Government of India

Guidance for developing State Action Plans for Containment of Antimicrobial Resistance (SAPCAR)

ANTIBIOTICS : USE WITH CARE

National Centre for Disease Control
Ministry of Health and Family Welfare, New Delhi

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Guidance for developing

State Action Plans for
Containment of Antimicrobial Resistance
(SAPCAR)

Contents

Abbreviations and acronyms

AMR	Antimicrobial resistance
CPCB	Central Pollution Control Board
CSIR	Council of Scientific & Industrial Research
DBT	Department of Biotechnology
ICAR	Indian Council of Agricultural Research
ICMR	Indian Council of Medical Research
IDSP	Integrated Disease Surveillance Programme
IMA	Indian Medical Association
NAP-AMR	National Action Plan on Antimicrobial Resistance
NCU	National Coordinating Unit
NGO	Non governmental organization
NHM	National Health Mission
NIPER	National Institute of Pharmaceutical Education and Research
RNTCP	Revised National Tuberculosis Control Programme
SAPCAR	State Action Plans for Containment of Antimicrobial Resistance
SPCB	State Pollution Control Board

Introduction

Antimicrobial Resistance is identified as a national priority by the Government of India, and the National Action Plan on AMR (NAP-AMR) was endorsed at the Inter-Ministerial Consultation on Antimicrobial Resistance in New Delhi on 19 April 2017.

The following six strategic priorities of NAP-AMR form the basic framework for developing the State Action Plans for Containment of Antimicrobial Resistance (SAPCAR):

1. Improve awareness and understanding of AMR through effective communication, education and training
2. Strengthen knowledge and evidence through surveillance and laboratory strengthening
3. Reduce the incidence of infection through effective infection prevention and control
4. Optimize the use of antimicrobials in human health, animals and food
5. Promote investments for AMR activities, research and innovations for AMR containment
6. Strengthen <State>'s commitment and collaborations on AMR

A monitoring and evaluation framework shall be an integral part of the SAPCAR and needs to be developed after finalization of SAPCAR, and before developing the operational plan. The framework of the State Action Plan rests on a One Health approach across defined strategic priorities, which are in alignment with the NAP-AMR.

Developing the State Action Plan for Containment of Antimicrobial Resistance

The following are the key steps for developing the State Action Plan for Containment of Antimicrobial Resistance (SAPCAR).

1. Map the AMR stakeholders in the State
2. Compile the background document – AMR and its Containment in the State
3. Organize a state workshop to draft the SAPCAR
4. Establish governance mechanisms for AMR containment in the state

1. Mapping of AMR stakeholders in the State

- **Purpose:** Identification of key stakeholders essential for containment of Antimicrobial Resistance (AMR) in the state
- **Steps**
    1) Conduct online search (official websites, publications, reports, news etc.) to identify key officials/AMR champions in the state
        - State Government departments
            - Health – public health, medical education, food safety
            - Agriculture, animal husbandry, dairying & fisheries
            - Environment, Forest & Climate Change (state pollution control board)
            - Department of Pharmaceuticals/drugs (state drug controller)
            - Science and Technology
            - Drinking Water and Sanitation
            - Consumer affairs, food & public distribution, and food processing
            - Human resource development/medical education, AYUSH, finance and information & broadcasting
        - Administrators and senior experts at medical colleges & hospitals, medical research centres and NABL accredited laboratories in the state; also nursing, dental, pharmacy, veterinary, agriculture, environmental and science colleges/research institutes
        - Office bearers from professional councils in the state – medical, nursing, dental, pharmacy, veterinary councils
        - Office bearers from professional associations/societies in the state – state branches/chapters of Indian Medical Association, Indian Academy of Pediatrics, Association of Surgeons of India, The Federation of Obstetric & Gynaecological Societies of India, Hospital Infection Society – India, Indian Association of Medical Microbiologists, Indian Orthopedic Association, etc.

