Ministry of Public Health, Afghanistan

Directorate of Curative Medicine

National Action Plan on Antimicrobial Resistance

(NAP-AMR) 2017 – 2021

May 2017 Afghanistan

Government of Afghanistan

May 2017

Contents:

Abbreviations and acronyms

AMR	Antimicrobial Resistance
ARB	Antibiotic resistance breaker
CWG-AMR	Core Working Group on AMR
DADF	Department of Animal Husbandry Dairy and Fishing
ESBL	extend spectrum beta-lactamase
FAO	Food and Agriculture Organization of the United Nation
GAP-AMR	Global Action Plan on Antimicrobial Resistance
GHSA	Global Health security Agenda
HAI	Health care Associated Infection
HICC	Hospital Infection Control Committee
ICC-AMR	Intersectoral Coordination Committee on AMR
IPC	Infection Prevention and Control
KAP	Knowledge, attitude and practice
MAIL	Ministry of Agriculture Irrigation and Livestock
MoIC	Ministry of Information and culture
MoHE	Ministry of Higher Education
MoE	Ministry of Education
MoF	Ministry of Finance
MoPH	Ministry of Public Health
MoT	Ministry of Trade
MRSA	methicillin resistance staphylococcus aureus
NAP-AMR	National Action Plan for Antimicrobial Resistance
NACP	National Aids Control Program

NCDC	National Center for Disease Control
NEPA	National Environment Protection Authority
OIE	World organization for Animal Health (Office International des Episooties)
TAG-AMR	Technical Advisory Group on AMR
UNEP	United Nation Environment Program
UNICEF	United Nation Children's Fund
WHA	World Health Assembly
WHO	World Health Organization

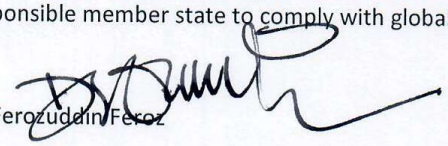
National Action Plan on Antimicrobial Resistance/Afghanistan

Message

AMR has emerged as major public health problem worldwide leading to significant morbidity and mortality. The growing problem of AMR has resulted in significant crisis in almost all the countries of the world including Afghanistan, resulting an immense increase in the infections due to the multi-resistant organisms and severely limiting the choice of antimicrobial agents available for treatment. The emergence and spread of resistance among the micro-organism is a complex phenomenon and hence requires multi-pronged approach to contain this phenomenon.

WHO through resolution WHA/67.25 in May 2014 stressed the need for development of Global action plan which reflects the global consensus on the profound threat of AMR to human and animal health. Accordingly, the 68th WHA through a resolution A68/20 adopted the Global Action Plan on AMR in May 2015.the global action plan aims to ensure, for as long as possible, continuity of successful treatments and prevention of infection diseases with effective and safe medicines that are quality assured, used in a responsible way, and accessible to all who needed them.

The National Action Plan Regarding AMR addresses six priority objectives from which five Strategic objectives are that of Global Action Plan (Improve awareness and understanding of antimicrobial resistance, Strengthen knowledge through surveillance and research , reduce the incidents of infections, optimize the usage of antimicrobial agents, ensure sustainable investments in countering AMR) and One Strategic objective is Customized for Afghanistan Conditions which is Strengthen Afghanistan commitment and collaborations on AMR at international, national and sub-national levels. The Government of Afghanistan shall remain committed to the WHO resolution on AMR as a Responsible member state to comply with global health security challenges.



Dr. Ferozuddin Feroz

Minister of Public Health

Islamic Republic of Afghanistan

Timeline S: short term <1 year; M: medium term 1-3 years; L: long term>3 years 6 | Page

National Action Plan on Antimicrobial Resistance/Afghanistan

Foreword

The Threat Posed by Antimicrobial Resistance (AMR) to Public Health as Well as Global health Security has been repeated in numerous World Health Assemblies (WHA) Resolutions. in May 2015 sixty-eight World Health Assembly indorse the global action plan on Antimicrobial Resistance (GAP-AMR)WHA (World Health Assembly) Resolution urges member states to align there national action plan on AMR with GAP-AMR. ministry of Public Health Afghanistan Identified AMR as one of the top priorities for the ministry's collaborative work with WHO. Ministry of Public Health Notified three Governance Mechanisms in 28th of November 2016 to address the challenge. these three Mechanisms includes Inter-Sectorial Coordination Committee (ICC), Technical Advisory Group (TAG) and Core Working Group(CWG) on AMR for technical coordination oversight. the Starting objectives of National Action Plan–AMR are Aligned with the Global Action Plan Base on National needs and Priorities.

The National Action Plan Regarding AMR addresses six priority objectives which are mentioned below:

I. Improve awareness and understanding of antimicrobial resistance
II. Strengthen knowledge through surveillance and research.
III. Reduce the incidents of infections
IV. Optimize the usage of antimicrobial agents
V. ensure sustainable investments in countering AMR
VI. Strengthen Afghanistan commitment and collaborations on AMR at international, national and sub-national levels.

On the Basis of the GAP, this strategic document is developed after extensive multi sectoral works over an extended period of time with the the principal stake holders. This document provides a frame work for the containment of AMR which can be implemented effectively

With Best Regards,

Dr. Mohammad Qasim Sahebi

National Focal Point for Antimicrobial Resistance

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Executive Summary

The threat posed by antimicrobial resistance (AMR) to public health as well as global health security has been reiterated in numerous World Health Assembly (WHA) resolutions. AMR is also prioritized under the Global Health Security Agenda (GHSA), and Afghanistan is one of the contributing countries. The Ministry of Public Health (MoPH) identified AMR as one of the top Priorities for the ministry's collaborative work with WHO.

In May 2015, sixty-eight World Health Assembly endorsed the Global Action Plan on Antimicrobial Resistance (GAP-AMR) – including antibiotics resistance, the most urgent drug resistance trends. The WAH resolution urges member state to align their National Action Plan on AMR with GAP-AMR by May 2017. Commitment by Global leaders to combat AMR was further strengthen at the High Level Meeting on AMR at the United Nation General Assembly on 21 September 2016

The Ministry of Public Health notified three governance mechanisms in 28 November 2016 to address the challenge. These include the Intersectoral Coordination Committee, Technical Advisory Group, and Core Working group on AMR for technical coordination and oversight. The Core Working Group has been drafted the National Action Plan during orientation workshop on Antimicrobial Resistance by Nation focal point-AMR (NF-AMR), drafted National Action Plan was further reviewed at the national workshop on Development of National Action Plan on AMR that included members from Core Working group and the Technical Advisory Group.

The starting objectives of NAP-AMR are aligned with the global action plan based on national needs and priorities, and in additional to the 5 priorities of GAP-AMR, Afghanistan has a sixth priority that is Afghanistan's specific dealing with Afghanistan's leadership on AMR – including international, national and sub-national collaboration on AMR. Six strategic Priorities have been identified under the NAP-AMR (i) improving awareness and understanding of AMR through effective communication, education and training (ii) strengthening knowledge and evidence through surveillance (iii) reducing the incidence of infection through effective infection prevention and control; (iv) optimizing the use of antimicrobial agents in health, animals and food; (v) promoting investments for AMR activities, research and innovations; and (vi) strengthening Afghanistan's leadership on AMR.

Strategic priorities focuses on improving awareness and understanding of AMR through effective communication, education and training, and has 2 focus areas – first is communication and information, education, communication (IEC) resources to raise awareness amongst all stakeholders, and second focus area is education and training to improve the knowledge and behavioral of professionals in all sectors. Strategic priorities 2 aims to strengthen knowledge and evidence through surveillance of AMR, with 2 focus area strengthening laboratories in human, animal, food and environment sectors, as well as ensuring surveillance of antimicrobial resistance in human, animal, food and environment sectors.

Strategic priority 3 attempts to reduce the incidence of infection through effective infection prevention and control in healthcare to reduce the burden of infection, in animal health and food to reduce spread of AMR and antimicrobial through animals and food, and in community and environment to reduce the spread of AMR and antimicrobials in the environment. Strategic priority 4 shall optimize the use of antimicrobial agents in health, animals and food through strengthening

regulation, ensuring access and surveillance of antimicrobial use, antimicrobial stewardship in healthcare as well as animal health and agriculture.

Strategic priority 5 aims to promote investment for AMR activities, research and innovations through new medicine and diagnosis, innovation to develop alternative approaches to manage infectious diseases, sustainable financing to ensure adequate resources for containment of AMR. Strategic priority 6 focuses on strengthening of Afghanistan's leadership on AMR through international collaborations to ensure Afghanistan contribution toward global efforts to contain AM, national collaboration to facilitate collaboration among vertical disease control programs and national stakeholders, and state level collaborations to ensure action at the ground level against AMR.

Within each strategic priority and focus area, strategic interventions, key activities and outputs have been defined with tentative responsibility and timelines – short (within 1 year), medium (between 1 and 3 years)and long-term (between 3and 5 years).

Background

AMR is one of the Key priority of the global health security agenda action package, as well as it is one of the commitments of Ministry of Public Health Afghanistan to combat AMR.

In Afghanistan because of war and some other political issues the borders of the country are not well secured and well controlled therefore control of smuggling of medicine is a big challenge in front of the rational use of medicine. Lack of knowledge (professionals and public), poor economic state, conflict of war, presence of remote areas and etc…. are the other main challenges for this to won the battle of combating AMR.

