

SYRIA
NATIONAL ACTION PLAN
ON COMBATING
ANTIMICROBIAL
RESISTANCE

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The National Action Plan is backed up the National Multi-sectoral Coordination Group:

- The Deputy of Minister of Health (Dr. Ahmad Khelfawy)
- The Director of Communicable Diseases Directorate, Ministry of Health (Dr. Hazar Farouan)
- The Head of Epidemiological Studies and Emerging Diseases Department, Communicable Diseases Directorate, Ministry of Health (Dr. Hani Laham)
- The Director of Hospital Directorate, Ministry of Health (Dr. Ahmad Domieria)
- Head of Public Health Laboratories, Ministry of Health (Dr. Shebl Khouri)
- Directorate of Pharmaceutical Affairs, Ministry of Health MOH (Dr. Razan Salota)
- Head of Infection Control Department, Hospital Directorate, Ministry of Health (Dr. Bashar Haj Ali)
- Ministry of Higher Education (Dr. Wahid Rajab Beak)
- Director of Animal Health Directorate, Ministry of Agriculture (Dr. Hussein Suleiman)
- Head of Environmental Health Department, Ministry of Environment (Mrs. Rafida Shamat)

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Abbreviations and acronyms

ABX: Antibiotics

AMR: Antimicrobial resistance

CME: Continuous Medical Education

EMRO: Eastern Mediterranean Region Office

FAO: Food and Agriculture Organization

GAP: Global Action Plan

GLASS: Global Antimicrobial Resistance Surveillance System

ID: Infectious Diseases

IPC: Infection Prevention and Control

IT: Information Technology

KPI: Key Performance Indicator

LTCF: Long-Term Care Facilities

MOA: Ministry of Agriculture

MOH: Ministry of Health

MOE: Ministry of Education

MOHE: Ministry of Higher Education

NA: Not Available

NAP: National Action Plan

NGO: Non-governmental Organization

NMCG: National Multi-sectoral Coordination Group

OIE: World Organization for Animal Health

PHC: Primary Health Care

PHCC: Primary Health Care Center

QC: Quality Control

TOR: Terms of Reference

TV: Television

UN: United Nations

UNRWA: United Nations Relief and Works Agency

USD: United States Dollars

WHO: World Health Organization

Executive Summary

Syria is in the healing phase after a countrywide conflict that lasted so far 9 years. In 2019, there are still areas in the country where the hospitals and health systems are unreachable because of persistent conflict. The current AMR plan is made to cover all the areas that are reachable by the current official government. During the 9 years of conflict, there has been very little data from Syria about AMR. Despite being limited, the available data and information show that Syria is not spared from the global phenomenon of antimicrobial resistance (AMR).

A National Action Plan (NAP) has been put by the stakeholders of the country in the field, facilitated by the World Health Organization (WHO) under the umbrella of the Ministry of Health (MOH). The plan is tricyclic consistent with a “One Health” approach involving human and non-human sectors. The plan is in concordance with the WHO Global Action Plan (GAP) and follows the WHO template of having a strategic plan, an operational plan and a monitoring plan in each of the 4 axes (awareness, surveillance, infection prevention and control, and antibiotic use). The operational plan dissects each activity or sub-activity specifying the responsible entity or person, the time frame, the cost and the source of funding, with a corresponding quality key performance indicator (KPI) for monitoring if applicable.

The NAP in Syria is based first and foremost on elevating the problem of AMR to the level of national priorities, especially in this period where rebuilding of the organizational structure of the country is being carried on. Then, a basic preparation for the actual work is necessary, by starting from legislations, or reinforcement of available related legislations that were neglected or forgotten during the years of conflict.

In this NAP on AMR, the main objectives are:

- B. To improve AMR awareness among the authorities, the public, and the concerned professionals.
- C. To initiate an AMR surveillance system that ultimately can report to the Global Antimicrobial Resistance Surveillance System (GLASS) and generate its own local surveillance report. This is to be done through:
 - Reintroducing the culture of antibiograms in clinical specimens in human, veterinary and food specimens.
 - Including the cost of antibiogram into the budget of the health system.
 - Providing the needed material despite the current economic and trading Embargo on Syria.
 - Providing human capacity building by workshops and education opportunities to microbiologists and laboratory technicians.
 - Capacity building of the central laboratory to become a reference laboratory for AMR.
- D. To improve Infection Prevention and Control (IPC) in health care systems by introducing mandatory IPC programs in these premises and providing/requiring education in IPC of professionals.
- E. To improve antimicrobial use in humans, animals and agriculture by including activities that aim at:
 - Controlling the quality of the antimicrobial molecules that are available in the Syrian market.

- Providing treatment guidelines to professionals for the common infectious diseases (ID) and diffusing these guidelines in healthcare facilities, in addition to educational lectures about these guidelines.
- Introducing the idea of antimicrobial stewardship by restricting specific high priority antimicrobials to professionals who received education/training on its use.
- Controlling the use of antimicrobials in the community by restricting their dispensing in pharmacies to prescription-based dispensing, and education of primary care physicians about the treatment guidelines.
- Reinforcing OIE biosafety laws in the veterinary world.

The activities of different axes should be executed within the coming 5 years. Collaboration between the Syrian government and different non-governmental organizations (NGOs) like the Food and Agriculture Organization (FAO), the World Organisation for Animal Health (OIE), WHO and Aghakhan will be an asset towards the execution of the NAP on AMR.

Introduction

Since 2012, the conflict in Syria has become the leading cause of death and injury. In the absence of accurate recent figures, it is estimated, as of the end of 2015, that 470,000 have been killed and 1.9 million injured ([Syrian Center for Policy Research, 2018](#)). With high rates of injury, the potential for infection is exacerbated by the crowded and often unsanitary conditions in health facilities, combined with the nature of injuries produced by heavy weaponry. Unfortunately, in such life threatening conditions, AMR emerges and spreads but remains neglected.

The destruction of health facilities, the death of healthcare workers, and the increasing fragmentation of Syria's health system have all contributed to the myriad of challenges in addressing AMR ([Fouad et al., 2017](#)). By April 2017, only 56 out of 111 public hospitals were still offering services ([WHO, 2018](#)), with a major decrease in the number of available Health care professionals.

Since 2012, data on the availability and efficacy of antimicrobial therapy within Syria have become increasingly limited. Six studies from inside Syria since late 2011 have reported concerns over the increasing burden of resistant Gram-negative infections and methicillin-resistant *Staphylococcus aureus* (MRSA), four of these being focused on Aleppo ([Alheib et al., 2015](#); [Mahfoud et al., 2015](#); [Al-Assil et al., 2013](#); [Tabana et al., 2015](#)). It is notable that few datasets from within Syria have reported on war-related injuries and their infectious complications; this is likely driven by several factors including the overwhelmed health systems.

Tackling AMR amongst Syrians inside Syria requires multifaceted action at the local, regional, and international levels through establishing a National Action Plan based on the "One Health" approach taking into consideration the local situation. Failing to address issues at the local level can have regional and global implications.

Situation analyses and Assessment

Currently, Syria is a country in the process of recovery. Some parts of the country are still outside the control of the official government, and some others are still in war. Before 2012 AMR in Syria was not among the Health priorities, from 2011 until now, the conflict in the country stopped all health planning activities and the whole country was in an emergency situation. During the recovery period, the health officials consider that there are many priorities in Health other than AMR.

A major strength that can support any NAP is that the Syrian regime is strong and that ministerial decisions are respected and well taken by related stakeholders and employees. Another strong point is that the official structure of the health system before the conflict was very well organized, and there is a continuity in the structure of the system in the current situation. Also, the stakeholders believe in the power of the ministries and WHO. They have already participated in other national plans that were successful like the control of tuberculosis, polio, and meningitis, and a priori they believe that they can make a change with this NAP.

However, the weaknesses and threats are numerous. The ID specialists are few, not enough to cover the majority of the hospitals. Most of clinical microbiology labs lack microbiologists. In addition, hospitals consider that the equipment and material needed for antibiogram determination are expensive and therefore are not available. Automation machines are available but the material needed to run these machines are considered not affordable. Microbiological diagnosis in most of the hospitals is visual rather than biochemical, and as mentioned before, antibiograms are not being performed. Physicians start antibiotic therapy by intuition and if there is evidence of lack of response to therapy they escalate their treatment. On the other hand, most of the antibiotics available in the market are generic or copy drugs and there is a general lack of confidence among professionals that they are equivalent to brand antimicrobials.

There are opportunities for improving this situation. Because the officials consider the current period as a period of “healing”, the stakeholders consider that the current period is a high time to introduce a plan into the overall national strategy. On the other hand, the presence of many NGOs in Syria at the time being, involved in health, agriculture and environment can be an opportunity to attract funds and to cooperate with these organizations in performing many activities of the AMR NAP, that can be part of their targets as well.

The persistence of the lack of security in some areas, and the presence of aggregates of people in areas outside the reach of the official authorities, will make the plan restricted to the areas of Syria that are under the official regime and the other areas will be left out. This non-uniformity in plan coverage in different areas of the country would be a threat to the outcome of the plan. On the other hand, the economic embargo that is imposed on Syria would make it difficult for the stakeholders to procure the necessary equipment, material and sometimes expertise that are needed in the field of AMR.

Country Response

The Syrian Ministry of Health (MOH) has appointed the national multi-sectoral coordination group (NMCG) for AMR control in Syria. This group consists of representatives from the following ministries and departments:

- The Deputy of Minister of Health (Dr. Ahmad Khelfawy)
- The Director of Communicable Diseases Directorate, Ministry of Health (Dr. Hazar Farouan)
- The Head of Epidemiological Studies and Emerging Diseases Department, Communicable Diseases Directorate, Ministry of Health (Dr. Hani Laham)
- The Director of Hospital Directorate, Ministry of Health (Dr. Ahmad Domieria)
- Head of Public Health Laboratories, Ministry of Health (Dr. Shebl Khouri)
- Directorate of Pharmaceutical Affairs, Ministry of Health MOH (Dr. Razan Salota)
- Head of Infection Control Department, Hospital Directorate, Ministry of Health (Dr. Bashar Haj Ali)
- Ministry of Higher Education (Dr. Wahid Rajab Beak)
- Director of Animal Health Directorate, Ministry of Agriculture (Dr. Hussein Suleiman)
- Head of Environmental Health Department, Ministry of Environment (Mrs. Rafida Shamat)

In addition, the Syrian MOH has assigned four national AMR focal points:

- Axis A Awareness: Dr. Amer Teebi
- Axis B Surveillance: Dr. Fatima Mansour
- Axis C Infection Prevention and Control: Dr. Bashar Haj Ali
- Axis D Antibiotic Use: Dr. Hani Laham

In February 2019, a mission led by the WHO and Syrian MOH was undertaken whereby a 5-days workshop was held in Damascus. The workshop was facilitated by a WHO consultant and the Syrian members of the NMCG for AMR containment. The aim was to put a NAP in line with the WHO GAP for the fight against AMR.

Governance

Strategic Plan

Strategic objective	Activity	Sub-activity	Date (from operational plan)	Milestone
G.1 Establishment of the NMCG	G.1.1 Nomination and definition of functions of the NMCG	G.1.1.1 Nomination of the members of the NMCG	G.1.1 Achieved	G.1 1 month
		G.1.1.2 -Include the TOR of the NMCG in the official nomination -Include its function, authority and accountability to existing document	G.1.1.2 1 month	
	G.1.2 Appointment of the National Focal person of the NMCG	G.1.2.1 Official appointment of focal person	G.1.2.1 1 month	
		G.1.2.2 Specify the TOR of the focal person, and include them in the letter of appointment.	G.1.2.2 1 month	
G.2 Establish support for the NMCG with ministerial authorities	G.2.1 Involvement of higher authorities with AMR NAP, as support of NMCG	G.2.1.1 Briefing of the deputy of the minister about the NAP and put a road map for higher political support of the NMCG	G.2.1.1 2 months	G.2 2 months
G.3 Establish technical committees for the axes of awareness, IPC, surveillance, ABX use in “One Health” approach	G.3.1 Nominate committees and invite members for the meetings during the 1 st workshop for the NAP		G.3.1 10 th Feb 2019	G.3 10 th Feb 2019

Operational Plan

Strategic objective	Activity	Sub-activity	Unit	Quantity	Date	Location	Responsible entity	Cost	Source of funding	Indicator
G.1 Establishment of the NMCG	G.1.1 Nomination and definition of functions of the NMCG	G.1.1.1 Nomination of the members of the NMCG	G.1.1 Nomination	G.1.1 1	G.1.1 Achieved					
		G.1.1.2 -Include the TOR of the NMCG in the official nomination -Include its function, authority and accountability to existing document	G.1.1.2 Decree	G.1.1.2 1	G.1.1.2 1 month	G.1.1.2 MOH	G.1.1.2 -MOH -MOA -Ministry of environment	G.1.1.2 None	G.1.1.2 -----	G.1.1 Decree is issued with specified TOR of the NMCG
	G.1.2 Appointment of the National Focal	G.1.2.1 Official appointment of focal person	G.1.2.1 Decree	G.1.2.1 1	G.1.2.1 1 month	G.1.2.1 MOH	G.1.2.1 -MOH -MOA -Ministry of	G.1.2.1 None	G.1.2.1 -----	G.1.2 Focal Person appointed with

	person of the NMCG						environme nt			specified TOR
		G.1.2.2 Specify the TOR of the focal person, and include them in the letter of appointment.	G.1.2.2 Decree	G.1.2.2 1	G.1.2.2 1 month	G.1.2.2 MOH	G.1.2.2 -MOH -MOA -Ministry of environment	G.1.2.2 None	G.1.2.2 -----	
G.2 Establish support for the NMCG with ministerial authorities	G.2.1 Involvement of higher authorities with AMR NAP, as support of NMCG	G.2.1.1 Briefing of the deputy of the minister about the NAP and put a road map for higher political support of the NMCG	G.2.1.1 Meeting	G.2.1.1 1	G.2.1.1 2 months	G.2.1.1 MOH MOA	G.2.1.1 -WHO AMR focal person (Dr. Rasmieh Allahham) -Focal person of NMCG (Dr.?) +/- -WHO Consultant/Facilitator (Dr. Rima Moghnieh)	G.2.1.1 None	G.2.1.1 -----	G.2.1.1 None
G.3 Establish technical working	G.3.1 Nominate technical working		G.3.1 Nomination	G.3.1 4 technical working groups	G.3.1 10 th Feb 2019	G.3.1 Workshop meeting venue	G.3.1 -NMCG -WHO Consultant/	G.3.1 None	G.3.1 -----	G.3.1 None

groups for the axes of awareness, IPC, surveillance, ABX use in “One Health” approach	groups and invite members for the meetings during the 1 st workshop for the NAP					(Dam Rose)	Facilitator (Dr. Rima Moghnieh)			
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Axis A (Awareness)

Strategic plan

Strategic objective	Activity	Sub-activity	Date	Milestone
A.1 Organization of the tasks in this axis	A.1.1 Establishing the technical working group	A.1.1.1 Nomination	A.1.1.1 1 month	A.1 1 month
		A.1.1.2 Putting TOR	A.1.1.2 1 month	
		A.1.1.3 Assigning focal point (Dr. Amer Teebi)	A.1.1.3 1 month	
A.2 Include AMR awareness in the national school education system	A.2.1 Education in schools	A.2.1.1 Letter from MOH to MOE to send a mandate to the school curricula committee to include AMR awareness in school curricula (Dr. Tabbah)	A.2.1.1 1 month	A.2 9 months
	A.2.2 Preparation of education material for the different levels and specialization in higher education and to train the educators about AMR	A.2.2.1 Preparation of material AMR/IPC Material according to each specialization: Medical school, Pharmacy students, Nursing, Dentists Veterinarians	A.2.2.1 1 month	

	A.2.3 To sensitize And train educators in schools and higher education about teaching about AMR.	A.2.3.1 Training of trainers and educators through workshops for all school activities related to AMR	A.2.3.1 6 months	
		A.2.3.2 Training of employees in the sectors of education by trained profession in the TOT central training	A.2.3.2 9 months	
A.3 Fortify the awareness about AMR in the human medical education	A.3.1 Medical schools: Include AMR projects in health education projects that are required to be prepared by medical students in their 5 th /6 th year of medical school	A.3.1.1 Recommendation to medical schools program director	A.3.1.1 2 months	A.3 2 months
	A.3.2 To give a lecture to medical students when they start their clinical work at the 6 th year of Medical school, once they reach primary health care to be distributed to the different specialties for training	A.3.2.1 Include lecture /year/trainee about AMR	A.3.2.1 2 months	
	A.3.3 -To include AMR Awareness in the preparatory course for the medical students that are graduates from abroad and	A.3.3.1 Letter from NMCG and MOH to رئيس الهيئة الصحية للتخصصات الطبية	A.3.3.1 2 months	

	who need to sit for colloquium -To include AMR questions in the colloquium exam الهيئة الصحية للتخصصات الطبية مسؤولة عن هذا في الدورة التدريبية وأُسئلة امتحان الكولوكيوم			
	A.3.4 Include AMR questions in colloquium exams	A.3.4.1 Letter to دائرة الامتحانات	A.3.4.1 1 month	
A.4 To fortify the education about AMR in veterinary schools	A.4.1 Veterinary schools: Include AMR projects in education projects that are required to be prepared by students in their 5th/6th year of veterinary school programs	A.4.1.1 Acquire acceptance from MOE	A.4.1.1 2 months	A.4 2 months
	A.4.2	A.4.2.1	A.4.2.1 2 months	

	To train veterinarians about AMR at the level of 6 th year when they start their practical training	Letter from MOA to مديرية الصحة الحيوانية في المحافظات Students in 5 th /6 th year in training/ lecture		
A.5 Raise AMR awareness among veterinarians and farmers outside official veterinary school training	A.5.1 Workshops targeting veterinarians and farmers	A.5.1.1 To include AMR awareness in the yearly program of مديرية تاهيل وتدريب الأطباء البيطريين	A.5.1.1 1 year	A.5 1 year
A.6 AMR awareness in higher education specializations	A.6.1 To recommend to Ministry of Higher Education to include AMR education and hygiene in the basic education of medical doctors, pharmacists, dentists, nurses, midwives, veterinarians and students in the agriculture and environment fields (according to material prepared in A.2.2)	A.6.1.1 Letter from MOH to Ministry of higher education to include AMR in the curricula of health related specializations as listed	A.6.1.1 3 months	A.6 1 year
	A.6.2 Include AMR awareness material in health and hygiene education program outside the official curricula	A.6.2.1 Letter to MOE to include information on AMR in health education outside curricula	A.6.2.1 1 year	
A.7 AMR education in continuous education programs	A.7.1 Ask Syndicates/Orders of Physicians, Pharmacist, Nurses, Veterinarians to	A.7.1.1 Letter from NMCG/MOH/MOA to these orders/syndicates to include	A.7.1.1 1 month	A.7 1 year 3 months

	include information on AMR in their continuous education programs	information on AMR in their continuous education programs		
		A.7.1.2 To ask these s orders/syndicates to give lectures once/year in each specialty about AMR	A.7.1.2 1 month	
		A.7.1.3 Send a letter to the organizing committee of the yearly congress of the Syrian Order of Physicians to include lectures on AMR اللجنة العلمية المؤتمر السنوي للأطباء في سوريا	A.7.1.3 3 months	
		A.7.1.4 Send a letter to the organizing committee of the yearly congress of the Syrian Order of Veterinarians to include lectures on AMR اللجنة العلمية المؤتمر السنوي للطب البيطري في سوريا	A.7.1.4 3 months	

