion of districts reporting >1 case of neonatal tetanus per 1000 live birth	0	0	0
Was there an SIA? (Y/N)	No	No	No
Neonatal deaths reported and investigated	0	0	0
Delivery at Facility Rate	No data	No data	No data
Measles & Rubella			
Measles / MR vaccination coverage (1st dose)	84%	80%	76%
Measles / MR vaccination coverage (2nd dose)	76%	71%	71%
Measles incidence rate	35.4	15.6	1.3
Rubella incidence rate	3.5	4.2	4.2
Number of lab confirmed measles/rubella cases	513	237	24
Number of lab confirmed measles/rubella outbreaks	1	1	1
Geographic extent National Immunization Day	95%	95%	--
Age Group (in months)	6m-12y	6m-12y	--
Coverage	72, 82	86, 99	--

This section provides a brief description of the existing situation, achievements and gaps regarding below mentioned vaccine preventable diseases:

Poliomyelitis

Syria was free of poliomyelitis since 2014. The last reported endogenous wild Poliovirus in Syria was in 1995. However, Syria had experienced a polio outbreak in October 2013 in Deir al-Zour identifying 36 cases, last case was reported in January 21, 2014. Syria was confronted by a cVDPV outbreak in the same area in 2017- 2018, where 74 cases were reported. Successful polio vaccination response campaigns and efforts to strengthen AFP surveillance were carried out, and a new environmental surveillance site has been established in Mayadeen district of Deir Ez-Zor governorate, the ep-centre of the outbreak. This takes the total number of environmental surveillance sites in Syria to 17 in 14 governorates. The programme has developed strong capacity to implement mass population campaigns successfully and reach different communities/households in short period of time. It worth mentioning that the programme efficiently controlled two polio epidemics in the country in a record time (wild virus and the cVDPV2 outbreaks).

The last endogenous Wild Polio virus detected in Syria was back in 1995; in 2000 Syria was officially considered Polio free. With the eruption of the Syria War and the subsequent decrease in the EPI coverage, Polio virus struck twice in 2013 (NSL1) and 2017 (cVDPV2) which were both controlled immediately through concerted efforts of MOH staff and partners

The Surveillance system, meanwhile, was strengthened many folds through the expansion of the scope of sample collection from close asymptomatic contacts and Primary Immune Deficient Children (PID), healthy children arriving from ex outbreak zones, silent areas and returnees. Environmental sampling

started in late 2017 and currently covers 17 sites from all 14 governorates.

Measles

Every child in Syria should receive 2 doses of MCV; (in 2017 we implement addition dose at 6 months age and it was temporal (as response to measles outbreak in 2017 and we stopped it in 2020), it was only measles vaccine) the first MMR dose is given at age 12 months and the second dose is also MMR and given at 18 months. The coverage rate of both MMR doses is still low (MMR1 82% and MMR2 71% for 2019), needs to be raised more than 95% at district level to achieve the goal of measles elimination. In addition, Syria implemented a number of measles SIAs as a response to increasing number of cases reported since 2014. A major measles outbreak occurred in 2017 and outbreak vaccination response was carried out. Meanwhile, there is a need to monitor population immunity against measles and identifying the gaps in immunity in high risk areas/populations (periodic assessment), because there is an outbreak of measles arises almost every 3 to 4 years. All main PHCs and hospitals have routine case-based surveillance for measles. Besides, there is a surveillance guideline for measles, but it needs to be updated.
The transport of the Measles samples is from the HF to the NML in Damascus; this has a specific arrangement with the Organization as is the case for EWARS and Polio. Hence the statement of insufficient could be smoother.

Rubella and CRS

According to immunization schedule in Syria, every child should receive at least two doses of Rubella vaccine, which is included in MMR vaccine (at 12 and 18 months). The same surveillance criteria and strengths for measles are present for Rubella surveillance. There is lack of private sector involvement in measles and rubella surveillance.

Maternal, Neonatal and Tetanus

Syria had eliminated MNT long ago and maintained this status up to 2019.. The immunization schedule of children includes 4 primary doses of tetanus toxoid included within Penta vaccine (2, 4, 6 and 18 months), in addition to two booster doses within DTP vaccine (4-6 years and 12 years. Neonatal tetanus protection at birth in Syria is very high ranges between 92% - 96%. No significant challenges.

Hepatitis B

Within first 24 – 72 hours after child delivery, 77% of new-borns get a birth dose of hepatitis B vaccine.
The Schedule includes only 3 doses of Hep B at 0,2,6 months of age.
But currently weprovide 5 doses of hepatitis B vaccine in at birth, 2, 4, 6 and 18 months, included in the pentavalent vaccine, according to the national immunization schedule. The Hepatitis surveillance is available and managed by the CDC surveillance, however, weekly and monthly surveillance reports are received from PHCs and hospitals.

1.5.3 Analysis of Immunization Performance

Table 10: Situational analysis of routine EPI by immunization system components

Indicators	2017	2018	2019
Programme management			
1. Law & Regulation			
1.1 Is there legislation or other administrative order establishing a line item for vaccines?	Yes	Yes	Yes
2. Policy			
2.1 Has the national immunization policy been updated in the last 5 years?	Yes	Yes	Yes
3. Planning			
3.1 Does the Province have an annual work plan for immunization funded through Health Authorities budgeting processes?	Yes	Yes	Yes
3.2 What is the number of districts with an annual micro-plan for immunization (Please indicate denominators)?	73/82	92/106	96/106
4. Coordination			
4.1 What were the Number of NITAG (or equivalent) meetings held last year? (only at Federal)	4	4	4
5. Advocacy			
5.1 How many presentations on immunization performance, expenditures, were made to parliament? Once a year just achievements	1	1	1
Human Resource Management			
6. HR numbers			
6.1 No. of immunization skilled health workers per 10,000 population In official reports 24\10000	24	24	24
6.2 % of vaccinator posts currently vacant	No data	No data	20%
7. Capacity building			
7.1 No. & proportion of managers trained in immunization services through MLM training per year	0	0	0
7.2 No. & proportion of health workers trained in immunization services through Immunization Practices (IP) training per year	71%	79%	50%
7.3 % of health workers trained in immunization in the last two years (data from PIE and EPI reviews)	30%each year	30%each year	30%each year
8. Supervision			
8.1 Average no. of central supervision visits to each District level Per year	47/100%	54/100%	55/100%

Indicators	2017	2018	2019
Costing and financing			
9. Financial sustainability			
9.1 What percentage of total routine vaccine spending was financed using government funds? (including loans and excluding external public financing)	5%	5%	5%
9.2 What proportion of the line item in the provincial budget for immunization was actually funded?	No data	No data	No data
9.3 What % of immunization resources are being met by the domestic health budget (as identified in the annual budget plan)	No data	No data	No data
9.4 Government expenditures on routine immunization per surviving infant	$ 1.9	$ 1.8	$ 1.8
9.5 Are sub-national immunization budgets and expenditures monitored and reported at provincial level?	Yes	Yes	Yes
Vaccine supply, quality and logistics			
10. Transport / Mobility			
10.1 Percentage of districts with a sufficient number of supervisory/EPI field activity vehicles (based on their need) in working condition at the district level	80%	80%	90%
11. Vaccine supply			
11.1 Was there a stock-out of any antigen at national level during 2012?	No	No	N0
11.2 If yes, specify duration in months	--	--	--
11.3 If yes, specify which antigen(s)	--	--	--
12. Cold chain / logistics			
12.1 % of health facilities with adequate numbers of appropriate and functional cold chain equipment	65%	75%	80%
12.2 What was the year of last inventory assessment for all cold chain, transport and waste management equipment (or EVM)	--	--	Yes (EVM)
12.3 No. PHC facilities with > 80% score for all indicators on the last EVM assessment	--	--	0
12.4 % Districts with Availability of a cold chain replacement plan	0%	0%	60%
13. Waste disposal			
13.1 Availability of a waste management policy and plan	Yes	Yes	Yes
Immunization services			
14. Routine Coverage			
14.1 DTP3 coverage	67%	66%	73%
15. Demand			

Indicators	2017	2018	2019
15.1 National DTP1-DTP3 drop-out rate	9%	15%	12%
15.2 % of districts with drop-out rate DTP1-DTP3 > 10%	12%	15%	12%
16. Equity			
16.1 Number of Districts < 80% Coverage	24 (29%)	56 (54%)	65 (82%)
16.2 % Gap between lowest- highest socio-economic quintile	No data	No data	No data
16.3 % planned outreach visits conducted	60%	71%	84%
16.4 Line list of high risk districts/communities identified	Yes	Yes	Yes
16.5 High risk plan for disadvantaged communities	Yes	Yes--	Yes
17. New Vaccines			
17.1 % PCV Coverage (or coverage for other new antigens)	No	No	No
Surveillance and Reporting			
18. Routine Surveillance			
18.1 Percentage of integrated VPD surveillance reports received at national level from districts compared to number of reports expected (completeness)	96%	95%	92%
18.2 AFP detection rate/100,000 population under 15 year of age	4	4.4	4.8
18.3 % suspected measles cases for which a laboratory test was conducted	85%	92%	100%
18.4 Number of neonatal deaths for which a follow up investigation was conducted	No NNT deaths reported	No NNT deaths reported	No NNT deaths reported
18.5 Sentinel Surveillance for Rotavirus established	Yes	Yes	Yes
18.6 Sentinel Surveillance for meningitis (Hib/PCV) established	Yes	Yes	Yes
18.7 % of suspected meningitis cases tested for Hib/pneumococcal disease according to standard protocol	No data	No data	No data
19. Coverage monitoring			
19.1 % gap in match between DTP3 survey coverage and officially reported figures	17%	16%	23%
20. Immunization safety			
20.1 % of districts that have been supplied with adequate (equal or more) number of AD syringes for all routine immunizations	100%	100%	100%
21. Adverse Events			
21.1 National AEFI System is Active with a designated national committee	Yes	Yes	Yes
21.2 Number of serious AEFI cases reported and investigated	19	23	13
Demand Generation and Communication			

Indicators	2017	2018	2019
22. Communization strategy			
22.1 Availability of a routine immunization communication plan	Yes	Yes	Yes
23. Research			
23.1 Year of last study on community knowledge, attitudes and practices in relation to immunization	No	No	Yes

1) Programme Management:

The immunization programme has a high political commitment from the higher Authorities in the country and this supported through the mandatory vaccination law since 1952.
National immunization policy in place, cMYP 2016-2018, and annual work plan available at different levels, there is a budget line for immunization with the government budget (section 238) and this budget regularly contributes training activities, transportation, incentives, etc.

The VPD is under the leadership of the PHC department.

Immunization programme is being supported by a functioning National Immunization Technical Advisory Group (NITAG) with regular quarterly meetings and also there is a good collaboration with all partners and stakeholders.

2) Human Resource Management

The immunization programme has a satisfactory human resources distributed at the national, governorate, and districts levels. It includes the EPI manager and the VPD surveillance officers, cold chain officers and admin staff.
At the Health Center level, the number of Vaccination and surveillance personnel is not sufficient due to the high turnover and the uneven distribution. There is ongoing programme of capacity building by each level and type of cadres despite that the challenge of high turnover of staff is a threat for sustainability of quality immunization services, .

The percentage of vacant vaccinators' posts are 20%, although there is a lot of effort from MOH to fill the gaps and define a reserve vaccinator in each health center.

3) Vaccine, Cold Chain and Logistics

Vaccine, cold chain and logistics is an essential system component for the immunization programme. With the needs to introduce new vaccines the greater storage capacity is required at every level of the supply chain. This requires a consistently high standard of supply chain management, which can only be achieved if all of the links in the supply chain comply with current good storage and distribution practices.

Cold-chain equipment and vehicles used to distribute vaccines supply chain extends over different administrative levels of the country (National, Sub-national and Districts) up to the service delivery points. For each level of the supply chain, certain cold chain equipment are used according to the need and

population size.