Misuse and over use of ATB is very common among the society, everyone is able to buy ATB and other medicine without prescription. In majority of cases professionals prescribe without proper diagnosis and in every prescription you can see ATB at first line and even two or three Antibiotics as combination,

Smuggling and inappropriate or inadequate quality control of drug, caused presence of big number poor quality medicine in the markets, there for it may cause long term treatment, failure of treatments and finally Antibiotics resistance.

Other big issue is unsafe and insecure transportation of medicine, lot of companies using nonstandard containers and stocks, which facilitates the appearance of medicine to high degree of temperature.

MoPH Afghanistan highlights the problem of antimicrobial resistance and calls for a rapid standardization of guidelines regarding antibiotic use, limiting the use of antibiotics as over the counter medications, banning or restricting the inclusive usage of antibiotic in the hospital and community.

In addition, the MoPH has also identified AMR as one of the key strategic priorities. Therefore, we are committed to implement, monitor and evaluate the NAP - AMR in our country.

1.1. Introduction

In May 2014, the World Health Assembly requested the development of a global action plan (GAP) on antimicrobial resistance, in resolution WHA67.25, reflecting a global consensus that antimicrobial resistance poses a profound threat to human health.

The WHO secretariat led the development of the Global Action Plan on AMR (GAP-AMR) that takes into account the commitment, perspectives and roles of all relevant stakeholders. And in which everyone has clear and shared ownership and responsibilities. In May 2015, the sixty-eight world Health Assembly endorsed GAP- AMR to tackle antimicrobial resistance including antibiotic resistance, the most urgent drug resistance trend. The WHO resolution also requests Member States to align their national action plans with GAP-AMR by May 2017.

The Global Action Plan on AMR provides a broad framework for combating AMR. The of GAP-AMR is to ensure, for as long as possible, continuity of successful treatment and prevention of infectious diseases with effective and safe medicines that are quality assured, used in a responsible way, and accessible to all who need them. The FAO Acton Plan on AMR has 4 strategic objectives that are aligned with GAP-AMR.

To achieve it is goal, the global action plan sets out five strategic objectives, to:

1. Improve awareness and understanding of antimicrobial resistance;
2. Strengthen knowledge throw surveillance and research;
3. Reduce the incidence of infection;
4. Optimize the use of antimicrobial agents in health, animal and food sectors; and
5. Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions.

The strategic objectives of the NAP-AMR are aligned to the GAP-AMR based on notional needs and priorities.

1.2. AMR and its containment in Afghanistan

1.2.1. AMR in man and animals

The AMR is a major public health concern in Afghanistan. Some small steps are getting towards containment of AMR like some Infection prevention and control programs in some tertiary hospitals of some cities, and preparing some treatment guidelines for some hospitals, this framework will serve as a starting point for cohesive engagement and mobilization of all who are accountable for action on antimicrobial resistance and use. Given

the global nature of this issue, the Action Plan, in line with the one – health concept, highlights the need for Afghanistan to work with international organization and groups to develop solutions applicable to domestic production and use and importation from global market.

1.2.2. Awareness and understanding of AMR

The GAP-AMR states that the first strategic objective in effectively containing AMR is to improve awareness and understanding of AMR through effective communication, education and training. The strategy envisions that the awareness building has to proceed on several fronts at the same time. On one hand it has to leverage public communication programs to encourage behavior change in target population-namely stakeholders in human health, animal health and agriculture; and on the other there needs to be concerted efforts to incorporate AMR as core component in the professional education of medical and veterinary professional.

The need to focus on awareness building, both in consumers and providers, was highlighted by the results of the multi country public awareness survey that was conducted by WHO in 2015.

The finding of the study highlighted important deficits in the understanding of what antibiotics are, how they should be used and when to take them. There is ample evidence to suggest that there is some pressure from patients which forces medical practitioners to overprescribe antibiotics, especially for conditions like viral illness, upper respiratory tract infections and diarrhea, for which antibiotic therapies are not the recommended first line of approach.

Given the financial incentives to prescribe antibiotics and the role of the pharmaceutical industry in encouraging prescription of antibiotics in Afghanistan, there is a need to approach the process of awareness generation with additional legislative support. Internationally there is evidence that awareness generation campaign in combination with other interventions that are organized at the national level may be successful to reduce antibiotic use.

There is also a need to increase the awareness about the need of contain AMR at the higher levels of policy making, so that it may emerge as a priority in the health policies of the nation.

1.2.3. Surveillance of AMR

Afghanistan has previously instituted of the emergence of drug resistance in disease causing microbes in the context of vertical programs, like the Revised National Tuberculosis Control Program (RNTCP), and the National AIDS Control Program (NACP), to name a few. However, a cross cutting program dealing with antimicrobial resistance across multiple microbes has been lacking.

Historically, AMR has not received adequate focus and attention in Afghanistan. However recent trends clearly illustrate the growing MoPH commitment at the highest levels to have a coherent response in place that can the necessary gravitas for nationwide surveillance and stewardship for containment of AMR. Efforts are also being made to incorporate the one health approach into these plans.

The Ministry of Health has recently notified 3 governance mechanisms towards this – an intersectoral Coordination Committee, a Technical Advisory Group and a Core Working Group on AMR.

The recent political declaration/UN resolution on AMR fallowing the high level meeting on AMR at the United Nations General Assembly is an opportunity for the technical leadership in Afghanistan to leverage the current conducive policy environment for effective action against AMR.

2. Developing the Nation Action Plan on AMR

2.1. Governance mechanism

The Government of Afghanistan is strongly committed to tackling AMR in the country and led the global and regional AMR agenda.

Governance mechanisms are essential for effective intersectoral coordination of activities to combat AMR. They are also important to engage key stakeholders in the development of NAP-AMR to ensure their ownership during the implementation phase. Governance mechanisms need political support and authority to take actions, and are more likely to be effective with clearly defined terms of reference. The following AMR committee/groups (Figure 1) were notified.

Intersectoral coordinating committee
Technical advisory group
Core working group

Figure 1: key governance mechanisms for AMR

2.1.1. Intersectoral Coordination Committee on AMR

The purpose of Intersectoral Coordination Committee on Antimicrobial Resistance (ICC-AMR) is to oversee and coordinate policy decision for activities related to antimicrobial resistance in all sectors in alignment with AMR related public health goals.

The ICC-AMR shall lead and facilitate the coordination of the national (along with sub national and international) response to the threat of AMR; ensure information sharing to reinforce AMR-related activities among all sectors; review and revise term of reference of the technical advisory group on AMR; ensure coordination of health system and other sectors to achieve the AMR- related public health goals; facilitate and synergies existing and new initiatives to achieve to goal of combating AMR in Afghanistan; facilitates collaboration with internal and external agencies and organizations for AMR-related public health activities; endorse national action plan on AMR, and ensure adequate logistic and resource mobilization to cover any funding gap; and oversee progress of efforts to combat AMR and ensure program planning and implementation.

2.1.2. Technical Advisory Group on AMR

The purpose of the Technical Advisory Group on Antimicrobial Resistance (TAG-AMR) shall be to the approach and initiatives for combating AMR in Afghanistan and make recommendations on technical issues.

The TAG- AMR shall provide technical advice and reports to the ICC- AMR; technically review and revise the draft national action plan on AMR; provide technical oversight for existing and new initiatives to combat AMR in Afghanistan; and review and revise the terms of the core working group on AMR.

2.1.3. Core Working Group on AMR

The Core Working Group on Antimicrobial Resistance (CWG- AMR) shall provide technical and operational inputs to the designated national coordinating center for AMR in Afghanistan i.e. National Center for Disease Control (NCDC) to develop and implement the National Action Plan on Antimicrobial Resistance (NAP- AMR)

The CWG- AMR shall identify and map stakeholders for AMR- related activities; lead the development of the national action plan on AMR in Afghanistan with involvement of all stakeholders; ensure regular data collection and information sharing; coordinate national activities for establishing/strengthening surveillance systems; develop and disseminate national AMR reports; and facilitate and monitor/evaluate the overall implementation of NAP- AMR. The details of these committees/groups are provided in annex 1. The Technical Advisory Group and Core Working Group are specific for governance mechanisms in the human health sector. Similar groups are needed in the other sectors to coordinate their response in tackling AMR.

3. National Action Plan on Antimicrobial Resistance

3.1. Goal

The overarching goal of the National Action Plan on Antimicrobial Resistance (NAP-AMR) is to effectively combat antimicrobial resistance in Afghanistan, and contribute towards the global efforts to tackle this public health threat. It shall establish and strengthen governance mechanisms as well as the capacity of all stakeholders to reduce the impact of AMR in Afghanistan. The scope of the NAP- AMR focuses primarily on resistance on in bacteria.

3.2. Objectives

The following are the specific objectives of the NAP- AMR:

1. Define the strategic priorities, key actions, outputs, responsibilities, and indicative timeline and budget to slow the emergence of AMR in Afghanistan and strengthen the organizational & management structures to ensure intra- & inter sectoral coordination with a One Health Approach;
2. Combat AMR in Afghanistan through better understanding and awareness of AMR, strengthen surveillance, prevention of emergence and spread of resistance bacteria through infection prevention and control, optimize use of antibiotics in all sectors and enhance investments for AMR activities, researches innovation; and
3. Enable monitoring and evaluation (M&E) of the NAP- AMR implementation based on M&E framework.

3.3. Strategic Priorities

The NAP- AMR outline the priorities and interventions planned to implemented over 2017-2021 to tackle the public health challenge of AMR in Afghanistan.