		A.7.1.5 Trained personnel give AMR lectures in all sectors covered	A.7.1.5 1 year 3 months	
A.8 Improve AMR awareness among professionals in human health sectors	A.8.1 Raise AMR awareness among primary care physicians أطباء المستوصفات	A.8.1.1 Send a letter to مديرية الأمراض السارية في المستوصفات Department of communicable diseases	A.8.1.1 1 month	A.8 5 years
		A.8.1.2 Letter from مديرية الأمراض السارية في المستوصفات to WHO to organize yearly activities on AMR for physicians and relevant personnel in the primary care field	A.8.1.2 a-1 month b-5 years	
	A.8.2 Improve AMR awareness for employees of dispensaries, NGOs like الهلال الأحمر, Red Cross, MSF, UNRWA, Religious foundations/organizations	A.8.2.1 Workshop to the employees of these NGOs about AMR	A.8.2.1 2 months	
A.9 To improve AMR awareness among farmers	A.9.1 To include AMR information among the lectures given to farmers by الارشاد الزراعي	A.9.1.1 Letter from MOA to الارشاد الزراعي to include AMR information in their weekly lectures	A.9.1.1 1 month	A.9 1 month
A.10 To raise public awareness about AMR	A.10.1 To include	A.10.1.1 To prepare the message	A.10.1.1 3 months	A.10 6 months

	AMR Awareness in antibiotic leaflets النشرة الطبية للمضادات الحيوية			
		A.10.1.2 To send a letter to مديرية الشؤون الصيدلانية to include this message in the ABX leaflets	A.10.1.2 1 month	
	A.10.2 Preparation of material for billboards, radio, TV, social media	A.10.2.1 Launch a competition for the public to prepare material for broadcasting and logo	A.10.2.1 3 months	
		A.10.2.2 To advertise for the competition on TV news, social media, official Newspaper	A.10.2.2 3 months	
		A.10.2.3 Put a yearly schedule for broadcasting the chosen advertisement material throughout the year and concentrate on it during the Global Week for AMR and book the spots for it	A.10.2.3 6 months	
	A.10.3 Improve awareness of the media employees about AMR	A.10.3.1 Workshop to media employees	A.10.3.1 6 months	

	A.10.4 Have a celebrity talk about AMR	A.10.4.1 Choose and approach a celebrity to talk frequently about AMR	A.10.4.1 6 months	
	A.10.5 To create a page for AMR included in the MOH and MOA websites where all information, studies, news are broadcasted	A.10.5.1 Letter from the technical working group to المكتب الإعلامي التابع لوزارة الصحة	A.10.5.1 1 month	

Operational plan and budget

Strategic objective	Activity	Sub-activity	Unit	Quantity	Date	Location	Responsible entity	Cost	Source of funding	Indicator
A.1 Organization of the tasks in this axis	A.1.1 Establishing the technical working group	A.1.1.1 Nomination	A.1.1.1 Nomination letter with the list of members	A.1.1.1 1	A.1.1.1 1 month	A.1.1.1 MOH MOA	A.1.1.1 NMCG	A.1.1.1 None	A.1.1.1 -----	A.1 Working group and focal person nominated
		A.1.1.2 Putting TOR	A.1.1.2 List of TOR inside nomination letter	A.1.1.2 1	A.1.1.2 1 month	A.1.1.2 MOH MOA	A.1.1.2 NMCG	A.1.1.2 None	A.1.1.2 -----	
		A.1.1.3 Assigning focal point (Dr. Amer Teebi)	A.1.1.3 Nomination letter	A.1.1.3 1	A.1.1.3 1 month	A.1.1.3 MOH MOA	A.1.1.3 NMCG	A.1.1.3 None	A.1.1.3 -----	
A.2 Include AMR awareness in the national school education system	A.2.1 Education in schools	A.2.1.1 Letter from MOH to MOE to send a mandate to the school curricula committee to include AMR awareness	A.2.1.1 Letter	A.2.1.1 1	A.2.1.1 1 month	A.2.1.1 MOE	A.2.1.1 Dr. Hotouf Tawashi (School Health Directorate, MOE)	A.2.1.1 None	A.2.1.1 -----	A.2.1, A.2.2 Percentage of school programs/curricula that include AMR education

		in school curricula (Dr Tabbah)								
	A.2.2 Preparation of education material for the different levels and specialization in higher education and to train the educators about AMR	A.2.2.1 Preparation of material AMR/IPC Material according to each specialization: Medical school, Pharmacy students, Nursing, Dentists Veterinarians	A.2.2.1 List	A.2.2.1 1	A.2.2.1 1 month	A.2.2.1 MOH MOA	A.2.2.1 Technical working group	A.2.2.1 None	A.2.2.1 -----	
	A.2.3 To sensitize And train educators in schools and higher education about teaching	A.2.3.1 Training of trainers and educators through workshops for all school activities	A.2.3.1 Training of trainers (TOT) workshops	A.2.3.1 2	A.2.3.1 6 months	A.2.3.1 Damascus	A.2.3.1 Dr. Hotouf Tawashi (School Health Directorate, MOE)	A.2.3.1 5000 USD/works hop	A.2.3.1 AMR Fund	A.2.3 Percentage of education sector employees that have attended training

	about AMR.	related to AMR								sessions about AMR
		A.2.3.2 Training of employees in the sectors of education by trained profession in the TOT central training	A.2.3.2 Workshops in the different Governorates	A.2.3.2 8	A.2.3.2 9 months	A.2.3.2 Different Governorates	A.2.3.2 Trained personnel (TOT)	A.2.3.2 500 USD/ workshop Total= 4,000 USD	A.2.3.2 AMR Fund	
A.3 Fortify the awareness about AMR in the human medical education	A.3.1 Medical schools: Include AMR projects in health education projects that are required to be prepared by medical students in their 5 th /6 th year of medical school	A.3.1.1 Recommendation to medical schools program director	A.3.1.1 Letter	A.3.1.1 1	A.3.1.1 2 months	A.3.1.1 MOE	A.3.1.1 Dr. Hotouf Tawashi (School Health Directorate, MOE)	A.3.1.1 None	A.3.1.1 -----	A.3.1.1 Percentage of 5 th /6 th year medical school projects that are related to AMR
	A.3.2	A.3.2.1	A.3.2.1	A.3.2.1	A.3.2.1	A.3.2.1	A.3.2.1	A.3.2.1	A.3.2.1	A.3.2.1

	To give a lecture to medical students when they start their clinical work at the 6 th year of Medical school, once they reach primary health care to be distributed to the different specialties for training	Include lecture /year/trainee about AMR	Letter from MOH to primary health care directorate to include this lecture in primary health care where all 6 th year medical student have to go through	1	2 months	MOH	Technical working group NMCG	None	-----	None
	A.3.3 -To include AMR Awareness in the preparatory course for the medical students that are graduates	A.3.3.1 Letter from NMCG and MOH to رئيس الهيئة الصحية للتخصصات الطبية	A.3.3.1 Letter	A.3.3.1 1	A.3.3.1 2 months	A.3.3.1 MOH	A.3.3.1 NMCG	A.3.3.1 None	A.3.3.1 -----	A.3.3.1 None

	from abroad and who need to sit for colloquium -To include AMR questions in the colloquium exam الهيئة الصحية للتخصصات الطبية مسؤولة عن هذا في الدورة التدريبية وأسئلة امتحان الكولوكيوم									
	A.3.4 Include AMR questions in colloquium exams	A.3.4.1 Letter to دائرة الامتحانات	A.3.4.1 Letter	A.3.4.1 1	A.3.4.1 1 month	A.3.4.1 MOH	A.3.4.1 Technical working group	A.3.4.1 None	A.3.4.1 -----	A.3.4.1 Yes/No questions about AMR in colloquium exam

A.4 To fortify the education about AMR in veterinary schools	A.4.1 Veterinary schools: Include AMR projects in education projects that are required to be prepared by students in their 5 th /6 th year of veterinary school programs	A.4.1.1 Acquire acceptance from MOE	A.4.1.1 Letter	A.4.1.1 1	A.4.1.1 2 months	A.4.1.1 MOE	A.4.1.1 Dr. Hotouf Tawashi (School Health Directorate, MOE)	A.4.1.1 None	A.4.1.1 -----	A.4.1.1 Percentage of 5 th /6 th year veterinary school projects that are related to AMR
	A.4.2 To train veterinarians about AMR at the level of 6 th year when they start their practical training	A.4.2.1 Letter from MOA to مديرية الصحة الحيوانية في المحافظات Students in 5 th /6 th year in training/ lecture	A.4.2.1 Letter	A.4.2.1 1	A.4.2.1 2 months	A.4.2.1 MOA	A.4.2.1 Technical working group	A.4.2.1 None	A.4.2.1 -----	A.4.2.1 None
A.5 Raise AMR awareness	A.5.1 Workshops targeting	A.5.1.1 To include AMR	A.5.1.1 Program	A.5.1.1 1/year	A.5.1.1 1 year	A.5.1.1 MOA	A.5.1.1 MOA	A.5.1.1 2000 USD/year	A.5.1.1 AMR Fund	A.5.1.1 Percentage of farmers

among veterinarians and farmers outside official veterinary school training	veterinarians and farmers	awareness in the yearly program of مديرية تأهيل وتدريب الأطباء البيطريين								and veterinarians who attend these workshops
A.6 AMR awareness in higher education specializations	A.6.1 To recommend to Ministry of Higher Education to include AMR education and hygiene in the basic education of medical doctors, pharmacists, dentists, nurses, midwives, veterinarians and students in the	A.6.1.1 Letter from MOH to Ministry of higher education to include AMR in the curricula of health related specializations as listed	A.6.1.1 Letter	A.6.1.1 1	A.6.1.1 3 months	A.6.1.1 MOH	A.6.1.1 NMCG MOH	A.6.1.1 None	A.6.1.1 ----	A.6 Percentage of health related curricula that include modules about AMR

	agriculture and environment fields (according to material prepared in A.2.2)									
	A.6.2 Include AMR awareness material in health and hygiene education program outside the official curricula	A.6.2.1 Letter to MOE to include information on AMR in health education outside curricula	A.6.2.1 Letter from technical working group represented by Dr. Hotouf Tawashi (School Health Directorate, MOE) to the Minister of Education	A.6.2.1 1	A.6.2.1 1 year	A.6.2.1 MOE	A.6.2.1 Dr. Hotouf Tawashi (School Health Directorate, MOE)	A.6.2.1 None	A.6.2.1 -----	
A.7 AMR education in continuous education programs	A.7.1 Ask Syndicates/ Orders of Physicians, Pharmacist, Nurses,	A.7.1.1 Letter from NMCG/MOH/MOA to these orders/syndicates to	A.7.1.1 Letter	A.7.1.1 1	A.7.1.1 1 month	A.7.1.1 MOH MOA	A.7.1.1 NMCG MOH MOA	A.7.1.1 None	A.7.1.1 -----	A.7 Percentage of activities/sessions/lectures that include

	Veterinarians to include information on AMR in their continuous education programs	include information on AMR in their continuous education programs								messages about AMR
		A.7.1.2 To ask these societies to give lectures once/year in each specialty about AMR	A.7.1.2 Letter	A.7.1.2 1	A.7.1.2 1 month	A.7.1.2 MOH MOA	A.7.1.2 Technical working group NMCG MOH MOA	A.7.1.2 None	A.7.1.2 -----	
		A.7.1.3 Send a letter to the organizing committee of the yearly congress of the Syrian Order of Physicians	A.7.1.3 Letter	A.7.1.3 1	A.7.1.3 3 months	A.7.1.3 MOH	A.7.1.3 Technical working group	A.7.1.3 None	A.7.1.3 -----	

		to include lectures on AMR اللجنة العلمية المؤتمر السنوي للأطباء في سوريا								
		A.7.1.4 Send a letter to the organizing committee of the yearly congress of the Syrian Order of Veterinarians to include lectures on AMR اللجنة العلمية المؤتمر السنوي للطب البيطري في سوريا	A.7.1.4 Letter	A.7.1.4 1	A.7.1.4 3 months	A.7.1.4 MOH MOA	A.7.1.4 Technical working group NMCG MOA	A.7.1.4 None	A.7.1.4 -----	
		A.7.1.5 Trained personnel give AMR	A.7.1.5 Workshop	A.7.1.5 4 workshops /year	A.7.1.5 1 year 3 months	A.7.1.5 Different governorates	A.7.1.5 MOA	A.7.1.5 500 USD/ Workshop	A.7.1.5 AMR Fund	

		lectures in all sectors covered								
A.8 Improve AMR awareness among professionals in human health sectors	A.8.1 Raise AMR awareness among primary care physicians أطباء المستوصفات	A.8.1.1 Send a letter to مديرية الأمراض السارية في المستوصفات Department of communicable diseases	A.8.1.1 Letter	A.8.1.1 1	A.8.1.1 1 month	A.8.1.1 MOH	A.8.1.1 MOH	A.8.1.1 None	A.8.1.1 -----	A.8.1 Percentage of primary care physicians who attend sessions/activities/workshops related to AMR
		A.8.1.2 Letter from مديرية الأمراض السارية في المستوصفات to WHO to organize yearly activities on AMR for physicians and relevant personnel in the	A.8.1.2 a-Letter b-Workshops	A.8.1.2 a-1 b-9/year	A.8.1.2 a-1 month b-5 years	A.8.1.2 MOH	A.8.1.2 MOH	A.8.1.2 9 workshops/year 2,500 USD/workshop	A.8.1.2 AMR Fund	

		primary care field								
	A.8.2 Improve AMR awareness for employees of dispensaries, NGOs like, الهلال الاحمر, Red Cross, MSF, UNRWA, Religious foundations /organizations	A.8.2.1 Workshop to the employees of these NGOs about AMR	A.8.2.1 Workshop to all available in Damascus	A.8.2.1 4 workshops/ year 1 st year to increase with time depending on the number of areas that are reachable according to safety conditions	A.8.2.1 2 months	A.8.2.1 Damascus and expanding to safe areas outside Damascus	A.8.2.1 Technical working group	A.8.2.1 2,500 USD /workshop First 2 years 4 workshops/ year	A.8.2.1 AMR Fund	A.8.2 Percentage of employees of these organizations that attend these workshops
A.9 To improve AMR awareness among farmers	A.9.1 To include AMR information among the lectures given to farmers by الارشاد الزراعي	A.9.1.1 Letter from MOA to الارشاد الزراعي to include AMR information in their weekly lectures	A.9.1.1 Letter	A.9.1.1 1	A.9.1.1 1 month	A.9.1.1 MOA	A.9.1.1 Technical working group	A.9.1.1 None	A.9.1.1 -----	A.9.1.1 Letter sent and % of lectures given including AMR messages

A.10 To raise public awareness about AMR	A.10.1 To include AMR Awareness in antibiotic leaflets النشرة الطبية للمضادات الحيوية	A.10.1.1 To prepare the message	A.10.1.1 Document	A.10.1.1 1	A.10.1.1 3 months	A.10.1.1 MOH	A.10.1.1 Technical working group	A.10.1.1 None	A.10.1.1 None	A.10.1 Percentage of ABX that include AMR awareness in their leaflet
		A.10.1.2 To send a letter to مديرية الشؤون الصيدلانية to include this message in the ABX leaflets	A.10.1.2 Letter	A.10.1.2 1	A.10.1.2 1 month	A.10.1.2 MOH	A.10.1.2 Technical working group	A.10.1.2 None	A.10.1.2 None	
	A.10.2 Preparation of material for billboards, radio, TV, social media	A.10.2.1 Launch a competition for the public to prepare material for broadcasting and logo	A.10.2.1 Public competition	A.10.2.1 1	A.10.2.1 3 months	A.10.2.1 All over the safe area	A.10.2.1 MOH MOA وزارة الاعلام	A.10.2.1 1,000 USD	A.10.2.1 AMR Fund	A.10.2.1 None
		A.10.2.2	A.10.2.2	A.10.2.2	A.10.2.2	A.10.2.2	A.10.2.2	A.10.2.2	A.10.2.2	A.10.2.2

		To advertise for the competition on TV news, social media, official Newspaper	Advertisement campaign	1	3 months	All over the safe area	MOH MOA وزارة الاعلام	Included in A.10.2.1	AMR Fund	None
		A.10.2.3 Put a yearly schedule for broadcasting the chosen advertisement material throughout the year and concentrate on it during the Global Week for AMR and book the spots for it	A.10.2.3 Schedule and booking	A.10.2.3 1	A.10.2.3 6 months	A.10.2.3 المكتب الإعلامي التابع لوزارة الصحة	A.10.2.3 المكتب الإعلامي التابع لوزارة الصحة	A.10.2.3 To be assigned later	A.10.2.3 AMR Fund	A.10.2.3 Schedule is put and spots are booked
	A.10.3 Improve awareness	A.10.3.1	A.10.3.1 Workshop	A.10.3.1 2/year	A.10.3.1 6 months	A.10.3.1 MOH MOA	A.10.3.1	A.10.3.1 2,500 USD/ workshop	A.10.3.1 AMR Fund	A.10.3.1 Percentage of

	of the media employees about AMR	Workshop to media employees				WHO	Technical working group المكتب الإعلامي التابع لوزارة الصحة			employees who attend the sessions related to AMR awareness
	A.10.4 Have a celebrity talk about AMR	A.10.4.1 Choose and approach a celebrity to talk frequently about AMR	A.10.4.1 Person	A.10.4.1 1	A.10.4.1 6 months	A.10.4.1 Damascus	A.10.4.1 Technical working group	A.10.4.1 None	A.10.4.1 -----	A.10.4.1 Number of sessions/ appearance s of this person when he/she talks about AMR
	A.10.5 To create a page for AMR included in the MOH and MOA websites where all information , studies, news are broadcasted	A.10.5.1 Letter from the technical working group to المكتب الإعلامي التابع لوزارة الصحة	A.10.5.1 Letter	A.10.5.1 1	A.10.5.1 1 month	A.10.5.1 MOH	A.10.5.1 Technical working group NMCG	A.10.5.1 None	A.10.5.1 -----	A.10.5.1 Letter sent and webpage created

Monitoring and evaluation plan

Strategic objective	Activity	Sub-activity	Indicator	Purpose	Calculation	Frequency	Data source	Method	Baseline
A.1 Organization of the tasks in this axis	A.1.1 Establishing the technical working group	A.1.1.1 Nomination	A.1 Working group and focal person nominated	A.1 To organize and follow up the activities of this axis	A.1 Yes/No	A.1 Once/3 months until appointment	A.1 MOH	A.1 Checking	A.1 Not officially nominated
		A.1.1.2 Putting TOR							
		A.1.1.3 Assigning focal point (Dr. Amer Teebi)							
A.2 Include AMR awareness in the national school education system	A.2.1 Education in schools	A.2.1.1 Letter from MOH to MOE to send a mandate to the school curricula committee to include AMR awareness in school curricula (Dr Tabbah)	A.2.1, A.2.2 Percentage of school programs/curricula that include AMR education	A.2.1, A.2.2 To raise AMR awareness in an early stage at school	A.2.1, A.2.2 Number of school curricula that include AMR education/Total number of school curricula	A.2.1, A.2.2 Once /2 years	A.2.1, A.2.2 MOE	A.2.1, A.2.2 Survey	A.2.1, A.2.2 Unknown

