

MONITORING AND EVALUATION OF THE GLOBAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE

**Regional Expert Consultation on Monitoring
and Evaluation of AMR Interventions
26 January 2017**



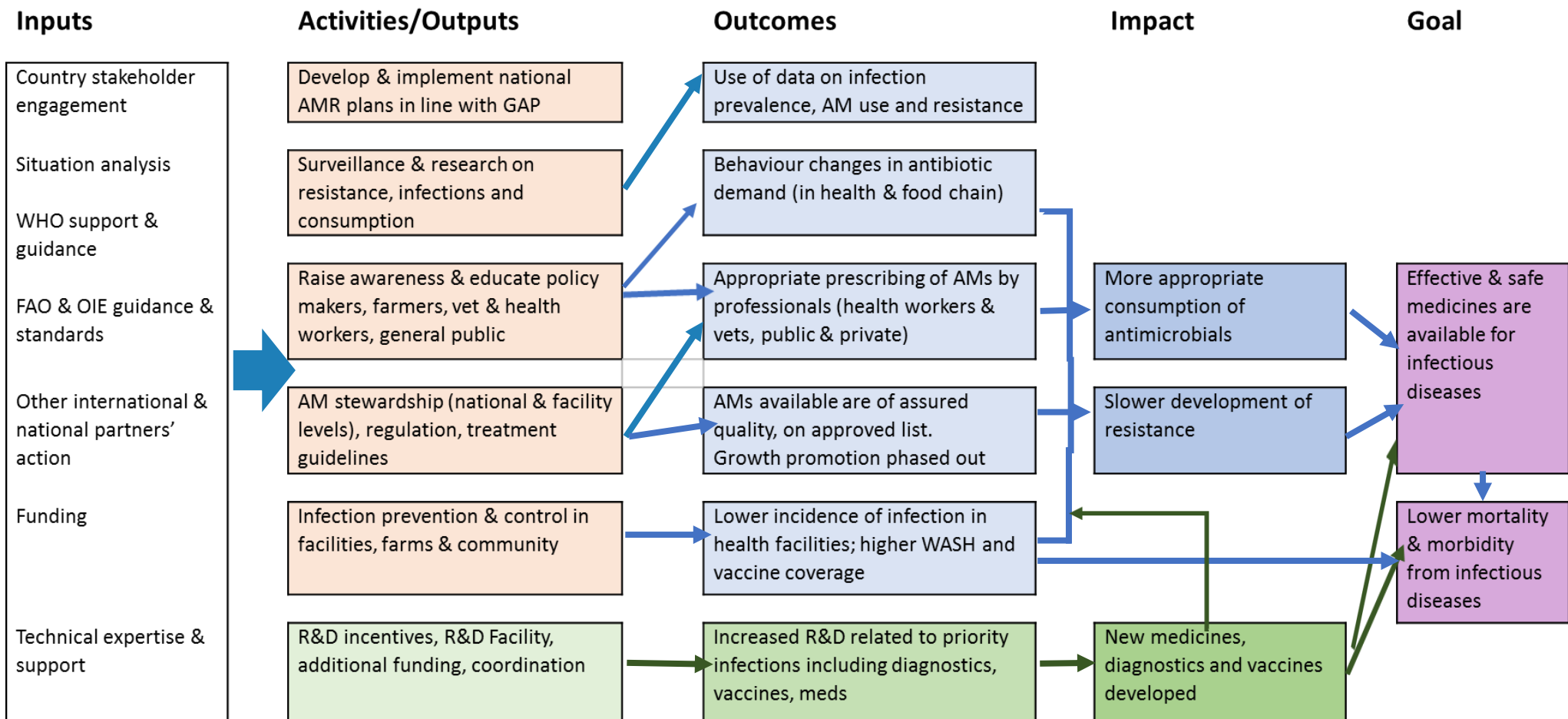
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Progress on global M&E approach