The first 5 strategic priorities of NAP- AMR (figure 2) are aligned with the Global Action Plan on AMR and the sixth strategic priorities highlighted Afghanistan's role in containment of AMR at the international level with other countries and organization, national disease control programs and at the sub- national/state level through development of state action plans on AMR to ensure action at the ground level.

1. Improve awareness and understanding of AMR though effective communication, education and training	2. Strengthen knowledge and evidence through surveillance	3. Reduce the incidence of infection through effective infection prevention and control
4. Optimize the use of antimicrobial agents in health, animal and food	5. Promote investments for AMR activities, research and innovations	Strengthen Afghanistan leadership on AMR

T m ter

Figure 2: Priorities of NAP- AMR

A harmonize approach across various sectors to address the use of and resistance to antimicrobial agents in human health, animal health, agriculture, food products and the environmental is critical to address these strategic priorities.

The focus areas of the six strategic priorities of NAP- AMR (figure 3) are:

1. Improve awareness and understanding of AMR through effective communication, education, and training
    a. Communication, IEC resources – to raise awareness amongst all stakeholders, including policy makers, general public and formers
    b. Education and training – to improve the knowledge and behavior of professionals
2. Strengthen knowledge and evidence through surveillance
    a. Strengthen laboratories – in human, animal, food and environment sectors – for evidence-informed policy making
    b. Surveillance of antimicrobial resistance in human, animal/food and environment sectors for evidence informed policy making
3. Reduce the incidence of infection through effective infection prevention and control
    a. Health care - to reduce the burden of infection
    b. Animal health/food – to reduce spread of AMR and antimicrobials through animals and food
    c. Community and community environment – to reduce the spread of AMR and antimicrobials in the community and environment
4. Optimize the use of antimicrobial agents in health animal and food
    a. Regulations, access and surveillance of antimicrobial use – to ensure rational use without affecting access to antimicrobials
    b. Antimicrobial stewardship in healthcare – to optimize use of antimicrobials in humans
    c. Animal health, agriculture – to optimize use of antimicrobials in animal and food sectors
5. Promote investments for AMR activities , research and innovation
    a. New medicine and diagnostics – to ensure availability of effective diagnosis and drug to treat infections
    b. Innovations – to develop alternative approaches to manage infectious disease
    c. Financing – to ensure sustainable recourses for containment of AMR
6. Strengthen Afghanistan's leadership on AMR
    a. International collaboration – to ensure Afghanistan's contributions towards global efforts to contain AMR
    b. National collaborations – to facilitate collaborations among vertical disease control programs and national stakeholders
    c. State level collaborations – to ensure action at the ground level against AMR

1. Awareness & understanding	2. Knowledge & evidence	3. Infection prevention & control	4. Optimize use	5. Innovation R&D	6. Leadership
Communication & IEC	Laboratories	Healthcare, HAI	Regulation, access, AM use	New medicine, diagnostics	International collaborations
Education, training	Surveillance of AMR – human, animal, environment	Animal health	Antimicrobial stewardship in human health	Financing	National collaboration
		Community & environment	AMS in animals, agriculture	Innovations	State level Collaborations

Figure: 3 focus areas of NAP- AMR strategic priorities

The National Workshop on Development of National Action Plan on AMR was organized by MoPH, AMR National Focal Point, Glass Focal Point and WHO – Afghanistan on 28 December 2016 in Kabul by Participation of representatives of different related departments. In this Workshop about the topics of what is AMR, How does Antimicrobial spread, Why Antimicrobial is a global concern and information about the Global Antimicrobial Surveillance system presented by the related Focal points, The National Action Plan, primary perpetrations has been done by the sub groups of the Core Working Groups, was extensively reviewed by the Technical Advisory Group and Intersectoral Coordinating Committee suggestions and inputs from the Technical Advisory Group on AMR and Intersectoral Coordinating Committee on AMR have also been incorporated.

3.4. National Action Plan on AMR – interventions, activities and outputs

The interventions, activities and key outputs under specific objectives of key focus areas of the strategic priorities are elaborated in the subsequent pages. Each activity has a timeline, which is classified as short term (S) with an expected achievement in one year, medium term (M), with an expected horizon of 1-3 years and long term (L) with a 3-5 years' timeline.

Strategic priority 1

Improve awareness and understanding of AMR through effective communication education and training

Awareness and communication

Objective 1.1

Increase awareness and improve communication regarding AMR in Afghanistan

Strategic interventions and activities

1.1.1 Assess understanding knowledge and awareness of antimicrobial resistance (AMR) and antimicrobial use (AMU) amongst key stakeholders/target groups

1.1.1.1 Consolidate the existing available KAP (Knowledge attitude and practice) studies across general population, professional in health, veterinary, pharmaceutical and environment, farmers and food processing sector (MoPH, MAIL) **S**

1.1.1.2 Conduct behavioral studies and KAP surveys amongst general population(as a priority),health professionals, veterinary professionals, pharmaceutical industry, environment professional, food processing sector and formers (MoPH, MAIL) **S**

Key out put

- Baseline and trends in knowledge, attitude, practice and behavioral of different segment of population on AMR and its use, in general population, farmers, professionals and industry

1.1.2 Document the existing communication and information resources and products on AMR

1.1.2.1 Identify and consolidate existing communication/information resources/products on AMR in various sectors/stakeholders groups (MoHE, MoPH,MAIL, NEPA,) **S**

- Consolidate AMR resources; identify and list national/international partners (best practices/learnings) towards consolidating the AMR database on communication

1.1.2.2 Map the expertise of stakeholders, individual and organizations to develop communication strategy (MoHE, MoPH,MAIL, NEPA,) **S**

Key output

- Consolidated communication and information resources on AMR available
- Stakeholder map of communication expertise on AMR developed

1.1.3 Utilize communications to promote AMR awareness targeting key stakeholders

1.1.3.1 Develop a cross-cutting and sustained communication program on antimicrobial resistance and use, at national, state, district and sub-district levels

- Evidence-based communication program with a focus on general population predominantly, followed by famers & dairy/poultry/meat/fish suppliers and all stakeholders to promote rational use of antibiotics; focus on infection prevention through hand hygiene, clean water, sanitation, biosafety in animal farms, etc.; high impact IEC content e.g. related stories from the general population in form of videos etc.; incorporate awareness raising and behavior change as essential component of any public policy; adapt and adopt features of successful AMR communication program from other countries (individual sector); government may consider a Health Cess to fund health campaigns on AMR (MoPH, MoF, MAIL, MoIC, communication agency/agencies identified by Media and communications unite of MoPH,) **S**

1.1.3.2 Implement AMR communication program targeting general population and key stakeholders in all sectors, throw partnership and collaborative approach including NGOs and private sectors (Communication agency/agencies identified by Media and communication unite of MoPH, MAIL, MoIC, NEPA, MoE, MoHE) **S-M-L**

Key output

- Cross-cutting, comprehensive and sustained communication program for AMR containment at national, state, district and peripheral level

Education and training

Objective 1.2

Improve knowledge and capacity of key stakeholders regarding AMR and related topics

Strategic interventions and activities

1.2.1 Strengthen and consolidate AMR and related topics as core components of professional education and training

1.2.1.1 Review and revise curricula of professionals in human health (MoHE, MoPH etc.) **S**

1.2.1.2 review/revise curricula of professionals in Animal health

1.2.1.3 Review and revise curricula of professionals in food industry, agriculture and environment (MAIL, MoHE, MoPH etc.) **S**

1.2.1.4 Review and develop curricula and resources for in-service training of different professionals and allied services (MAIL, MoHE, MoPH etc.) **S-M**

- Develop a module on AMR to bring together the segmented knowledge being imparted under different subjects (microbiology, pharmacology, medicine, etc.)

Key outputs

- Professional curricula revised
- Training module developed on AMR (for in-service and training s)

1.2.2 Introduce concept of AMR and appropriate use of antimicrobials as part of school curriculum

1.2.2.1 Develop module on AMR and appropriate use of antimicrobial for school children (MoE, etc.) **M**

Key output

- Module on AMR and antimicrobials developed for school children

1.2.3 Strengthen capability and skills of key stakeholders

1.2.3.1 Conduct Training Needs Analysis (TNA) across all sectors (MoPH, MAIL, NEPA) **S**

1.2.3.2 Develop training resource (including online courses) on antibiotic resistance and use for capacity development among professionals **S (overall responsibility MoPH, NACP)**

- Human health (MoPH)
- Animal health (MAIL)
- Food Industry (MoPH)
- Agriculture (MAIL)
- Environment (NEPA)

1.2.3.3 Implement training of AMR for all key stakeholders has an essential component of the phased NAP implementation S-M (MoPH)

- Clinician
- Microbiologist
- Pharmacologist
- Public Health
- Veterinarians
- Food industries
- Social workers and civil society activists
- Academic institutions

Key output

- National training plan and information products developed for key stakeholders and human health, animal health, food industry, feed industry, agriculture, environment and pharmaceutical industry

1.2.4 Improve inter-departmental as well as intersectoral communication

1.2.4.1 Develop a strategy towards enabling the institutions to ensure communication and data sharing among their microbiologist and clinicians (antibiotic policy etc.) MoPH **S**

1.2.4.2 Design AMR training/orientation programs to train composite group of representatives from all sectors (MoPH) **M**

1.2.4.3 Develop a strategy towards enabling communication, interaction among different sectors influencing AMR (MoPH, Media and communication unit of MoPH, MAIL, NEPA) **S**