	A.2.2 Preparation of education material for the different levels and specialization in higher education and to train the educators about AMR	A.2.2.1 Preparation of material AMR/IPC Material according to each specialization: Medical school, Pharmacy students, Nursing, Dentists Veterinarians							
	A.2.3 To sensitize And train educators in schools and higher education about teaching about AMR.	A.2.3.1 Training of trainers and educators through workshops for all school activities related to AMR	A.2.3 Percentage of education sector employees that have attended training sessions about AMR	A.2.3 To increase awareness of educators about AMR	A.2.3 Number of schools that have given awareness sessions to their employees about AMR	A.2.3 Once/ year	A.2.3 Schools MOE	A.2.3 Survey	A.2.3 NA
		A.2.3.2 Training of employees in the sectors of education by							

		trained profession in the TOT central training							
A.3 Fortify the awareness about AMR in the human medical education	A.3.1 Medical schools: Include AMR projects in health education projects that are required to be prepared by medical students in their 5 th /6 th year of medical school	A.3.1.1 Recommend ation to medical schools program director	A.3.1.1 Percentage of 5 th /6 th year medical school projects that are related to AMR	A.3.1.1 To raise AMR awareness among medical students at the stage of clinical work training	A.3.1.1 Number of 5 th /6 th year medical school projects that are related to AMR/Total number of projects	A.3.1.1 Once/ year	A.3.1.1 Medical schools	A.3.1.1 Survey	A.3.1.1 NA
	A.3.2 To give a lecture to medical students when they start their clinical work at the 6 th	A.3.2.1 Include lecture /year/trainee about AMR	A.3.2.1 None						

	year of Medical school, once they reach primary health care to be distributed to the different specialties for training								
	A.3.3 -To include AMR Awareness in the preparatory course for the medical students that are graduates from abroad and who need to sit for colloquium -To include AMR questions in the colloquium exam	A.3.3.1 Letter from NMCG and MOH to رئيس الهيئة الصحية للتخصصات الطبية	A.3.3.1 None						

	الهيئة الصحية للتخصصات الطبية مسؤولة عن هذا في الدورة التدريبية وأُسئلة امتحان الكولوكيوم								
	A.3.4 Include AMR questions in colloquium exams	A.3.4.1 Letter to دائرة الامتحانات	A.3.4.1 Yes/No questions about AMR in colloquium exam	A.3.4.1 Raise AMR awareness among new coming physicians, while preparing for the colloquium exam	A.3.4.1 Yes/No	A.3.4.1 Once/year	A.3.4.1 Colloquium exam committee	A.3.4.1 Survey	A.3.4.1 NA
A.4 To fortify the education about AMR in veterinary schools	A.4.1 Veterinary schools: Include AMR projects in education projects that are required to be prepared by students in their 5 th /6 th	A.4.1.1 Acquire acceptance from MOE	A.4.1.1 Percentage of 5 th /6 th year veterinary school projects that are related to AMR	A.4.1.1 To raise AMR awareness among veterinary school students at the stage of clinical work training	A.4.1.1 Number of 5 th /6 th year veterinary school projects that are related to AMR/Total number of projects	A.4.1.1 Once/ year	A.4.1.1 Veterinary schools	A.4.1.1 Survey	A.4.1.1 NA

	year of veterinary school programs								
	A.4.2 To train veterinarians about AMR at the level of 6 th year when they start their practical training	A.4.2.1 Letter from MOA to مديرية الصحة الحيوانية في المحافظات Students in 5 th /6 th year in training/ lecture	A.4.2.1 None						
A.5 Raise AMR awareness among veterinarians and farmers outside official veterinary school training	A.5.1 Workshops targeting veterinarians and farmers	A.5.1.1 To include AMR awareness in the yearly program of مديرية تأهيل وتدريب الأطباء البيطريين	A.5.1.1 Percentage of farmers and veterinarians who attend these workshops	A.5.1.1 To increase AMR awareness among this group	A.5.1.1 Number of farmers and veterinarians who attend workshops/ Total number of farmers and veterinarians	A.5.1.1 Once/year	A.5.1.1 مديرية تأهيل وتدريب الأطباء البيطريين	A.5.1.1 Survey	A.5.1.1 NA

A.6 AMR awareness in higher education specializations	A.6.1 To recommend to Ministry of Higher Education to include AMR education and hygiene in the basic education of medical doctors, pharmacists, dentists, nurses, midwives, veterinarians and students in the agriculture and environment fields (according to material prepared in A.2.2)	A.6.1.1 Letter from MOH to Ministry of higher education to include AMR in the curricula of health related specializations as listed	A.6 Percentage of health related curricula that include modules about AMR	A.6 To increase awareness since university and college about AMR	A.6 Number of health related curricula that include modules about AMR /Total number of health related curricula	A.6 Once/Year	A.6 Ministry of higher education	A.6 Survey	A.6 NA
	A.6.2 Include	A.6.2.1 Letter to							

	AMR awareness material in health and hygiene education program outside the official curricula	MOE to include information on AMR in health education outside curricula							
A.7 AMR education in continuous education programs	A.7.1 Ask Syndicates/Orders of Physicians, Pharmacists, Nurses, Veterinarians to include information on AMR in their continuous education programs	A.7.1.1 Letter from NMCG/MOH/MOA to these orders/syndicates to include information on AMR in their continuous education programs	A.7 Percentage of activities/sessions/lectures that include messages about AMR	A.7 To raise AMR awareness among healthcare workers/professionals outside the education curricula	A.7 Number of activities lectures that include messages about AMR/ Total number of activities	A.7 Once/year for each specialty	A.7 Orders/syndicates	A.7 Survey	A.7 NA

		A.7.1.2 To ask these s orders/syndi cates to give lectures once/year in each specialty about AMR							
		A.7.1.3 Send a letter to the organizing committee of the yearly congress of the Syrian Order of Physicians to include lectures on AMR اللجنة العلمية المؤتمر السنوي للأطباء في سوريا							
		A.7.1.4 Send a letter to the							

		organizing committee of the yearly congress of the Syrian Order of Veterinarians to include lectures on AMR اللجنة العلمية المؤتمر السنوي للطب البيطري في سوريا							
		A.7.1.5 Trained personnel give AMR lectures in all sectors covered							
A.8 Improve AMR awareness among professionals in human health sectors	A.8.1 Raise AMR awareness among primary care physicians أطباء المستوصفات	A.8.1.1 Send a letter to مديرية الأمراض السارية في المستوصفات Department of communicable diseases	A.8.1 Percentage of primary care physicians who attend sessions/activities/workshops related to AMR	A.8.1 To increase awareness of primary care physicians, since they are the primary ABX prescribers	A.8.1 Number of primary care physicians who attend workshops related to AMR/Total number of primary care physicians	A.8.1 Once/year	A.8.1 MOH مديرية الأمراض السارية في المستوصفات	A.8.1 Survey	A.8.1 NA

				in the community					
		A.8.1.2 Letter from مديرية الأمراض السارية في المستوصفات to WHO to organize yearly activities on AMR for physicians and relevant personnel in the primary care field							
	A.8.2 Improve AMR awareness for employees of dispensaries, NGOs like, الهلال الاحمر, Red Cross, MSF, UNRWA, Religious foundations/	A.8.2.1 Workshop to the employees of these NGOs about AMR	A.8.2 Percentage of employees of these organization s that attend these workshops	A.8.2 To increase awareness of NGOs about AMR	A.8.2 Number employees of these organization s that attend these workshops/ Total number of employees	A.8.2 Once/year	A.8.2 NGO	A.8.2 Survey	A.8.2 NA

	organization s								
A.9 To improve AMR awareness among farmers	A.9.1 To include AMR information among the lectures given to farmers by الارشاد الزراعي	A.9.1.1 Letter from MOA to الارشاد الزراعي to include AMR information in their weekly lectures	A.9.1.1 Letter sent and % of lectures given including AMR messages	A.9.1.1 To focus farmers' knowledge about AMR in their field	A.9.1.1 Number of lectures that include AMR messages/total number of lectures given	A.9.1.1 Once/year	A.9.1.1 MOA الارشاد الزراعي	A.9.1.1 Checking and survey	A.9.1.1 NA
A.10 To raise public awareness about AMR	A.10.1 To include AMR Awareness in antibiotic leaflets النشرة الطبية للمضادات الحيوية	A.10.1.1 To prepare the message	A.10.1 Percentage of ABX that include AMR awareness in their leaflet	A.10.1 To involve pharmaceutical companies in raising public/professional awareness about AMR through reading the leaflets	A.10.1 Number of ABX products that include AMR awareness in their leaflet/ Total number of ABX products in the Syrian market	A.10.1 Once/year	A.10.1 MOH Pharmaceutical companies	A.10.1 Checking	A.10.1 NA
		A.10.1.2 To send a letter to مديرية الشؤون الصيدلانية							

		to include this message in the ABX leaflets							
	A.10.2 Preparation of material for billboards, radio, TV, social media	A.10.2.1 Launch a competition for the public to prepare material for broadcasting and logo	A.10.2.1 None						
		A.10.2.2 To advertise for the competition on TV news, social media, official Newspaper	A.10.2.2 None						
		A.10.2.3 Put a yearly schedule for broadcasting the chosen advertisement material throughout the year and concentrate on it during	A.10.2.3 Schedule is put and spots are booked	A.10.2.3 To have a year long schedule of awareness sessions for the public on media	A.10.2.3 Yes/No	A.10.2.3 Once/year	A.10.2.3 MOH	A.10.2.3 Checking	A.10.2.3 NA

		the Global Week for AMR and book the spots for it							
	A.10.3 Improve awareness of the media employees about AMR	A.10.3.1 Workshop to media employees	A.10.3.1 Percentage of employees who attend the sessions related to AMR awareness	A.10.3.1 To sensitize the media about AMR in order to motivate them to talk/publish about AMR and cover AMR events	A.10.3.1 Number of media employees who attend these workshops/ Total number of media employees	A.10.3.1 Once/year	A.10.3.1 MOH	A.10.3.1 Survey	A.10.3.1 NA
	A.10.4 Have a celebrity talk about AMR	A.10.4.1 Choose and approach a celebrity to talk frequently about AMR	A.10.4.1 Number of sessions/ appearances of this person when he/she talks about AMR	A.10.4.1 To involve celebrities/p public figures to talk about AMR due to their influence on the public	A.10.4.1 Number of appearances of this person when he/she talks about AMR/Total number of appearances	A.10.4.1 Once/year	A.10.4.1 MOH	A.10.4.1 Checking	A.10.4.1 NA
	A.10.5 To create a page for AMR included in the MOH	A.10.5.1 Letter from the technical working group to المكتب الإعلامي	A.10.5.1 Letter sent and webpage created	A.10.5.1 To have an online site where activities about AMR	A.10.5.1 Yes/No	A.10.5.1 Once/year	A.10.5.1 MOH/MOA websites	A.10.5.1 Checking	A.10.5.1 NA

	and MOA websites where all information, studies, news are broadcasted	التابع لوزارة الصحة		are posted as a broadcasting technique					
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Axis B: Surveillance

Strategic plan

Strategic objective	Activity	Sub-activity	Date (operational plan)	Milestone
B.1 Organization of the work on this axis.	B.1.1 Create a technical working group with TOR	B.1.1.1 Letter from NMCG to nominate the technical group	B.1.1.1 1 month	B.1 1 month
	B.1.2 Assign focal person	B.1.2.1 Letter from NMCG to appoint a focal person (Dr Fatima Mansour)	B.1.2.1 1 month	
B.2 Capacity building of the existing reference laboratory	B.2.1 Check Readiness of existing central to be AMR Reference Lab	B.2.1.1 -Appointment of a subgroup to check readiness of existing central Lab to be the reference Lab for AMR -Suggested subgroup members: -Dr. Adnan -Rula hammoud -Dr. Ahmad Darwish (Laboratory Commission) -Dr. Eyad Qatraji (Laboratory Commission) -Dr. Mazen Dieb (Animal Health Directorate, MOA) -Dr. Shebl Khouri (Public Health Laboratories, MOH) -WHO EMRO specialist	B.2.1.1 Done	B.2 1 year basically (unless B.2.3.2 is not within 1 year)
	B.2.2	B.2.2.1	B.2.2.1 1 month	

	To provide the guidelines of WHO EMRO for AMR Reference Lab to the evaluating subgroup	Email to Dr. Maha Talaat (Regional Advisor, AMR/IPC, WHO/EMRO) to provide these guidelines		
	B.2.3 Ask EMRO to send a specialist to evaluate the central Lab to be an AMR reference Lab and to put a plan of action in order to fill the gaps	B.2.3.1 Letter from MOH to WHO asking for an EMRO specialist. Letter from WHO Syria to EMRO to ask for the specialist	B.2.3.1 1 month	
		B.2.3.2 Visit of the subgroup and the EMRO specialist to Central Lab and workshop to put the capacity building plan of this lab to become an AMR reference Lab.	B.2.3.2 To be announced by EMRO	
	B.2.4 Provide the Needed equipment, material and expertise for this lab to become the National AMR reference Lab	B.2.4.1 Prepare a budget according to the plan and source of funding for the capacity building of the reference Lab	B.2.4.1 1 year	
B.3 Sentinel surveillance of AMR to report to GLASS in incremental schedules	B.3.1 To designate the hospitals that will be included in this surveillance	B.3.1.1 Put a list of the potential hospitals laboratories (around 8) that could be included -Include the 2 hospitals related to the Ministry of	B.3.1.1 1 month	B.3 3 months

		Defense who already produce automated data		
		B.3.1.2 Letter from MOH to the included hospitals to ask them to cooperate with the working subgroup created for this sentinel surveillance project	B.3.1.2 2 months	
		B.3.1.3 Letter from MOH to the Ministry of Defense to allow the working subgroup to evaluate the generated data and to ask for the data to be included in the surveillance project	B.3.1.3 1 month	
	B.3.2 Evaluation of the data and the microbiological techniques followed in the labs of Ministry of Defense	B.3.2.1 Audit using GLASS checklist of the only 2 Labs in the country that already generate antibiogram data in order to start surveillance based on the results generated in these 2 labs, if found adequate	B.3.2.1 3 months	
B.4 Capacity building of the Lab in the hospitals listed in the sentinel projects	B.4.1 Appointment of a working subgroup that will be in charge of the capacity building workshops	B.4.1.1 Choosing the members	B.4.1.1 3 months	B.4 1 year
		B.4.1.2	B.4.1.2	

		Appointment of the members	3 months	
	B.4.2 Workshops for training on culture techniques, identification of microorganisms, and AST of organisms isolated in hospital laboratories	B.4.2.1 5-day workshop/ year on this issue	B.4.2.1 4 months	
	B.4.3 QTC (proficiency testing) of these labs after the workshop	B.4.3.1 QTC and follow up	B.4.3.1 5 months	
	B.4.4 2-day workshop for catch up after results of QTC		B.4.4 8 months	
	B.4.5 Equip the labs with needed material that are judged after the 2 nd workshop to be ready to provide data according to GLASS checklist	B.4.5.1 Request from NMCG to MOH to provide equipment to these labs	B.4.5.1 1 year	
	B.4.6 Revision of data and cleaning of data before sending to GLASS by an IT technician	B.4.6.1 Data cleaning and preparation to GLASS	B.4.6.1 For the 1 st 2 hospitals that are related to the Ministry of Defense 6 months	
B.5 Establish WHONET training	B.5.1 Training of MOH IT employee to use WHONET	B.5.1.1 Send 2 employees from MOH to learn about data entry into GLASS via WHONET	B.5.1.1 6-8 months	B.5 5 years
	B.5.2	B.5.2.1	B.5.2.1	

	General WHONET training for employees of the labs that will send data to GLASS after the capacity building	16 employees from hospital labs are trained per year	2 years then yearly	
B.6 Include antibiotic susceptibility testing (AST)/ antibiograms into the routine work of medical labs inside and outside hospitals	B.6.1 MOH sends a mandate to مديرية المشافي that AST/ antibiogram should be done for bacteria isolated from clinical specimens in hospital- and non- hospital-based laboratories	B.6.1.1 مديرية المشافي sends a mandate to all hospitals that AST / antibiogram should be done for bacteria isolated from clinical specimens	B.6.1.1 6 months	B.6 6 months
		B.6.1.2 هيئة المختبرات sends a mandate to all labs that AST / antibiogram should be done for bacteria isolated from clinical specimens	B.6.1.2 6 months	
		B.6.1.3 MOH sends a mandate to hospitals that the cost of antibiograms should be included in their budget	B.6.1.3 6 months	
		B.6.1.4 MOH looks for a source to buy the antibiotic susceptibility testing material in the presence of the current economic embargo	B.6.1.4 3 months	
		B.6.1.5	B.6.1.5	

		هيئة المختبرات updates the prices of clinical cultures in order to include the cost of the antibiogram	3 months	
B.7 Sentinel surveillance of AMR in veterinary labs.	B.7.1 Choose a sentinel group of veterinary clinics/labs for potentially providing AMR surveillance data in animals and plants	B.7.1.1 Evaluate the capacity of these veterinary labs to provide data for the surveillance project and identify the gaps according to GLASS checklist	B.7.1.1 3 months	B.7 3 months
	B.7.2 Invite FAO and OIE and NGO Aghakhan to participate in the surveillance project that requires capacity building of veterinary labs, and providing the needed material for AST	B.7.1.2 Letter from MOA to FAO OIE Aghakhan	B.7.1.2 3 months	
	B.7.3 Letter to Aghakhan that AMR is taken into consideration in the early warning system		B.7.3 1 month	
	B.7.4 Letter to FAO that there is a need for diagnostic material for AMR surveillance in the veterinary and agriculture		B.7.4 1 month	

	fields according to the activity that identifies the gaps needed for the capacity building of the chosen labs.			
	B.7.5 Letter to FAO there is a need for training of personnel in different AMR surveillance issues		B.7.5 1 month	
	B.7.6 Training of the personnel of the veterinary labs that were chosen to be able to provide AMR surveillance data in animals	B.7.6.1 Workshops TOT for lab technicians	B.7.6.1 1 year	
B.8 Establish AMR surveillance in food samples	B.8.1 Put list of priority organisms to be tested along with AST methods		B.8.1 3 months	B.8 3 months
	B.8.2 Send a mandate from MOH to public health labs and to the Directorate of Animal Health to add AST for the priority organisms mentioned above in their food testing protocols		B.8.2 3 months	
B.9	B.9.1		B.9.1 6 months	B.9 5 years

Issue a national AMR surveillance report with stratified results based on local needs of health professionals, researchers, etc. (e.g. nosocomial data, community-acquired data, etc.)	Workshop to put a standard report			
	B.9.2 Start issuing report about surveillance in humans, animals, food and agriculture		B.9.2 Humans: 1 year 1 st report from 2 hospitals then yearly, add on other hospitals	
	B.9.3 Publish the report in the following journals: المجلة الطبية مجلة الطب البيطري مجلة الزراعة	B.9.3.1 Get the acceptance of MOH/MOA of sending the report to these journals	B.9.3.1 1 month	
		B.9.3.2 Send the yearly reports to the journals	B.9.3.2 2 years	