The cold chain has been exposed to many risks such as shortage of refrigerated vehicles, aging of cold chain equipment, in addition to irregularity of electricity in health centers.

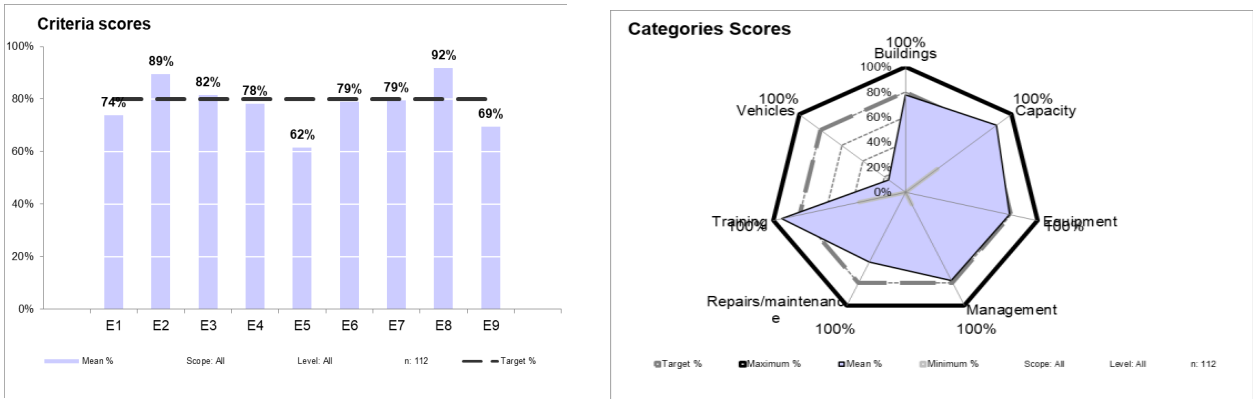
Effective Vaccine Management:

The recent Effective Vaccine Management (EVM) was conducted in July 2019, reflected that there is a good progress in the performance between the previous EVM findings in 2015 average (49% score) and the recent one in 2019 average (62%-82%). The overall scores of assessment criteria for Syria at all supply chain levels demonstrates a need for improvement in six areas of the vaccine and supply management system as there are three criteria (E2, E3 and E8) exceeds the standard required score of 80%, performance levels of four criteria (E1, E4, E6 and E7) are above 70%.

The Gaps areas were identified including: no electronic system for stock management, absence of maintenance preventive plans and specific annual work plan, budget covering important aspects related to immunization supply chain such as buildings where there were an actual needs to be renovated and rehabilitated in order to ensure compiling to all vaccine management requirements.

Figures 13 below shows the overall EVM scores by E9 criteria and by categories.

Figure 11: Overall EVM Scores by Criteria and Categories



4) Immunization Services Delivery:

Vaccines are delivered through three strategies, health centers (fix site strategy), mobile teams (mobile strategy) and sessions outside the centers (outreach strategy), free of charge, for children under five and for women of childbearing age regardless of their nationalities. Moreover, the program has developed a strategy to reach dropped out children aged 5-11 years children with 3 doses of HepB, 2 doses of MMR, 5 doses of Td, 2 doses of IPV and 3 doses of bOPV. This strategy is temporary and endorsed by the National Immunization Technical Advisory Group (NITAG-Syria).

Fixed site strategy

The vaccination strategy in fixed centers is an option to provide sustainable and applicable services. The national vaccination programme ensured a gradual increase in service delivery through a fixed center. Fixed immunization services cover about 168,597 (69%) of the total under one children. Residents living in areas within a circle whose half diameter is 3 to 5 kms around the health center or within 30 minutes of travel will receive the vaccination services provided by the fixed vaccination center.

For the established fixed center, the immunization programme ensures the availability cold chain equipment and its maintenance, trained and qualified personnel and minimum stocks of vaccines, logistics, etc.

Outreach strategy:

Vaccination in these sessions is carried out on the basis of the low rates of vaccination coverage in the health center, and the health center staff implement them with the aim of reaching every child within the sphere of the center and off-centers immunization services covered about 114,371 (21%) of the total under one children.

Mobile strategy:

It is a mobile vaccination unit with all its components (vehicles, workers – cold chain equipment - records - cards - syringes - safety boxes – vaccines, etc.). This strategy aimed to reach all children and women in settlements where there are no health units that provide vaccination services according to a specific programme or plan of action with an interval of at least one month and no more than 2-3 months at least, so that all the settlements are covered by four visits annually mobile immunization services covered about 54226 (10%) of the total under one **children.**

Equity:

Immunization strategies identified in Reaching Every District (RED/REC) approach has been implemented since. This has facilitated achieving equity in immunization services in the country. The aim of EPI is to reach every child regardless his/her sex, ethnicity, tribe, location, rich or poor, vaccination provided through three strategies fixed, outreach and mobile to cover all population.
Immunization services are free of charge. Gender disparities not appear with any documented evidence the percentage was (50.2 male, 49.8% female in 2019). Annually special plans to reach the children in hard to reach, nomads, IDPs or closed areas developed, implemented and monitored by the MOH jointly with partners mainly WHO and UNICEF. No information about the socio economics barriers on immunization and the disparities in coverage between high and low wealth quintiles.

5) Surveillance, Data Quality and Reporting

Surveillance:

Despite the critical situation in Syria the comprehensive communicable diseases surveillance system is still well functioning and in place. Primary health centres and hospitals reporting on a monthly and weekly basis and immediate notification in all governorates. This is complemented with community-based surveillance in some places.

All main PHCs and hospitals have routine surveillance. VPD surveillance is integrated within the PHC department of the Ministry of Health. There is an ongoing coordination with the national surveillance program under the CDC. For eradication/elimination purposes all related VPD diseases namely Polio, Measles, Rubella, Congenital Rubella Syndrome CRS, Rota, Pertussis, Diphtheria and neonatal Tetanus are reported and managed by the EPI

There are national surveillance guidelines for almost all VPDs but need updating. The surveillance system is backed by a well-equipped and efficient Public Health Laboratory (PHL), and it works on with generous support from WHO. Following cVDPV outbreak 2017, an environmental surveillance System has been established to detect polio virus.

An AEFI surveillance system was established, In 2007, it is functional and managed by the National EPI manager. Data entry and investigation is run by the EPI including response activities. Meanwhile, the collected data is also shared with the Pharmacovigilance Unit at central MOH for national compilation

VPD surveillance faced some obstacles like insufficient resources and dependence on donor support for transportation of samples, supervisory visits and other activities. In addition, there is no surveillance for some diseases like pneumococcal diseases, The willingness of the Private sector for VPD disease reporting needs to be streamlined in surveillance and some families refuse collecting samples from children. Another perceived threat is that recurrent outbreaks exhaust surveillance system and staff. Population living in insecure areas Is a challenge to the Surveillance System.

Data Quality and Reporting:

The information system is one of the main pillars in the structure of the immunization programme. Availability of an efficient and effective information system that ensures the accurate and timely arrival of information contributes greatly to respond appropriately.

The EPI information relies on two main axes of information, coverage data and surveillance data. Coverage data includes several performance indicators, some are already mentioned such as vaccination coverage, drop-out rates, etc. More indicators related to reporting system are also considered important such as the completeness and timeliness which were 93% and 85% respectively during the year 2019.

The reporting mechanism is one of the challenges of the EPI information system, as the programme relies on manual reporting from health facility to the district level and becomes electronic from District to governorate and central level, which takes at least two weeks every month to reach the national level. The availability of an electronic system at all levels is considered one of the recommendations of the cMYP preparation workshop and one of its main activities.

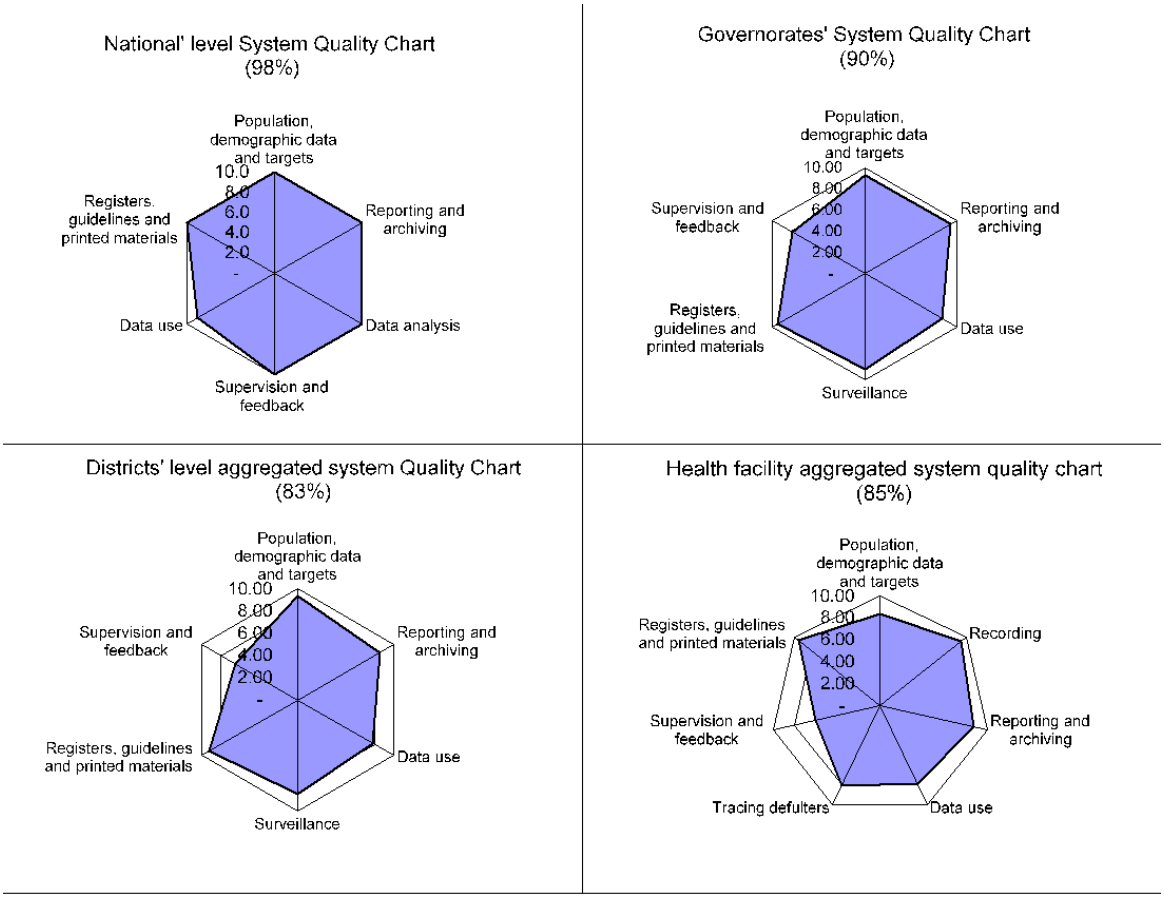
Another axis of information in the immunization programme is the surveillance system for VPDs, which also indicated that the completeness and timeliness was 92% for both in 2019.

The Data Quality Audit (DQA) report involved many positive points, the most important of which was that the accuracy ratio at the national and provincial levels which exceeded 95%, while this percentage varied from 0 - 109% at the health facility and district levels.

As shown in below Figure 14, the quality of the data in different domains, and the overall index showed more thatn 80% at all levels (health centers, directorates, governorates, and national). The assessment involved some weaknesses, the most important was the unavailability of updated and constant targets for

routine immunization activities, as the last census was conducted in 2004 and what is currently being used are estimates at the governorate level depends on the number of vaccinated children during polio vaccination campaigns. Therefore, there is a great need to obtain a more accurate source of information according to which vaccination target groups should be determined for the coming years. There are also many other areas for improvement were mentioned in the assessment report regarding improving the completeness and timeliness of reports in lower levels and the accuracy of these reports.