Key output

- Mechanisms establish for interdepartmental and intersectoral communication

Strategic Priority 2

Strengthen knowledge and evidence through surveillance

Laboratory capacity

Objective 2.1

Invent and Strengthen microbiology laboratory capacity for AMR surveillance in human, animal, food and environmental sectors*

Strengthen interventions and activities

2.1.1 Strengthen capacity for laboratory- based surveillance of AMR in humans, animals, food and environment

2.1.1.1 Develop national strategy based on system/lab assessments to strengthen microbiology (including private sector) for antimicrobial susceptibility testing (AST) in medical labs, ensuring SOPs, quality assurance and community data (MoPH) **S-M**

2.1.1.2 Develop national strategy based on system/lab assessments to strengthen microbiology (including private sector) for antimicrobial susceptibility testing (AST) in animals, food, ensuring SOPs, quality assurance and community data (MAIL) **S-M**

2.1.1.3 Develop national strategy based on system/lab assessment to strengthen microbiology laboratories (including private sector) for antimicrobial resistance and antimicrobial residues in the environment, including waste from farms, factories and healthcare settings (MoPH, MAIL) **S**

2.1.1.4 Strengthen capacity for laboratory-based surveillance of AMR with species level identification of bacteria in humans during health and

disease; surveillance lab under national network including private sector (MoPH) **S**

- (<1 year): 5-10 labs; M (1-3 year): 10-20 labs; L (>3 years): >30 labs

2.1.1.5 Strengthen capacity for laboratory based surveillance for AMR in animals, food and environmental **M**

- Animal sector (MAIL)
- Food sector (MAIL, MoT)
- Environmental sector (NEPA)

2.1.1.6 Establish routine EQAS for all surveillance laboratories **M L**

- Human labs (MoPH)
- Animal labs (MAIL)
- Food Labs (MAIL, MoPH)
- Environment Labs (MoPH, NEPA)

2.1.1.7 Organize joint training workshops for bacterial identification, antimicrobial susceptibility testing (AST) and data harmonization **S-M**

- Humans (MoPH)
- Animals (MAIL)
- Food (MAIL, MoPH)
- Environmental (NEPA, MoPH)

Key out puts

- Strategic plan developed to strengthen microbiology laboratories for AMR surveillance in humans, animals, food and environment
- Training workshops held for AST in medical and food labs and environment labs

2.1.2 Designate national reference laboratories for AMR surveillance in humans (also in animal, food and environmental sectors) as pre-requisite for enrolment in GLASS

2.1.2.1 Identify and strengthen national reference laboratories for confirmation and detailed characterization of target pathogens and external quality assessment scheme for AMR organized in human health (MoPH) **S**

2.1.2.2 Identify and strengthen national reference laboratory(ies)for confirmation and detailed characterization of target pathogens and external quality assessment scheme for AMR in animal and food sector (MAIL, MoPH) **S**

2.1.2.3 Afghanistan enrollment in GLLAS – Global AMR Surveillance System (MoPH) **S-M**

Key outputs

- National AMR reference labs designated
- Afghanistan enrolled in GLASS

Surveillance of AMR

Objective 2.3

Strengthen Surveillance for AMR in humans, animals, food and environment

Strategic interventions and activities

2.3.1 Establish standard and coordination mechanisms for national surveillance of AMR

2.3.1.1 Establish an intersectoral experts group on integrated AMR surveillance (MoPH, MAIL, NEPA, MoHE, MoE) **S**

2.3.1.2 Define comprehensive standards for national coordination of AMR surveillance – including surveillance standards at various healthcare levels, drug-bug combination - in a phased approach for strengthening AMR surveillance (MoPH) **S**

- Humans include private sector (MoPH, WHO)
- Animals (MAIL, OIE)
- Food (MAIL, MoPH,FAO)
- Environmental (NEPA, MoPH, UNEP)

2.3.1.3 Organize annual consultation to strengthen AMR surveillance (MoPH) **S**-**M**-**L**

- Humans include private sector (MoPH, WHO)
- Animals (MAIL, OIE)
- Food (MAIL, MoPH, FAO)
- Environmental (NEPA, MoPH, UNEP)

2.3.1.4 Organize annual national consultation to strengthen the AMR surveillance program in humans, animals, food and environment (MoPH, MAIL and NEPA, WHO, FAO) **S**-**M**-**L**

Key outputs

- National AMR surveillance standards establish in human, animal, food and environment

2.3.2 Standard data analyses and information management for AMR surveillance

2.3.2.1 Define mechanisms and modalities for data collections, collection and analysis and information management at central, state and district level (including urban, rural, governmental, private and unorganized sector) to increase health intelligence for AMR in human (MoPH, WHO) S

2.3.2.2 Define mechanisms and modalities for data collections, collection and analysis and information management at central, state and district level for AMR surveillance in animals and food (MAIL, FAO)

2.3.2.3 Define mechanisms and modalities for data collections, collection and analysis and information management at central, state and district level for AMR surveillance in environment (NEPA, MoPH UNEP) **S**

Key outputs

- National mechanisms for data analysis/information management for AMR surveillance implemented in humans, animals, food and environment

2.3.3 Strengthen AMR surveillance data/information management in human, animals, food and environment

2.3.3.1 Implement mechanisms to collate and analyses AMR surveillance data into useful information and make an online database available to all stakeholders (MoPH) **S**-**M**-**L**

- Humans include private sector (MoPH, WHO)
- Animals (MAIL, OIE)
- Food (MAIL, MoPH, FAO)
- Environmental (NEPA, MoPH, UNEP)

Key outputs

- AMR surveillance database available in human, food and environment
- Annual report of national AMR surveillance with data from all sectors published

2.3.4 Establish surveillance of antimicrobial residues/containment in food and environment

2.3.4.1 Develop national framework for surveillance of antibiotics residues and containment in food animals (MAIL, MoPH, FAO, OIE, WHO) **S**

2.3.4.2 Develop national framework for surveillance of antibiotics residues and containments in environment including waste from farms, factories (pharmaceutical industries, making animal feed, processing meat, dairy, fish), veterinary and human health care settings (MAIL, MoPH, MoT, FAO, OIE, WHO) M

2.3.4.3 Develop standards for antibiotics residues in food from animals such as chicken, eggs, milk and fish (MAIL, MoT,) **S**

2.3.4.4 Develop standards for antibiotics residues in industrial effluents and waste from farms, human health care and veterinary care settings (MAIL, MoPH, MoT) **M**

2.3.4.5 Collate and analyses antibiotics residues surveillance data from food in to useful information (MoPH, MAIL,FAO,WHO) **M**

2.3.4.6 Collate and analyses antibiotics residues surveillance data from environment in to useful information (MoPH, NEPS, UNEP) **M**

Key outputs

- Standards for antibiotics residues, national framework and results of surveillance of antibiotics residues in food and linkages with AMR developed and published
- Standards for antibiotics residues, national framework and results of surveillance of antibiotics residues in environment and linkages with AMR developed and published

Strategic Priority 3

Reduce the incidence of infection through effective infection prevention and control

Infection prevention and control (IPC) in healthcare

Objective 3.1

Develop and establish a strategic national plan for IPC in health care

Strategic interventions and activities

3.1 .1 Ensure development and implementation of infection prevention and control policies and strategies across all tiers of healthcare system

3.1.1.1 Define terms of reference and scope and establish National Coordinating Unite (NCU) for infection prevention and control (MoPH) **S**

3.1.1.2 Define core element of IPC, and establish standardized definitions for elements at different tiers of health care settings in public and private facilities (MoPH, WHO) **S**

3.1.1.3 Conduct IPC assessments and gap analyses at different levels and all categories of health care settings (MoPH) **S-M**

3.1.1.4 Streamline hand hygiene and sanitation as components of performance monitoring/performance payment within different schemes quality programs initiatives (MoPH)

3.1.1.5 Develop national IPC standards and targets in different tiers of health care settings, and a phased implementation plan based upon risk and need based matrix, patient and healthcare worker/ professionals/attendants/vendors and community safety, designing interventions, including reuse of single use devices (MoPH) **S**

3.1.1.6 Develop national IPC implementation plan (in a phased approach) based upon risk and need based matrix, patient and healthcare workers/ professionals/attendants/vendors and community safety with clearly defined interventions (MoPH) **S**

3.1.1.7 Establish a standardize surveillance program on healthcare associated infections (HCAIs) in a tiered network that utilizes uniform case definitions, methodologies, and reporting mechanisms (MoPH) **S-M**

3.1.1.8 Develop capacity – infrastructure and skilled human resources with adequate financial resources to implement the national IPC plan (MoPH) **S-M-L**

3.1.1.9 Develop monitoring and evaluating framework to assess the phased implementation of national IPC plan (MoPH) **S-M**

3.1.1.10 Incorporate IPC in curricula for education and training of professionals in human health (MoPH) **S-M**

Key outputs

- IPC national coordinating unit establish and it is scope defined
- Core elements of IPC for different tiers of health care settings established
- National IPC standards developed and targets defined
- National IPC plan with M&E framework endorsed and implemented
- National HAI surveillance establish in identified facilities

Infection prevention in animal health

Objective 3.2

Establish IPC program in veterinary settings and animal husbandry

Strategic interventions and activities

3.2.1 Ensure development and implantation of infection prevention and control program in animal and food sector

3.2.1.1 Include biosafety, biosecurity, hygiene and infection prevention and control in curricula for education and training of animal health and food professionals and workers (MoPH, MAIL, MoT) **M**