Operational plan and budget

Strategic objective	Activity	Sub-activity	Unit	Quantity	Date	Location	Responsible entity	Cost	Source of funding	Indicator
B.1 Organization of the work on this axis.	B.1.1 Create a technical working group with TOR	B.1.1.1 Letter from NMCG to nominate the technical group	B.1.1.1 Letter	B.1.1.1 1	B.1.1.1 1 month	B.1.1.1 MOH MOA	B.1.1.1 NMCG	B.1.1.1 None	B.1.1.1 -----	B.1 Technical working group created and focal person appointed
	B.1.2 Assign focal person (Dr Fatima Mansour)	B.1.2.1 Letter from NMCG to appoint a focal person	B.1.2.1 Letter	B.1.2.1 1	B.1.2.1 1 month	B.1.2.1 MOH MOA	B.1.2.1 NMCG	B.1.2.1 None	B.1.2.1 -----	
B.2 Capacity building of the existing reference laboratory	B.2.1 Check Readiness of existing central to be AMR Reference Lab	B.2.1.1 - Appointment of a subgroup to check readiness of existing central Lab to be the reference Lab for AMR	B.2.1.1 Letter	B.2.1.1 1	B.2.1.1 Done	B.2.1.1 MOH	B.2.1.1 Surveillance axis technical working group	B.2.1.1 None	B.2.1.1 -----	B.2.1, B.2.2, B.2.3 Plan is put to improve the capacity of the existing central lab to fulfill the requirements of the AMR

		-Suggested subgroup members: -Dr. Adnan -Rula hammoud -Dr. Ahmad Darwish (Laboratory Commission) -Dr. Eyad Qatraji (Laboratory Commission) -Dr. Mazen Dieb (Animal Health Directorate, MOA) -Dr. Shebl Khouri (Public Health Laboratories, MOH)								reference lab
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		-WHO EMRO specialist								
	B.2.2 To provide the guidelines of WHO EMRO for AMR Reference Lab to the evaluating subgroup	B.2.2.1 Email to Dr. Maha Talaat (Regional Advisor, AMR/IPC, WHO/EMRO) to provide these guidelines	B.2.2.1 Email	B.2.2.1 1	B.2.2.1 1 month	B.2.2.1 WHO office	B.2.2.1 WHO AMR focal person (Dr. Rasmieh Allahham)	B.2.2.1 None	B.2.2.1 -----	
	B.2.3 Ask EMRO to send a specialist to evaluate the central Lab to be an AMR reference Lab and to put a plan of action in order to fill the gaps	B.2.3.1 Letter from MOH to WHO asking for an EMRO specialist. Letter from WHO Syria to EMRO to ask for the specialist	B.2.3.1 Letters	B.2.3.1 2	B.2.3.1 1 month	B.2.3.1 MOH WHO Syria	B.2.3.1 Surveillance axis technical working group WHO Syria	B.2.3.1 None	B.2.3.1 -----	
		B.2.3.2 Visit of the subgroup	B.2.3.2 Visit	B.2.3.2 1	B.2.3.2	B.2.3.2 Central Lab	B.2.3.2 Surveillance axis	B.2.3.2	B.2.3.2 AMR Fund	

		and the EMRO specialist to Central Lab and workshop to put the capacity building plan of this lab to become an AMR reference Lab.	One-day workshop		To be announced by EMRO		technical working group	Fees of EMRO specialist + 2000 USD for the workshop		
	B.2.4 Provide the Needed equipment, material and expertise for this lab to become the National AMR reference Lab	B.2.4.1 Prepare a budget according to the plan and source of funding for the capacity building of the reference Lab	B.2.4.1 Budget And proposal To be sent to potential funders	B.2.4.1 1 1	B.2.4.1 1 year	B.2.4.1 MOH	B.2.4.1 Reference Lab subgroup members EMRO Specialist	B.2.4.1 Depends on the report of the subgroup	B.2.4.1 MOH WHO Aghakhan	B.2.4 A budget is determined, funding source is identified and the fund is available
B.3 Sentinel surveillanc	B.3.1 To designate	B.3.1.1 Put a list of the	B.3.1.1 List	B.3.1.1 1	B.3.1.1 1 month	B.3.1.1 MOH	B.3.1.1 Surveillanc e axis	B.3.1.1 None	B.3.1.1 -----	B.3.1 List of hospitals

e of AMR to report to GLASS in incremental schedules	the hospitals that will be included in this surveillance	potential hospitals laboratories (around 8) that could be included -Include the 2 hospitals related to the Ministry of Defense who already produce automated data					technical working group			that will participate in the sentinel surveillance is ready
		B.3.1.2 Letter from MOH to the included hospitals to ask them to cooperate with the working subgroup created for this sentinel	B.3.1.2 Letter	B.3.1.2 1	B.3.1.2 2 months	B.3.1.2 MOH	B.3.1.2 NMCG	B.3.1.2 None	B.3.1.2 -----	

		surveillance project								
		B.3.1.3 Letter from MOH to the Ministry of Defense to allow the working subgroup to evaluate the generated data and to ask for the data to be included in the surveillance project	B.3.1.3 Letter	B.3.1.3 1	B.3.1.3 1 month	B.3.1.3 MOH	B.3.1.3 NMCG	B.3.1.3 None	B.3.1.3 -----	
	B.3.2 Evaluation of the data and the microbiological techniques followed in the labs of Ministry of Defense	B.3.2.1 Audit using GLASS checklist of the only 2 Labs in the country that already generate antibiogram data in	B.3.2.1 Audit according to GLASS checklist	B.3.2.1 1	B.3.2.1 3 months	B.3.2.1 Ministry of Defense hospitals Labs	B.3.2.1 Working subgroup of this project	B.3.2.1 1,000 USD	B.3.2.1 AMR Fund	B.3.2 Data from the labs of Ministry of Defense reported to GALSS as a starting point from Syria

		order to start surveillance based on the results generated in these 2 labs, if found adequate								
B.4 Capacity building of the Lab in the hospitals listed in the sentinel projects	B.4.1 Appointment of a working subgroup that will be in charge of the capacity building workshops	B.4.1.1 Choosing the members	B.4.1.1 List	B.4.1.1 1	B.4.1.1 3 months	B.4.1.1 MOH	B.4.1.1 Surveillance axis technical working group	B.4.1.1 None	B.4.1.1 -----	B.4 Percentage of labs that were chosen to report to GLASS start reporting to it
		B.4.1.2 Appointment of the members	B.4.1.2 Letter	B.4.1.2 1	B.4.1.2 3 months	B.4.1.2 MOH	B.4.1.2 NMCG	B.4.1.2 None	B.4.1.2 -----	
	B.4.2 Workshops for training on culture techniques, identification of	B.4.2.1 5-day workshop/year on this issue	B.4.2.1 Workshop	B.4.2.1 1/year	B.4.2.1 4 months	B.4.2.1 Central Lab	B.4.2.1 Working subgroup for capacity building	B.4.2.1 ????	B.4.2.1 AMR Fund	

	microorganisms, and AST of organisms isolated in hospital laboratories									
	B.4.3 QTC (proficiency testing) of these labs after the workshop	B.4.3.1 QTC and follow up	B.4.3.1 2/year/lab	B.4.3.1 Eight the 1 st year then 12 2 nd year then increase by 4 each year	B.4.3.1 5 months	B.4.3.1 Central Lab	B.4.3.1 Working subgroup for capacity building Central Lab	B.4.3.1 ????	B.4.3.1 AMR Fund	
	B.4.4 2-day workshop for catch up after results of QTC		B.4.4 Workshop	B.4.4 1/Lab	B.4.4 8 months	B.4.4 Central Lab	B.4.4 Working subgroup for capacity building	B.4.4 2,500 USD/workshop	B.4.4 AMR fund	
	B.4.5 Equip the labs with needed material that are judged after the 2 nd workshop to be ready to provide	B.4.5.1 Request from NMCG to MOH to provide equipment to these labs	B.4.5.1 Lab equipment for microorganism identification and AST	B.4.5.1 4-5 labs/year	B.4.5.1 1 year	B.4.5.1 Central Lab	B.4.5.1 MOH WHO	B.4.5.1 ????	B.4.5.1 AMR Fund MOH Fund	

	data according to GLASS checklist									
	B.4.6 Revision of data and cleaning of data before sending to GLASS by an IT technician	B.4.6.1 Data cleaning and preparation to GLASS	B.4.6.1 Data cleaning	B.4.6.1	B.4.6.1 For the 1 st 2 hospitals that are related to the Ministry of Defense 6 months	B.4.6.1 MOH	B.4.6.1 MOH IT employee	B.4.6.1 None	B.4.6.1 -----	
B.5 Establish WHONET training	B.5.1 Training of MOH IT employee to use WHONET	B.5.1.1 Send 2 employees from MOH to learn about data entry into GLASS via WHONET	B.5.1.1 Travel to workshop	B.5.1.1 2 employees	B.5.1.1 6-8 months	B.5.1.1 Lebanon or Egypt according to workshop availability	B.5.1.1 MOH	B.5.1.1 3,000 USD /workshop	B.5.1.1 AMR Fund MOH	B.5 None
	B.5.2 General WHONET training for employees of the labs that will send data to GLASS after the	B.5.2.1 16 employees from hospital labs are trained per year	B.5.2.1 3-day workshop	B.5.2.1 1	B.5.2.1 2 years then yearly	B.5.2.1 Central Lab	B.5.2.1 Surveillance axis technical working subgroup	B.5.2.1 3,000 USD /year	B.5.2.1 AMR Fund	

	capacity building									
B.6 Include antibiotic susceptibility testing (AST)/antibiograms into the routine work of medical labs inside and outside hospitals	B.6.1 MOH sends a mandate to مديرية المشافي that AST/antibiogram should be done for bacteria isolated from clinical specimens in hospital- and non-hospital-based laboratories	B.6.1.1 مديرية المشافي sends a mandate to all hospitals that AST /antibiogram should be done for bacteria isolated from clinical specimens	B.6.1.1 Mandate	B.6.1.1 1	B.6.1.1 6 months	B.6.1.1 مديرية المشافي	B.6.1.1 NMCG MOH	B.6.1.1 None	B.6.1.1 ----	B.6.1.1 Percentage of hospital labs that generate antibiograms for clinical bacteriology specimens
		B.6.1.2 هيئة المختبرات sends a mandate to all labs that AST /antibiogram should be done for	B.6.1.2 Mandate	B.6.1.2 1	B.6.1.2 6 months	B.6.1.2 هيئة المختبرات	B.6.1.2 NMCG MOH	B.6.1.2 None	B.6.1.2 ----	B.6.1.2 Percentage of non-hospital-based labs that generate antibiograms for clinical

		bacteria isolated from clinical specimens								bacteriology specimens
		B.6.1.3 MOH sends a mandate to hospitals that the cost of antibiograms should be included in their budget	B.6.1.3 Mandate	B.6.1.3 1	B.6.1.3 6 months	B.6.1.3 MOH	B.6.1.3 NMCG MOH	B.6.1.3 None	B.6.1.3 ----	B.6.1.3 None
		B.6.1.4 MOH looks for a source to buy the antibiotic susceptibility testing material in the presence of the current economic embargo	B.6.1.4 Task force from MOH for finding a reliable cost effective source for material needed for antibiogram generation	B.6.1.4 1	B.6.1.4 3 months	B.6.1.4 MOH	B.6.1.4 NMCG MOH Surveillance axis technical working group	B.6.1.4 3,000 USD	B.6.1.4 AMR fund	B.6.1.4 None
		B.6.1.5	B.6.1.5 Document	B.6.1.5 1	B.6.1.5 3 months	B.6.1.5	B.6.1.5 MOH	B.6.1.5 None	B.6.1.5 ----	B.6.1.5 None

		هيئة المختبرات updates the prices of clinical cultures in order to include the cost of the antibiogram				هيئة المختبرات				
B.7 Sentinel surveillance of AMR in veterinary labs.	B.7.1 Choose a sentinel group of veterinary clinics/labs for potentially providing AMR surveillance data in animals and plants	B.7.1.1 Evaluate the capacity of these veterinary labs to provide data for the surveillance project and identify the gaps according to GLASS checklist	B.7.1.1 List of potential labs	B.7.1.1 1	B.7.1.1 3 months	B.7.1.1 MOA MOH	B.7.1.1 Surveillance axis technical working group (that includes a representative from the veterinary field)	B.7.1.1 None	B.7.1.1 ----	B.7.1 List of vet. Labs that will participate in the sentinel surveillance is available Yes/No.

	B.7.2 Invite FAO and OIE and NGO Aghakhan to participate in the surveillance project that requires capacity building of veterinary labs, and providing the needed material for AST	B.7.1.2 Letter from MOA to FAO OIE Aghakhan	B.7.1.2 Letters/Meetings with FAO/OIE/Aghakhan representatives to explain the project of sentinel surveillance in vet. labs and the needs for capacity building and material	B.7.1.2 Multiple	B.7.1.2 3 months	B.7.1.2 MOA	B.7.1.2 NMCG MOA	B.7.1.2 None	B.7.1.2 -----	B.7.2 None
	B.7.3 Letter to Aghakhan that AMR is taken into consideration in the early warning system		B.7.3 Letter	B.7.3 1	B.7.3 1 month	B.7.3 MOA	B.7.3 NMCG MOA	B.7.3 None	B.7.3 -----	B.7.3 None

	B.7.4 Letter to FAO that there is a need for diagnostic material for AMR surveillanc e in the veterinary and agriculture fields according to the activity that identifies the gaps needed for the capacity building of the chosen labs.		B.7.4 Letter	B.7.4 1	B.7.4 1 month	B.7.4 MOA	B.7.4 NMCG MOA	B.7.4 None	B.7.4 -----	B.7.4 None
	B.7.5 Letter to FAO there is a need for training of personnel		B.7.5 Letter	B.7.5 1	B.7.5 1 month	B.7.5 MOA	B.7.5 NMCG MOA	B.7.5 None	B.7.5 -----	

	in different AMR surveillance issues									
	B.7.6 Training of the personnel of the veterinary labs that were chosen to be able to provide AMR surveillance data in animals	B.7.6.1 Workshops TOT for lab technicians	B.7.6.1 Workshop	B.7.6.1 2/year	B.7.6.1 1 year	B.7.6.1 MOA	B.7.6.1 Surveillance axis technical working group	B.7.6.1 2,500 USD/workshop	B.7.6.1 AMR fund FAO OIE Aghakhan	B.7.6.1 Percentage of the chosen labs that have sent lab technicians for training
B.8 Establish AMR surveillance in food samples	B.8.1 Put list of priority organisms to be tested along with AST methods		B.8.1 List	B.8.1 1	B.8.1 3 months	B.8.1 MOH	B.8.1 Surveillance axis technical working group	B.8.1 None	B.8.1 -----	B.8.1 List of priority organisms and corresponding AST methods are available

	B.8.2 Send a mandate from MOH to public health labs and to the Directorate of Animal Health to add AST for the priority organisms mentioned above in their food testing protocols		B.8.2 Mandate	B.8.2 2	B.8.2 3 months	B.8.2 MOH	B.8.2 NMCG	B.8.2 None	B.8.2 -----	B.8.2 AMR priority organisms and their AST results are available in Food safety reports
B.9 Issue a national AMR surveillance report with stratified results based on local needs of health professionals	B.9.1 Workshop to put a standard report		B.9.1 Workshop	B.9.1 1	B.9.1 6 months	B.9.1 MOH MOA	B.9.1 Surveillance axis technical working group Expert	B.9.1 1,500 USD	B.9.1 AMR Fund	B.9 National report is published in journals and on AMR webpages

ls, researchers, etc. (e.g. nosocomial data, community-acquired data, etc.)										
	B.9.2 Start issuing report about surveillance in humans, animals, food and agriculture		B.9.2 Yearly reports	B.9.2 3	B.9.2 Humans: 1 year 1 st report from 2 hospitals then yearly, add on other hospitals	B.9.2 MOH MOA	B.9.2 NMCG Surveillance axis technical working group Expert	B.9.2 30,000 USD/ year	B.9.2 AMR Fund	
	B.9.3 Publish the report in the following journals: المجلة الطبية مجلة الطب البيطري مجلة الزراعة	B.9.3.1 Get the acceptance of MOH/MOA of sending the report to these journals	B.9.3.1 Letter	B.9.3.1 1	B.9.3.1 1 month	B.9.3.1 MOH MOA	B.9.3.1 Surveillance axis technical working group	B.9.3.1 None	B.9.3.1 -----	
		B.9.3.2 Send the yearly	B.9.3.2 Report	B.9.3.2 1/year	B.9.3.2 2 years	B.9.3.2 MOH MOA	B.9.3.2 Surveillance axis	B.9.3.2 2,000USD/ year	B.9.3.2 AMR Fund	

		reports to the journals					technical working group			
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Monitoring and evaluation plan

Strategic objective	Activity	Sub-activity	Indicator	Purpose	Calculation	Frequency	Data source	Method	Baseline
B.1 Organization of the work on this axis.	B.1.1 Create a technical working group with TOR	B.1.1.1 Letter from NMCG to nominate the technical group	B.1 Technical working group created and focal person appointed	B.1 To organize the work of this axis and follow up of the corresponding activities	B.1 Yes/No	B.1 Once/3 months until appointment, then once/5 years	B.1 MOH NMCG	B.1 Checking	B.1 NA
	B.1.2 Assign focal person	B.1.2.1 Letter from NMCG to appoint a focal person (Dr Fatima Mansour)							
B.2 Capacity building of the existing reference laboratory	B.2.1 Check Readiness of existing central to be AMR Reference Lab	B.2.1.1 - Appointment of a subgroup to check readiness of existing central Lab to be the reference Lab for AMR	B.2.1, B.2.2, B.2.3 Plan is put to improve the capacity of the existing central lab to fulfill the requirements of the AMR reference lab	B.2.1, B.2.2, B.2.3 To equip the reference lab to fulfill the functions of the AMR reference lab	B.2.1, B.2.2, B.2.3 Yes/No	B.2.1, B.2.2, B.2.3 Once	B.2.1, B.2.2, B.2.3 Surveillance axis technical working group NMCG	B.2.1, B.2.2, B.2.3 Checking	B.2.1, B.2.2, B.2.3 Reference Lab not ready currently to fulfill this function

		-Suggested subgroup members: -Dr. Adnan Rula hammoud -Dr. Ahmad Darwish (Laboratory Commission) -Dr. Eyad Qatraji (Laboratory Commission) -Dr. Mazen Dieb (Animal Health Directorate, MOA) -Dr. Shebl Khouri (Public Health Laboratories, MOH) -WHO EMRO specialist							
	B.2.2	B.2.2.1							

	To provide the guidelines of WHO EMRO for AMR Reference Lab to the evaluating subgroup	Email to Dr. Maha Talaat (Regional Advisor, AMR/IPC, WHO/EMRO) to provide these guidelines							
	B.2.3 Ask EMRO to send a specialist to evaluate the central Lab to be an AMR reference Lab and to put a plan of action in order to fill the gaps	B.2.3.1 Letter from MOH to WHO asking for an EMRO specialist. Letter from WHO Syria to EMRO to ask for the specialist							
		B.2.3.2 Visit of the subgroup and the EMRO specialist to Central Lab and							

		workshop to put the capacity building plan of this lab to become an AMR reference Lab.							
	B.2.4 Provide the Needed equipment, material and expertise for this lab to become the National AMR reference Lab	B.2.4.1 Prepare a budget according to the plan and source of funding for the capacity building of the reference LAB	B.2.4 A budget is determined, funding source is identified and the fund is available	B.2.4 To actually build the capacity of the current central Lab to become an AMR reference Lab	B.2.4 Yes/No	B.2.4 Once/6 months until everything is secured	B.2.4 Reference Lab	B.2.4 Checking	B.2.4 NA
B.3 Sentinel surveillance of AMR to report to GLASS in incremental schedules	B.3.1 To designate the hospitals that will be included in this surveillance	B.3.1.1 Put a list of the potential hospitals laboratories (around 8) that could be included -Include the 2 hospitals related to the	B.3.1 List of hospitals that will participate in the sentinel surveillance is ready	B.3.1 To ultimately have data reported to GLASS that is microbiologically sound and representative	B.3.1 Yes/No	B.3.1 Once/3 months until the list is available	B.3.1 Surveillance axis technical working group	B.3.1 Checking	B.3.1 NA