Figure 12: Immunization System Data Quality Index for Syria, 2019



6) Outbreak preparedness and response

Outbreak preparedness and rapid response is a joint responsibility of Communicable Disease Control (CDC) and EPI in general, but it is a pure EPI responsibility when it comes to VPDs outbreaks. The major strength points are; presence of rapid response teams at governorate level, cumulative experience of staff, presence of effective public health laboratory, presence of national and governorate annual work plans to control communicable diseases and presence of multi sectorial coordination. However, apart from polio, there is no outbreak preparedness and response plans. Lack of efficient budget for

emergencies and competing national priorities and security situation are among perceived obstacles, in addition to that, PHL supplies related to the diseases surveillance and outbreaks need to be ensured.

7) Advocacy and communication:

Communication addressing the public and clients plays an important role in increasing the utilization of EPI services through influencing the initial performance and sustain the continuation of behavior till the completion of the immunization schedule.

Media outlets like radio, television and celebrities and high national figures are used to raise the awareness regarding the immunization.

Although there is a communication plans in place, but all the activities conducted only during Supplemental Immunization Activities (SIAs) and there are no separate plans for routine immunization.

On the other hand, there are some gaps identified as lack of Interpersonal Communication (IPC) skills of health workers and community engagements mainly in routine immunization.

Figure 15 and 16 shows the findings from the last EPI review assessment conducted in 2019, regarding the knowledge of parents about the vaccine preventable diseases, next dose notification and concern about AEFI.

Figure 13: Knowledge of Parents about the Vaccines Preventable Diseases

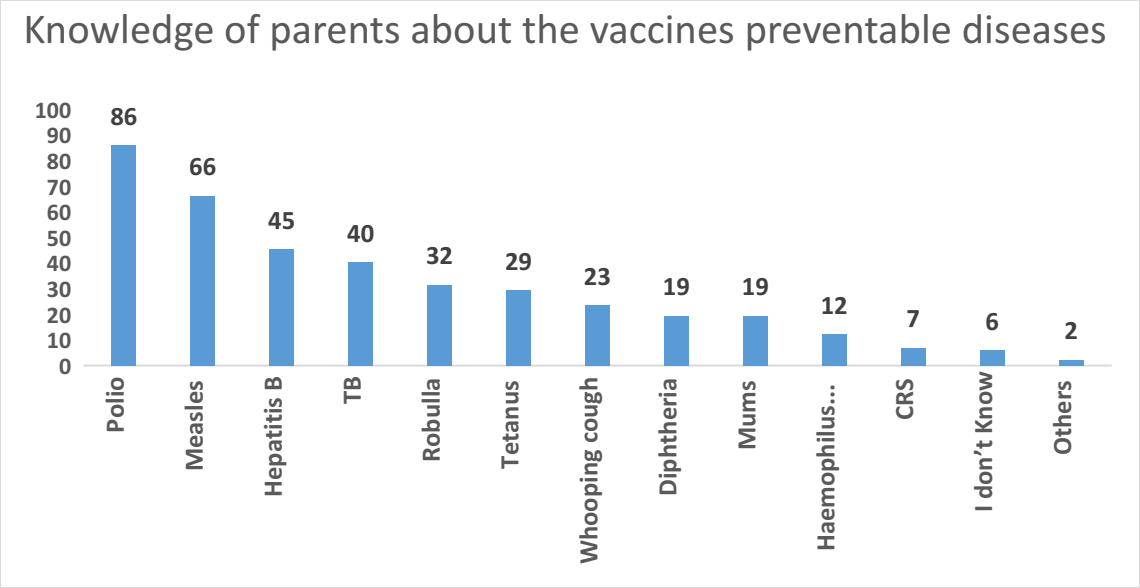
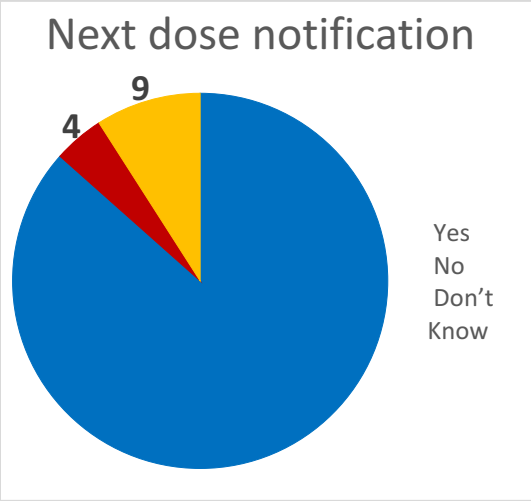
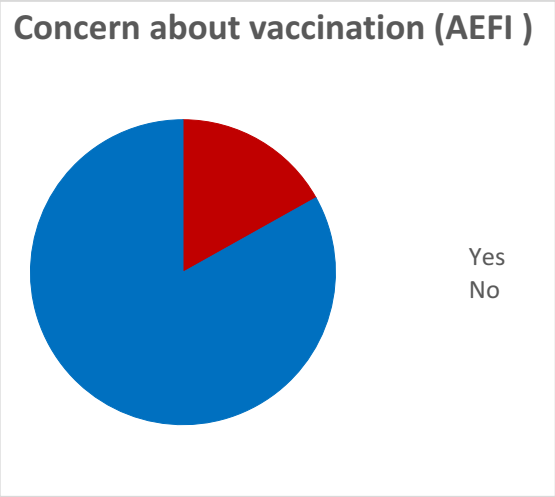


Figure 14: Knowledge of Parents about the Vaccines Preventable Diseases


Next dose notification
9
4
Yes
No
Don't
Know


Concern about vaccination (AEFI)
Yes
No

1.6 SWOT Analysis

SWOT Analysis – EPI Syria	
Programme Management	
Strengths	**Weaknesses**
• High political commitment • EPI is a high priority programme supported by law No. 238 • Regular budget line for immunization programme • Effective EPI management system in place. • Availability of updating national policies, guidelines, annual plans • Functioning National Immunization • Technical Advisory Group (NITAG) with regular meetings • Good collaboration with all partners	• Limited resources in the budget line • Lack of a law that covers psychological, health and financial compensation as a result of the vaccines side effects • Some manuals not updated (surveillance, missed opportunities)
Opportunities	**Threats**
• Political commitment, strong coordination and partnership with EPI partners (WHO, UNICEF, GAVI, NGOs) • Improved geographical access (new areas liberated) • Donors support and trust • Integration with other PHC programmes • Immunization performance has been an agenda in national Parliament deliberation.	• Economic crisis and high inflation in the country. • The security situation in some areas • Emergencies, outbreaks, crisis
Human Resource Management	
Strengths	**Weaknesses**
• Enough qualified staff at national and governorates levels. • Highly dedicated staff at all levels, kept the programme running under the difficult situations over recent years	• Maldistribution of staff • Inadequate knowledge of the newly appointed staff with the rapid turnover and ageing of vaccinators • Incomplete implementation of the training plan • No training plan at health center level
Opportunities	**Threats**
• Donor support	

	• limited recruitment opportunities and turnover of qualified personnel • Absence of retention policy
Vaccine Management and Logistics	
Strengths	**Weaknesses**
• Availability of refrigerated vehicles for vaccines distribution to governorates • Availability of trained personnel with skills in dealing with emergency situations during transportation of vaccines. • Supportive supervision in collaboration with others • No stockout at national level with strong coordination between governorates • Strong system for monitoring the distribution and stock management • Availability of cold chain equipment at all levels • Trained staff on the policy of safety of injections and waste management. • Availability of adequate numbers of safety boxes	• Dependence on rented cars for vaccines transportation to health centers and for supervision • Shortage of fuel for refrigerated vehicles in some governorates • Inadequate financial incentives for supply workers. • Irregularity for electricity supply in some areas. • Poor performance of solar refrigerators during winter • Maldistribution of the cold chain equipment • Low score in some EVM indicators (maintenance and supportive management) • Absence of electronic system for stock management • Lack of maintenance preventive and replacement plans, specific annual work plan budget covering buildings re-habitation • Lack of implementation of WHO waste management guidelines • Lack of commitment to regular collecting (burning or burial) wastes at health facilities.
Opportunities	**Threats**
• GAVI NVS/HSS support and Cold Chain Optimization Platform (CCEOP) application and support • EVM improvement plan (EVMIP) • Availability of a political decision supporting the improvement of the vaccination programme indicators and the raising of coverage rates • availability of plans and guidelines adopted by WHO for the waste disposal	• Sustainability of donor support • Non-availability of budget line for cold chain maintenance and spare parts • Non-availability of waste disposal equipment
Immunization Services Delivery	

Strengths	**Weaknesses**
• Despite the crisis situation, EPI officers find solutions to implement immunization in hard to reach areas • Mobile/outreach activities are provided to populations from district and HFs • Support from partners and flexibility of the immunization programme at national level. • No differences between males and females vaccination. • Availability of studies for introducing new vaccines (rotavirus vaccine and pneumococcal vaccines) • A system for defaulter tracing is in place, implemented using some times SIAs and immunization week celebration • Availability of micro-plans, maps to provide vaccination services to high risk groups	• 18% of the existing PHC facilities is still not providing immunization services • High dropout rate (DTP1 and DTP3) of more than 10% in 54 districts • Low coverage in some antigen's (DTP3, MMR1 and MMR2) • Inadequate coordination with the private sector • Weak implementation of defaulters tracing system due to poor communication and transportation means and registration problems in some areas. • Fear from the side effects of vaccines • Lack of an updated population data
Opportunities	**Threats**
• Improved security situation • Supplementary Immunization Activities (SIAs) • Community participation. • Coordination with other sectors	• Population movements affected the targets • Ongoing conflict in some areas (Accessibility to insecure areas) • Outbreaks and emergencies
Surveillance	
Strengths	**Weaknesses**
• Surveillance system for VPDs is in place • Declaring Syria polio-free, wild virus and cVDPV2 • Dedicated staff for polio and measles case based surveillance at national and governorate levels • Achieved high, certification standard performance indicators in AFP surveillance. • Conduct complementary surveillance activities (healthy children, children with immunity deficiency, environmental surveillance) • Community-based surveillance in some places. • Establishment of AEFI surveillance system	• In depth review of the VPD surveillance hasn't been conducted since ….. • Weak linkage between number of cases, and analysis of vaccination coverage reports • Lake of documentation of some activities at HFs level • The AEFI focal persons not well trained about the importance of reporting • Lake of coordination with private sector in surveillance • Refusal in collecting samples with some families.

• Accredited laboratories.	
Opportunities	**Threats**
• Availability of donor support • Polio transition • Coordination with other sectors	• Recurrent outbreaks exhausting surveillance system and staff • Insecure areas
Data Quality and Reporting	
Strengths	**Weaknesses**
• Achievement of high verification rates regarding the (DQA, 2019) • Securing adequate printing materials (registers, tally sheets, immunization cards and reporting forms) • Availability of guidelines and SOPs at all levels • Target population is identified through using polio campaign data • There is a national plan and checklist for supportive supervision. • There are some identified EPI performance indicators which are monitored on almost monthly basis at all levels.	• Last censes was in 2004 • Mismatch of target numbers between different levels in some districts • Lack in monitoring the timeliness and completeness of reports in some districts • Inadequate training on data analysis and data use at the lower levels • Lack of implementation of planned supervision at governorate and district levels because of lack of transportation. • No documentation of supervisory visits or follow up action • No places to save and archive monthly reports in some areas, which leads to the loss of some reports for previous years
Opportunities	**Threats**
• Donor support • Plan to conduct a national coverage survey • Plan to conduct a national censes	• Manual reporting system • Unavailability of data from insecure areas
Demand Generation and Communication	
Strengths	**Weaknesses**
• Presence of SIAs communication plan and implementation experience • Media outlets like radio, television and celebrities and high national figures are used for EPI • Trained cadres with rich experience • Organization of communities through community societies • Best investment of social media • Good knowledge of the parents regarding usefulness of vaccinations • Parents are generally satisfied with the immunization services i.e EPI.	• Lack of routine communication activities • Absence of communication materials at health facility level. • Lack of studies and research • Health education on immunization to the parents is not being always provided at the time of their child immunization (Inadequate IPC skills) • Lack of risk communication skills.