3.2.1.2 Establish IPC coordinating unite within MoPH (at Center and state level), with designated staff and defined terms of reference (MoPH) **S**

3.2.1.3 Train staff in cities and villages level for biosafety, biosecurity principles and practices (MoPH) **M-L**

3.2.1.4 Increase awareness in community for good production practice (proper hygiene/sanitation/practice of IPC); demonstrate profitability in various production systems (MoPH) **S-M-L**

3.2.1.5 Develop, implement and monitor the national plan for IPC in animal and food sector (MAIL, MoPH, MoT) **M**

Key outputs

- IPC Program for animal and food sector implemented and monitored at national and sub national level

Hygiene, sanitation and infection prevention in community

Objective 3.3

Strengthen infection prevention outside healthcare setting to limit the development and spread of AMR

Strategic intervention and activities

3.3.1 Promote personal hygiene through behavioral change activity

3.3.1.1 Assess knowledge and practice of personal hygiene in different social groups (MoPH, MoIC) **S**

3.3.1.2 Develop behavioral change communication and social mobilization campaigns to promote IPC (MoPH, MoIC, MoHE, MoE, WHO)

3.3.1.3 Implement sustained IPC campaigns that are socially and culturally acceptable in local context, in collaboration with academic organizations and communications experts (MoPH, MoIC, WHO) **M**

3.3.1.4 Insure engagement of mass media and new IT tools (mobile technology etc.) (MoPH, UNICEF) **S**

3.3.1.5 Ensure appropriate immunization against VPDs (MoPH) **M**

3.3.1.6 Involve community leaders in media campaign, information, education, communication at villages level, schools, showcase, importance in the community (MoPH, MoIC, MoH, UNICEF, WHO)

Key outputs

- Behavior change communication and social mobilization campaign developed and implemented

3.3.2 Strengthen infection prevention and hand hygiene compliance, in different social groups

3.3.2.1 Assess knowledge, attitude & practice of IPC (with emphasis on hand hygiene) in different social groups in community (MoPH, WHO) **S**

3.3.2.2 Develop national hand hygiene campaign in alignment with Global Hand Hygiene Day (MoPH, MoE, UNICEF)**M**

3.3.2.3 Implement IPC campaign with collaboration of academic organizations (MoPH, UNICEF) **S**

3.3.2.4 Reinforce behavior change through IEC and social mobilization campaigns to promote personal hygiene including patient attendance (MoPH, MoIC, MoE, UNICEF) **M-L**

3.3.2.5 Educate and train children about importance of hand hygiene at school level (MoPH, MoE, UNICEF) **S**

3.3.2.6 Enhance awareness of IPC and hand hygiene amongst farmers and fishermen (MAIL, MoPH, FAO, OIE)

Key outputs

- Study on IPC practices, emphasis on hand hygiene
- Hand hygiene campaign implemented

Objective 3.4

Align healthcare support industry with infection prevention and control

Strategic interventions and activities

3.4.1. Develop and strengthen alliance for IPC

3.4.1.1. Identify area of collaboration keeping healthcare need, patients and healthcare workers' safety and long-term industry perspective in alignment (MoPH) **S-M**

3.4.1.2. Collaborate with other government bodies and ministries, regulatory and industry partners as needed (MoPH) **S-M-L**

3.4.1.3. Establish a board for IPC professionals in public and private healthcare institutions, to review devices and modalities in healthcare, to review infection prevention and control mechanisms and adequacy (MoPH) **M-L**

Reduce environmental spread of AMR

Objective 3.5

Reduce environmental contamination with resistance genes, resistance pathogens and antimicrobial residues

Strategic interventions and activities

3.5.1 Develop strategic interventions to reduce impact of AMR on the environment

3.5.1.1 Develop policy of registrations of farms, factories, slaughter houses, wet markets, aquaculture units, food processing unites, feed manufacturers, health care facilities, veterinary care facilities (MAIL, MoPH) **M-L**

3.5.1.2 Based on environment risk assessment developed guidelines for locating farms, factories, slaughter houses, wet markets, processing unites, feed manufacturers, health care facilities, and veterinary care facilities; ensuring compliance by strengthening existing guidelines and enforcement strategies related to payments benefits etc. (MAIL, MoPH) **M-L**

3.5.1.3 Develop policy and implementation mechanisms on extended producers responsibility for expired/unused antibiotics (MoPH) **M-L**

3.5.1.4 Develop and implement a strategy and operational plan to reduce environmental impact on AMR (MoPH, NEPA) **S-M-L**

Key output

- National plan to reduce environmental impact of AMR developed and implemented

Strategic priority 4

Optimize the use of antimicrobial agents in health, animals and food

Regulated access to high-quality antimicrobials

Objective 4.1

Ensure uninterrupted access to high-quality antimicrobial medicines *Strategic interventions and activities*

4.1.1 Strengthen national regulatory authority for improved quality, safety of antimicrobials

4.1.1.1 Review and strengthen national regulatory authority and regulation regarding use and access to antimicrobials, as per levels of health care (MoPH) **S-M-L**

- Regulatory enforcement to prohibit sale of antimicrobials as OTC under Drugs & Cosmetics Act, and Rules; identify unlicensed pharmacies unqualified medical practitioners and prescribers; organize studies on antibiotic sales to understand incentives to sell or buy antibiotics; review categorization of high end antimicrobials as well as new antibiotics in schedule of regulations; create focal point for networking for information exchange among states, and establish an online forum on use and access as per level of healthcare; expedite regulatory processes to ensure uninterrupted supply quality assured antibiotics; regulate the availability of probiotics without resistance determinants

4.1.1.2 Strengthen and enforce regulations to minimize substandard, spurious, falsely labeledand falsified antimicrobials (MoPH) **S-M-L**

4.1.1.3 Establish a quality management system for supply chain management of antimicrobials (MoPH) **S-M-L**

Key outputs

- National regulatory authority strengthened and regulation implemented
- Quality management system implemented for supply chain management of antimicrobials

4.1.2 Create/develop and enforce enabling regulatory framework and intersectoral coordination for regulation on use of antimicrobials in animals and food safety

4.1.2.1 Establish independent veterinary regulatory authority (MAIL, OIE, FAO) **S-M**

4.1.2.2 Restrict and phase-out non-therapeutic use of antimicrobial such as their use as growth promoters and disease prevention in animals (MAIL,) **S-M-L**

4.1.2.3 Foster development of antimicrobial policies and evidence based standard treatment guideline for food animals (MAIL, MoPH) **S-M**

4.1.2.4 Restrict and gradually eliminate the use of restricted antibiotics, which are critically important for humans in non-human sectors especially food producing animals (MAIL, VRA, NDRA) **S-M**

4.1.2.5 Restrict antibiotic in animal fee, feed premix; ensure registration and use of registered products only; regulate their importation, direct distribution; ensure appropriate labeling (MAIL, MoPH)

4.1.2.6 Ensure prescription sale of antibiotics and their use under supervision; regulate bulk selling, importation and labeling for species specific use (MAIL) **S**

4.1.2.7 Ensure labeling of food from animals produced with or without routine use of antibiotics (MAIL) **S**

4.1.2.8 Fast track implementation of the codex alimentarius and OIE guidelines on antimicrobial resistance (MAIL, OIE, FAO)

Key output

- Regulatory authority established for rational use of antibiotics in food and animal sector

Surveillance of antimicrobial use

Objective 4.2

Establish the national surveillance system for antimicrobial use

Strategic interventions and activities

4.2 .1 Institutionalize national surveillance system for antimicrobial use(AMU) in humans, animals, agriculture & food sectors

4.2.1.1 Develop methodology to estimate national consumption of antibiotics through an expert consultation (MoPH, MAIL, WHO,

4.2.1.2 Use of AMC tool to measure consumption of antibiotics at health care facilities (MoPH, WHO) **S-M-L**

4.2.1.3 Ensure registration of and data collection from manufacturers, prescriber and bulk users (farmers and feed manufacturers) of antibiotics (MAIL, MoPH) **S**

4.2.1.4 Standardize tools to measure consumption of antibiotics in animal health facilities, food and agriculture (MAIL, MoPH, FAO) **S-M**

4.2.1.5 Organize training workshop to develop capacity to measure consumption and use of antibiotics (MoPH, MAIL, WHO, FAO) **S-M-L**

4.2.1.6 Organize national consultation to strengthen AMU surveillance program in human, animal and food sectors (MoPH, MAIL) **S-M-L**

4.2.2 Establish a monitoring system to assess antimicrobial consumption in humans, animals & food sectors

4.2.2.1 Develop monitoring framework to estimate national consumption of antimicrobials through an experts consultation (MoPH, MAIL, WHO, FAO) **M-L**

4.2.3 Foster optimal use of antimicrobials

4.2.3.1 Ensure capacity development of institutions for antibiotics audits and feedback to ensure optimal use (MoPH, WHO) **S-M-L**

4.2.3.2 Regulate the establishment of comities to develop and update hospital formularies and STGs; provide training, CME, establish system for audits and review (MoPH, WHO) **M-L**

4.2.3.3 Implement system to ensure compliance with standard guidelines (STGs) (MoPH) **M-L**

Key outputs

- National surveillance for antimicrobials use, established in human, animal and food sectors
- Feedback mechanism established for all stakeholders
- Annual national AMU surveillance report published and disseminated