- WHO is developing M&E approach for Global Action Plan on AMR
- Aims
 - learn from experience;
 - limit burden on countries;
 - recognise countries at different stages;
 - harmonise global, country and regional M&E;
 - one health as far as possible
- M&E approach paper developed - inputs from WHO (regions and HQ), FAO, OIE, STAG and informal consultation with experts
- Endorsed by STAG November 2016, recommended expert input to indicators
- Developed and circulated AMR Global Monitoring questionnaire to countries

Framework for monitoring AMR

Global Action Plan



Summary of proposed M&E approach

Monitoring and evaluation of the process of GAP implementation

- Country progress with producing and implementing national action plans on AMR
- Progress on WHO implementation plan, tripartite activities, FAO and OIE monitoring
- Progress on R&D coordination and incentive arrangements
- Investment in AMR responses
- Process review/formative evaluation of the response and how to improve it

Monitoring and evaluation of outcomes and impact

- Outcomes: measured by countries (with standard indicators if possible) and for R&D
- Impact: trends in AMR rates, antimicrobial consumption and appropriate use
- Impact on health and mortality from infectious diseases facing AMR
- Availability / affordability of effective products and research and development (R&D) pipeline
- Evaluation of why there has been progress and where to focus resources

M&E of process: Country progress on AMR plans

- Expect national action plans (NAPs) to include targets, indicators of progress, monitoring and review mechanisms
- Completed NAPs suggest limited focus on M&E so far
- Expect countries and regions to define activities and outputs (local ownership and fit with existing systems is important)
- Developing core global set of outcome and impact indicators (some regions will develop additional indicators for regional use)
- Plus global monitoring of country progress, which summarises status of key outputs, capacities and outcomes in implementing AMR response



Sample framework for M&E of NAPs

– updated draft

Planning <small>Results</small>	Input <small>Resources</small>	Process <small>Activities</small>	Output <small>Results at level of programme</small>	Outcome <small>Results at level of population</small>	Impact and Goals <small>Abstract effect in long term</small>
GAP strategic objective 1	Communication programme targeting people in food practice prepared Funding for developing media kit on AMR secured	Participation in global antibiotic awareness week Partnerships with professional associations, private medical and veterinary groups to address AMR	Proportion of medical and veterinary workforce in public and private sectors who have received education on AMR	AMR awareness levels in target populations	Access to diagnostics and treatment in public and private sectors Resistance to penicillin in Streptococcus pneumoniae
GAP strategic objective 2	Terms of reference for a national coordinating centre for AMR surveillance prepared Operational plans for implementing and strengthening surveillance of resistance and consumption	National laboratory quality assurance programme organized and implemented in all laboratories participating in AMR surveillance Data collected to assess total antimicrobial consumption in humans and animals	National report on surveillance of AMR and antimicrobial consumption published Proportion of AMR surveillance sites that submitted surveillance reports to the national coordinating centre on time Data submitted to global level on antimicrobials used in animals National AMR research agenda developed	How AMR surveillance data has been used for decision making	Resistance to 3 rd gen cephalosporins among Esch coli and Klebsiella HIV drug resistance rate for people about to start anti-retroviral therapy ESBL levels in poultry production Total human use of antimicrobials in DDD per capita and in hospitals per 1000 admissions
GAP strategic objective 3	Curriculum and training materials for continuing education on infection prevention and control for health care workers available Hygiene and infection prevention and control included in undergraduate curricula for animal health professionals	Enhance vaccination program in low performing districts Standard operating procedures developed and distributed for infection prevention and control in hospitals Number of train-the-trainers courses on biosecurity in agriculture conducted	Proportion of hospitals implementing infection prevention and control programmes Proportion of animal health facilities implementing infection prevention and control programmes	Hib vaccine coverage rate Percentage of hospitals with hand hygiene compliance rates > 75% Percentage of health facilities with improved water supply and sanitation on the premises	Weight of antimicrobials used for animal growth promotion by species, weight used in fish farming. Prevalence of hospital acquired infections (MRSA, CLABSI, SSI, VAP, C difficile) Number of MDR TB cases Incidence of catheter-associated urinary tract infections
GAP strategic objective 4	List of critically important antibiotics prepared National quality standards for antimicrobials set	Number of antimicrobial agents authorized for marketing (for human and animal use) Regulations introduced to phase out use of antimicrobials for animal growth promotion	Percentage of hospitals with specific treatment recommendations based on local antimicrobial susceptibility for common clinical conditions Number of veterinary workers trained in responsible use of antimicrobials Veterinary oversight required for use of medically-important antibiotics in the feed or water of food-producing animals Enforcement of regulations on antimicrobial licencing and quality of imports in human and animal health	Availability of antimicrobials on the essential medicines list in public facilities Percentage of hospitals prescribing antimicrobials for surgical prophylaxis with >80% compliance with guidelines Availability of unauthorised and sub-standard antimicrobials in the local market	Mortality rate associated with bloodstream infections caused by carbapenem-resistant Enterobacteriaceae (CRE)
GAP strategic objective 5	Funding secured for creation and functioning of national multisectoral coordination mechanism and for NAP activities	AMR NAP budget updated and funding gaps identified Number of new public-private partnerships created to encourage research and development related to AMR	Financing sources for the NAP identified Research funding focused on national priorities related to AMR	Research findings applied. Uptake of new products developed with global incentives.	