Opportunities	Threats
• The spread of social media • Existing of community societies • Financial support from partners • Coordination with other sectors	• Vaccines hesitancy and refusal based on some private doctors' advice. • Little collaboration with private sector
Accelerated Disease Control Initiatives	
Strengths	**Weaknesses**
• Strong capacity of the programme to implement mass population campaigns successfully and reach different communities/households in short period of time • Controlling the two polio ourbreak in a record time (wild virus – cVDPV2) • Eliminated Neonatal tetanus since 1997	• Discrepancy between reported and independent coverage in some governorates during sub-national campaigns. • Difficult to reach children in war-torn zones during Polio and Measles Mass Immunization campaigns has resulted in low coverage rates.
Opportunities	**Threats**
• Financial and logistic support from donors. • Improvement in the geographical access. • Coordination and networking with other ministries, organizations and NGOs	• Population movements (demographic change) affected the targets and coverage. • Inaccessible population (7%). • Work of some individuals and organizations in uncontrolled areas negatively affecting the programme • High dependence on donors in surveillance, lab and outbreak response

1.4.7 cMYP Development Process and Key Areas for the cMYP Plan Period 2021-2023

With WHO assistance, the Ministry of Health has developed this document for the period 2021-23 through a very inclusive and consultative process. A four days consultative workshop was held from 22nd 25th

February 2020 in Damascus, Syria. The workshop was participated by the relevant staff of the EPI (national and governorate levels), MOH related directorates, NITAG, WHO and UNICEF. The objectives of the workshop were to:

- Brief the relevant decision makers, technical teams and partners on the importance, need and process for developing the cMYP for the period 2021-23.
- Undertake SITUATIONAL ANALYSIS including SWOT.
- Discuss and formulate the GOALS and OBJECTIVES.
- Discuss and identify the STRATEGIES and ACTIVITIES.
- Discuss and develop the IMPLEMENTATION PLAN and M&E.
- Discuss and agree on the way forward for developing and finalizing the cMYP.

In addition to the workshop, a series of consultations/ discussions among key programme partners were held to discuss and agree on the contents of the cMYP including coverage rates.

Also, the relevant national documents including National Health Strategy, cMYP 2016-18 and other relevant documents were reviewed in order to develop the cMYP in line with these already developed documents and guidelines by the MOH.

2 Immunization programme goals, objectives, strategies and activities

2.1 Programme goals, objectives and coverage targets

The overall goal of the National Immunization Programme is to protect children from vaccine preventable diseases (VPD) associated morbidity, disability and mortality including:

- Sustain polio free status.
- Eliminate measles and rubella by the earliest possible date.
- Sustain neonatal tetanus elimination in the country.

The overall objective of the National Immunization Programme is to improve the performance of the immunization system. While specific objectives/immunization targets are given below at the start of each immunization system component.

The immunization coverage targets both baseline (2019) and projections for the plan period (2021-2023) are listed below in Table 17:

Table 15: Coverage Rates (Baseline and Projections)

Indicator/ Antigen	Baseline Year (Administrative coverage)	Future Years		
Routine Immunization	**2019**	**2021**	**2022**	**2023**
BCG	86.0%	92.0%	96.0%	99.0%
bOPV0	81.0%	93.0%	95.0%	99.0%
Hep-B (Birth dose)	77.0%	88.0%	92.0%	97.0%
Penta1 (DTP-Hib-HepB)	83.0%	93.0%	95.0%	99.0%
IPV1	82.0%	93.0%	95.0%	99.0%
Penta2 (DTP-Hib-HepB)	77.0%	87.0%	92.0%	97.0%
IPV2	77.0%	87.0%	92.0%	97.0%
Penta3 (DTP-Hib-HepB)	73.0%	85.0%	90.0%	95.0%
bOPV1	76.0%	87.0%	92.0%	95.0%
MMR1	82.0%	84.0%	92.0%	95.0%
bOPV2	80.0%	87.0%	92.0%	95.0%
MMR2	71.0%	80.0%	85.0%	90.0%
bOPV3	70.0%	80.0%	85.0%	90.0%
Penta4 Booster (DTP-Hib-HepB)	70.0%	80.0%	85.0%	90.0%
DT Children 6 years	73.0%	90.0%	95.0%	95.0%
Td Children 12 years age	76%	90.0%	95.0%	95.0%

2.2 Strategies and Main Activities

In the cMYP document, the strategies and main activities to achieve the above EPI goals , objectives and targets are categorized into seven Immunization System Components (ISCs): i). Programme Management, ii) Human Resource Management, iii) Vaccine Cold Chain and Logistics, iv) Immunization Services Delivery, v) Surveillance, Data Quality and Reporting, vi) Outbreak Preparedness, Detection and Response, vii) Demand Generation and Communication. This section presents specific objectives/set targets under all seven ISCs and a list of the component specific strategies and activities.

(1) Programme Management

The main objective of this immunization system component is to increase the programme management performance.

Specific objectives/targets:

- More authenticated coverage rates are ensured.
- Mandatory vaccination of all target groups is ensured.
- Financial sustainability for EPI activities is ensured.
- Political commitment is enhanced.

Strategies and activities to achieve the programme management targets are:

Strategy 1.1: Conducting a census or any other population survey to identify real population figures

Activity 1.1.1: Advocate the relevant authorities to conduct a new population census/survey (meanwhile the immunization programme will continue working on the best estimates based on available data.

Activity 1.1.2: Continue advocacy and follow-up meetings till the relevant authorities conduct a census/survey

Activity 1.1.3: In the light of census/survey results update the population data and target groups for all antigens

Activity 1.1.4: Adjust immunization goals and targets accordingly

Strategy 1.2: Availability of updated law for the mandatory vaccination

Activity 1.2.1: Conduct advocacy meetings with the relevant authorities to discuss the importance of updating the mandatory vaccination law

Activity 1.2.2: Continue advocacy and follow-up meetings till the mandatory vaccination law is developed and endorsed

Strategy 1.3: Allocate sufficient budget to support 100% of the planned vaccination activities

Activity 1.3.1: Carry out comprehensive planning for all EPI activities

Activity 1.3.2: Advocate the relevant authorities about the importance of EPI activities and availability programme budget

Activity 1.3.3: Review the plan and set priorities according to available funds

Strategy 1.4: Involve decision makers in immunization programme activities

Activity 1.4.1: Conduct regular/need-based advocacy meetings with the relevant decision makers and sensitize them so that they involve and support immunization activities

Activity 1.4.2: Submit a quarterly report on the achievements of the national vaccination programme to the higher authorities

(2) Human Resource Management

The objective of this immunization system component is to increase the availability of qualified human resources for the immunization programme

Specific objectives/targets:

- The quantity and quality of qualified health workers at all levels is ensured

Strategies and activities to achieve the human resource management targets are:

ISC Objective 2:

Strategy 2.1: Mapping of vaccinators

Activity 2.1.1: Conduct detailed mapping of vaccinators and identify their needs at all levels

Activity 2.1.2: Deploy vaccinators in the light of mapping findings giving the priority to districts/ health areas with significant HR shortage

Strategy 2.2: Training needs Assessment

Activity 2.2.1: Conduct study on the qualification levels and role of workers

Activity 2.2.2: Conduct training needs assessment of workers in the various components of the programme

Activity 2.2.3: Prepare and implement the necessary training, including periodic refresher training (every 2-3 years)

Strategy 2.3: Focus on needy governorates (equitable distribution)

Activity 2.3.1: Identify priority provinces/districts /centers based on an agreed criteria

Activity 2.3.2: Find alternatives and reconsider the distribution and transfer of cadres as needed

Activity 2.3.3: Allocate incentives for workers in the most vulnerable districts

Strategy 2.4: Retaining cadres

Activity 2.4.1: Provide financial and non-financial incentives

Activity 2.4.2: Ensure equal opportunities for trainings

Strategy 2.5: Capacity building of workers at all levels

Activity 2.5.1: Estimate the need for health workers to be trained

Activity 2.5.2: Conduct MLM training course for mid-level managers

Activity 2.5.3: Carry out training courses for health workers in developing plans

Activity 2.5.4: Conduct training on vaccine administration and safe injection techniques

Activity 2.5.5: Conduct training on information system and registration accuracy

Activity 2.5.6: Conduct training on VPD surveillance and outbreak investigation and lab technicians

Activity 2.5.7: Conduct training on tracing defaulters

Activity 2.5.8: Conduct IPC skills training for vaccinators

Activity 2.5.9: Conduct training courses for medical equipment maintenance engineers on the maintenance of solar energy refrigerators and other cold chain equipment

Strategy 2.6: Multi- task cadre to meet the urgent need

Activity 2.6.1: Develop a TORs including the criteria for the multi-task cadre

Activity 2.6.2: In the light of TORs, identify the existing workers for multi-task

Activity 2.6.3: Train the identified workers in multi-task

Activity 2.6.4: Deploy them as per need

(3) Vaccine, Cold Chain and Logistics

The objective of this immunization system component is to improve/sustain an uninterrupted supply of vaccines to immunization services delivery.

Specific objectives/targets:

- Un-interrupted availability of vaccines at all levels including health centers without any stockouts is ensured
- Vaccine management at all levels is improved
- Proper functioning of cold chain equipment is ensured
- Transportation of vaccines under required temperature is ensured
- The risks of medical waste from vaccines is minimized

ISC Objective 3:

Strategy 3.1: Availability and mobilization of vaccines transportation vehicles at all levels

Activity 3.1.1: Re-evaluate the requirements for vaccines transportation at all levels

Activity 3.1.2: Procure additional vaccines transportation vehicles in the light of identified needs

Activity 3.1.3: Ensure the availability of necessary fuel in sufficient quantities to take into account the distances

Strategy 3.2: Providing financial incentives for overtime of workers in vaccine warehouses

Activity 3.2.1: Conduct advocacy meetings with the relevant authorities to discuss and sensitize them to approve the overtime/incentives for workers in vaccine warehouses

Activity 3.2.2: Provide overtime/incentives to workers of vaccine warehouses

Strategy 3.3: Reducing vaccines wastage rates to the minimum

Activity 3.3.1: Conduct regular sessions with workers to minimize the vaccine wastage rates

Strategy 3.4: Effective and efficient vaccine procurement and supply system

Activity 3.4.1: Coordinate with the Ministry of Foreign Affairs to facilitate customs exemption of vaccine shipments

Activity 3.4.2: Develop monthly plan and distribution due to limited capacity of the stores at governorate level (due to electricity, no full time Cold chain store keeper and no alarm system for maintenance of the temperature in most of the governorates.