- Key NGOs working on AMR containment in the state
- Manufacturers of diagnostics, and pharmaceutical companies manufacturing antibiotics, vaccines, infection control products, etc. in the state

2) Tabulate the available information (to include names/contact details of key officials and websites)
3) Peer review of collated information by a core group of AMR experts in the state, to identify AMR champions

2. Background document – AMR and its Containment in the State

- **Purpose:** Provides a situational analysis of antimicrobial resistance (AMR) in the state as well as summarizes activities on AMR containment, and forms the background document for developing the State Action Plan for Containment of Antimicrobial Resistance (SAPCAR)
- **Steps**
  1) Conduct online search for AMR in the state as well as activities for its containment; key words include – antimicrobial resistance, antibiotic resistance and name of state
  2) Capture key information sector-wise (human health, veterinary, food and environment), on following aspects of AMR:
     - Awareness and understanding
     - Laboratories and AMR surveillance
     - Infection prevention and control
     - Regulations, antimicrobial consumption/use and antimicrobial stewardship
     - Research & innovations
     - Collaborations
  3) Prepare draft document on – **AMR and its Containment in *<State>*** – with a brief description of the findings. Reference all sources/publications/documents
  4) Organize a State AMR workshop to generate awareness on AMR containment and information sharing amongst key stakeholders in the state (human health, veterinary sector, food and environment) and information shared by stakeholders could be used to update the background document
  5) Finalise the document – AMR and its Containment in *<State>* – through peer review by a core group of AMR experts in the state

3. State workshop to draft the State Action Plan for Containment of Antimicrobial Resistance (SAPCAR)

- **Purpose:** Strategic action plan to assist the states to streamline AMR containment activities, in alignment with the National Action Plan on AMR (NAP-AMR)
- **Steps**
  1) Organize State AMR workshop with the aim to generate awareness and share information on AMR containment. Based on stakeholder mapping, key stakeholders across sectors (human health, veterinary sector, food and environment) may be invited for the workshop.
  2) Initial round of technical sessions could be followed by group work. Groups may be created based on strategic priorities of the state action plan as mentioned below:
     - Awareness and understanding – communications and trainings;
     - Knowledge and evidence – laboratories and AMR surveillance;
     - Infection prevention and control – human health, animal/food and community;
     - Optimizing use of antibiotics – regulations and antibiotic consumption/use, antimicrobial stewardship in humans, and antimicrobial stewardship in animals;
     - Research, innovations and sustainable financing; and
     - Collaborations
  3) A draft template of SAPCAR may be shared with each group for recording outputs (annex 1)
  4) Groups may review and revise specific objectives and activities for each strategic priority
  5) State Action Plan for Containment of Antimicrobial Resistance (SAPCAR) could be drafted by consolidating the group outputs
  6) *The summary of the background document – AMR and its Containment in <State> – may form the background/introduction for SAPCAR*

4. Establish governance mechanisms for AMR containment in the state

Since AMR is everybody's business, multi-sectoral collaboration and cooperation will be critical for ensuring effective action across sectors. Therefore, state level governance mechanisms are important to facilitate planning & implementation of activities, provide ownership and oversight with defined responsibilities, and for sharing the glory of achievements of AMR containment.

At the state level, two governance mechanisms are proposed:

- <State> multi-sectoral steering committee for AMR containment
- <State> technical working group for AMR containment

<State> Multi-sectoral Steering Committee for AMR containment

The Multi-sectoral Steering Committee shall provide policy level guidance and oversight for AMR containment in the state.

Term of reference:

- Oversee coordination within the health system and with other sectors to achieve AMR containment in the <State>

- Facilitate collaboration between government, private, civil society and donors for AMR-related activities

- Ensure information sharing about AMR-related activities in all sectors and facilitate synergy between existing and new AMR initiatives

- Review and endorse policy level advice from <State> Technical Working Group on AMR

- Ensure availability of adequate infrastructure, logistics and resources for AMR containment in the <State>

- Endorse the State Action Plan for Antimicrobial Resistance Containment and oversee its progress and achievement of milestones

<State> Technical Working Group for AMR containment

The <State> Technical Working Group shall provide strategic operational guidance and support for AMR containment in the state.