		Ministry of Defense who already produce automated data		e of the whole country					
		B.3.1.2 Letter from MOH to the included hospitals to ask them to cooperate with the working subgroup created for this sentinel surveillance project							
		B.3.1.3 Letter from MOH to the Ministry of Defense to allow the working subgroup to evaluate the generated data and to ask for the							

		data to be included in the surveillance project							
	B.3.2 Evaluation of the data and the microbiological techniques followed in the labs of Ministry of Defense	B.3.2.1 Audit using GLASS checklist of the only 2 Labs in the country that already generate antibiogram data in order to start surveillance based on the results generated in these 2 labs, if found adequate	B.3.2 Data from the labs of Ministry of Defense reported to GALSS as a starting point from Syria	B.3.2 To send the first available data to GLASS	B.3.2 Yes/No	B.3.2 Once/year	B.3.2 Surveillance axis technical working group	B.3.2 Checking	B.3.2 NA
B.4 Capacity building of the Lab in the hospitals listed in the sentinel projects	B.4.1 Appointment of a working subgroup that will be in charge of the capacity	B.4.1.1 Choosing the members	B.4 Percentage of labs that were chosen to report to GLASS start reporting to it	B.4 Standardize the AMR surveillance work and see how many labs will be compliant	B.4 Number of labs actually reporting to GALSS/Total number of labs chosen to report	B.4 Once/year	B.4 Surveillance axis technical working group	B.4 Checking	B.4 NA

	building workshops			and report to GLASS as required after capacity building	their data to GLASS				
		B.4.1.2 Appointment of the members							
	B.4.2 Workshops for training on culture techniques, identification of microorganisms, and AST of organisms isolated in hospital laboratories	B.4.2.1 5-day workshop/ year on this issue							
	B.4.3 QTC (proficiency testing) of these labs after the workshop	B.4.3.1 QTC and follow up							
	B.4.4								

	2-day workshop for catch up after results of QTC								
	B.4.5 Equip the labs with needed material that are judged after the 2 nd workshop to be ready to provide data according to GLASS checklist	B.4.5.1 Request from NMCG to MOH to provide equipment to these labs							
	B.4.6 Revision of data and cleaning of data before sending to GLASS by an IT technician	B.4.6.1 Data cleaning and preparation to GLASS							
B.5 Establish WHONET training	B.5.1 Training of MOH IT employee to	B.5.1.1 Send 2 employees from MOH to learn	B.5 None						

	use WHONET	about data entry into GLASS via WHONET							
	B.5.2 General WHONET training for employees of the labs that will send data to GLASS after the capacity building	B.5.2.1 16 employees from hospital labs are trained per year							
B.6 Include antibiotic susceptibility testing (AST)/ antibiograms into the routine work of medical labs inside and outside hospitals	B.6.1 MOH sends a mandate to مديرية المشافي that AST/ antibiogram should be done for bacteria isolated from clinical specimens in hospital- and non-hospital-based laboratories	B.6.1.1 مديرية المشافي sends a mandate to all hospitals that AST / antibiogram should be done for bacteria isolated from clinical specimens	B.6.1.1 Percentage of hospital labs that generate antibiograms for clinical bacteriology specimens	B.6.1.1 To have a stepwise increase the numbers of labs that produce antibiogram	B.6.1.1 Number of hospital labs that generate antibiograms for routine bacteriology work/Total number of hospital labs	B.6.1.1 Once/year	B.6.1.1 مديرية - المشافي -The hospitals themselves	B.6.1.1 Checking	B.6.1.1 NA

		B.6.1.2 هيئة المختبرات sends a mandate to all labs that AST / antibiogram should be done for bacteria isolated from clinical specimens	B.6.1.2 Percentage of non- hospital- based labs that generate antibiograms for clinical bacteriology specimens	B.6.1.2 To increase the number of nonhospital based labs that produce antibiogram	B.6.1.2 Number of non-hospital based medical labs that generate antibiograms for routine bacteriology work/Total number of medical labs outside hospitals	B.6.1.2 Once/year	B.6.1.2 هيئة المختبرات The labs themselves	B.6.1.2 Checking	B.6.1.2 NA
		B.6.1.3 MOH sends a mandate to hospitals that the cost of antibiograms should be included in their budget	B.6.1.3 None						
		B.6.1.4 MOH looks for a source to buy the antibiotic susceptibility testing material in the presence	B.6.1.4 None						

		of the current economic embargo							
		B.6.1.5 هيئة المختبرات updates the prices of clinical cultures in order to include the cost of the antibiogram	B.6.1.5 None						
B.7 Sentinel surveillance of AMR in veterinary labs.	B.7.1 Choose a sentinel group of veterinary clinics/labs for potentially providing AMR surveillance data in animals and plants	B.7.1.1 Evaluate the capacity of these veterinary labs to provide data for the surveillance project and identify the gaps according to GLASS checklist	B.7.1 List of vet. Labs that will participate in the sentinel surveillance is available Yes/No.	B.7.1 To designate the labs	B.7.1 Enumeration	B.7.1 Once/3 months until the list is available	B.7.1 Surveillance axis technical working group	B.7.1 Checking	B.7.1 NA

	B.7.2 Invite FAO and OIE and NGO Aghakhan to participate in the surveillance project that requires capacity building of veterinary labs, and providing the needed material for AST	B.7.1.2 Letter from MOA to FAO OIE Aghakhan	B.7.2 None						
	B.7.3 Letter to Aghakhan that AMR is taken into consideration in the early warning system		B.7.3 None						
	B.7.4 Letter to FAO that there is a need for		B.7.4 None						

	diagnostic material for AMR surveillance in the veterinary and agriculture fields according to the activity that identifies the gaps needed for the capacity building of the chosen labs.								
	B.7.5 Letter to FAO there is a need for training of personnel in different AMR surveillance issues								

	B.7.6 Training of the personnel of the veterinary labs that were chosen to be able to provide AMR surveillance data in animals	B.7.6.1 Workshops TOT for lab technicians	B.7.6.1 Percentage of the chosen labs that have sent lab technicians for training	B.7.6.1 Part of capacity building of these labs	B.7.6.1 Number of labs that have sent technicians to be trained /Number of chosen labs that have sent personnel for training	B.7.6.1 Once/year	B.7.6.1 Attendance sheets of the workshops	B.7.6.1 Checking	B.7.6.1 NA
B.8 Establish AMR surveillance in food samples	B.8.1 Put list of priority organisms to be tested along with AST methods		B.8.1 List of priority organisms and corresponding AST methods are available	B.8.1 To specify which organisms are to be tested for antimicrobial susceptibility and to which antimicrobials in food samples	B.8.1 Yes/No	B.8.1 Once/3 months until the list is available.	B.8.1 Surveillance axis technical working group	B.8.1 Checking	B.8.1 NA
	B.8.2 Send a mandate from MOH to public health labs		B.8.2 AMR priority organisms and their AST results	B.8.2 Visualize the actual burden of AMR in priority	B.8.2 Number of priority organisms that have ABX	B.8.2 Once/year	B.8.2 Food safety report	B.8.2 Checking	B.8.2 NA

	and to the Directorate of Animal Health to add AST for the priority organisms mentioned above in their food testing protocols		are available in food safety reports	organisms in the food chain	susceptibility actually tested/Total number of organisms for which AST is recommended in food safety as per the defined list				
B.9 Issue a national AMR surveillance report with stratified results based on local needs of health professionals , researchers, etc. (e.g. nosocomial data, community-acquired data, etc.)	B.9.1 Workshop to put a standard report		B.9 National report is published in journals and on AMR webpages	B.9 To improve awareness and stimulate decision makers to contribute to the AMR plan	B.9 Yes/No	B.9 Once/year	B.9 Journals AMR webpage	B.9 Checking	B.9 NA
	B.9.2								

	Start issuing report about surveillance in humans, animals, food and agriculture								
	B.9.3 Publish the report in the following journals: المجلة الطبية مجلة الطب البيطري مجلة الزراعة	B.9.3.1 Get the acceptance of MOH/MOA of sending the report to these journals							
		B.9.3.2 Send the yearly reports to the journals							

Axis C: IPC

Strategic plan

Strategic objective	Activity	Sub-activity	Date from operational plan	Milestone
C.1 Organization of the work in this axis	C.1.1 To appoint the members of the technical working group for IPC axis: -Dr. Shebl Khouri (Public Health Laboratories, MOH) - Dr. Fatima Mansour (Public Health Laboratories, MOH) -Dr. Hazar Farouan (Communicable Diseases Directorate, MOH) -Dr. Hani Lahham (Communicable Diseases Directorate, MOH) -Dr. Amer Teebi (Communicable Diseases Directorate, MOH) -Dr. Wahid Rajba Beak (MOHE) -Dr. Majed Bitar (Primary Care/PHCC Directorate, MOH) -Dr Mazen Dieb (Animal Health Directorate, MOA)		C.1.1 1 month	C.1 1 month

	-Dr. Atef Altawel (Environmental Health, MOH) -Dr. Issam Anjek (MOHE) Put TOR for this group			
	C.1.2 Appoint the focal person (Dr Bashar Haj Ali) through a letter from MOH/MOA		C.1.2 1 month	
C.2 Raise the awareness of officials about the need for national IPC program, committee and working team	C.2.1 Make it a priority of MOH	C.2.1.1 Prepare a report about available local data about nosocomial infections	C.2.1.1 6 months	C.2 8 months
		C.2.1.2 -Meeting with MOH and presentation of data -Requests for the need of a national program with a committee, a focal person, and a special budget	C.2.1.2 8 months	
C.3 Include/Update IPC requirements in accreditation standards of hospitals and in licensing of long-term care facilities (LTCF)	C.3.1.1 Updating IPC in accreditation/licensing manual and make sure it includes essential elements in IPC for hospitals and LTCF		C.3.1.1 1 year	C.3 1 year
	C.3.1.2 Training of accreditation auditors on IPC		C.3.1.2 1 year	

	requirements in the accreditation			
C.4 To recommend establishing IPC programs in Hospitals	C.4.1 Send a letter (تعميم) from إدارة المشافي to all hospitals for mandatory establishment of an IPC team with at least 1 full time nurse and a part time physician		C.4.1 1 month	C.4 1 month
C.5 Reinforce National IPC Guidelines	C.5.1 Update existing ones	C.5.1.1 Mandate to the technical working group to update them	C.5.1.1 3 months	C.5 8 months
		C.5.1.2 Update the guidelines	C.5.1.2 6 months	
		C.5.1.3 Post the updated guidelines on AMR website	C.5.1.3 8 months	
C.6 To organize IPC professionals education and training	C.6.1 To specify training and prerequisites of IPC officers	C.6.1.1 To put a list of prerequisite training and/or qualifications of IPC officers	C.6.1.1 6 months	C.6 1 year
	C.6.2 Workshop for IPC Officers	C.6.2.1 Ask مركز الدراسات الاستراتيجية to give the attendees certificates	C.6.2.1 1 year	
	C.6.3 Training of IPC physicians	C.6.3.1 To specify the qualifications/training needed for a physician to become an IPC physician	C.6.3.1 6 months	

C.7 Offer IPC training for hospital employees in general	C.7.1 General training for nurses	C.7.1.1 TOT Workshop	C.7.1.1 1 year	C.7 1 year
	C.7.2 For newly recruited healthcare workers, physicians, a mandatory yearly IPC training session should be given	C.7.2.1 تعميم to مدراء المشافي that all new employees should have a session of orientation about IPC principles and practice in the hospital	C.7.2.1 1 month	
C.8 IPC training of employees in primary healthcare centers (PHCC)	C.8.1 MOH sends a تعميم to PHCC that there is a need to train employees about IPC		C.8.1 1 month	C.8 1 month
C.9 IPC training of employees in LTCF	C.9.1 MOH asks the Ministry of Social Affairs to recommend training the LTCF personnel on IPC and hygiene practices		C.9.1 2 months	C.9 2 months
C.10 Provide education possibilities for IPC professional as new specialties in IPC	C.10.1 Letter from MOH to MOHE to develop a specialty in IPC		C.10.1 1 month	C.10 1 year
	C.10.2 Workshop for IPC Officers	C.10.2 Ask مركز الدراسات الاستراتيجية to give certificates to the attendees	C.10.2 1 year	

C.11 To establish national process indicators in IPC	C.11.1 -To put a list of these indicators and a plan of action accordingly -The list will one indicator at a time and the number will increase with time: 1-Hand Hygiene 2-Isolation of XDR organisms 3- the use of PPE		C.11.1 To be started in 1 year	C.11 5 years
	C.11.2 Workshops for TOT for the chosen process indicators (how to audit, calculations, data compilation, etc.)		C.11.2 2 years from time zero	
	C.11.3 Workshops lead by the trained trainers for the team that will collect data about national process indicators in different regions of Syria		C.11.3 2 years and 3 months	
C.12 Research: Surveillance of nosocomial infections	C.12.1 Research project on VAP surveillance	C.12.1.1 Workshop for putting a protocol for the study in hospitals	C.12.1.1 5 years after providing the hospital labs with the necessary equipment	C.12 5 years from time zero depending on each activity/sub-activity
	C.12.2 Research project on CLABSI/ CAUTI surveillance	C.12.2.1 Start auditing	C.12.2.1 5 years from time zero (until building lab capacity has been achieved)	

C.13 Apply IPC practices in animals and agriculture	C.13.1 Reinforce biosafety measures according to OIE guidelines	C.13.1.1 Training workshops about IPC to farmers and veterinarians	C.13.1.1 6 months	C.13 6 months
	C.13.2 Coordination with NGOs	C.13.2.1 Letter from MOA to FAO, OIE, Aghakhan to make AMR and IPC training a priority in their targets	C.13.2.1 2 months	

Operational plan and budget

Strategic objective	Activity	Sub-activity	Unit	Quantity	Date	Location	Responsible entity	Cost	Source of funding	Indicator
C.1 Organization of the work in this axis	C.1.1 To appoint the members of the technical working group for IPC axis: -Dr. Shebl Khouri (Public Health Laboratories, MOH) - Dr. Fatima Mansour (Public Health Laboratories, MOH) -Dr. Hazar Farouan (Communicable		C.1.1 Letter of appointment of its members +TOR	C.1.1 1	C.1.1 1 month	C.1.1 MOH MOA	C.1.1 MOH MOHE MOA	C.1.1 None	C.1.1 -----	C.1 Technical working group and focal person appointed

	Diseases Directorate, MOH) -Dr. Hani Lahham (Communicable Diseases Directorate, MOH) -Dr. Amer Teebi (Communicable Diseases Directorate, MOH) -Dr. Wahid Rajba Beak (MOHE) -Dr. Majed Bitar (Primary Care/PHCC Directorate, MOH) -Dr Mazen Dieb (Animal Health Directorate, MOA)									
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	-Dr. Atef Altawel (Environmental Health, MOH) -Dr. Issam Anjek (MOHE) Put TOR for this group									
	C.1.2 Appoint the focal person (Dr Bashar Haj Ali) through a letter from MOH/MOA		C.1.2 Letter	C.1.2 1	C.1.2 1 month	C.1.2 MOH MOA	C.1.2 MOH MOA	C.1.2 None	C.1.2 -----	
C.2 Raise the awareness of officials about the need for national IPC program, committee	C.2.1 Make it a priority of MOH	C.2.1.1 Prepare a report about available local data about nosocomial infections	C.2.1.1 Report	C.2.1.1 1	C.2.1.1 6 months	C.2.1.1 MOH MOA	C.2.1.1 Dr Bashar Haj Ali (Head of Infection Control Department , Hospital Directorate, MOH)	C.2.1.1 None	C.2.1.1 -----	C.2 Meeting is held where available local data about nosocomial infections is presented

and working team										to officials in MOH
		C.2.1.2 -Meeting with MOH (Minister and Director General Directorate) and presentation of data -Requests for the need of a national program with a committee, a focal person, and a special budget	C.2.1.2 Meeting	C.2.1.2 1	C.2.1.2 8 months	C.2.1.2 MOH	C.2.1.2 Technical working group	C.2.1.2 None	C.2.1.2 -----	
C.3 Include/Update IPC requirements in accreditation standards	C.3.1.1 Updating IPC in accreditation/licensing manual and make sure		C.3.1.1 Update the Manual	C.3.1.1 1	C.3.1.1 1 year	C.3.1.1 WHO office	C.3.1.1 WHO/IPC Specialist	C.3.1.1 2,000 USD	C.3.1.1 AMR Fund	C.3.1.1 IPC standards are available in hospital accreditation

of hospitals and in licensing of long-term care facilities (LTCF)	it includes essential elements in IPC for hospitals and LTCF									n manual checklist and LTCF licensing manual checklist
	C.3.1.2 Training of accreditation auditors on IPC requirements in the accreditation		C.3.1.2 Training workshop	C.3.1.2 1/year	C.3.1.2 1 year	C.3.1.2 MOH	C.3.1.2 MOH	C.3.1.2 1,500 USD/workshop	C.3.1.2 AMR Fund	C.3.1.2 None
C.4 To recommend establishing IPC programs in Hospitals	C.4.1 Send a letter (تعميم) from إدارة المشافي to all hospitals for mandatory establishment of an IPC team with at least 1 full time nurse and a part		C.4.1 تعميم	C.4.1 1	C.4.1 1 month	C.4.1 مديرية المشافي/ MOH	C.4.1 Dr Bashar Haj Ali (Head of Infection Control Department , Hospital Directorate, MOH)	C.4.1 None	C.4.1 -----	C.4.1 Percentage of hospitals that have IPC team as described

	time physician									
C.5 Reinforce National IPC Guidelines	C.5.1 Update existing ones	C.5.1.1 Mandate to the technical working group to update them	C.5.1.1 Letter	C.5.1.1 1	C.5.1.1 3 months	C.5.1.1 MOH	C.5.1.1 مديرية المشافي/ MOH	C.5.1.1 None	C.5.1.1 -----	C.5 National IPC Guidelines updated and posted on AMR webpage
		C.5.1.2 Update the guidelines	C.5.1.2 Document	C.5.1.2 1	C.5.1.2 6 months	C.5.1.2 MOH Hospitals	C.5.1.2 Technical working group	C.5.1.2 2,000 USD	C.5.1.2 WHO AMR fund	
		C.5.1.3 Post the updated guidelines on AMR website	C.5.1.3 Posting on Website	C.5.1.3 1	C.5.1.3 8 months	C.5.1.3 MOH	C.5.1.3 Technical working group	C.5.1.3 None	C.5.1.3 -----	
C.6 To organize IPC professionals education and training	C.6.1 To specify training and prerequisites of IPC officers	C.6.1.1 To put a list of prerequisite training and/or qualifications of IPC officers	C.6.1.1 List	C.6.1.1 1	C.6.1.1 6 months	C.6.1.1 MOH	C.6.1.1 Technical working group	C.6.1.1 None	C.6.1.1 -----	C.6.1.1 Percentage of IPC officers who fulfill the needed requirements/training