Strategy 3.5: Implement EVM assessment recommendations

Activity 3.5.1: Implement the EVM improvement plan

Activity 3.5.2: Conduct trainings for vaccine management team

Activity 3.5.3: Provide logistics support including computers

Activity 3.5.4: Monitor the EVM indicators on a regular basis

Strategy 3.6: Ensuring provision of repair and maintenance for cold chain equipment

Activity 3.6.1: Keep provision for the repair and maintenance of cold chain equipment including spare parts

Strategy 3.7: Introduction of new vaccines

Activity 3.7.1: Identify the need for the introduction of new vaccines (Rota, PCV13 and HPV) and get approval of the competent authorities

Activity 3.7.2: Prepare plans and guidelines for the introduction of new vaccines

Activity 3.7.3: Increase the storage capacity to accommodate the new vaccines

Activity 3.7.4: Conduct training for health workers on new vaccines

Activity 3.7.5: Conduct health awareness sessions regarding new vaccines

Activity 3.7.6: Appropriately implement the plan to introduce the new vaccines

Strategy 3.8: Facilitating cold chain equipment replacement procedures

Activity 3.8.1: Regularly update cold chain equipment inventory

Activity 3.8.2: Update warehouse system

Activity 3.8.3: Replace old equipment, when needed

Activity 3.8.4: Develop and implement preventative maintenance plan for cold chain equipment

Activity 3.8.5: Ensure availability of a well-trained qualified national and governorate maintenance teams

Strategy 3.9: Ensuring the effectiveness of the cold chain equipment used to store and transport the vaccine

Activity 3.9.1: Monitor vaccine temperature from the national level to the child

Activity 3.9.2: Ensure availability of vaccine mentoring devices and freeze tags

Strategy 3.10: Turning medical waste into regular waste

Activity 3.10.1: Update the national waste management policy and ensure availability of waste management plans at all levels

Activity 3.10.2: Coordinate with the Ministry of Local Administration and Environment for safe waste disposal

(4) Immunization Services Delivery

The main objective of this immunization system component is to strengthen the capacity of immunization services delivery.

Specific objectives/targets:

- Geographical access is increased
- More than 90% DTP3 coverage at national level and more than 80% DTP coverage in at least 90% districts is achieved and maintained
- New vaccines into a routine vaccination programme are identified and introduced
- More than 90% of DT and Td coverage among school children (6 and 12 years of age) is achieved and maintained
- High immunization coverage in hard reach areas/special populations including newly controlled areas is ensured
- If missed earlier, vaccination of children during second year of life (2YL) is ensured.

Strategies and activities to achieve the immunization services delivery targets are:

ISC Objective 4:

Strategy 4.1: Developing and updating annual plans at all levels and micro-plans at health facility level

Activity 4.1.1: Develop annual plans at all levels

Activity 4.1.2: Conduct training on how to prepare micro plans at the health facility level

Activity 4.1.3: Develop micro-plans (RED/REC approach) at health area/health facility level to reach all children including the missed children

Activity 4.1.4: Implement the plans appropriately

Strategy 4.2: Update the manuals, guidelines and operational procedures according to the requirements

Activity 4.2.1: Since the EPI program is adopting the WHO guidelines as the basis for the EPI in Syria. “The National EPI program reviews and align with WHO regional Guidelines”

Activity 4.2.2: to review the training package and align it with the regional guidelines

Activity 4.2.3: Review and update the guidelines (preparation of plans, information system, VPD surveillance, communication and others)

Activity 4.2.4: Prepare, print and distribute guidelines on missed opportunities

Strategy 4.3: Expansion of vaccination services/network including hard to reach children/areas

Activity 4.3.1: Review and update vaccination strategies

Activity 4.3.2: Promote vaccination in fixed centers and establish temporary centers and mobile teams as needed in each district

Activity 4.3.3: Conduct rapid need assessment for areas newly accessible, as the security situation has improved, immunization teams can enter the newly accessible areas to immunize target population

Activity 4.3.4: In the light of assessment findings, identify and provide vaccination requirements including rehabilitation of health facilities (

Activity 4.3.5: SARA study 2017 (index)

Activity 4.3.6: Identify a focal person at national level to closely monitor and follow up with districts and coordinate with different partners on population movement

Activity 4.3.7: Identify at least one focal person for special groups per affected district for tracing of movements

Activity 4.3.8: Develop special plans to reach the children in hard to reach areas, nomads, IDPs.

Activity 4.3.9: Conduct the training of focal persons for notification of VPDs (community base surveillance)

Activity 4.3.10: Conduct Periodic Intensification of Routine Immunization (PIRI) in the newly accessible areas

Activity 4.3.11: Conduct mapping of areas with unreached children

Activity 4.3.12: To strengthen defaulter tracing system and to regularly track the defaulters and vaccinate them

Activity 4.3.13: Identify the missed opportunities and develop strategy to vaccinate the children by availing the missed opportunities

Activity 4.3.14: Conduct catch-up vaccination activity for un-immunized older children

Activity 4.3.15: Establish strong reporting system

Strategy 4.4: Establishing and strengthening immunization in second year of life and school children

Activity 4.4.1: Conduct advocacy meetings with the relevant authorities and sensitize them regarding the importance of immunization in second year of life ((2YL)

Activity 4.4.2: Update guidelines and strategy to vaccinate the children during the second year of life (if missed earlier)

Activity 4.4.3: Conduct advocacy meetings with the relevant authorities and sensitize them regarding the importance and continuation of vaccinating school children

Activity 4.4.4: Implement campaigns and prepare the final report

Activity 4.4.5: Evaluate the implementation and make recommendations

(5) Surveillance, Data Quality and Reporting

The main objective of this immunization system component is to increase the sensitivity of VPDs surveillance, data quality and reporting system.

Specific objectives/targets:

- Polio-free Syria status is maintained
- Elimination of Measles and Rubella is achieved
- Elimination status of neonatal tetanus is maintained
- High vaccination coverage rates by controlling rumors are achieved and maintained
- Data accuracy, timeliness of reports and follow-up is ensured

Strategies and activities to achieve the surveillance, data quality and reporting targets are:

ISC Objective 5:

Strategy 5.1: Strengthening surveillance system

Activity 5.1.1: Develop and update detailed plans for disease surveillance

Activity 5.1.2: Expand the surveillance network for zero-reporting units

Activity 5.1.3: Conduct training of new surveillance workers including surveillance teams to improve their skills in surveillance

Activity 5.1.4: Conduct refresher training for old workers including surveillance teams

Activity 5.1.5: Conduct supervision and monitoring of the surveillance teams and reporting units

Activity 5.1.6: Update and distribute updated surveillance manuals

Activity 5.1.7: Conduct awareness sessions for private sector doctors and partner organizations including schools

Activity 5.1.8: Expand the environmental surveillance network

Activity 5.1.9: Continue and expand community-based surveillance

Activity 5.1.10: Coordinate with international partners to increase their support in the area of surveillance including internal and external evaluation and automation of the surveillance

Activity 5.1.11: Conduct periodic meetings of the surveillance committees

Activity 5.1.12: Continue conducting with routine meetings to discuss indicators for surveillance at all levels

Activity 5.1.13: Ensure proper transportation of samples from the place they were taken to the laboratory

Activity 5.1.14: Provide the necessary logistics for surveillance

Strategy 5.2: Building the capabilities of laboratories (The National Public Health Lab)

Activity 5.2.1: Ensure maintenance and modernization of laboratory equipment

Activity 5.2.2: Provide reagents and laboratory supplies

Activity 5.2.3: Increase the capacity of the laboratory to accommodate a larger number of samples

Strategy 5.3: Enhancing the surveillance of Adverse Events Following Immunization (AEFI)

Activity 5.3.1: Prepare, print and distribute the guidelines and necessary recording and reporting forms for AEFI

Activity 5.3.2: Train workers to monitor AEFI cases and manage mild cases

Activity 5.3.3: Conduct follow-up and supervision

Activity 5.3.4: Hold technical committee meetings to discuss AEFI

Activity 5.3.5: Conduct sensitization sessions with private sector doctors

Activity 5.3.6: Implement media campaigns to raise awareness among the community regarding AEFI cases

Strategy 5.4: Establish an automated system for documenting vaccination programme data up to district level

Activity 5.4.1: Develop and implement an automated reporting system

Activity 5.4.2: Allocate sufficient logistics to smoothly run the automated system

Activity 5.4.3: Train workers in automated system

Activity 5.4.4: Regularly monitor the system and ensure its proper functioning

Strategy 5.5: Capacity building for health workers on data quality, triangulation and use of data

Activity 5.5.1: Update the training manuals

Activity 5.5.2: Conduct training

Activity 5.5.3: Conduct supervision and follow-up

Strategy 5.6: Conduct data quality assessment

Activity 5.6.1: Conduct Data Quality Self-assessment (DQS) on regular basis

Activity 5.6.2: Implement Data Quality Improvement Plan (DQIP)

Activity 5.6.3: Update the supervision forms to include the quality and accuracy of the data

Activity 5.6.4: Conduct supervision and follow-up

Strategy 5.7: Ensure the availability of recording and reporting tools for the national vaccination programme

Activity 5.7.1: Review and update the recording and reporting tools

Activity 5.7.2: Print and distribute the recording and reporting tools

Activity 5.7.3: Ensure availability of the recording and reporting tools at levels

(6) Outbreak Preparedness, Detection and Response

The main objective of this component is to improve the system for early detection and effective response to epidemics with vaccine preventable diseases.

Specific objectives/targets:

- Epidemic preparedness, early detection and effective response to epidemics with vaccine diseases is ensured

Strategies and activities to achieve the outbreak preparedness, detection and response targets are:

ISC Objective 6:

Strategy 6.1: Epidemic preparedness

Activity 6.1.1: Review and update the preparedness plan, early detection and response in the event of every epidemic

Activity 6.1.2: Identify a rapid response teams at all levels

Activity 6.1.3: Train the rapid epidemic response team at all levels

Strategy 6.2: Early detection of diseases

Activity 6.2.1: Study and analyze indicators continuously

Activity 6.2.2: Conduct risk analysis at governorate and district levels

Activity 6.2.3: Continue and expand environmental surveillance especially for high-risk areas

Activity 6.2.4: Ensure community-based surveillance in high-risk areas

Activity 6.2.5: Ensure rapid surveillance measures including case discovery, reporting and investigation

Activity 6.2.6: Carry out continuous monitoring of the movement of arriving passengers especially arrivals from high-risk areas

Strategy 6.3: Effective response to epidemics with vaccine preventable diseases

Activity 6.3.1: Develop and implement communication plan for the epidemic awareness including risk communication

Activity 6.3.2: Follow the SOPs to respond epidemics

Activity 6.3.3: Ensure availability of buffer stock of vaccines and supplies

Activity 6.3.4: Ensure adequate financial resources

(7) Demand Generation and Communication

The main objective of this immunization system component is to improve knowledge and attitude towards immunization among target population

Specific objectives/targets:

Strengthening the communication component to increase the demand for vaccination services, while ensuring that more than 90% coverage rates to be achieved until the end of 2023

Strategies and activities to achieve the demand generation and communication targets are:

ISC Objective 7:

Strategy 7.1: Evidence-based planning

Activity 7.1.1: Conduct study on knowledge, attitudes and behaviors towards vaccination

Activity 7.1.2: In the light of study findings, design and distribute educational, awareness and communication materials

Activity 7.1.3: Conduct study to measure the effect of behavioral change

Strategy 7.2: Community mobilization and community involvement study and analyze indicators continuously

Activity 7.2.1: Conduct demand generation activities like awareness seminars and distribute immunization related awareness material

Activity 7.2.2: Strengthen partnerships and networking with different community organizations and bodies

Strategy 7.3: Advocacy

Activity 7.3.1: Identify and choose the people who affect society (politicians, actors, celebrities, etc.) and involve them in activities

Activity 7.3.2: Involve decision-makers in events and activities

3 Implementation Plan and M&E

3.1 Timelines for the cMYP

Strategies/activities	2021	2022	2023
1. Programme Management			
Strategy 1.1: Conducting a census or any other population survey to identify real population figures			
Activity 1.1.1: Advocate the relevant authorities to conduct a new population census/survey (meanwhile the immunization programme will continue working on the best estimates based on available data.	■		
Activity 1.1.2: Continue advocacy and follow-up meetings till the relevant authorities conduct a census/survey	■	■	
Activity 1.1.3: In the light of census/survey results update the population data and target groups for all antigens		■	
Activity 1.1.4: Adjust immunization goals and targets accordingly		■	
Strategy 1.2: Availability of updated law for mandatory vaccination			
Activity 1.2.1: Conduct advocacy meetings with the relevant authorities to discuss the importance of updating the mandatory vaccination law	■		
Activity 1.2.2: Continue advocacy and follow-up meetings till the mandatory vaccination law is developed and endorsed	■	■	
Strategy 1.3: Allocate sufficient budget to support 100% of the planned vaccination activities			
Activity 1.3.1: Carry out comprehensive planning for all EPI activities	■	■	■
Activity 1.3.2: Advocate the relevant authorities about the importance of EPI activities and programme	■	■	■