Term of reference:

- Provide technical and operational oversight for initiatives to combat AMR in the <State>

- Identify/map stakeholders for AMR activities in <State>

- Engage all relevant stakeholders for AMR-related activities

- Develop the State Action Plan for Containment of AMR, engaging all key stakeholders

- Provide technical advice and reports to <State> Multi-sectoral Steering Committee for Antimicrobial Resistance Containment

- Ensure regular data collection and information sharing amongst all AMR stakeholders

- Monitor and evaluate the implementation of SAPCAR

- Develop and disseminate annual AMR reports

Currently, Indian states are at varying stages of developing their State Action Plans for Antimicrobial Resistance Containment. Therefore, a template for developing SAPCAR has been provided in the next section.

The State Action Plan for Containment of Antimicrobial Resistance (SAPCAR) has the following 6 strategic priorities:

1. **Awareness and understanding – communications and training**

2. **Knowledge and evidence – laboratories and surveillance**

3. **Infection prevention and control – human health, animal/food and community**

4. **Optimizing use of antibiotics – regulations, access, antibiotic consumption and antimicrobial stewardship in humans and animals**

5. **Research and innovations**

6. **Collaborations**

Template for developing State Action Plan for Containment of Antimicrobial Resistance (SAPCAR)

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 communications regarding AMR in <State>

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 existing information and conduct knowledge, attitude and practice (KAP) and behavioural studies across general population, farmers, professionals (healthcare, AYUSH, veterinary, environment) and industry (food processing, pharmaceutical) **S**
>
> (**Regional/state ICMR institutes/ research centres; regional/state ICAR institutes/agricultural universities;** <State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, environment, State Health Education Bureau)

> *Key output*
> - Baseline/trends in knowledge, attitude, practices and behaviour of different segments of populations on AMR and its use, in general population, farmers, professionals and industry

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

> 1.1.2.1. Identify/consolidate existing communication/information resources on AMR in various stakeholder groups and map the expertise of stakeholders – individual and organizations (public and private) to develop and implement an AMR communication programme **S**
>
> (**State Health Education Bureau;** regional/state ICMR institutes/research centres; regional/state ICAR institutes/agricultural universities; <State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, environment, NGOs)

> *Key outputs*
> - Consolidated communication and information resources on AMR
> - Stakeholder map of communication expertise on AMR
> - State AMR communication programme developed and implemented

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/resources for in-service training of different professionals and allied services in human health **S**
>
> (**<State> directorate of medical education**, <State> Medical Council, <State>Nursing Council, <State> Pharmacy Council, <State> Dental Council)
>
> 1.2.1.2. Review/revise curricula/resources for in-service training of different professionals and allied services in animal health **S**
>
> (**<State> directorate of veterinary education**, <State> Veterinary Council)
>
> 1.2.1.3. Review/revise curricula/resources for in-service training of different professionals and allied services in food industry, agriculture and environment **S**
>
> (**<State> directorate of food/agriculture**, <State> Veterinary Council, regional/state agricultural universities; <State> pollution control board)
>
> *Key outputs*
>
> - Professional curricula reviewed and revised for key stakeholder groups
> - AMR training modules developed and implemented for all sectors

Key stakeholders

<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, environment; education/medical education, pharmaceuticals/drugs, <State> directorates of medical and agricultural education; regional/state ICMR institutes/research centres; regional/state ICAR institutes/agricultural universities; <State> professional councils – medical, nursing, veterinary, pharmacy, dental; NIPER; offices of MoEFCC; state pollution control boards; State Health Education Bureau...