Antimicrobial stewardship in human health

Objective 4.3

Improve appropriate use of antimicrobials in healthcare

Strategic interventions and activities

4.3.1 Establish antimicrobial stewardship programs in healthcare facilities

4.3.1.1 Harmonize and regularly update national antimicrobial use guideline; encourage development and use of similar guidelines at regional, and district level facilities (MoPH) **S**

4.3.1.2 Ratification dissemination of national guidelines from stakeholders (MoPH) **S**

4.3.1.3 Define terms of reference for multidisciplinary antimicrobial stewardship committees and teams at various levels of healthcare facilities, with M&E framework (MoPH) **S**

- Experts consultation to develop the terms of reference for antimicrobial stewardship (AMS) committees/teams at various level of healthcare facilities

4.3.1.4 Develop resources for AMS programs and implement trainings in phased manner (MoPH) **S**

- Identify a diverse pool of technical experts for collecting and collating evidence for national AMSP; and creating training packages and resources
- Engage or identify center(s) with capability for providing e-training for self-learning and refresher training

4.3.1.5 Establish M&E framework for antimicrobial stewardship (MoPH) **S**

- Expert consultation to develop M&E programs at different levels of healthcare facilities

4.3.1.6 Develop operational plan to implement facilities-based AMS programs at different levels of healthcare; identify and strengthen capacities of 6-8 institutions in different part of country with functional AMSP who are willing to be future nodal centers for regional trainings (MoPH) **M**

4.3.1.7 Implement the operational plan at selected tertiary care hospitals, district hospitals, sub district and primary healthcare facilities in phased manner (MoPH) **M**

4.3.1.8 Develop robust data management systems for AMS programs that also facilitate the generation of facility-level specific or regional antibiograms (MoPH) **M**

4.3.1.9 Streamline antibiotic in various central and state schemes by introducing quality indicators linked to performance monitoring/appraisal and innovative financial mechanisms (MoPH) **M**

Key outputs

- Antimicrobial stewardship programs implemented in selected health facilities in phased manner
- Regular review of AMS programs done

Objective 4.4

Improve appropriate use of antimicrobials in the community

Strategic interventions and activities

4.4.1 Increase awareness of appropriate antimicrobial use among provider, dispenser and consumer populations

4.4.1.1 Develop awareness campaigns targeted at prescribers, providers and dispensers regarding existing rules/law and appropriate use of antimicrobials (MoPH, MAIL, UNICEF) **S-M-L**

4.4.1.2 Develop awareness campaigns targeted at consumers and community, including schools and colleges regarding patient risks of inappropriate antibiotics use (MoPH, MAIL, MoE, MoHE, UNICEF) **S-M-L**

4.4.2 Monitor antimicrobial use in community settings

4.4.2.1 Use AMC tool to measure antimicrobial use in community settings, including standalone clinics and pharmacies (MoPH) **S-M-L**

4.4.2.2 Initiate surveillance to measure antimicrobial use in selected community settings (MoPH) **S-M-L**

Objective 4.5

Strengthen the legislation regarding various facets of antimicrobials

Strategic interventions and activities

4.5.1 Strengthen legislation to regulate prescription and dispensing of antimicrobials

4.5.1.1 Organize a consultation with regulatory bodies to review current legislation on antimicrobial prescriptions and feasibility to strengthen existing legislation and to introduce new legislations (MoPH) **S-M**

4.5.1.2 Identify additional regulatory interventions or support needed to effectively implement schedule HI and X restrictions (MoPH) **S-M-L**

Key output

- Legislation and regulation strengthened and implemented to optimize use of antibiotics

Objective 4.4

Improve knowledge and skills of prescribers, dispensers and medical trainees

Strategic interventions and activities

4.6.1 Develop structured (and mandatory) training programs on optimal antimicrobial use

4.6.1.1 Collaborate with regulatory bodies to mandate periodic training to optimize antibiotic use through pre-service and in-service trainings (MoPH, MoHE) **S-M-L**

4.6.1.2 Promote measures for overall health improvement and service delivery (MoPH) **M**

- Detect and treat malnutrition at an early stage
- Insure up-to-date vaccination
- Prevent sexually transmitted diseases
- Early diagnosis of malaria and viral infections to reduce antibiotic use

4.6.1.3 Develop strategies to improve efficacy and broaden coverage of existing vaccines and their usage, especially by at-risk populations e.g. Haemophilus influenza type b (Hib), influenza, pneumococcal and typhoid vaccines (MoPH)

Key output

- Collaborations forged for improving knowledge and skills relating to antimicrobial use

Antimicrobial stewardship and policies in animal husbandry and food

Objective 4.4

Improve and ensure appropriate use of antimicrobials in animals

Strategic interventions and activities

4.7.1 Establish antimicrobial stewardship programs for rational use of antimicrobials in animal facilities, agriculture, and food processing units

4.7.1.1 Develop and implement operational plan for antimicrobial stewardship (AMS) in animal facilities, with a One Health Approach (MoPH, FAO,MAIL)

- Support small and mid-size poultry, dairy and fish farmers to reduce use of antibiotics, avoid non-therapeutic use and move to safer alternatives; issues " pond health cards" to promote the health of fish farms through a systematic farm-specific assessment and feedback mechanism; develop and implement biosecurity practices across food animal production sectors and support small-and-medium scale farmers

Key output

- Antimicrobial stewardship programs implemented in animal facilities

4.7.2 Establish and implement national policies on use of antimicrobial agents in animals and agriculture

4.7.2.1 Develop national plan on restricting (ban/phase off) use of critically important antibiotics (MoPH, MAIL) **S-M**

- Evidence-based policy guided by data generated from well implemented antimicrobial stewardship across various sectors

4.7.2.2 Implement and monitor national plan to restrict use of critically important antibiotics in animals/agriculture (MAIL, MoPH) **M-L**

Key output

- System established and implemented to restrict use of critically important antibiotics in animals and agriculture

Strategic priority 5

Promote investment for AMR activities, research and innovation

Financing for AMR

Objective 5.1

Prepare the economic case for sustainable investments for AMR interventions

Strategic interventions and activities

5.1.1 Strategies to secure sustainable funds for implementation of the NAP-AMR

5.1.1.1 Assess impact of AMR – morbidity, mortality and cost of AMR in Afghanistan (MoPH) **S**

5.1.1.2 Develop the operational plan (with cost) of the plan to implement NAP-AMR (MoPH, MAIL) **S**

5.1.1.3 Estimate the investment gap for NAP-AMR, and develop resource mobilization plan for sustainable action against AMR (MoPH, MoF) **S**

5.1.1.4 Define center-state & other stakeholders' roles in implementation & financing (MoPH) **S**

5.1.1.5 Develop a long term resource mobilization plan with clear roles of different stakeholders (All Ministries) **S-M**

Key outputs

- Impact of AMR and cost-benefit analysis documented
- Resource mobilization plan endorsed and implemented

Research and innovation

Objective 5.2

Identify priorities for basic and operational research to optimize use of antimicrobials and improve infection prevention and control in human and animal health

5.2.1 Foster research and innovations to tackle AMR

5.2.1.1 Review need for new medicine, vaccines and diagnostics as well as other innovations (MoPH)

5.2.1.2 Define research priorities for AMR innovation (MoPH) **S**

5.2.1.3 Innovation and research interventions in respect of developing alternatives to antimicrobials and adjuvant remedies for infectious disease (MoPH) **S-M-L**

5.2.1.4 Develop and implement strategy/plan to promote/fast-track research for innovation to tackle AMR (MoPH) **S-M-L**

Key outputs

- National research priorities for AMR defined and published
- National strategy/plan developed to foster research and innovation to tackle AMR
- Development of new antibiotics, alternative tools and diagnostics supported

5.2.2 Prepare a national operational research agenda

5.2.2.1 Organize expert consultation to identify current gaps in knowledge and priorities topics for research (MoPH) **S-**

5.2.2.2 Publish the national research agenda for AMR (MoPH, MAIL) **S-M-L**

Key output

- Annual publication of operational research agenda on AMR

5.2.3 Encourage research for evidence-informed policy-making

5.2.3.1 Coordinate basic research projects in human, animals, food and environment sectors (MoPH, MAIL, NEPA,WHO,FAO,OIE) **S-M-L**

5.2.3.2 Fund and pilot basic and operational projects in human, animals, food and environment (MoPH, MAIL, NEPA,WHO,FAO,OIE) **S-M-L**

Key output

- Evidence generated based on AMR research

Strategic priority 6

Strengthen Afghanistan commitment and collaborations on AMR at international, national and sub-national levels

International role

Objective 6.1

Strengthen Afghanistan commitment on AMR through collaborations

Strategic interventions and activities

6.2.1 Strengthen intersectoral coordination of AMR activities

6.2.1.1 Review Afghanistan existing collaboration on AMR and identify priority areas as well as coordination mechanisms (MoPH, WHO) **S**

6.2.1.2 Establish an annual forum on AMR for donors and partners to share information and facilitate coordinated mobilization of recourses prioritized AMR activities (MoPH, WHO) **S-M-L**