Strategies/activities	2021	2022	2023
budget			
Activity 1.3.3: Review the plan and set priorities according to available funds			
Strategy 1.4: Involve decision makers in immunization programme activities			
Activity 1.4.1: Conduct regular/need-based advocacy meetings with the relevant decision makers and sensitize them so that they involve and support immunization activities			
Activity 1.4.2: Submit a quarterly report on the achievements of the national vaccination programme to the higher authorities			
(1) 2. Human Resource Management			
ISC Objective 2: **Strategy 2.1: Mapping of vaccinators**			
Activity 2.1.1: Conduct detailed mapping of vaccinators and their need at all levels			
Activity 2.1.2: Deploy vaccinators in the light of mapping findings giving the priority to districts/ health areas with significant HR shortage			
Strategy 2.2: Training needs assessment			
Activity 2.2.1: Conduct study on the qualification levels and role of workers			
Activity 2.2.2: Conduct training needs assessment of workers in the various components of the programme			
Prepare and implement the necessary training, including periodic refresher training (every 2-3			

Strategies/activities	2021	2022	2023
years)	■		■
Strategy 2.3: Focus on needy governorates (equitable distribution)			
Activity 2.3.1: Identify priority provinces/districts /centers based on an agreed criteria	■		■
Activity 2.3.2: Find alternatives and reconsider the distribution and transfer of cadres as needed	■	■	■
Activity 2.3.3: Allocate incentives for workers in the most vulnerable districts	■	■	■
Strategy 2.4: Retaining cadres			
Activity 2.4.1: Provide financial and non-financial incentives	■	■	■
Activity 2.4.2: Ensure equal opportunities for trainings	■	■	■
Strategy 2.5: Capacity building of workers at all levels			
Activity 2.5.1: Estimate the need for health workers to be trained	■	■	■
Activity 2.5.2: Conduct MLM training course for mid-level managers	■		■
Activity 2.5.3: Carry out training courses for health workers in developing plans	■		■
Activity 2.5.4: Conduct training on vaccine administration and safe injection techniques	■	■	■
Activity 2.5.5: Conduct training on information system and registration accuracy	■	■	■
Activity 2.5.6: Conduct training on VPD surveillance and outbreak investigation and lab technicians	■	■	■

Strategies/activities	2021	2022	2023
Activity 2.5.7: Conduct training on tracing defaulters			
Activity 2.5.8: Conduct IPC skills training for vaccinators			
Activity 2.5.9: Conduct training courses for medical equipment maintenance engineers on the maintenance of solar energy refrigerators and other cold chain equipment			
Strategy 2.6: Multi- task cadre to meet the urgent need			
Activity 2.6.1: Develop a TORs including the criteria for the multi-task cadr			
Activity 2.6.2: In the light of TORs, identify the existing workers for multi-task			
Activity 2.6.3: Conduct training on multi-tasking			
Activity 2.6.4: Deploy them as per need			
3. Vaccine Management and Logistics			
ISC Objective 3:			
Strategy 3.1: Availability and mobilization of vaccines transportation vehicles at all levels			
Activity 3.1.1: Re-evaluate the requirements for vaccines transportation at all levels			
Activity 3.1.2: Procure additional vaccines transportation vehicles in the light of identified needs			
Activity 3.1.3: Ensure the availability of necessary fuel in sufficient quantities to take into account the distances			
Strategy 3.2: Providing financial incentives for overtime of workers in vaccine warehouses			

Strategies/activities	2021	2022	2023
Activity 3.2.1: Conduct advocacy meetings with the relevant authorities to discuss and sensitize them to approve the overtime/incentives for workers in vaccine warehouses			
Activity 3.2.2: Provide overtime/incentives to workers of vaccine warehouses			
Strategy 3.3: Reducing vaccines wastage rates to the minimum			
Activity 3.3.1: Conduct regular sessions with workers to minimize the vaccine wastage rates			
Strategy 3.4: Effective and efficient vaccine procurement and supply system			
Activity 3.4.1: Coordinate with the Ministry of Foreign Affairs to facilitate customs exemption of vaccine shipments			
Activity 3.4.2: Develop quarterly distribution plan and distribute vaccines accordingly			
Strategy 3.5: Implement EVM assessment recommendations			
Activity 3.5.1: Implement the EVM improvement plan			
Activity 3.5.2: Conduct trainings for vaccine management team			
Activity 3.5.3: Provide logistics support including computers			
Activity 3.5.4: Monitor the EVM indicators on a regular basis			
Strategy 3.6: Ensuring provision of repair and maintenance for cold chain equipment			
Activity 3.6.1: Keep provision for the repair and maintenance of cold chain equipment including spare parts			
ISC Objective 1:			
ISC Objective 2:			

Strategies/activities	2021	2022	2023
ISC Objective 3: **Strategy 3.1:** **Strategy 3.2:** **Strategy 3.3:** **Strategy 3.4:** **Strategy 3.5:** **Strategy 3.6:** **Strategy 3.7: Introduction of new vaccines**			
Activity 3.7.1: Identify the need for the introduction of new vaccines (Rota, PCV13 and HPV) and get approval of the competent authorities		■	
Activity 3.7.2: Prepare plans and guidelines for the introduction of new vaccines		■	
Activity 3.7.3: Increase the storage capacity to accommodate the new vaccines		■	
Activity 3.7.4: Conduct training for health workers regarding new vaccines		■	
Activity 3.7.5: Conduct health awareness sessions regarding new vaccines		■	
Activity 3.7.6: Appropriately implement the plan to introduce the new vaccines		■	
Strategy 3.8: Facilitating cold chain equipment replacement			
Activity 3.8.1: Regularly update cold chain equipment inventory	■	■	■
Activity 3.8.2: Update warehouse system	■	■	■
Activity 3.8.3: Replace old equipment, when needed	■	■	■

Strategies/activities	2021	2022	2023
Activity 3.8.4: Develop and implement preventative maintenance plan for cold chain equipment			
Activity 3.8.5: Ensure availability of a well-trained qualified national and governorate maintenance teams			
Strategy 3.9: Ensuring the effectiveness of the cold chain equipment used to store and transport the vaccine			
Activity 3.9.1: Monitor vaccine temperature from the national level to the child (Allocating vaccine mentoring devices, freeze tags)			
Activity 3.9.2: Ensure availability of vaccine monitoring devices and freeze tags			
Activity 3.9.3: Conduct the temperature study 2021-2022			
Strategy 3.10: Turning medical waste into regular waste			
Activity 3.10.1: Coordinate with the Ministry of Local Administration and Environment for safe waste disposal			
4. Immunization Service Delivery			
ISC Objective 4: **Strategy 4.1: Developing and updating annual plans at all levels and micro-plans at health area/health facility level**			
Activity 4.1.1: Develop annual plans at all levels			
Activity 4.1.2: Conduct training on how to prepare micro plans at the health facility level			
Activity 4.1.3: Update the micro plans at all levels			
Activity 4.1.4: Develop micro-plans (RED/REC approach) at health area/health facility level to reach all children including the missed children			

Strategies/activities	2021	2022	2023
Activity 4.1.5: Implement the plans appropriately			
Strategy 4.2: Update the manuals, guidelines and operational procedures according to the requirements			
Activity 4.2.1: The National EPI program reviews and align with WHO regional Guidelines"			
Activity 4.2.2: Review and update the guidelines (preparation of plans, information system, VPD surveillance, communication and others)			
Activity 4.2.3: Prepare, print and distribute guidelines on missed opportunities			
Strategy 4.3: Expansion of vaccination services/network including hard to reach children/areas and newly controlled areas			
Activity 4.3.1: Regularly review and update vaccination strategies			
Activity 4.3.2: Promote vaccination in fixed centers and establish temporary centers and mobile teams as needed in each district			
Activity 4.3.3: Conduct rapid need assessment for areas newly accessible , as the security situation has improved, immunization teams can enter the accessible areas to immunize target population			
Activity 4.3.4: In the light of assessment findings, identify and provide vaccination requirements including rehabilitation of health facilities			
Activity 4.3.5: SARA study 2017			
Activity 4.3.6: Identify a focal person at national level to closely monitor and follow up with districts and coordinate with different partners on population movement			

Strategies/activities		2021	2022	2023
Activity 4.3.7:	Identify at least one focal person for special groups per affected district for tracing of movements	■		
Activity 4.3.8:	Develop special plans to reach the children in hard to reach areas, nomads, IDPs.	■	■	■
Activity 4.3.9:	Conduct the training of focal persons for notification of VPDs (community base surveillance)	■		
Activity 4.3.10:	Conduct Periodic Intensification of Routine Immunization (PIRI) in the newly accessible areas	■	■	■
Activity 4.3.11:	Conduct mapping of areas with unreached children	■	■	■
Activity 4.3.12:	To strengthen defaulter tracing system and to regularly track the defaulters and vaccinate them	■	■	■
Activity 4.3.13:	Identify the missed opportunities and develop strategy to vaccinate the children by availing the missed opportunities	■	■	■
Activity 4.3.14:	Conduct catch-up vaccination activity for un-immunized older children	■	■	■
Activity 4.3.15:	Establish strong reporting system	■	■	■
Strategy 4.4: Establishing and strengthening immunization in second year of life and school children				
Activity 4.4.1:	Conduct advocacy meetings with the relevant authorities and sensitize them regarding the importance of immunization in second year of life ((2YL)	■	■	■
Activity 4.4.2:	Update guidelines and strategy to vaccinate the children during the second year of life (if missed earlier)	■		
		■	■	■

Strategies/activities		2021	2022	2023
Activity 4.4.3:	Conduct advocacy meetings with the relevant authorities and sensitize them regarding the importance and continuation of vaccinating school children			
Activity 4.4.4:	Implement campaigns and prepare the final report			
Activity 4.4.5:	Evaluate the implementation and make recommendations			
5. Surveillance, Data Quality and Reporting				
ISC Objective 5:				
Strategy 5.1:	**Strengthening surveillance system**			
Activity 5.1.1:	Update detailed plans for disease surveillance			
Activity 5.1.2:	Expand the surveillance network for zero-reporting units			
Activity 5.1.3:	Conduct training of new surveillance workers including surveillance teams to improve their skills in surveillance			
Activity 5.1.4:	Conduct refresher training for old workers including surveillance teams			
Activity 5.1.5:	Conduct supervision and monitoring of the surveillance teams and reporting units			
Activity 5.1.6:	Update and distribute updated surveillance manuals			
Activity 5.1.7:	Conduct awareness sessions for private sector doctors and partner organizations including schools			
Activity 5.1.8:	Expand the environmental surveillance network			

Strategies/activities	2021	2022	2023
Activity 5.1.9: Continue and expand community-based surveillance			
Activity 5.1.10: Coordinate with partners to increase their support in the area of surveillance including internal and external evaluation and automation of the surveillance			
Activity 5.1.11: Conduct periodic meetings of the surveillance committees			
Activity 5.1.12: Continue conducting with routine meetings to discuss indicators for surveillance at all levels			
Activity 5.1.13: Ensure proper transportation of samples from the place they were taken to the laboratory			
Activity 5.1.14: Provide the necessary logistics for surveillance			
Strategy 5.2: Building the capabilities of laboratories (National Public Health Laboratory)			
Activity 5.2.1: Ensure maintenance and modernization of laboratory equipment			
Activity 5.2.2: Provide reagents and laboratory supplies			
Activity 5.2.3: Increase the capacity of the laboratory to accommodate a larger number of samples			
Strategy 5.3: Enhancing the surveillance of (AEFI) Adverse Events following immunization			
Activity 5.3.1: Prepare, print and distribute the guidelines and necessary recording and reporting forms (AEFI)			
Activity 5.3.2: Train workers to monitor AEFI cases and manage mild cases			