Global monitoring of country progress

- Purpose

- Summarise country capacity and monitor improvement
- Encourage multi-sector discussion on country progress
- Global progress report to World Health Assembly 2017
- Track progress year on year

- Approach

- Questionnaire developed jointly by WHO, OIE & FAO
- Responses summarise progress on each strategy
- Countries asked to submit one response online, following multi-sectoral self assessment
- Responses deadline extended to 15 Feb for WHA report.
- Data will be shared on open access data base WHA
- Plan to review questionnaire, repeat annually
- Intend to stay consistent with IHR and Joint External Evaluation processes

7.1 National monitoring system for consumption and rational use of antimicrobials in human health

- A No national plan or system for monitoring use of antimicrobials.
- B System designed for surveillance of antimicrobial use, that includes monitoring national level sales or consumption of antibiotics and rational use of antibiotics in health services.
- C Total sales of antimicrobials are monitored at national level and/or some monitoring of antibiotic use at sub-national level.
- D Prescribing practices and antibiotic use are monitored in a national sample of healthcare settings.
- E On a regular basis (every year/two years) data is collected and reported on:
 - a) antimicrobial sales or consumption at national level for human use
 - b) antibiotic prescribing and appropriate use, in a representative sample of health facilities, public and private.

Indicator selection

- Encourage use of existing indicators where possible (even if not AMR-specific)
- Sources include
 - Existing PAHO indicators
 - WASH indicators for SDG6 and for health care facilities (www.washinhcf.org)
 - IPC Core Components and emerging indicators
 - GLASS manual (see annex 4), CDC and WHO surveillance M&E
 - Standard health facility surveys and household surveys
 - Antimicrobial consumption surveys (human and animals)
 - Global monitoring questionnaire on AMR
- WHO currently developing survey protocols for
 - antimicrobial use in hospitals and community facilities
 - availability and price surveys (public and private, antibiotics and others)

M&E of outcomes and impacts

- Aim for standard outcome and impact measures
 - Requires further work to agree limited list of feasible indicators
 - Aim for core global set, consistent with regional indicators
 - Expect additional regional and country measures
- Challenges
 - manageable number of indicators versus many strategies, outputs and combinations
 - assessing impact of interventions whilst data is improving
 - Communicating scale of problem and impact of response
- AMR now better incorporated into ICD11 (needs piloting)
- Propose independent evaluation as input to updating GAP
 - to identify how to strengthen the response and target efforts better between strategies, countries and infections