	C.6.2 Workshop for IPC Officers	C.6.2.1 Ask مركز الدراسات الاستراتيجية to give the attendees certificates	C.6.2.1 Workshop	C.6.2.1 2/ year first centrally then in all safe governorate s	C.6.2.1 1 year	C.6.2.1 All safe areas in Syria	C.6.2.1 MOH	C.6.2.1 2,500 USD/ workshop	C.6.2.1 AMR fund	C.6.2.1 Percentage of IPC officers that who have attended a local IPC workshop and have a certificate
	C.6.3 Training of IPC physicians	C.6.3.1 To specify the qualificatio ns/training needed for a physician to become an IPC physician	C.6.3.1 List	C.6.3.1 1	C.6.3.1 6 months	C.6.3.1 MOH	C.6.3.1 Technical working group	C.6.3.1 None	C.6.3.1 -----	C.6.3.1 Percentage of IPC physicians who fulfill the needed requiremen ts/training
C.7 Offer IPC training for hospital employees in general	C.7.1 General training for nurses	C.7.1.1 TOT Workshop	C.7.1.1 Workshop	C.7.1.1 1 st year: 6/ year 2 nd year: 2/year then 2/year each year	C.7.1.1 1 year	C.7.1.1 All safe areas	C.7.1.1 Technical working group MOH	C.7.1.1 4,500 USD/ workshop	C.7.1.1 AMR fund	C.7.1.1 Percentage of safe governorat es that have trained trainers

	C.7.2 For newly recruited healthcare workers, physicians, a mandatory yearly IPC training session should be given	C.7.2.1 تعميم مدراء المشافي to that all new employees should have a session of orientation about IPC principles and practice in the hospital	C.7.2.1 Letter	C.7.2.1 1	C.7.2.1 1 month	C.7.2.1 MOH	C.7.2.1 إدارة المشافي	C.7.2.1 None	C.7.2.1 -----	C.7.2.1 Percentage of newly recruited employees that have attended an IPC orientation session upon employment
C.8 IPC training of employees in primary healthcare centers (PHCC)	C.8.1 MOH sends a تعميم to PHCC that there is a need to train employees about IPC		C.8.1 تعميم	C.8.1 1	C.8.1 1 month	C.8.1 MOH	C.8.1 Technical working group MOH	C.8.1 None	C.8.1 -----	C.8.1 Percentage of PHCC requiring that their employees attend IPC training sessions
C.9 IPC training of employees in LTCF	C.9.1 MOH asks the Ministry of Social Affairs to recommend training the		C.9.1 Letter	C.9.1 1	C.9.1 2 months	C.9.1 MOH	C.9.1 MOH Ministry of Social Affairs	C.9.1 None	C.9.1 -----	C.9.1 Percentage of LTCF requiring that their personnel attend IPC

	LTCF personnel on IPC and hygiene practices									training sessions
C.10 Provide education possibilities for IPC professional as new specialties in IPC	C.10.1 Letter from MOH to MOHE to develop a specialty in IPC		C.10.1 Letter	C.10.1 1	C.10.1 1 month	C.10.1 MOH	C.10.1 MOH	C.10.1 None	C.10.1 -----	C.10.1 Number of IPC programs available in higher education institutions
	C.10.2 Workshop for IPC Officers	C.10.2 Ask مركز الدراسات الاستراتيجية to give certificates to the attendees	C.10.2 Workshop	C.10.2 2/ year first centrally then in all safe governorates	C.10.2 1 year	C.10.2 All safe areas in Syria	C.10.2 MOH	C.10.2 2,500 USD/ workshop	C.10.2 AMR fund	C.10.2 Number of personnel trained
C.11 To establish national process indicators in IPC	C.11.1 -To put a list of these indicators and a plan of action accordingly -The list will one indicator at		C.11.1 List and plan of action	C.11.1 1/year with incremental indications with the years	C.11.1 To be started in 1 year	C.11.1 MOH	C.11.1 Technical working group	C.11.1 1,000 USD/ indicator as fees for data collection and analysis	C.11.1 AMR Fund	C.11.1 Number of national process indicators in IPC that is being followed up each year

	a time and the number will increase with time: 1-Hand Hygiene 2-Isolation of XDR organisms 3- the use of PPE									
	C.11.2 Workshops for TOT for the chosen process indicators (how to audit, calculations , data compilation , etc.)		C.11.2 TOT Workshop	C.11.2 Once/ year	C.11.2 2 years from time zero	C.11.2 MOH	C.11.2 Technical working group	C.11.2 2,500 USD/year	C.11.2 AMR Fund	C.11.2 None
	C.11.3 Workshops lead by the trained trainers for the team that will collect data		C.11.3 Workshops	C.11.3 5/year	C.11.3 2 years and 3 months	C.11.3 Hospitals in the different safe regions of Syria	C.11.3 Technical working group	C.11.3 5,000 USD/ year	C.11.3 AMR Fund	C.11.3 Percentage of hospitals reporting each included national indicator

	about national process indicators in different regions of Syria									
C.12 Research: Surveillance of nosocomial infections	C.12.1 Research project on VAP surveillance	C.12.1.1 Workshop for putting a protocol for the study in hospitals	C.12.1.1 Workshop	C.12.1.1 1	C.12.1.1 5 years after providing the hospital labs with the necessary equipment	C.12.1.1 Hospitals	C.12.1.1 Technical working group	C.12.1.1 2,000 USD	C.12.1.1 AMR fund	C.12 Results of the studies are published
	C.12.2 Research project on CLABSI/CAUTI surveillance	C.12.2.1 Start auditing	C.12.2.1 Audit	C.12.2.1 1	C.12.2.1 5 years from time zero (until building lab capacity has been achieved)	C.12.2.1 Hospitals	C.12.2.1 Technical working group	C.12.2.1 4000 USD	C.12.2.1 AMR Fund	
C.13 Apply IPC practices in animals and agriculture	C.13.1 Reinforce biosafety measures according to OIE guidelines	C.13.1.1 Training workshops about IPC to farmers and	C.13.1.1 Workshop	C.13.1.1 5/year	C.13.1.1 6 months	C.13.1.1 Rural areas municipalities	C.13.1.1 Technical working group	C.13.1.1 2,500 USD/workshop/year	C.13.1.1 AMR fund OIE Aghakhan	C.13.1.1 Number of farmers /per governorate who attend these

		veterinarians								training workshops
	C.13.2 Coordination with NGOs	C.13.2.1 Letter from MOA to FAO, OIE, Aghakhan to make AMR and IPC training a priority in their targets	C.13.2.1 Letter	C.13.2.1 3	C.13.2.1 2 months	C.13.2.1 MOA	C.13.2.1 Technical working group	C.13.2.1 None	C.13.2.1 -----	C.13.2.1 None

Monitoring and evaluation plan

Strategic objective	Activity	Sub-activity	Indicator	Purpose	Calculation	Frequency	Data source	Method	Baseline
C.1 Organization of the work in this axis	C.1.1 To appoint the members of the technical working group for IPC axis: -Dr. Shebl Khouri (Public Health Laboratories, MOH) - Dr. Fatima Mansour (Public Health Laboratories, MOH) -Dr. Hazar Farouan (Communicable Diseases Directorate, MOH) -Dr. Hani Lahham		C.1 Technical working group and focal person appointed	C.1 To organize the work in this axis, define responsibilities and ensure follow up of task execution	C.1 Yes/No	C.1 Once/5 years	C.1 NMCG	C.1 Checking	C.1 Appointed during stakeholders meeting to put the NAP for Syria. Letter of appointment is pending

	(Communicable Diseases Directorate, MOH) -Dr. Amer Teebi (Communicable Diseases Directorate, MOH) -Dr. Wahid Rajba Beak (MOHE) -Dr. Majed Bitar (Primary Care/PHCC Directorate, MOH) -Dr Mazen Dieb (Animal Health Directorate, MOA) -Dr. Atef Altawel (Environmental Health, MOH)								
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	-Dr. Issam Anjek (MOHE) Put TOR for this group								
	C.1.2 Appoint the focal person (Dr Bashar Haj Ali) through a letter from MOH/MOA								
C.2 Raise the awareness of officials about the need for national IPC program, committee and working team	C.2.1 Make it a priority of MOH	C.2.1.1 Prepare a report about available local data about nosocomial infections	C.2 Meeting is held where available local data about nosocomial infections is presented to officials in MOH	C.2 To raise the awareness of officials at MOH in order to get the needed authority and budget to be able to execute the activities of the plan	C.2 Yes/No	C.2 Once	C.2 NMCG	C.2 Checking	C.2 NA
		C.2.1.2 -Meeting with MOH and							

		presentation of data -Requests for the need of a national program with a committee, a focal person, and a special budget							
C.3 Include/Update IPC requirements in accreditation standards of hospitals and in licensing of long-term care facilities (LTCF)	C.3.1.1 Updating IPC in accreditation /licensing manual and make sure it includes essential elements in IPC for hospitals and LTCF		C.3.1.1 IPC standards are available in hospital accreditation manual checklist and LTCF licensing manual checklist	C.3.1.1 To make all facilities (hospitals & LTCF) apply IPC principles	C.3.1.1 Yes/No	C.3.1.1 Once/5 years	C.3.1.1 Focal person	C.3.1.1 Checking	C.3.1.1 NA
	C.3.1.2 Training of accreditation auditors on IPC requirements in the accreditation		C.3.1.2 None						

C.4 To recommend establishing IPC programs in Hospitals	C.4.1 Send a letter (تعميم) from إدارة المشافي to all hospitals for mandatory establishment of an IPC team with at least 1 full time nurse and a part time physician		C.4.1 Percentage of hospitals that have IPC team as described	C.4.1 Make sure that IPC teams are uniform in all hospitals	C.4.1 Number of hospitals that have IPC team as described/ Total number of hospitals	C.4.1 Once/year	C.4.1 Hospitals	C.4.1 Survey	C.4.1 NA
C.5 Reinforce National IPC Guidelines	C.5.1 Update existing ones	C.5.1.1 Mandate to the technical working group to update them	C.5 National IPC Guidelines updated and posted on AMR webpage	C.5 To make the new guidelines in line with up-to-date international recommendations based on evidence based medicine	C.5 Yes/No	C.5 Once/ year until available	C.5 AMR Website	C.5 Checking	C.5 NA
		C.5.1.2 Update the guidelines							
		C.5.1.3							

		Post the updated guidelines on AMR website							
C.6 To organize IPC professionals education and training	C.6.1 To specify training and prerequisites of IPC officers	C.6.1.1 To put a list of perquisite training and/or qualifications of IPC officers	C.6.1.1 Percentage of IPC officers who fulfill the needed requirements /training	C.6.1.1 Baseline evaluation of the situation	C.6.1.1 Number of IPC officers who fulfill the needed requirements /Total number of IPC officers checked	C.6.1.1 Once/year	C.6.1.1 Hospitals	C.6.1.1 Survey Accreditation audit	C.6.1.1 NA
	C.6.2 Workshop for IPC Officers	C.6.2.1 Ask مركز الدراسات الاستراتيجية to give the attendees certificates	C.6.2.1 Percentage of IPC officers that who have attended a local IPC workshop and have a certificate	C.6.2.1 To make sure that the IPC officers are well trained according to the up-to-date IPC principles & practices	C.6.2.1 Number of IPC officers that who have attended a local IPC workshop and have a certificate/ Total number of IPC officers	C.6.2.1 Once/year	C.6.2.1 Hospitals	C.6.2.1 Survey Accreditation audit	C.6.2.1 NA
	C.6.3 Training of IPC physicians	C.6.3.1 To specify the qualification	C.6.3.1 Percentage of IPC physicians	C.6.3.1 To make sure that physicians	C.6.3.1 Number of IPC physicians	C.6.3.1 Once/2 years	C.6.3.1 Hospitals	C.6.3.1 Survey	C.6.3.1 NA

		s/training needed for a physician to become an IPC physician	who fulfill the needed requirements /training	are in charge of IPC are properly trained and well qualified	who fulfill the needed requirements / Total number of IPC physicians				
C.7 Offer IPC training for hospital employees in general	C.7.1 General training for nurses	C.7.1.1 TOT Workshop	C.7.1.1 Percentage of safe governorates that have trained trainers	C.7.1.1 To have trained professionals help spreading the know how in IPC throughout the whole safe areas of the country	C.7.1.1 Number of safe governorates that have trained trainers/ Total number of governorates	C.7.1.1 Once/year	C.7.1.1 Attendance sheets of these workshops	C.7.1.1 Checking	C.7.1.1 NA
	C.7.2 For newly recruited healthcare workers, physicians, a mandatory yearly IPC training session should be given	C.7.2.1 تعميم to hospital directors that all new employees should have a session of orientation about IPC principles and practice	C.7.2.1 Percentage of newly recruited employees that have attended an IPC orientation session upon employment	C.7.2.1 To have a start up education and not to miss those who have been employed after the yearly general	C.7.2.1 Number of newly recruited employees that have attended an IPC orientation session upon employment/ Total number of	C.7.2.1 Yearly	C.7.2.1 Hospitals	C.7.2.1 Survey Accreditation audit	C.7.2.1 NA

		in the hospital		employees session	newly recruited employees				
C.8 IPC training of employees in primary healthcare centers (PHCC)	C.8.1 MOH sends a تعميم to PHCC that there is a need to train employees about IPC		C.8.1 Percentage of PHCC requiring that their employees attend IPC training sessions	C.8.1 To have employees in primary care sensitized and apply IPC practices	C.8.1 Number of PHCC requiring that their employees attend IPC training sessions /Total number of PHCC	C.8.1 Once/year	C.8.1 PHCC	C.8.1 Survey	C.8.1 NA
C.9 IPC training of employees in LTCF	C.9.1 MOH asks the Ministry of Social Affairs to recommend training the LTCF personnel on IPC and hygiene practices		C.9.1 Percentage of LTCF requiring that their personnel attend IPC training sessions	C.9.1 To have employees in LTCF sensitized and apply IPC practices	C.9.1 Number of LTCF requiring that their personnel attend IPC training sessions /Total number of LTCF	C.9.1 Once/year	C.9.1 LTCF	C.9.1 Survey	C.9.1 NA
C.10 Provide education possibilities for IPC professional	C.10.1 Letter from MOH to MOHE to develop a		C.10.1 Number of IPC programs available in	C.10.1 To provide local education opportunities	C.10.1 Number	C.10.1 Yearly	C.10.1 Higher education institutions	C.10.1 Survey	C.10.1 NA

as new specialties in IPC	specialty in IPC		higher education institutions	to Higher education students who like to have a profession in this field					
	C.10.2 Workshop for IPC Officers	C.10.2 Ask مركز الدراسات الاستراتيجية to give certificates to the attendees	C.10.2 Number of personnel trained	C.10.2 To make sure that the IPC officers are well trained according to the up-to-date IPC principles & practices	C.10.2 Yes/No	C.10.2 Once/year	C.10.2 Hospitals	C.10.2 Survey	C.10.2 NA
C.11 To establish national process indicators in IPC	C.11.1 -To put a list of these indicators and a plan of action accordingly -The list will one indicator at a time and the number will increase with time: 1-Hand Hygiene		C.11.1 Number of national process indicators in IPC that is being followed up each year	C.11.1 To have a follow up at the national level on the key performance indicators in IPC	C.11.1 Number	C.11.1 Once/year	C.11.1 MOH	C.11.1 Checking	C.11.1 NA

	2-Isolation of XDR organisms 3- the use of PPE								
	C.11.2 Workshops for TOT for the chosen process indicators (how to audit, calculations, data compilation, etc.)		C.11.2 None						
	C.11.3 Workshops lead by the trained trainers for the team that will collect data about national process indicators in different regions of Syria		C.11.3 Percentage of hospitals reporting each included national indicator	C.11.3 To increase gradually the number of hospitals that report data on national indicators and have the results representative of the country	C.11.3 Number of hospitals reporting each included national indicator /Total number of hospitals	C.11.3 Once/year	C.11.3 MOH Hospitals	C.11.3 Checking	C.11.3 NA

C.12 Research: Surveillance of nosocomial infections	C.12.1 Research project on VAP surveillance	C.12.1.1 Workshop for putting a protocol for the study in hospitals	C.12 Results are published	C.12 Follow up on the efficacy and application of IPC principles in hospitals	C.12 Yes/No	C.12 Once	C.12 Investigators MOH Technical working group	C.12 Checking	C.12 NA
	C.12.2 Research project on CLABSI/ CAUTI surveillance	C.12.2.1 Start auditing							
C.13 Apply IPC practices in animals and agriculture	C.13.1 Reinforce biosafety measures according to OIE guidelines	C.13.1.1 Training workshops about IPC to farmers and veterinarians	C.13.1.1 Number of farmers /per governorate who attend these training workshops	C.13.1.1 To sensitize and improve awareness of farmers about biosafety including IPC practices	C.13.1.1 Number	C.13.1.1 Once/year	C.13.1.1 Attendance sheets of these workshops	C.13.1.1 Checking	C.13.1.1 NA
	C.13.2 Coordination with NGOs	C.13.2.1 Letter from MOA to FAO, OIE, Aghakhan to make AMR and IPC	C.13.2.1 None						

		training a priority in their targets							
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Axis D: Antibiotic Use

Strategic plan

Strategic objective	Activity	Sub-activity	Date from operational plan	Milestone
D.1 Organization of the tasks in this axis	D.1.1 Establishing the technical working group and focal person	D.1.1.1 Nomination Document	D.1.1.1 1 month	D.1 1 month
		D.1.1.2 Putting TOR	D.1.1.2 1 month	
		D.1.1.3 Assigning Focal Person (Dr Hani Laham)	D.1.1.3 1 month	
D.2 To check the QC of generic and copy antibiotics that are licensed in the country	D.2.1 To apply bio- equivalence studies to antimicrobials	D.2.1.1 Letter from NMCG to the Directorate of Drugs to consider ABX to be a priority in the bioequivalence project that is being prepared at the Directorate of Drugs	D.2.1.1 1 month	D.2 1 year
	D.2.2 To check the type of chemical and biological analysis of medicines (ABX) that is a prerequisite for their licensing before introduction in the market	D.2.2.1 MOH recommends a meeting between the drug licensing authority and a technical subgroup to review the tested ABX in 2018, the licensed and the refused	D.2.2.1 2 months	

		ones and the results of testing		
		D.2.2.2 The technical subgroup reviews the results of QC of the chemical and biological analysis of ABX during 2018	D.2.2.2 3 months	
		D.2.2.3 The technical subgroup that audited the pre-licensing testing submits a report to the NMCG to evaluate the situation and put a final plan of the pre-licensing testing	D.2.2.3 4 months	
		D.2.2.4 To ask authorities that licensing of ABX to be done according to a formula that includes QC to be taken into consideration, not only the price	D.2.2.4 2 months	
		D.2.2.5 The Axis D technical working group puts a checklist for the characteristics of ABX formulations to be accepted in the market. This list should apply to both imported and locally manufactured ABX	D.2.2.5 3 months	