Strategies/activities	2021	2022	2023
Activity 5.3.3: Conduct follow-up and supervision			
Activity 5.3.4: Hold technical committee meetings to discuss AEFI			
Activity 5.3.5: Conduct sensitization sessions with private sector doctors			
Activity 5.3.6: Implement media campaigns to raise awareness among the community regarding AEFI cases			
Strategy 5.4: Establish an automated system for documenting vaccination programme data up to district level			
Activity 5.4.1: Develop and implement an automated reporting system			
Activity 5.4.2: Allocate sufficient logistics to smoothly run the automated system			
Activity 5.4.3: Train workers in automated system			
Activity 5.4.4: Regularly monitor the system and ensure its proper functioning			
Strategy 5.5: Capacity building for health workers on data quality, triangulation and use of data			
Activity 5.5.1: Update the training manuals			
Activity 5.5.2: Conduct training			
Activity 5.5.3: Conduct supervision and follow-up			
Strategy 5.6: Conduct data quality assessment			
Activity 5.6.1: Conduct data quality self-assessment DQS on regular basis			

Strategies/activities	2021	2022	2023
Activity 5.6.2: Implement Data Quality Improvement Plan (DQIP)			
Activity 5.6.3: Update the supervision forms to include the quality and accuracy of the data			
Activity 5.6.4: Conduct supervision and follow-up			
Strategy 5.7: Ensure the availability of recording and reporting tools for the national vaccination programme			
Activity 5.7.1: Review and update the recording and reporting tools			
Activity 5.7.2: Print and distribute the recording and reporting tools			
Activity 5.7.3: Ensure availability of the recording and reporting tools at levels			
6. Outbreak preparedness, detection and response			
ISC Objective 6: **Strategy 6.1: Epidemic preparedness**			
Activity 6.1.1: Review and update the preparedness plan, early detection and response in the event of every epidemic			
Activity 6.1.2: Identify a rapid response team at all levels			
Activity 6.1.3: Train the rapid epidemic response team at all levels			
Strategy 6.2: Early detection of diseases			
Activity 6.2.1: Study and analyze indicators continuously			
Activity 6.2.2: Conduct risk analysis at governorate and district levels			

Strategies/activities	2021	2022	2023
Activity 6.2.3: Continue and expand environmental surveillance especially for high-risk areas			
Activity 6.2.4: Ensure community-based surveillance in high-risk areas			
Activity 6.2.5: Ensure rapid surveillance measures including case discovery, reporting and investigation			
Activity 6.2.6: Carry out continuous monitoring of the movement of arriving passengers especially arrivals from high-risk areas			
Strategy 6.3: Effective response to epidemics with vaccine preventable diseases			
Activity 6.3.1: Develop and implement communication plan for the epidemic awareness including risk communication			
Activity 6.3.2: Follow the SOPs to respond epidemics			
Activity 6.3.3: Ensure availability of buffer stock of vaccines and supplies			
Activity 6.3.4: Ensure adequate financial resources			
7. Demand Generation and Communication			
ISC Objective 7: **Strategy 7.1: Evidence-based planning**			
Activity 7.1.1: Conduct study on knowledge, attitudes and behaviors towards vaccination			
Activity 7.1.2: In the light of study findings, design and distribute educational, awareness and communication materials			

Strategies/activities	2021	2022	2023
Activity 7.1.3: Conduct study to measure the effect of behavioral change			
Strategy 7.2: Community mobilization and community involvement study and analyze indicators continuously			
Activity 7.2.1: Conduct demand generation activities like awareness seminars and distribute immunization related awareness material			
Activity 7.2.2: Strengthen partnerships and networking with different community organizations and bodies			
Strategy 7.3: Advocacy			
Activity 7.3.1: Identify and choose the people who affect society (actors, celebrities, etc.) and involve them in activities			
Activity 7.3.2: Involve decision-makers in events and activities			

3.2 National Monitoring and Evaluation Framework for Immunization

The national monitoring and evaluation framework enables tracking of progress towards the goals and objectives of the cMYP. The purpose of monitoring and evaluating the cMYP is to measure the short -term achievements as well as the long- term impact of the interventions on the overall health status of targeted population.

The monitoring framework include indicators for all levels of the outcome chain; outputs, outcome and impact indicators country should develop annual monitoring sheet to monitor process indicators (key activities). The M&E matrix summarizes the set of indicators needed to monitor and evaluate the cMYP, their frequency, data sources for each indicator and responsible entity.

Annually a report will be developed to assess the progress towards the planned targets, this reports share with donors and national implementation partners

Evaluation of the cMYP will be conducted annually of the plan cycle to measure achievement of the strategic objectives and outcomes. The evaluation will be based on the pre-set goals and outcome indictors and will provide a base for the development of the new cMYP for the next years.

M&E framework is embedded as a separate excel file.

4 Immunization Programme Costing and Financing

It is all mentioned and updated in PSR and CCEOP documents in details.

4.1 Current programme costs and financing

Baseline Cost Profile

WHO costing and financing tool was used for estimating the baseline expenditures and future projections. The total baseline expenditure including the shared cost and campaigns is $33,280,165. Out of this total amount, the shared cost including shared personnel cost and shared transport cost was $1,245,255 and the amount of $2,882,458 were spent on campaigns.

The total baseline cost excluding shared cost and campaigns is $29,158,915. The baseline cost profile is grouped under four categories: Personnel, Vehicles & Transportation, Other routine recurrent costs, Vaccines and Injection and supplies (Figure 18). The personnel cost $12,372,812 was (42%) of the total cost. The second important factor was “Under used vaccines” with total amount of $7,138,256 (25%) of total baseline cost. Remaining weightage goes for other routine recurrent costs with $6,793,279 (23%), new vaccines $1,682,040 (6%), Traditional vaccines $523,848 (2%), injection supplies $310,000 (1%) and Transportation costs $208,472(1%).

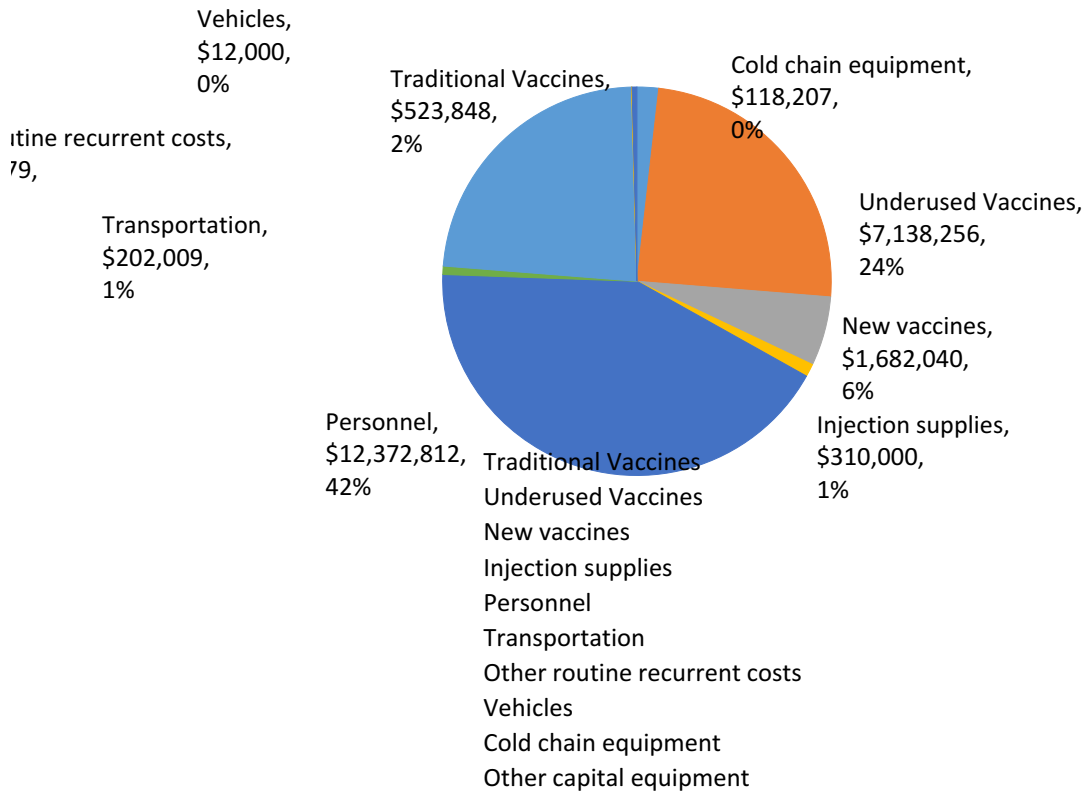


Figure 16: Baseline Cost Profile (Shared costs and campaigns excluded)

1. Personnel

Here, the cost of personnel reflects only full time (100%) EPI staff. However, the shared personnel cost has already mentioned above. The information pertaining to personnel consisted of three components: salaries and allowances for EPI staff, per-diems for vaccinators and mobile teams and per-diems for supervisory and monitoring staff.

The baseline information was compiled on the basis of standard government payment rates that are used by the ministry of health for the payment of salaries, allowances and per-diems.

The analysis of the baseline cost profiles (2019) shows that USD 12,372,812 was incurred on personnel cost which constituted to 44.58% of the total expenditure on immunization programme. Further analysis shows that 95% of this cost was spent on payment of salaries and allowances. The expenses incurred under 'Personnel' were borne by the government. This analysis highlights that salaries and allowance were the major cost driver in 2019.

2. Vehicles & Transportation

The expenditure on vehicles and transportation was based on the type and number of vehicles available at national, governorate, district and health centre levels. In addition, information was collected regarding the average mileage per year of a given vehicle and consumption of fuel used per 100 kilometers.

The analysis shows that the expenditure on transportation contributed to 0.7% (USD 208,472) of the total expenditure on EPI in 2019. One of the main reasons for less expenditure on transportation was non-availability of sufficient number of vehicles for the immunization staff. The other alternatives used by the programme were hiring vehicles on rental basis with financial support of WHO and UNICEF. The government was the sole contributor for the running expenditure on transportation except the rented vehicles.

3. Other routine recurrent costs

The other routine costs comprised expenditures for cold chain and equipment maintenance and overheads, short term trainings, social mobilization, disease surveillance, programme management and other programme activities. This information was populated by cMYP costing tool based on the standard inputs provided by the national EPI.

The total expenditure against routine recurrent costs was USD 6,793,279 which was found 23.3% of the total baseline expenditure.

4. Vaccines, Injections and Supplies

The traditional vaccines included BCG, OPV, Measles and Tetanus Toxoid, whereas underused vaccines included Hep-B and Pentavalent (DTP-HepB-Hib) and MMR. All the vaccines were procured by the UNICEF at the national level and then collected by the governorates, and then distributed from governorates to districts and health centers.

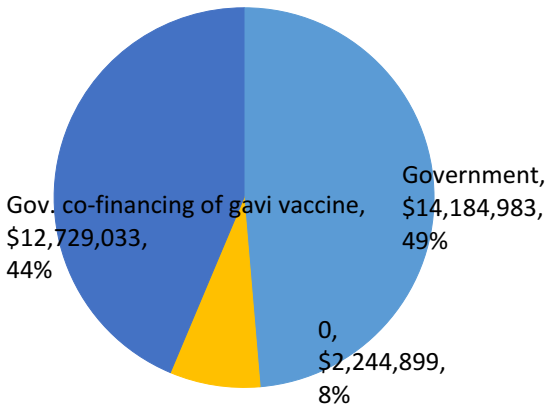
WHO's forecasting tools was not used for estimating the expenditures made for procuring vaccines and injections. It was based on the information available with the UNICEF and National EPI.