6.2.1.3 Collaborate with other countries to combat AMR (MoPH) **S-M-L**

Key output

- International collaboration strengthened and established

National role

Objective 6.3

Strengthen national collaborations to tackle AMR with disease control programs

Strategic interventions and activities

6.3.1 Strengthen drug resistance containment activities & linkages

6.3.1.1 Strengthen HIV/STI resistance activities (MoPH) **S-M-L**

6.3.1.2 Strengthen MDR/XDR-TB activities (MoPH) **S-M-L**

6.3.1.3 Strengthen drug resistance activities for malaria (MoPH) **S-M-L**

6.3.1.4 Strengthen drug resistance activities in leprosy and NTDs (MoPH) **S-M-L**

6.3.1.5 Strengthen IDSP's AMR activities (MoPH) **S-M-L**

6.3.1.6 Establish linkages to share best practice and information amongst vertical diseases programs and national AMR program (MoPH) **S-M-L**

Key output

- Integrated AMR containment in alignment with vertical disease programs

Sub-national role

Objective 6.4

Strengthen sub-national collaboration to tackle AMR

Strategic interventions and activities

6.4.1 Establish AMR as a state-level priority

6.4.1.1 Convene state-level advocacy meetings to priority action against AMR with One Health approach (MoPH, WHO, FAO) **S-M-L**

6.4.2 Develop state action plan on containment of Antibiotic Resistance (SAP-CAR) aligned to NAP-AMR

6.4.2.1 Convene regional stakeholder workshop to develop SAP-CAR (MoPH, WHO, FAO)

6.4.2.2 Organize a stakeholder consultation on SAP-CAR in selected state (in first phase) **S**

Key output

- SAP-CAR developed – in 5 selected states in first phase – and subsequently in all states/UTs

3.5. monitoring and evaluation plan

Monitoring and evaluation (M&E) is an integral part of the national plan on AMR to ensure objective review and monitoring of the implementation progress. The M&E framework shall be finalized based on the final national action plan, and shall be developed according to the draft outline below.

Planning element (activity linked to the NAP-AMR)	indicator	Type and purpose	Value (calculation)	Frequency of data collection	Data source	Method	baseline	target
Measure awareness and knowledge of AMR in different social and professional groups	Level of awareness by target group	Assessment, baseline survey, monitoring and evaluation of outcome	Awareness scores stratified by target group (composite indicator)	Baseline and periodic(based on schedule of awareness campaign)	Baseline survey, post-intervention survey reports	Awareness survey; knowledge-practice(KAP) studies	Measured in baseline survey	50% increase over baseline score
Awareness/behavior change communication campaign on AMR and AMU	Number of IEC recourses developed	Monitoring and evaluation of output	IEC resources stratified by stakeholders	Annually	Baseline post-campaign	Awareness campaign report	None	Based on NAP
Review and consolidate AMR in curricula for health professional	Revise curricula available for target professional group	M&E of input	Yes/No No. of curricula No. of professional Group targeted	Annually	Key information at MoPH	Key informant interview	……	Revised curricula with AMR
Review and consolidate AMR in curricula for professional in animal health food industry and agriculture	Revised curricula for target professional groups	M&E of input	Yes/No No. of curricula No. of professional Group targeted	Annually	Key information at MoPH, MAIL	Key informant interview	……	Revised curricula with AMR

Planning element (activity linked to the NAP-AMR)	indicator	Type and purpose	Value (calculation)	Frequency of data collection	Data source	Method	baseline	target
Write and approve term of reference for a national coordinating center for AMR surveillance	National coordination center terms of reference approved	M&E input	Yes/No	Annually	Key information at MoPH	AMR surveillance program implementation report	No terms of reference for national coordinating center	Define ToR for national coordinating center
Write and approve terms of reference for national reference laboratories	National reference lab term of reference written and approved	M&E input	Yes/No	Annually	Key information at MoPH	AMR surveillance program implementation report	No terms of reference for NRL	Define terms of reference for NRL
Write and approve term of reference for a national infection prevention coordination unit	IPC unite terms of reference written and approved	M&E input	Yes/No	Annually	Key information at MoPH	IPC program implementation report	No quality management system	Define terms of reference for IPC unit
Establish a quality management system for the medicines supply chain	QMS established and introduced	M&E input	Yes/No	Annually	Key information of department of Pharmaceutical	Key information interview	No terms of reference for antimicrobial stewardship committees	Quality management system implemented
Write generic terms of reference (ToR) for multidisciplinary antimicrobial stewardship committees and teams	Antimicrobial stewardship committee ToR written and approved	M&E input	Yes/No	Annually	Key information at MoPH	Key information interview	No research agenda	Define ToR for AMS committes
Engage relevant experts to identify research topics on AMR	Draft research agenda prepared	M&E input	Yes/No	Annually	Key information at MoPH	Key information interview		Define AMR research agenda

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Annex 1: Governance committees/groups for AMR

Intersectoral Coordination Committee on AMR (ICC-AMR)

The purpose of the intersectoral coordination committee on Antimicrobial Resistance is to oversee and coordinate policy decisions for activities related to antimicrobial resistance in all sectors in alignment with AMR-related public health goals.

Terms of reference

- Lead and facilitates the coordination of the national (along with sub-national and international response to the threat of AMR;
- Ensure information sharing to reinforce AMR-related activities amongst all sectors;
- Review and revise terms of reference of technical advisory group on AMR;
- Ensure coordination of the health system and other sectors to achieve the AMR-related public health goals;
- Facilitate and synergies existing and new initiatives to achieve the goal of combating AMR in Afghanistan;
- Facilitate collaboration with internal and external agencies and organizations for AMR-related activities;
- Endorse national action plan on AMR, and ensure adequate logistic and resource mobilization to cover any funding gap; and
- Oversee progress of NAP-AMR and ensure program planning and implementation.

Constitution of ICC-AMR

• Secretary (MoPH)	Chair
• Joint Secretary, (MAIL)	Member
• Secretary, Department Animal Husbandry, Dairying and fisheries	Member
• Secretary, Department of Health research	Member
• Secretary, Department of Biotechnology	Member
• Director General Curative Medicine	Member
• Joint Secretary, (NEPA)	Member
• Joint Secretary, Department of Pharmaceuticals	Member
•	
• Joint Secretary, (Ministry of information and culture)	Member
• Joint Secretary, (Ministry of finance)	Member
• Joint Secretary, (MoHE)	Member
• Joint Secretary, (MoT)	Member

Frequency of meetings:

- It is proposed that ICC-AMR shall meet at least once every quarter
- The frequency of meetings shall be decided in the first meeting of ICC-AMR

Technical Advisory Group on AMR (TAG-AMR)

The purpose of Technical Advisory Group on Antimicrobial Resistance shall be to review the approach and initiatives for combating AMR in Afghanistan and make recommendations on technical issues.

Term of reference:

- Provide technical advice and reports to the Inter-Sectoral Coordination Committee on Antimicrobial Resistance (ICC-AMR);
- Technical review and revise the draft NAP-AMR;
- Provide technical oversight for initiatives to combat AMR in Afghanistan; and
- Review and revise the terms of reference of the core working group on AMR.

Constitution of TAG-AMR

• General Director of Curative Medicine	Joint chair
• Secretary, Department of Health research	Joint chair
• Drug control Authority	Member
• Commissioner, Department of Animal Husbandry	Member
• Representative, food safety and standard Authority	Member
• Representative, NEPA	Member
• Representative, Department of Agriculture research	Member
• Representative, Ministry of Information and culture	Member
• Representative, Department of Biotechnology	Member
• Representative, Department of Pharmaceuticals	Member
• WHO representative to Afghanistan	Member
• WHO Focal point of AMR	Member
• Hospital's Directors	Member
• Professionals of Different Specialty	Member
• Senior Microbiologist	Member
• Senior pharmacologist	Member
• Consultant, infectious disease	Member

Frequency of meetings:

- TAG-AMR shall meet at least once every quarter.

Core working group on AMR (CWG-AMR)

The Core Working Group on Antimicrobial Resistance shall provide technical and operational inputs to the designated national coordinating center for AMR in Afghanistan to develop and implement the National Action Plan on Antimicrobial Resistance (NAP-AMR).

Terms of reference

- Identify and map stakeholder for AMR-related activities;

- Lead the development of the national action plan on AMR in Afghanistan with active engagement of all key stakeholders;
- Ensure regular data collection and information sharing through effective communication and coordination amongst all stakeholders;
- Coordinate national activities for establishing/linking surveillance system for AMR and antimicrobial use;
- Develop and disseminate national AMR reports annually; and
- Facilitate and monitor/evaluate the overall implementation of NAP-AMR.

Constitution of CWG-AMR

- Director, National Center for Disease Control
- Deputy Drug Controller
- Microbiologist
- Pharmacologist
- Surgeon
- Pediatrician
- Department of animal husbandry
- Environment experts
- Food experts
- Finance/budget experts
- Communication experts
- WHO experts

Frequency of meetings:

- The CWG-AMR shall meet at frequency intervals; it is proposed that it meet at least once every month during the initial phase.

The technical advisory group and core working group are governance mechanisms specific to the human health sector. Similar groups may be needed in other sectors to coordinate their response in tackling AMR.

Annex 2: Operational plan and budget (template)

The operational plan and budget shall be developed after the strategic priorities are finalized, as per national financial rules and regulations, and shall be added based on finalized priorities/activities as per template below.