	D.2.3 الرقابة الدوائية control on transport of ABX	D.2.3.1 MOH and MOA ask الرقابة الدوائية to check on transport conditions of ABX	D.2.3.1 2 months	
	D.2.4 Program of pharmacovigilance for ABX (post marketing surveillance)	D.2.4.1 NMCG asks معاون الوزير لشؤون الصيدلة والدواء to put ABX as top priority for pharmacovigilance	D.2.4.1 3 months	
		D.2.4.2 Workshop for physicians and pharmacists on how to report ineffectiveness or side effect of medicines	D.2.4.2 1 year	
	D.2.5 Essential medicine list to be updated		D.2.5 3 months	
	D.2.6 Mandate from MOH that each hospital has its essential medicine list and ABX as part of it		D.2.6 1 month	
D.3 Regulate dispensing of ABX in pharmacies	D.3.1 Reinforce the law that prevents dispensing of ABX in pharmacies without a physician's prescription	D.3.1.1 List of high-priority ABX to be dispensed only with a prescription is put (Priority ABX)	D.3.1.1 3 months	D.3 4 months
		D.3.1.2 MOH sends a تعميم	D.3.1.2 1 month	

		to pharmacies to include priority ABX on their list of controlled medicines		
	D.3.2 Send a تعميم that forbids dispensing ABX that are included in the high priority list without prescription		D.3.2 4 months	
	D.3.3 Primary health care authority sends a تعميم to NGOs in order not to dispense high priority ABX without medical prescription		D.3.3 1 month	
	D.3.4 هيئة الرقابة على الصيدليات ولجنة الرقابة الدوائية 29/T will have ABX in its round	D.3.4.1 Presence of High priority ABX In the checklist of هيئة الرقابة على الصيدليات ولجنة الرقابة	D.3.4.1 1 month	
	D.3.5 MOH,		D.3.5 Every 2-3 months	

	Order of Physicians, and هيئة الرقابة على الصيدليات will call/visit			
	D.3.6 Prescription is of 2 papers including a carbon-copy		D.3.6 1 month	
	D.3.7 تعميم from MOH to The Social Affairs that antibiotic dispensing is forbidden in dispensaries without a physician's prescription who abides by the written guidelines		D.3.7 1 month	
D.4 Reinforce the code of ethics for pharmaceutical companies in issues related to marketing ABX	D.4.1 Apply the code of ethics to ABX marketing	D.4.1.1 Meeting to put the Syrian code of ethics for advertisement and incentives	D.4.1.1 3 months	D.4 4 months
		D.4.1.2 Mandate from MOH to pharmaceutical companies to abide by the code of ethics	D.4.1.2 4 months	
D.5 Preparation for antimicrobial stewardship programs (ASP) by preparation of	D.5.1 Establish guidelines and protocols for ID management	D.5.1.1 Guidelines/ABX protocols for: -Uncomplicated UTI	D.5.1.1 6 months	D.5 2 years

local ID treatment guidelines for hospitals		-Upper respiratory tract infection -Diarrhea in children -Surgical Antibiotic Prophylaxis		
		D.5.1.2 MOH sends a تعميم to hospitals to recommend use these protocols as a guide for patient management	D.5.1.2 1 year	
		D.5.1.3 To include these protocols in الرعاية الصحية	D.5.1.3 1 year 3 months	
	D.5.2 Broadcasting these guidelines to all scientific societies	D.5.2.1 Order of Physicians sends a mandate to include these guidelines among the lectures and activities of the meetings of the scientific societies in the country (Ex: UTI guidelines in Family Medicine, Internal Medicine, Urology Societies Meetings)	D.5.2.1 2 years	
	D.5.3 To make the management proposed by these guidelines easily accessible to practitioners during daily work	D.5.3.1 Make posters with protocol algorithm as easy reference of the management proposed by these guidelines	D.5.3.1 1 year	
		D.5.3.2	D.5.3.2	

		Post these posters in different healthcare facilities and on AMR website	1 year 2 months	
	D.5.4 Guidelines related to ABX in hospitals other than UTI, CAP and acute diarrhea: Ex: Establish judicious surgical ABX prophylaxis practices and use	D.5.4.1 مديرية المشافي\ المؤسسات الاستشفائية\ المستشفيات sends a circular to hospitals to implement proper use of surgical ABX prophylaxis through the established guidelines	D.5.4.1 1 year	
D.6 Regulate the use of high-risk ABX as an early antimicrobial stewardship activity	D.6.1 Establish a list and guidelines for using critically important ABX in hospital setting including carbapenems, colistin, vancomycin, teicoplanin, linezolid, tigecycline, etc.		D.6.1 6 months	D.6 1 year
	D.6.2 مديرية المشافي asks hospitals to give lectures about these guidelines/ protocols to different departments (critical care, internal medicine, pediatrics, obstetrics, oncology, etc.)		D.6.2 1 year	
	D.6.3 مديرية المشافي		D.6.3 1 year	

	asks hospitals to restrict the use of high-risk ABX based on written guidelines			
D.7 Regulate ABX use in agriculture and veterinary fields	D.7.1 تعميم from MOA to forbids dispensing ABX without prescription from a specialist in the field (Veterinarian)		D.7.1 1 month	D.7 1 year
	D.7.2 Put a list of ABX that should not be used in animals and agriculture because they can be used in humans		D.7.2 6 months	
	D.7.3 Communicate this list with FAO, OIE, and Aghakhan to include awareness about the implication of using these ABX in animals and agriculture in their activities (workshops and awareness sessions)	D.7.3 Letter from Axis D technical working group To FAO, OIE, Agahkhan	D.7.3 6 months	
	D.7.4 تعميم from MOA that forbids the purchase of these ABX for veterinary and agriculture use		D.7.4 8 months	
	D.7.5	D.7.5.1 Plan for control visits to veterinary clinics, veterinary pharmacies and farms,	D.7.5.1 1 year	

	To organize control visits from audit committee at MOA to veterinary clinics, pharmacies and farms to check whether these products are being sold	especially to those who are selling these products		
	D.7.6 To reinforce the law of Withdrawal period	D.7.6 Send a تعميم to farmers and slaughter houses about withdrawal period and reinforce its control	D.7.6 3 months	

Operational plan and budget

Strategic objective	Activity	Sub-activity	Unit	Quantity	Date	Location	Responsible entity	Cost	Source of funding	Indicator
D.1 Organization of the tasks in this axis	D.1.1 Establishing the technical working group and focal person	D.1.1.1 Nomination Document	D.1.1.1 Nomination letter with the list of members	D.1.1.1 1	D.1.1.1 1 month	D.1.1.1 MOH MOA	D.1.1.1 NMCG	D.1.1.1 None	D.1.1.1 -----	D.1 technical working group appointed with clear TOR and focal person appointed
		D.1.1.2 Putting TOR	D.1.1.2 List of TOR inside nomination letter	D.1.1.2 1	D.1.1.2 1 month	D.1.1.2 MOH MOA	D.1.1.2 NMCG	D.1.1.2 None	D.1.1.2 -----	
		D.1.1.3 Assigning Focal Person (Dr Hani laham)	D.1.1.3 Nomination letter	D.1.1.3 1	D.1.1.3 1 month	D.1.1.3 MOH MOA	D.1.1.3 NMCG	D.1.1.3 None	D.1.1.3 -----	
D.2 To check the QC of generic and copy antibiotics that are	D.2.1 To apply bio-equivalence studies to antimicrobials	D.2.1.1 Letter from NMCG to the Directorate of Drugs to consider	D.2.1.1 Letter	D.2.1.1 1	D.2.1.1 1 month	D.2.1.1 MOH	D.2.1.1 NMCG	D.2.1.1 None	D.2.1.1 -----	D.2.1 Percentage of locally available ABX that are tested for

licensed in the country		ABX to be a priority in the bioequivalence project that is being prepared at the Directorate of Drugs								bioequivalence
	D.2.2 To check the type of chemical and biological analysis of medicines (ABX) that is a prerequisite for their licensing before introduction in the market	D.2.2.1 MOH recommends a meeting between the drug licensing authority and a technical subgroup to review the tested ABX in 2018, the licensed and the refused ones and the results of testing	D.2.2.1 Letter from MOH to directorate of drug pre-licensing testing	D.2.2.1 1	D.2.2.1 2 months	D.2.2.1 MOH Drug pre-licensing office	D.2.2.1 NMCG	D.2.2.1 None	D.2.2.1 -----	D.2.2.1 to D.2.2.4 Report about QC of ABX that is being carried in the Drug directorate is sent to NMCG and a consequent plan is issued
		D.2.2.2	D.2.2.2	D.2.2.2	D.2.2.2	D.2.2.2	D.2.2.2	D.2.2.2	D.2.2.2	

		The technical subgroup reviews the results of QC of the chemical and biological analysis of ABX during 2018	Visit and research	1	3 months	Drug pre-licensing office	Technical subgroup	3,000 USD	AMR Fund	
		D.2.2.3 The technical subgroup that audited the pre-licensing testing submits a report to the NMCG to evaluate the situation and put a final plan of the pre-licensing testing	D.2.2.3 Report	D.2.2.3 1	D.2.2.3 4 months	D.2.2.3 MOH	D.2.2.3 Technical subgroup	D.2.2.3 Included above	D.2.2.3 AMR Fund	

		D.2.2.4 To ask authorities that licensing of ABX to be done according to a formula that includes QC to be taken into consideration, not only the price	D.2.2.4 Document	D.2.2.4 1	D.2.2.4 2 months	D.2.2.4 MOH	D.2.2.4 Axis D technical working group	D.2.2.4 None	D.2.2.4 -----	
		D.2.2.5 The Axis D technical working group puts a checklist for the characteristics of ABX formulations to be accepted in the market. This list	D.2.2.5 List	D.2.2.5 1	D.2.2.5 3 months	D.2.2.5 MOH	D.2.2.5 Axis D technical working group	D.2.2.5 None	D.2.2.5 -----	D.2.2.5 Checklist for QC of ABX is available and sent to the drug licensing committee

		should apply to both imported and locally manufactured ABX								
	D.2.3 الرقابة الدوائية control on transport of ABX	D.2.3.1 MOH and MOA ask الرقابة الدوائية to check on transport conditions of ABX	D.2.3.1 Document	D.2.3.1 1	D.2.3.1 2 months	D.2.3.1 MOH MOA	D.2.3.1 NMCG	D.2.3.1 None	D.2.3.1 -----	D.2.3 Document with audit results on conditions of transport of ABX is available on a yearly basis
	D.2.4 Program of pharmacovigilance for ABX (post marketing surveillance)	D.2.4.1 NMCG asks معاون الوزير لشؤون الصيدلة والدواء to put ABX as top priority for pharmacovigilance	D.2.4.1 Document	D.2.4.1 1	D.2.4.1 3 months	D.2.4.1 MOH MOA	D.2.4.1 NMCG	D.2.4.1 None	D.2.4.1 -----	D.2.4 Number of ABX formulations that are being reviewed in the pharmacovigilance project at MOH
		D.2.4.2 Workshop for	D.2.4.2 Workshops	D.2.4.2 2	D.2.4.2 1 year	D.2.4.2	D.2.4.2	D.2.4.2 2,500 USD/ workshop	D.2.4.2 Pharmacovigilance	

		physicians and pharmacists on how to report ineffectiveness or side effect of medicines				وزارة شؤون الصيدلة و الدواء	وزارة شؤون الصيدلة و الدواء		project from وزارة شؤون الصيدلة و الدواء	
	D.2.5 Essential medicine list to be updated		D.2.5 List	D.2.5 1	D.2.5 3 months	D.2.5 MOH	D.2.5 Axis D technical working group	D.2.5 None	D.2.5 -----	D.2.5 Essential medicine list at drug office at MOH is updated Yes/No
	D.2.6 Mandate from MOH that each hospital has its essential medicine list and ABX as part of it		D.2.6 Mandate	D.2.6 1	D.2.6 1 month	D.2.6 Hospitals	D.2.6 MOH	D.2.6 None	D.2.6 -----	D.2.6 None
D.3 Regulate dispensing of ABX in pharmacies	D.3.1 Reinforce the law that prevents dispensing	D.3.1.1 List of high-priority	D.3.1.1 List	D.3.1.1 1	D.3.1.1 3 months	D.3.1.1 MOH	D.3.1.1 Axis D technical working group	D.3.1.1 None	D.3.1.1 -----	D.3.1.1 List is put Yes/No

	of ABX in pharmacies without a physician's prescription	ABX to be dispensed only with a prescription is put (Priority ABX)								
		D.3.1.2 MOH sends a تعميم to pharmacies to include priority ABX on their list of controlled medicines	D.3.1.2 تعميم	D.3.1.2 1	D.3.1.2 1 month	D.3.1.2 Pharmacies	D.3.1.2 MOH	D.3.1.2 None	D.3.1.2 -----	D.3.1.2 Percentage of pharmacies that include priority ABX on their list of controlled medicines
	D.3.2 Send a تعميم that forbids dispensing ABX that are included in the high priority list without prescription		D.3.2 Ta3mim	D.3.2 1	D.3.2 4 months	D.3.2 MOH	D.3.2 Dr Razan Salota (Pharmaceutical Affairs, MOH) Axis D technical working group	D.3.2 None	D.3.2 -----	D.3.2 Percentage of pharmacies abiding the regulations of not dispensing high priority ABX without prescriptions

	D.3.3 Primary health care authority sends a تعميم to NGOs in order not to dispense high priority ABX without medical prescription		D.3.3 Ta3mim	D.3.3 1	D.3.3 1 month	D.3.3 Primary Health Care authorities	D.3.3 Axis D technical working group Primary Health Care authorities	D.3.3 None	D.3.3 -----	D.3.3 Percentage of NGO medical care centers that do not dispense ABX without a prescription
	D.3.4 هيئة الرقابة على الصيدليات ولجنة الرقابة الدوائية 29/T will have ABX in its round	D.3.4.1 Presence of High priority ABX In the checklist of هيئة الرقابة على الصيدليات ولجنة الرقابة	D.3.4.1 Document	D.3.4.1 1	D.3.4.1 1 month	D.3.4.1 MOH	D.3.4.1 هيئة الرقابة على الصيدليات ولجنة الرقابة الدوائية	D.3.4.1 None	D.3.4.1 -----	D.3.4 Presence of High priority ABX in the checklist of هيئة الرقابة على الصيدليات ولجنة الرقابة Yes/No
	D.3.5 MOH, Order of Physicians, and		D.3.5 Call/Visit	D.3.5 1	D.3.5 Every 2-3 months	D.3.5 MOH, Order of Physicians	D.3.5 MOH, Order of Physicians, and	D.3.5 None	D.3.5 -----	D.3.5 Percentage of pharmacies that are

	هيئة الرقابة على الصيدليات will call/visit						هيئة الرقابة على الصيدليات			being visited by هيئة الرقابة على الصيدليات
	D.3.6 Prescription is of 2 papers including a carbon- copy		D.3.6 Document	D.3.6 1	D.3.6 1 month	D.3.6 MOH, Order of Physicians	D.3.6 MOH, Order of Physicians	D.3.6 None	D.3.6 -----	D.3.6 None
	D.3.7 تعميم from MOH to The Social Affairs that antibiotic dispensing is forbidden in dispensaries without a physician's prescription who abides by the written guidelines		D.3.7 تعميم	D.3.7 1	D.3.7 1 month	D.3.7 MOH	D.3.7 Axis D technical working group MOH	D.3.7 None	D.3.7 -----	D.3.7 Percentage of dispensaries abiding the regulations regarding ABX dispensing

D.4 Reinforce the code of ethics for pharmaceutical companies in issues related to marketing ABX	D.4.1 Apply the code of ethics to ABX marketing	D.4.1.1 Meeting to put the Syrian code of ethics for advertisement and incentives	D.4.1.1 Meeting	D.4.1.1 1	D.4.1.1 3 months	D.4.1.1 WHO	D.4.1.1 Axis D technical working group WHO	D.4.1.1 2,500 USD	D.4.1.1 AMR Fund	D.4.1.1 None
		D.4.1.2 Mandate from MOH to pharmaceutical companies to abide by the code of ethics	D.4.1.2 Mandate	D.4.1.2 1	D.4.1.2 4 months	D.4.1.2 MOH	D.4.1.2 NMCG MOH	D.4.1.2 None	D.4.1.2 -----	D.4.1.2 None
D.5 Preparation for antimicrobial stewardship programs (ASP) by preparation of local ID treatment	D.5.1 Establish guidelines and protocols for ID management	D.5.1.1 Guidelines/ ABX protocols for: - Uncomplicated UTI -Upper respiratory	D.5.1.1 Guidelines	D.5.1.1 4	D.5.1.1 6 months	D.5.1.1 MOH	D.5.1.1 Technical subgroup for writing these guidelines	D.5.1.1 1,000 USD/ guidelines set Total 4,000 USD	D.5.1.1 AMR fund	D.5.1 Guidelines published on official AMR webpage

guidelines for hospitals		tract infection -Diarrhea in children -Surgical Antibiotic Prophylaxis								
		D.5.1.2 MOH sends a تعميم to hospitals to recommend use these protocols as a guide for patient management	D.5.1.2 تعميم	D.5.1.2 1	D.5.1.2 1 year	D.5.1.2 MOH	D.5.1.2 NMCG	D.5.1.2 None	D.5.1.2 -----	
		D.5.1.3 To include these protocols in الرعاية الصحية	D.5.1.3 تعميم موجه لمديرية الرعاية الصحية	D.5.1.3 1	D.5.1.3 1 year 3 months	D.5.1.3 MOH	D.5.1.3 NMCG gets approval of the Minister of Health	D.5.1.3 None	D.5.1.3 -----	
	D.5.2 Broadcasting these guidelines to all	D.5.2.1 Order of Physicians sends a mandate to include	D.5.2.1 Mandate from Order of physicians	D.5.2.1 Number of scientific societies	D.5.2.1 2 years	D.5.2.1 Conferences	D.5.2.1 Axis D technical working group	D.5.2.1 None	D.5.2.1 -----	D.5.2.1 Percentage of scientific societies that have included

	scientific societies	these guidelines among the lectures and activities of the meetings of the scientific societies in the country (Ex: UTI guidelines in Family Medicine, Internal Medicine, Urology Societies Meetings)	to scientific societies				Order of physicians			these guidelines in one or more of their meetings.
	D.5.3 To make the management proposed by these guidelines easily accessible to practitioner	D.5.3.1 Make posters with protocol algorithm as easy reference of the management proposed	D.5.3.1 Posters	D.5.3.1 ?/Guidelines	D.5.3.1 1 year	D.5.3.1 MOH WHO	D.5.3.1 WHO	D.5.3.1 5,000 USD	D.5.3.1 AMR Fund	D.5.3.1 Percentage of health care facilities having these posters held in their premises

	s during daily work	by these guidelines								
		D.5.3.2 Post these posters in different healthcare facilities and on AMR website	D.5.3.2 Posters	D.5.3.2 ?/Guidelines	D.5.3.2 1 year 2 months	D.5.3.2 Healthcare facilities	D.5.3.2 MOH	D.5.3.2 None	D.5.3.2 -----	D.5.3.2 None
	D.5.4 Guidelines related to ABX in hospitals other than UTI, CAP and acute diarrhea: Ex: Establish judicious surgical ABX prophylaxis practices and use	D.5.4.1 مديرية المشافي المؤسسات الاستشفائية المستشفيات sends a circular to hospitals to implement proper use of surgical ABX prophylaxis through the established guidelines	D.5.4.1 Circular	D.5.4.1 1	D.5.4.1 1 year	D.5.4.1 مديرية المشافي	D.5.4.1 NMCG	D.5.4.1 None	D.5.4.1 -----	D.5.4.1 None
D.6 Regulate the use of high-risk	D.6.1 Establish a list and guidelines		D.6.1 Writing guidelines/ protocols	D.6.1 To be assigned later	D.6.1 6 months	D.6.1 MOH	D.6.1 Dr.Wahid Rajb Beak (MOHE) +	D.6.1 5,000 USD	D.6.1 AMR Fund	D.6.1 Guidelines are issued, published