In 2019, 33.1% (USD 9,654,144) of the total expenditure was incurred on vaccines, injections and supplies, another cost driver for EPI besides personnel.

Baseline Financing Profile

Figure 19 shows financing profile/pattern of baseline year 2019 where it is clearly observed that the Government, UNICEF and WHO remained the major contributor to the programme with 48%, 44% and 8% respectively in the total 2019 costs.

Figure 17: Baseline Financing Profile (shared costs and campaigns excluded)



4.2 Future resource requirements

Table 20 shows future requirements by cost categories of immunization programme for next three years (2021-23). The majority of funds will be utilized on personnel cost followed by underused vaccines.

The routine immunization costs are further divided in categories: Vaccines and Injection Supplies, Personnel, Transportation, Vehicles, Cold chain equipment, other Capital equipment, other routine recurrent costs and campaigns. A gradual increase in the cost is seen in subsequent years in almost all cost categories except supplemental immunization activities which is higher in 2022 due to campaigns. The main reason of this is inflationary increment and an annual increase in target population. This is mainly due to planned activity of coverage evaluation survey in 2022.

Table 18: Future resource requirements by cost categories (Shared cost excluded)

Cost category	2021	2022	2023	Total Cost (2021-23)	Total Cost
Routine recurrent costs	**US$**	**US$**	**US$**	**US$**	**%**
Traditional Vaccines	$993,099	$1,060,716	$1,104,767	$3,158,581	2.3%
Underused Vaccines	$9,065,823	$9,629,584	$10,327,318	$29,022,725	20.8%
New vaccines	$2,213,598	$2,431,357	$2,573,315	$7,218,271	5.2%
Injection supplies	$330,994	$354,611	$374,811	$1,060,416	0.8%
Personnel	$13,228,756	$13,824,050	$14,446,132	$41,498,938	29.8%
Transportation	$239,525	$268,200	$299,512	$833,062	0.6%
Other routine recurrent costs	$10,422,244	$12,036,008	$13,906,413	$36,364,666	26.1%
Vehicles	$0	$0	$0	$0	0.0%
Cold chain equipment	$6,991,109	$0	$0	$6,991,109	5.0%
Other capital equipment	$135,938	$156,329	$179,779	$472,046	0.3%

Supplemental immunization activities	$2,155,898	$9,062,753	$1,649,532	$12,868,182	9.2%
Total	$45,776,983	$48,823,609	$44,861,580	$139,462,171	100%

1. Vaccines and Injection Supplies

The financial projections for vaccines and injection supplies are based on the number of doses required per antigen including wastage rates and the price list used by UNICEF.

In order to achieve the immunization coverage targets, the additional resource requirement for purchasing vaccines and injection supplies will increase in the coming years due to an increase in vaccination coverage and target population in future years.

2. Personnel

At national level, there will be no new hiring.

At governorate level, there will be new hiring of 5 Directors PHC, 4 Directors MCH/EPI, 3 Information/ Statistics Officers, 2 Cold Chain Officers, 2 Communication Officers and 1 VPD Surveillance Officer in 2021.

At district level, there will be new hiring for 8 district Directors, 8 Vaccine Operation Officers, 36 Cold Chain Operation Officers, 8 Surveillance Officers and 12 Communication Officers in 2021.

At Health Centre Level, there will be new hiring of 95 Health Centre Managers, 35 Surveillance Officers and 153 Support staff in 2021.

The addition of new staff will require a slight increase in resource allocation for immunization programme. The government will require USD 14.45 million in 2023 as compared to USD 12.37 million in 2019.

3. Transportation

Expansion in the EPI coverage will result in increase in demand for resources for transportation. In 2019, nearly 0.7% of the total resources were spent on transportation. By 2023, the immunization system will require to increase this expenditure to USD 299,512 compared to USD 202,009 in 2019. This requirement is closely linked with the increase in vehicle maintenance as a percentage of fuel cost.

During the years 2021-23, the immunization programme will require an amount of USD 833,062 for rented vehicles to deliver the immunization services.

4. Vehicles

During the years 2021-23, the immunization programme will procure 2-4 new vehicles after revision of the current vehicles.

5. Cold chain equipment

The immunization programme plans to enhance the capacity of the cold chain system. It includes supply of power generators and other cold chain equipment. At governorate level, district and health center levels, national EPI has estimated these projections by using the information on number of items required and

the prevailing market prices.

It is estimated that USD 6,991,109 will be required to meet the needs of cold chain equipment.

6. Other capital requirement

The immunization system will require USD 472,046 for supplying other capital equipment (office equipment and furniture). These projections are estimated by using average costs as per the prevailing market rates.

7. Other recurrent costs

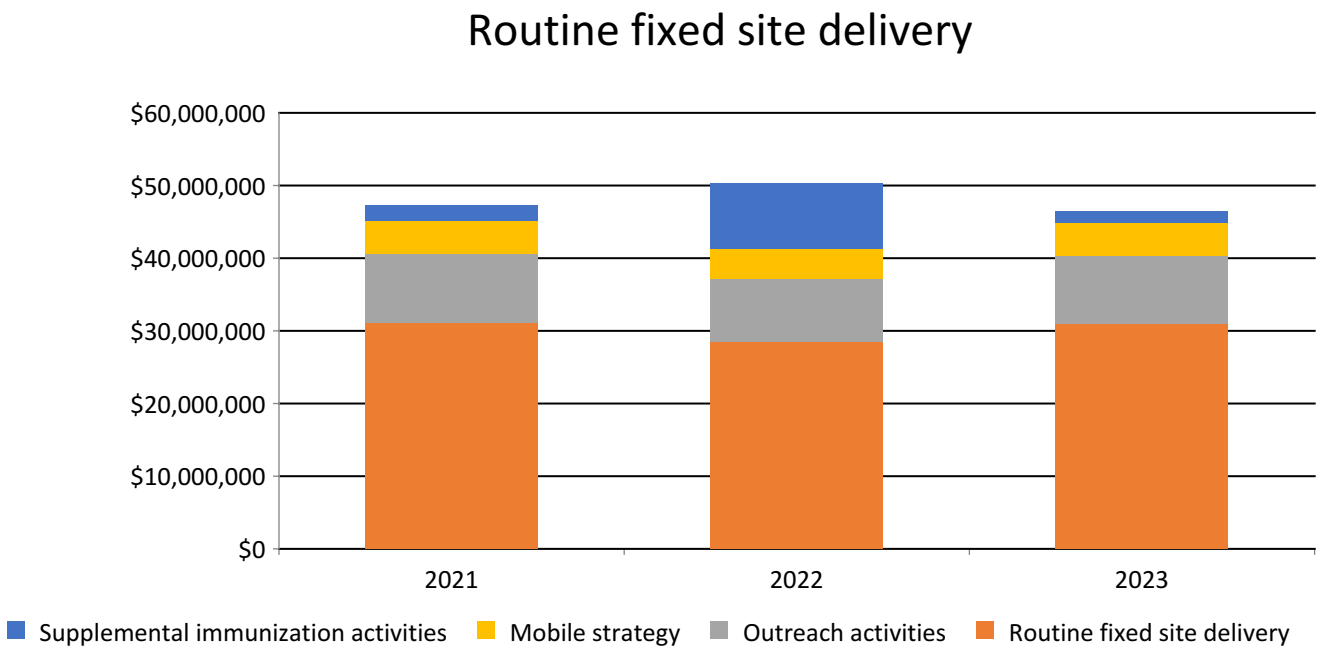
Other recurrent costs consists of funds required for cold chain maintenance and overheads, maintenance of other capital equipment, utility bills, short-term training, IEC/social mobilization, disease surveillance, programme management and other programme activities.

The financial projections indicate that the immunization programme will require USD 36,364,666 to meet the expenditure planned under other recurrent costs during 3 years 2021-23.

In addition to the routine immunization, the government plans to conduct special immunization campaigns in the next 3 years including polio and measles campaigns with average coverage of 95%. The measles campaign will be conducted in 2022 only. In order to achieve the coverage targets, the immunization system will require USD 12,868,182 for campaigns during the cMYP period 2021-23.

Figure 21, very clearly depicts the average costs of immunization programme by strategy for next three years (2021-23). Majority (62.8%) percent of total cost is kept for routine fixed site delivery, while 19.1% for outreach activities. The remaining 9.1% and 8.9% funds with be utilized by mobile strategies and Supplemental immunization activities (campaigns) respectively.

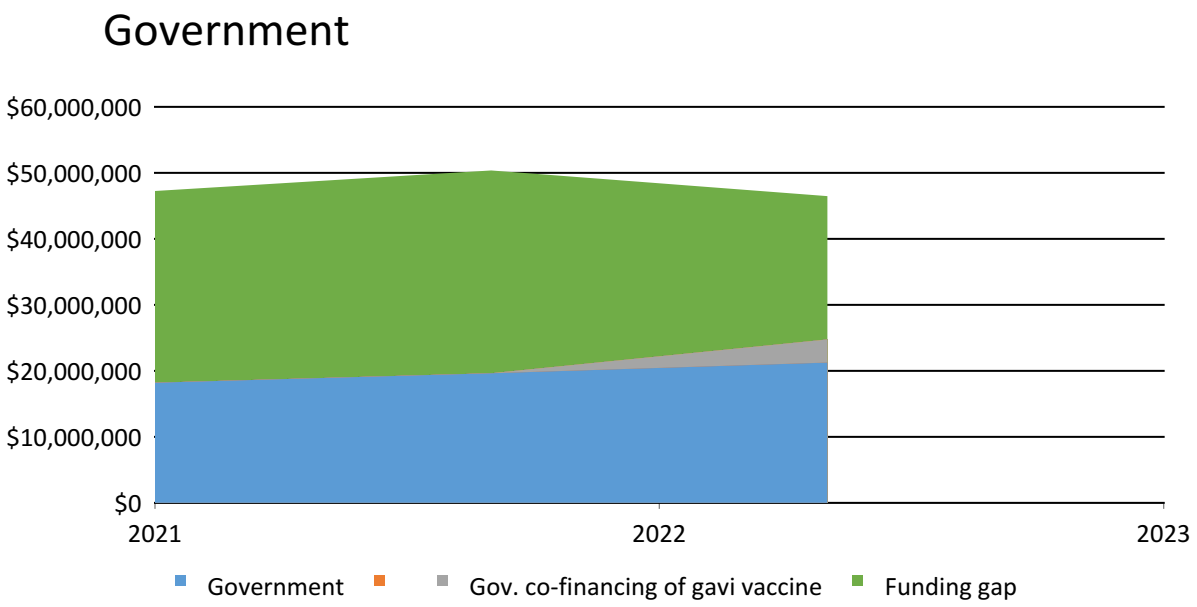
Figure 19: Costs by Strategy



4.3 Future financing and funding gaps of the immunization programme

The financial projections presented in Figure 22 indicate that the government is the main source of secure financing for immunization programme in the next three years. Further, their contribution will gradually increase from USD 18,199,975 in 2021 to USD 21,256,637 in 2023. There is a gap of 56.6% of the total resource requirement that could be filled by external donors and international agencies including WHO, UNICEF, GAVI etc.

Figure 20: Future Secure Financing and Gaps (shared costs excluded)



As shown in below Table 23, the funding gap increases in year 2021 and 2022. The main reason of this increase in funding gap during 2021 is the cost of new cold chain equipment and in 2022 is the cost of measles campaign. Bridging this gap is important to maintain the momentum build and improve performance of the immunization programme.

Table 21: Future Funding Gaps (shared costs excluded)

Year	Funding Gap
2021	$29,049,979
2022	$30,723,154
2023	$21,712,342
Total (2021-23)	**$-81,485,475**

4.4 Financial Sustainability

The monetary value and percentage of funding gap ($81,485,475) after secure funding is 56.6% of the total immunization programme. It is expected that the government and international partners including WHO, UNICEF and GAVI will continue their probable funding which shows the financial sustainability of the immunization programme in short-term.

Annexes