Item	Description	date	location	Responsible entity	Cost (USD)	Source of funding	indicator
	Strategic Priority 1: Improve awareness and understanding of AMR through effective communication education and training						
Activity 1	**AMR Awareness**						
Sub-activity 1.1.1	The suppliers and pharmaceutical importing companies should be given full awareness on AMR to import quality medicine	Q1 2018	Kabul and 4 regions	NMHRA	10,000	WHO	Orientation sessions conducted in each region
Sub-activity 1.1.2	Orientation Seminars should be conducted for the religious leaders on the proper use of antibiotics and the hazardous of AMR	Q2 2018	Kabul and 4 regions	National AMR Committee and Regional AMR Committee	15000	WHO	Orientation seminars conducted in each region
Activity 2							
Sub-activity 1.2.1	Conducting a baseline study/KAP survey on AMR at national level at least in the 5 capital zones of the country	Q3 2018	Kabul and 4 regions	National AMR Core working group	50000	???	Report of KAP survey
Sub-activity 1.2.2	Advocacy for the inclusion of AMR in the curriculum of schools and universities.	Q1 2019	…..	National AMR Core Working group	15000	…..	Curriculum of the schools and universities with AMR
Sub-activity 1.2.3	Orientation seminars and IEC materials on AMR for the students in the universities and schools	Q2 2019		National AMR Core Committee and AMR regional Committee	60,000		Number of orientation seminars for schools and universities
Sub-Activity 1.2.4	The Public and Animal health clinics/pharmacies should be instructed through the NRAs not to distribute antibiotics for animals without prescription of Doctor of Veterinary.	Q1 2018		MAIL and Agriculture Directorate in the provinces	30000		Letter from NRAs
Sub-Activity 1.2.5	The veterinary doctors should give orientation to all the farm/livestock owners not to use milk of the relevant animals from	Q4 2018		National AMR Committee and MAIL	10000		Leaflets

	24 till 48 h after antibiotic use by animals. (Printing of leaflets)						
	Establishment of AMR Committees at regional level. TOR to be developed by the National AMR Committee	Q3 2018		National AMR Committee	10,000		Monthly reports of the AMR committees
Strategic Priority 2: Lab Strengthening							
Item	Description	date	location	Responsible entity	Cost (USD)	Source of funding	indicator
Activity 2.1	Lab Capacity building						
Sub activity 2.1.1	Strategic plan development to strengthen microbiology laboratories for AMR surveillance in humans, animals, food and environment	Q3 2018		Nation GlASS Sub-Comittee	10000		Strategic plan
Sub-activity 2.1.2	Training workshops held for AST in medical and food labs and environment labs	Q4 2018	…..	National GLASS Sub-Committee	30000		Number of training workshop
Sub-Activity 2.2.1	Standards for antibiotics residues, national framework and results of surveillance of antibiotics residues in food and linkages with AMR developed and published	Q1 2019		GLASS Committee	10,000		Standards available for anti ? biotics residue
Sub Activity 2.2.2	National AMR reference labs designated	Q3 2018		GLASS Committee	3000		Availability of design for Ref labs
Sub-Activity 2.2.3	Afghanistan enrolled in GLASS	Q2 2018		GLASS Committee	0		Reporting to GLASS
Sub-Activity 2.2.4	Training workshops held for AST in medical and food labs and environment lab	Q4 2018		National AMR Committee	20,000		Training Report
Sub-Activity 2.2.5	AMR surveillance database available in human, food and environment Annual report of national AMR surveillance with data from all sectors published	Q2 2019		Surveillance department	10,000		Availability of AMR database in human, food and environmental sectors
Strategic Priority 3: Infection prevention and control (IPC) in healthcare							
Activity 3.1	**National IPC Program**						

Sub-activity 3.1.1	Establishment of IPC national coordinating unit	Q3 2018		National IPC Committee /IPC departmen t	3000		Availability of National IPC Coordination unit
Sub-activity 3.1.2	Development, Endorsement of and implementation National IPC plan with M&E framework	Q4 2018		National IPC Committee /Dept	3000		Availability and implementation of National IPC framework
Sub-Activity 3.1.3	Establishment of National HAI surveillance in identified facilities	Q4 2018		National IPC Committee /Dept	15000		Report of HAI Surveillance
Sub-Activity 3.1.4	Development of National IPC standards and targets defined	Q1 2019		National IPC Committee /Dept	3000		Availability of national IPC standards
Sub-Activity 3.1.5	IPC Program for animal and food sector implemented and monitored at national and sub national level	Q1 2019		National IPC Committee /Dept	20000		Availability of IPC national program in food and animal sector
Sub-Activity 3.1.6	Conducting Campaign for Behavior change communication and social mobilization	Q2 2019		National AMR Committee			Campaign reports
Sub-Activity 3.1.7	Study on IPC practices, emphasis on hand hygiene	Q2 2019		National IPC Committee /Dept	20000		
Sub-Activity 3.1.8	Conducting Hand hygiene campaign	Q2 2019		National IPC Committee /Dept	60,000		
Activity 3.2	Impact of AMR						
Sub-Activity 3.2.2	Develop strategic interventions to reduce impact of AMR on the environment in terms of policy of registrations of farms, factories, slaughter houses, wet markets, aquaculture units, food processing unites, feed manufacturers, health care facilities, veterinary care facilities	Q3 2019		National AMR Committee	20000		
Item	Description	date	location	Responsibl e entity	Cost (USD)	Source of funding	indicator

Sub-Activity 3.2.2	Development of guidelines for locating farms, factories, slaughter houses, wet markets, processing unites, feed manufacturers, health care facilities, and veterinary care facilities, based on environment risk assessment and ensuring compliance by strengthening existing guidelines and enforcement strategies related to payments benefits etc.	Q3 2019		GLASS Committee	10,000		
Sub-Activity 3.2.2	Develop policy and implementation mechanisms on extended producers' responsibility for expired/unused antibiotics.	Q4 2019		GLASS Committee	3000		
Sub-Activity 3.2.3	Develop and implement a strategy and operational plan to reduce environmental impact on AMR	Q1 2019		Strategy and operational plan developed and implemented	15000		
Activity 4.1	Strengthening Regulatory bodies						
Sub-Activity 4.1.1	National regulatory authority strengthened and regulation implemented to ban the use of Antibiotics on OTC in health and animal sector and ban malpractices and maluses of antimicrobials in both sector	2018		Revised Laws/Acts			
Sub-Activity 4.1.2	Quality management system implemented for supply chain management of antimicrobials	2018			20,000		Availability of quality management system
Sub-Activity 4.1.3	Regulatory authority established for rational use of antibiotics in food and animal sector to enforce the rational use of antibiotics in food and animal sector and restrict and phase-out non-therapeutic use of antimicrobial such as their use as growth promoters and disease prevention in animals	2019			100,000		Availability of regulatory authority
Sub-Activity 4.1.4	Establish National surveillance for antimicrobials use, in human, animal and food sectors and publishing/disseminating annual AMR report	2019			20,000		Annual AMR surveillance report

Sub-Activiy 4.1.5	Develop operational plan to implement facilities-based AMS programs at different levels of healthcare; identify and strengthen capacities of 6-8 institutions in different part of country with functional AMSP who are willing to be future nodal centers for regional trainings (MoPH) M	2019-20			50,000		Plan available
Sub-Activity 4.1.6	Implement the operational plan at selected tertiary care hospitals, district hospitals, sub district and primary healthcare facilities in phased manner	2020			10,000		Implementation report
Sub-Activity 4.1.7	Establish and implement a system to restrict use of critically important antibiotics in animals and agriculture	2019		National AMR with Animal Health	5000		
Item	Description	date	location	Responsible entity	Cost (USD)	Source of funding	indicator
Strategic Intervention 5: Financing AMR							
Activity 5.1	Studying the impact of the AMR						
Sub activity 5.1.1	5.1.1.1 Assess impact of AMR – morbidity, mortality and cost of AMR in Afghanistan (MoPH	2019		National AMR Comm	40,000		Study report
Sub-activity 5.1.2	Develop resource mobilization plan to finance the action plan	2018		National AMR Committee	5000		Resource mobilization plan
Sub-Activity 5.1.3	Review need for new medicine, vaccines and diagnostics as well as other innovations, and define research priorities for AMR innovation 5.2.1.3	2019-20		National AMR Committee	0		Review report
5.1.4 Sub-Activity	Innovation and research interventions in respect of developing alternatives to antimicrobials and adjuvant remedies for infectious disease	2020		National AMR Committee	30,000		Report of interventions
5.1.5 Sub-Activity	Evidence generated based on AMR basic research projects in human, animals, food and environment sectors research and interventions	2020		National AMR Committee	30,000		AMR research report
Strategic Priority 6: Strengthen Afghanistan commitment and collaborations on AMR at international, national and sub-national levels							

Activity 6.1	AMR Collaboration						
Sub-Activity 6.1.1	Review Afghanistan existing collaboration on AMR and identify priority areas as well as coordination mechanisms	2018-22		National AMR Committee	0		
Sub-Activity 6.1.2	Establish an annual forum on AMR for donors and partners to share information and facilitate coordinated mobilization of recourses prioritized AMR activities	2019		National AMR Committee	15000		Annual report
	Collaborate with other countries to combat AMR	2019-22		National AMR Committee	10,000		Coordination report
Sub-Activity 6.1.2	Convene state-level advocacy meetings to priority action against AMR with One Health approach and develop state action plan on containment of Antibiotic Resistance (SAP-CAR) aligned to NAP-AMR	2019		National AMR Committee	20,000		Meeting reports
Sub-Activity 6.1.3	Convene regional stakeholder workshop to develop SAP-CAR	2019		National AMR Committee	10,000		Report of workshop
Sub-Activity 6.1.4	Integrated AMR containment in alignment with vertical disease programs to reduce MDR/TB…….	2019		National AMR Committee	15,000		plan