Laboratory capacity

Objective 2.1

Strengthen microbiology laboratory capacity to detect AMR in human, animal, food and environment sectors

Strategic interventions and activities

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

2.1.1.1. Develop state strategy to strengthen microbiology laboratories for antimicrobial susceptibility testing (AST), including EQAS in medical labs **S**-**M**

(**State IDSP**; regional/state ICMR institutes/research centres)

2.1.1.2. Develop state strategy to strengthen microbiology laboratories for antimicrobial susceptibility testing (AST), including EQAS in animals and food **S**-**M**

(**<State> department of agriculture, animal husbandry, dairying & fisheries**, regional/state ICAR institutes/agricultural universities, <State> food safety authority)

2.1.1.3. Develop state strategy to strengthen microbiology laboratories for detection of antimicrobial resistance and antimicrobial residues, including EQAS in the environment **S**

(**<State> department of environment**; state pollution control board)

Key output

- Strategic plans developed and training workshops held to strengthen quality in microbiology laboratories for AMR surveillance in humans, animals, food and environment

2.1.2. Designate state AMR reference laboratory in human, animal, food and environment sectors

2.1.2.1. Identify and strengthen state AMR reference laboratory in human health **S**

(**<State> department of health and family welfare**; regional/state ICMR institutes)

2.1.2.2. Identify and strengthen state AMR reference laboratory in animal health/food **S**

(**<State> departments of agriculture, animal husbandry, dairying & fisheries**; <State> food safety authority, regional/state ICAR institutes and agricultural universities)

2.1.2.3. Identify and strengthen state reference laboratory for AMR in environment **S**

(**<State> department of environment**, <State> pollution control board)

Surveillance of AMR

Objective 2.2

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

Strategic interventions and activities

2.2.1. Establish and operationalise state networks for surveillance of AMR in all sectors

2.2.1.1. Establish state surveillance network for surveillance of AMR in humans **S**

(<State> departments of health and family welfare)

2.2.1.2. Establish state surveillance network for surveillance of AMR in animals and food **S**

(<State> departments of agriculture, animal husbandry, fisheries, <State> food authority)

2.2.1.3. Establish state surveillance network for surveillance of AMR in environment **S**

(State Pollution Control Board, <State> department of environment)

2.2.1.4. Organize annual consultations to strengthen AMR surveillance in humans, animals, food and environment and generate annual reports **S-M-L**

(<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries and environment; <State> food safety authority, state pollution control board)

Key outputs

- AMR surveillance database/reports available in humans, animals, food and environment

Key stakeholders

<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, environment, <State> food safety authority; state pollution control board, …

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 state plan for IPC in health care

Strategic intervention and activities

3.1.1. Ensure implementation of infection prevention and control policies and guidelines in human health

> 3.1.1.1. Define terms of reference and scope, and establish **State Coordinating Unit (SCU)** for infection prevention and control **S**
>
> (<State> department of health and family welfare)
>
> 3.1.1.2. Develop and implement policy and action plan for strengthening IPC, based on assessments and gap analyses in healthcare facilities in the State **S**
>
> (**SCU**; <State> department of health and family welfare)
>
> 3.1.1.3. Establish a state surveillance program for healthcare associated infections **M-L**
>
> (**SCU**; <State> department of health and family welfare)
>
> *Key outputs*
> - State coordinating unit for IPC established
> - State IPC action plan developed and implemented
> - HAI surveillance established in healthcare facilities

Infection prevention in animal health and food

Objective 3.2

Establish IPC programmes in veterinary settings and animal husbandry

Strategic intervention and activities

3.2.1. Ensure development and implementation of infection prevention and control programme in animal and food sector

> 3.2.1.1. Establish IPC coordinating unit within <State> department of agriculture, animal husbandry, dairying & fisheries **S**
>
> (<State> departments of agriculture, animal husbandry, dairying & fisheries, food)