Possible core outcome indicators

Strategic objective	Outcomes	Possible indicators
1.	Change antimicrobial demand behaviour	Awareness levels about appropriate antibiotic use among target groups.
		Behaviour change e.g. in reasons for using antibiotics for animal production.
2.	Better data on AMR (resistance rates, use) used for decision making	Whether and how appropriately AMR surveillance data has been used for decisions e.g. to adjust list of authorised antibiotics.
3.	Lower incidence of infection in health facilities. Higher WASH and vaccine coverage	Coverage with preventive measures e.g.
		% of hospitals with hand hygiene compliance rates > 75% % of health care facilities with basic water supply, basic sanitation and practising basic hand hygiene (see definitions) Hib vaccine coverage rate

Possible core outcome indicators (2)

Strategic objective	Outcomes	Possible indicators
4	Rational prescribing practice in public and private sectors	<p>Compliance with treatment guidelines e.g.</p> <p>% of hospitals prescribing antimicrobials for surgical prophylaxis with >80% compliance with guidelines</p> <p>% of hospital diagnoses with lab confirmation and susceptibility testing</p> <p>Use of reserve second line antibiotics in community/hospital</p>
	Antimicrobials are available of assured quality, on approved list	<p>Availability of antimicrobials on the essential medicines list in public and private facilities</p> <p>Availability of unauthorised and sub-standard antimicrobials in local market (human and veterinary)</p>
5.	Increased R&D related to priority infections including diagnostics, vaccines, medicines	Numbers and targeted infections of medicines, vaccines and diagnostics in the R&D pipeline

Issues in measuring outcomes

- Defining outcomes
- Methods needed for measurement
 - **awareness and appropriate use** by patients and farmers
 - **use of surveillance data** (for policy or clinical use)
 - assessing **rational prescribing** (private and public sectors)
 - **compliance** with preventive measures in health and livestock production
 - **access** to diagnosis and treatment
- Are standard tools needed?
 - build into existing service quality assessments, household surveys?

Possible core impact measures

Impact	Possible measures
<p>More appropriate use of antimicrobials (appropriate medicines are accessible, inappropriate use has reduced)</p>	<p>Total consumption of antimicrobials in humans, in defined daily doses (DDD) per inhabitant per day, per 1000 inpatients.</p> <p>Volume of antimicrobials used in food production: total volume (by class) used in animals; volume/weight used for growth promotion; etc.</p> <p>Volume of antibiotics on critically important antibiotic list for human use that were sold for use in animals.</p> <p>Access to diagnosis and treatment in public and private sectors; % with prescriptions.</p>
<p>Slower development of resistance</p>	<p>Trends in resistance rates for priority pathogen & drug combinations including</p> <ul style="list-style-type: none"> - resistance to penicillin in <i>Streptococcus pneumoniae</i>; - resistance to 3rd-generation cephalosporins among <i>Escherichia coli</i> and <i>Klebsiella</i>. <p>Resistance mechanisms e.g. ESBL in <i>E Coli</i> in people, animals, food & environment.</p> <p>Antimicrobial residues in wastewater.</p>
<p>New diagnostics, medicines, vaccines developed & available</p>	<p>New products in clinical trials/approved/on market.</p> <p>Uptake of new products developed with global incentives.</p>

Possible global measures for GAP goals

Impact/Goals	Possible measures
Safe, effective medicines available	Affordability and availability of medicines, diagnostics and other technologies for common infections.
Lower disease and mortality from infections relevant to AMR	Incidence of infections including health care-associated infections Estimated mortality rates for key infections linked to AMR Global modelling of mortality rates and burden of disease, and effect of global and national action on these

Next steps

- Next steps at global level:
 - Follow up global questionnaire and release data for WHA 2017
 - Learn lessons on and support country level M&E of National Action Plans
 - Build consensus on best outcome, impact and goal indicators
 - Formal, open consultation on M&E approach

- Look forward to inputs from this meeting on
 - Proposed indicators of outputs and outcomes
 - Advice on or needs for methods for collection
 - What countries would find useful for monitoring their national action plans

Thank you



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