ABX as an early antimicrobial stewardship activity	for using critically important ABX in hospital setting including carbapenems, colistin, vancomycin, teicoplanin, linezolid, tigecycline, etc.		for ABX use				Another ID physician + ICU Haytham Bshara			in journals, posted on AMR website
	D.6.2 مديرية المشافي asks hospitals to give lectures about these guidelines/ protocols to different departments (critical care, internal medicine,		D.6.2 Document	D.6.2 1	D.6.2 1 year	D.6.2 مديرية المشافي	D.6.2 NMCG	D.6.2 None	D.6.2 -----	D.6.2 Number of lectures given per year related to these guidelines

	pediatrics, obstetrics, oncology, etc.)									
	D.6.3 مديرية المشافي asks hospitals to restrict the use of high-risk ABX based on written guidelines		D.6.3 Document	D.6.3 1	D.6.3 1 year	D.6.3 مديرية المشافي	D.6.3 NMCG	D.6.3 None	D.6.3 -----	D.6.3 Percentage of hospitals restricting the use of high-risk ABX
D.7 Regulate ABX use in agriculture and veterinary fields	D.7.1 تعميم from MOA to forbids dispensing ABX without prescription from a specialist in the field (Veterinarian)		D.7.1 تعميم	D.7.1 1	D.7.1 1 month	D.7.1 MOA	D.7.1 MOA	D.7.1 None	D.7.1 -----	D.7.1 None
	D.7.2 Put a list of ABX that should not		D.7.2 List	D.7.2 1	D.7.2 6 months	D.7.2 MOA	D.7.2 اللجنة الفنية للدواء البيطري	D.7.2 None	D.7.2 -----	D.7.2 None

	be used in animals and agriculture because they can be used in humans						Axis D technical working group			
	D.7.3 Communicate this list with FAO, OIE, and Agahkhan to include awareness about the implication of using these ABX in animals and agriculture in their activities (workshops and awareness sessions)	D.7.3 Letter from Axis D technical working group To FAO, OIE, Agahkhan	D.7.3 Letters	D.7.3 3	D.7.3 6 months	D.7.3 MOA	D.7.3 اللجنة الفنية للدواء البيطري Axis D technical working group	D.7.3 None	D.7.3 ----	D.7.3 Number of awareness sessions about ABX use in agriculture and veterinary fields/year
	D.7.4 تعميم from		D.7.4 تعميم	D.7.4 1	D.7.4 8 months	D.7.4 MOA	D.7.4 Axis D technical	D.7.4 None	D.7.4 -----	D.7.4 None

	MOA that forbids purchase of these ABX for veterinary and agriculture use						working اللجنة group الفنية للدواء البيطري			
	D.7.5 To organize control visits from audit committee at MOA to veterinary clinics, pharmacies and farms to check whether these products are being sold	D.7.5.1 Plan for control visits to veterinary clinics, veterinary pharmacies and farms, especially to those who are selling these products	D.7.5.1 Plan	D.7.5.1 1	D.7.5.1 1 year	D.7.5.1 MOA	D.7.5.1 Axis D technical working اللجنة group الفنية للدواء البيطري	D.7.5.1 None	D.7.5.1 -----	D.7.5.1 None
	D.7.6 To reinforce the law of	D.7.6 Send a تعميم to farmers and slaughter	D.7.6 تعميم	D.7.6 1	D.7.6 3 months	D.7.6 MOA	D.7.6 MOA	D.7.6 None	D.7.6 ----	D.7.6 None

	Withdrawal period	houses about withdrawal period and reinforce its control								
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Monitoring and evaluation plan

Strategic objective	Activity	Sub-activity	Indicator	Purpose	Calculation	Frequency	Data source	Method	Baseline
D.1 Organization of the tasks in this axis	D.1.1 Establishing the technical working group and focal person	D.1.1.1 Nomination Document	D.1 technical working group appointed with clear TOR and focal person appointed	D.1 To organize the work, define responsibilities, and ensure follow up and task execution	D.1 Yes/No	D.1 Once/3 months until nomination document is issued	D.1 MOH	D.1 Checking	D.1 NA
		D.1.1.2 Putting TOR							
		D.1.1.3 Assigning Focal Person (Dr Hani Laham)							
D.2 To check the QC of generic and copy antibiotics that are licensed in the country	D.2.1 To apply bio-equivalence studies to antimicrobials	D.2.1.1 Letter from NMCG to the Directorate of Drugs to consider ABX to be a priority in the bioequivalence	D.2.1 Percentage of locally available ABX that are tested for bioequivalence	D.2.1 To make sure that the available generics in the market have been compared by bioequivalence studies to	D.2.1 Number of generic ABX that are subject to chemical and biological bioequivalence testing/all generic ABX available in	D.2.1 Once/ 6 months	D.2.1 Drug office in MOH	D.2.1 Visit and checking	D.2.1 Unknown

		ce project that is being prepared at the Directorate of Drugs		the original brands	the Syrian market				
	D.2.2 To check the type of chemical and biological analysis of medicines (ABX) that is a prerequisite for their licensing before introduction in the market	D.2.2.1 MOH recommends a meeting between the drug licensing authority and a technical subgroup to review the tested ABX in 2018, the licensed and the refused ones and the results of testing	D.2.2.1 to D.2.2.4 Report about QC of ABX that is being carried in the Drug directorate is sent to NMCG and a consequent plan is issued	D.2.2.1 to D.2.2.4 To evaluate the process of generic and copy ABX acceptance into the market	D.2.2.1 to D.2.2.4 Meeting	D.2.2.1 to D.2.2.4 6 months	D.2.2.1 to D.2.2.4 MOH Technical subgroup	D.2.2.1 to D.2.2.4 Meeting	D.2.2.1 to D.2.2.4 NA
		D.2.2.2 The technical subgroup reviews the results of QC of the chemical and							

		biological analysis of ABX during 2018							
		D.2.2.3 The technical subgroup that audited the pre-licensing testing submits a report to the NMCG to evaluate the situation and put a final plan of the pre-licensing testing							
		D.2.2.4 To ask authorities that licensing of ABX to be done according to a formula that includes							

		QC to be taken into consideration, not only the price							
		D.2.2.5 The Axis D technical working group puts a checklist for the characteristics of ABX formulations to be accepted in the market. This list should apply to both imported and locally manufactured ABX	D.2.2.5 Checklist for QC of ABX is available and sent to drug licensing committee	D.2.2.5 To make sure that ABX released in the Syrian market are of an acceptable quality regarding bioequivalence and bioactivity	D.2.2.5 Yes/No	D.2.2.5 Once/3 months until the list is ready and sent to licensing authorities	D.2.2.5 Licensing authorities Axis D technical working group	D.2.2.5 Checking	D.2.2.5 NA
	D.2.3 الرقابة الدوائية control on transport of ABX	D.2.3.1 MOH and MOA ask الرقابة الدوائية to check on transport	D.2.3 Document with audit results on conditions of transport of ABX is	D.2.3 To make sure that ABX are transported under the	D.2.3 Yes/No	D.2.3 ??	D.2.3 الرقابة الدوائية	D.2.3 Checking	D.2.3 NA

		conditions of ABX	available on a yearly basis	proper conditions					
	D.2.4 Program of pharmacovig ilance for ABX (post marketing surveillance)	D.2.4.1 NMCG asks معاون الوزير لشؤون الصيدلة والدواء to put ABX as top priority for pharmacovig ilance	D.2.4 Number of ABX formulations that are being reviewed in the pharmacovig ilance project at MOH	D.2.4 To do post marketing follow up of the quality of antimicrobial s	D.2.4 Number	D.2.4 Once/year	D.2.4 Pharmacovig ilance project at MOH	D.2.4 Checking	D.2.4 NA
		D.2.4.2 Workshop for physicians and pharmacists on how to report ineffectivene ss or side effect of medicines							
	D.2.5 Essential medicine list to be updated		D.2.5 Essential medicine list at drug office at	D.2.5 To make sure that all needed ABX are available	D.2.5 Yes/No	D.2.5 Once/6 months until updated	D.2.5 Drug office at MOH	D.2.5 Checking	D.2.5 Not updated

			MOH is updated Yes/No						
	D.2.6 Mandate from MOH that each hospital has its essential medicine list and ABX as part of it		D.2.6 None						
D.3 Regulate dispensing of ABX in pharmacies	D.3.1 Reinforce the law that prevents dispensing of ABX in pharmacies without a physician's prescription	D.3.1.1 List of high-priority ABX to be dispensed only with a prescription is put (Priority ABX)	D.3.1.1 List is put Yes/No	D.3.1.1 To be able to restrict the most important ABX	D.3.1.1 Yes/No	D.3.1.1 Every 3 months until the list is put	D.3.1.1 MOH	D.3.1.1 Checking	D.3.1.1 NA
		D.3.1.2 MOH sends a ta3mim to pharmacies to include priority ABX on their list of controlled medicines	D.3.1.2 Percentage of pharmacies that include priority ABX on their list of controlled medicines	D.3.1.2 To follow up on this issue	D.3.1.2 Number of pharmacies that include priority ABX on their list of controlled medicines/T otal number	D.3.1.2 Once/ 3 months	D.3.1.2 MOH	D.3.1.2 Checking	D.3.1.2 NA

					of pharmacies				
	D.3.2 Send a تعميم that forbids dispensing ABX that are included in the high priority list without prescription		D.3.2 Percentage of pharmacies abiding the regulations of not dispensing high priority ABX without prescriptions	D.3.2 To increase the number of pharmacies that do not dispense high priority ABX without a medical prescription	D.3.2 Number of pharmacies abiding the regulations of not dispensing high priority ABX without prescriptions /Total number of pharmacies	D.3.2 Once/ 3 months	D.3.2 Pharmacies	D.3.2 Visits	D.3.2 NA
	D.3.3 Primary health care authority sends a تعميم to NGOs in order not to dispense high priority ABX without medical prescription		D.3.3 Percentage of NGO medical care centers that do not dispense ABX without a prescription	D.3.3 To prevent erratic dispensing of ABX outside the official pharmacies by NGOs	D.3.3 Number of NGO medical care centers that do not dispense ABX without a prescription /Total number of NGO medical care centers	D.3.3 Once/3 months	D.3.3 NGO medical care centers	D.3.3 Visits	D.3.3 NA

	D.3.4 هيئة الرقابة على الصيدليات ولجنة الرقابة الدوائية 29/T will have ABX in its round	D.3.4.1 Presence of High priority ABX in the checklist of هيئة الرقابة على الصيدليات ولجنة الرقابة	D.3.4 Presence of High priority ABX in the checklist of هيئة الرقابة على الصيدليات ولجنة الرقابة Yes/No	D.3.4 To have هيئة الرقابة على الصيدليات ولجنة الرقابة control the dispensing of high priority ABX in pharmacies	D.3.4 Number	D.3.4 Once/ 6 months	D.3.4 هيئة الرقابة على الصيدليات ولجنة الرقابة	D.3.4 Checking	D.3.4 NA
	D.3.5 MOH, Order of Physicians, and هيئة الرقابة على الصيدليات will call/visit		D.3.5 Percentage of pharmacies that are being visited by هيئة الرقابة على الصيدليات	D.3.5 To control the dispensing of high priority ABX in pharmacies	D.3.5 Number of pharmacies controlled/ Total number of pharmacies	D.3.5 Every 2-3 months	D.3.5 هيئة الرقابة على الصيدليات	D.3.5 Visits/calls	D.3.5 NA
	D.3.6 Prescription is of 2 papers including a carbon-copy		D.3.6 None						
	D.3.7 تعميم from MOH to The Social Affairs that antibiotic dispensing is		D.3.7 Percentage of dispensaries abiding the regulations regarding	D.3.7 To avoid dispensing ABX by dispensary without prescription	D.3.7 Number of dispensaries abiding the regulations regarding	D.3.7 Once	D.3.7 MOH	D.3.7 Checking	D.3.7 NA

	forbidden in dispensaries without a physician's prescription who abides by the written guidelines		ABX dispensing	while banning them in pharmacies without prescription	ABX dispensing/ Total number of dispensaries				
D.4 Reinforce the code of ethics for pharmaceutical companies in issues related to marketing ABX	D.4.1 Apply the code of ethics to ABX marketing	D.4.1.1 Meeting to put the Syrian code of ethics for advertisement and incentives	D.4.1.1 None						
		D.4.1.2 Mandate from MOH to pharmaceutical companies to abide by the code of ethics	D.4.1.2 None						
D.5 Preparation for	D.5.1 Establish guidelines	D.5.1.1 Guidelines/ABX	D.5.1 Guidelines published on	D.5.1 To make sure	D.5.1 Yes/No	D.5.1 To check every 6	D.5.1 AMR website	D.5.1 Checking	D.5.1 NA

antimicrobial stewardship programs (ASP) by preparation of local ID treatment guidelines for hospitals	and protocols for ID management	protocols for: - Uncomplicated UTI -Upper respiratory tract infection -Diarrhea in children -Surgical Antibiotic Prophylaxis	official AMR webpage	guidelines were prepared and made public		months until posted			
		D.5.1.2 MOH sends a تعميم to hospitals to recommend use these protocols as a guide for patient management							
		D.5.1.3 To include these protocols in الرعاية الصحية							
	D.5.2 Broadcasting these	D.5.2.1 Order of Physicians	D.5.2.1 Percentage of scientific	D.5.2.1 To increase awareness of	D.5.2.1 Number of scientific	D.5.2.1 Once/year	D.5.2.1 Scientific societies	D.5.2.1 Survey	D.5.2.1 NA

	guidelines to all scientific societies	sends a mandate to include these guidelines among the lectures and activities of the meetings of the scientific societies in the country (Ex: UTI guidelines in Family Medicine, Internal Medicine, Urology Societies Meetings)	societies that have included these guidelines in one or more of their meetings.	professionals a about these guidelines and direct their practice accordingly	societies that have included these guidelines in one or more of their meetings /Total number of scientific societies.				
	D.5.3 To make the management proposed by these guidelines easily accessible to practitioners during daily work	D.5.3.1 Make posters with protocol algorithm as easy reference of the management proposed by	D.5.3.1 Percentage of health care facilities having these posters held in their premises	D.5.3.1 Increase the visibility of these protocols and make them easily accessible to practitioners	D.5.3.1 Number of health care facilities having these posters held in their premises /Total number of health care	D.5.3.1 Once/ 3 months	D.5.3.1 Health care facilities	D.5.3.1 Visits	D.5.3.1 NA

		these guidelines			facilities that were checked				
		D.5.3.2 Post these posters in different healthcare facilities and on AMR website	D.5.3.2 None						
	D.5.4 Guidelines related to ABX in hospitals other than UTI, CAP and acute diarrhea: Ex: Establish judicious surgical ABX prophylaxis practices and use	D.5.4.1 مديرية المشافي المؤسسات الاستشفائية المستشفيات sends a circular to hospitals to implement proper use of surgical ABX prophylaxis through the established guidelines	D.5.4.1 None						
D.6 Regulate the use of high-risk ABX as an early	D.6.1 Establish a list and guidelines for using		D.6.1 Guidelines are issued, published in journals,	D.6.1 Guidelines should be prepared to pave the way	D.6.1 Yes/No	D.6.1 Once/ 3 months until they are	D.6.1 AMR website	D.6.1 Checking	D.6.1 NA

antimicrobial stewardship activity	critically important ABX in hospital setting including carbapenems , colistin, vancomycin, teicoplanin, linezolid, tigecycline, etc.		posted on AMR website	for antimicrobial stewardship in hospitals		published on the website	Local medical journals		
	D.6.2 مديرية المشافي asks hospitals to give lectures about these guidelines/ protocols to different departments (critical care, internal medicine, pediatrics, obstetrics, oncology, etc.)		D.6.2 Number of lectures given per year related to these guidelines	D.6.2 To spread the knowledge about these guidelines and encourage practitioners to read them and use them in daily work	D.6.2 Number	D.6.2 Once/year	D.6.2 Hospitals	D.6.2 Checking	D.6.2 NA
	D.6.3		D.6.3	D.6.3	D.6.3	D.6.3	D.6.3	D.6.3	D.6.3

	مديرية المشافي asks hospitals to restrict the use of high- risk ABX based on written guidelines		Percentage of hospitals restricting the use of high-risk ABX	To limit the use of these ABX to professionals who have received training about the related guidelines and to ID specialists to avoid overuse and emergence of further resistance	Number of hospitals restricting the use of high-risk ABX/ Total number of hospitals	Once/year	Hospitals	Survey to hospitals	NA
D.7 Regulate ABX use in agriculture and veterinary fields	D.7.1 تعميم from MOA to forbids dispensing ABX without prescription from a specialist in the field (Veterinarian)		D.7.1 None						
	D.7.2		D.7.2 None						

	Put a list of ABX that should not be used in animals and agriculture because they can be used in humans								
	D.7.3 Communicate this list with FAO, OIE, and Aghakhan to include awareness about the implication of using these ABX in animals and agriculture in their activities (workshops and awareness sessions)	D.7.3 Letter from Axis D technical working group To FAO, OIE, Agahkhan	D.7.3 Number of awareness sessions about ABX use in agriculture and veterinary fields/year	D.7.3 Improve awareness of veterinarians and farmers about the misuse of ABX in their fields as well as its impact on humans	D.7.3 Number	D.7.3 Once/year	D.7.3 MOA FAO	D.7.3 Checking	D.7.3 Partially available through OIE biosafety awareness plan
	D.7.4 تعميم		D.7.4 None						

	MOA forbids Purchase of these ABX for veterinary and agriculture use								
	D.7.5 To organize control visits from audit committee at MOA to veterinary clinics, pharmacies and farms to check whether these products are being sold	D.7.5.1 Plan for control visits to veterinary clinics, veterinary pharmacies and farms, especially to those who are selling these products	D.7.5.1 None						
	D.7.6 To reinforce the law of Withdrawal period	D.7.6 Send a تعميم to farmers and slaughter houses about withdrawal period and	D.7.6 None						

		reinforce its control							
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References

- Al-Assil B, Mahfoud M, Hamzeh AR. First report on class 1 integrons and Trimethoprim-resistance genes from *dfrA* group in uropathogenic *E. coli* (UPEC) from the Aleppo area in Syria. *Mob Genet Elem* 2013;3:e25204.
- Alheib O, Al Kayali R, Abajy MY. Prevalence of plasmid-mediated quinolone resistance (PMQR) determinants among extended spectrum beta-lactamases (ESBL)-producing isolates of *Escherichia coli* and *Klebsiella pneumoniae* in Aleppo, Syria. *Arch Clin Infect Dis* 2015;10:, doi:<http://dx.doi.org/10.5812/archcid.20631>.
- Fouad FM, Sparrow A, Tarakji A, et al. Health workers and the weaponisation of health care in Syria: a preliminary inquiry for The Lancet—American University of Beirut Commission on Syria. *Lancet* 2017;6736:1–11.
- Mahfoud M, Al Najjar M, Hamzeh AR. Multidrug resistance in *Pseudomonas aeruginosa* isolated from nosocomial respiratory and urinary infections in Aleppo, Syria. *J Infect Dev Ctries* 2015;9:210–3.
- Syrian Center for Policy Research. Population status & analysis. Syrian Center for Policy Research SCPR; 2018.
- Tabana Y, Dahham S, Al-Hindi B, Al-Akkad A, Khadeer Ahamed MB. Prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA) among medical staff in three Syrian provinces. *Middle East J Sci Res* 2015;23:1756–64.
- WHO. HeRAMS Syria: Snapshot for Public Hospitals. 2018.