3.2.1.2. Train staff in KVK and village level for IPC and biosafety/biosecurity practices **M**-**L**

(<State> departments of agriculture, animal husbandry, dairying & fisheries)

3.2.1.3. Increase awareness in community for good production practices (proper hygiene/sanitation/practices of IPC) **S**-**M**-**L**

(Krishi Vigyan Kendra [KVK]; <State> departments of agriculture; Pashumitra)

3.2.1.4. Develop, implement and monitor the state plan for IPC in animal and food sector **M**

(<State> departments of agriculture, animal husbandry, fisheries, <State> food authority)

Key output

- State IPC programme for animal and food sector implemented

Sanitation and infection prevention in the community and reduction of environmental spread of AMR

Objective 3.3

Strengthen infection prevention and control in the community and reduce environmental contamination with resistant pathogens and antimicrobial residues

Strategic interventions and activities

3.3.1. Promote personal hygiene through behavioural change campaign

3.3.1.1. Develop and implement IPC campaign under *Swachh Bharat Abhiyaan* and *Kayakalp* involving community leaders in villages and schools **M**-**L**

(**SCU**; <State> departments of health and family welfare, water and sanitation, key NGOs in the state; UNICEF)

3.3.1.2. Educate and train school children about importance of hand hygiene **S**

 (**SCU**; <State> department of education/higher education; <State> directorate of medical education; UNICEF)

3.3.1.3. Enhance awareness of IPC and hand hygiene amongst farmers and fishermen **S**-**M**-**L**

(**Krishi Vigyan Kendras**/*Pashumitras*)

Key output

- State IPC campaign for community developed and implemented

3.3.2. Develop strategic interventions to reduce impact of AMR on the environment

3.3.2.1. Develop and implement state plan to reduce environmental impact of AMR **(S**-**M**-**L)**

(**<State> department of environment**; state pollution control board)

Key output

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

Key stakeholders

<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, environment, water and sanitation, industries, pharmaceuticals/drugs; <State> directorate of drugs control; regional/state ICMR institutes/research centres; regional/state ICAR institutes/agricultural universities; offices of MoEFCC; state pollution control board…

Regulated access to high-quality antimicrobials

Objective 4.1

Ensure uninterrupted access to high-quality antimicrobial medicines

Strategic intervention and activities

4.1.1. Strengthen/improve quality, safety and access to antimicrobials

> 4.1.1.1. Strengthen state regulatory authority regarding use and access to antimicrobials and enforce regulations to minimise substandard, spurious, falsely labelled and falsified antimicrobials **S-M-L**
>
> (<State> departments of pharmaceuticals/drugs, health and family welfare)

4.1.2. Ensure intersectoral coordination to regulate and optimise use of antimicrobials in animals and food

> 4.1.2.1. Restrict/ban non-therapeutic use of critically important antimicrobials for humans as growth promoters and for disease prevention in animals **S-M-L**
>
> (<State> directorate of drugs control)

> *Key output*
> - Strengthened state regulatory authority
> - Critically important antibiotics banned for non-therapeutic use in food animals

Surveillance of antimicrobial use

Objective 4.2

Establish the state surveillance system for antimicrobial use

Strategic intervention and activities

4.2.1. Establish state surveillance system for antimicrobial use (AMU) in humans, animals, agriculture & food

> 4.2.1.1. Use AMC tool to measure and monitor trends of antibiotic consumption in healthcare facilities **S-M-L**
>
> (<State> department of health and family welfare)

> 4.2.1.2. Monitor state consumption of antibiotics in animal health facilities, food and agriculture **S-M**
>
> (<State> departments of agriculture, animal husbandry, fisheries; <State> directorate of drugs control)

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

> 4.2.2.1. Estimate state consumption of antimicrobials through an expert consultation involving all stakeholders **M-L**
>
> (<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries)

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 programmes in healthcare facilities

4.3.1.1. Develop/implement state guidelines on antimicrobial use in all healthcare facilities **S**

(**State AMR coordinating institution** [to be identified])

4.3.1.2. Develop multidisciplinary antimicrobial stewardship committees and teams at various levels of healthcare facilities and implement antimicrobial stewardship trainings **S**

(**<State> department of health and family welfare**)

Key outputs

- Antimicrobial stewardship programme implemented in state health facilities

Antimicrobial stewardship and policies in animal husbandry and food

Objective 4.4

Improve and ensure appropriate use of antimicrobials in animals

Strategic intervention and activities

4.4.1.1. Develop standard treatment guidelines for common infections in food animals **S-M**

(**Regional/state ICAR institutes/agricultural universities**; <State> departments of agriculture, animal husbandry, dairying & fisheries)

4.4.1.2. Develop/implement action plan for antimicrobial stewardship (AMS) in animal facilities **M-L**

(<State> departments of agriculture, animal husbandry, fisheries)

Key output

- Antimicrobial stewardship programmes implemented in animal facilities

Key stakeholders

<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, pharmaceuticals/drugs; <State> directorates of medical education, drugs control; <State> Medical Council; <State> Pharmacy Council; <State> Dental Council; <State> Nursing Council; <State> Veterinary Council; AMR coordinating institution in the state [to be identified]; <State> branch/chapters of professional associations; regional/state ICAR institutions and agricultural universities …

Strategic priority 5

Promote investments for AMR activities, research and innovations for AMR containment

Financing for AMR

Objective 5.1

Ensure sustainable investments for AMR containment activities

Strategic intervention and activities

5.1.1. Secure sustainable funds for implementation of the State Action Plan for AMR Containment

5.1.1.1. Develop the operational plan (with budget/costs) to secure funds to implement SAPCAR **S**

(**AMR coordinating institution** in the state [to be identified]; <State> department of health and family welfare)

Key outputs

- State AMR operational plan developed and implemented

Research and innovations

Objective 5.2

Encourage basic and operational research for AMR containment

Strategic intervention and activities

5.2.1. Encourage research for evidence-informed policy-making in all sectors

5.2.1.1. Develop and implement basic and operational research projects in humans, animals, food and environment sectors **S**-**M**-**L**

(**Regional/state ICMR institutes and medical research centres**; regional/state ICAR institutes and agricultural universities; DBT institutions; CSIR labs and research institutes in the state)

Key output

- AMR research projects planned, implemented and documented

Key stakeholders

<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, AYUSH, pharmaceuticals/drugs, finance; AMR coordinating institution(s) in the state [to be identified]; regional/state ICMR institutes/research centres; regional/state ICAR institutes/agricultural universities; pharmaceutical institutions; CSIR labs/research institutes, DBT institutions, …

Strategic priority 6

Strengthen <State>'s commitment and collaborations on AMR

State role

Objective 6.1

Strengthen collaborations within the state to contain AMR

Strategic interventions and activities

6.2.1. Strengthen and streamline intra-state collaborations on AMR

> 6.2.1.1. Organise annual consultations on AMR with key stakeholders including disease control programmes in the state to share information and facilitate coordinated action and mobilization of resources for AMR activities **S-M-L**
>
> (<State> department of health and family welfare, …)

> 6.2.1.2. Establish partnership with private sector and civil society organizations for AMR containment **S-M-L**
>
> (<State> department of health and family welfare, …)

> *Key output*

- Intra-state collaborations and public-private partnerships established and strengthened

Key stakeholders

<State> departments of health and family welfare, agriculture, animal husbandry, dairying & fisheries, environment, water & sanitation, State IDSP, State Health Mission; <State> AIDS Prevention and Control Societies (SACS), <State> TB Control Programme, <State> Vector Borne Disease Control Programme, <State> NLEP Units, key officials/AMR stakeholders in states, donors and partners…