



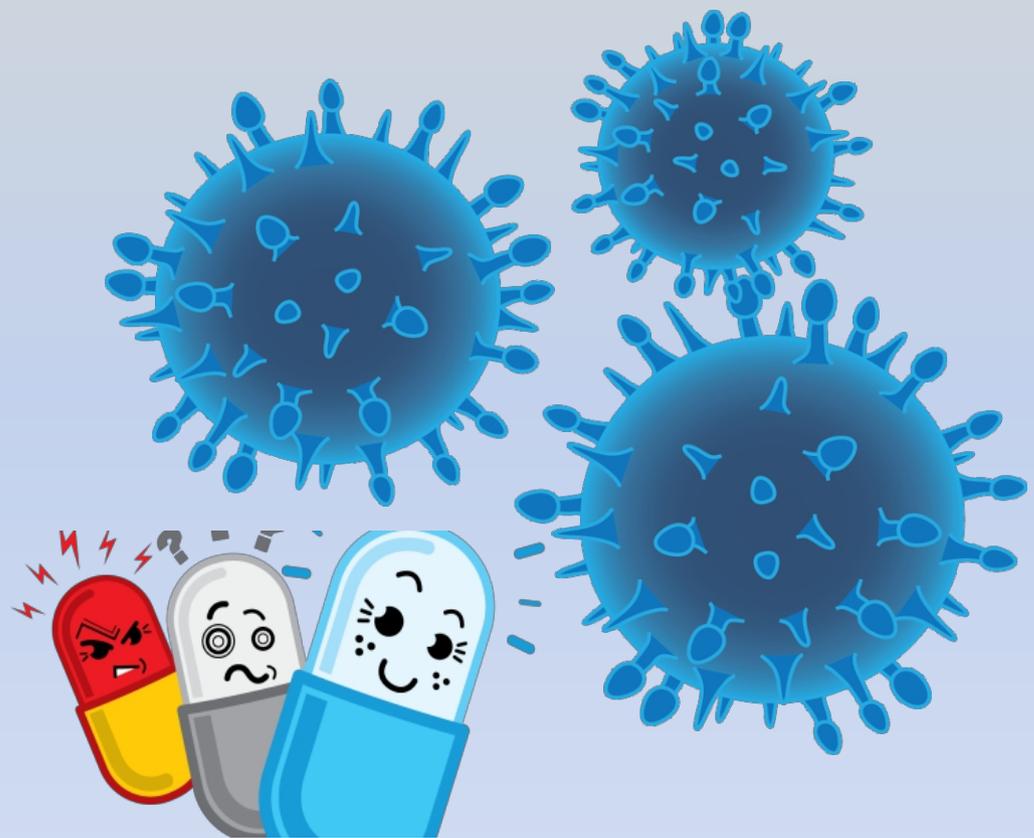
**WHO**

# *i*-CARE Bulletin

(Initiatives to Curb Antimicrobial Resistance)

An official Publication of the **SEARPharm Forum**

Volume 1, Issue (1), 2019



## *i*-CARE Bulletin

An official quarterly e-news bulletin of SEARPharm Forum

C/o SBD College of Pharmacy,

1<sup>st</sup> Cross, Hanumantha Nagar, Bangalore - 560019, India



An official quarterly e-news bulletin of **SEARPharm Forum**

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### Objectives of SEARPharm Forum

A Forum of **FIP & WHO with National Pharmaceutical Association of the South East Asian Region (SEAR)** with objective to encourage and support a dialogue and collaboration among national and regional pharmaceutical associations in the South-East Asia region of WHO and WHO SEARO. Bangladesh, India, Indonesia, Sri Lanka and Thailand are the founding nations of SEAR Pharm Forum, while Bhutan, DPR Korea, Maldives, Myanmar, Nepal and Timor-Leste are invited members of the forum. The defined objectives are,

- Improving health in the South- East Asian region by development and enhancement of pharmacy practice (Good Pharmacy Practice).
- Encouraging the implementation of pharmacy service and pharmacy practice projects by national pharmaceutical associations.
- Supporting WHO- policies and goals.
- Integrating appropriate WHO policies into undergraduate, postgraduate, and continuing education programmes in pharmacy.
- Formulating policy statements on health issues.
- Combating the production and distribution of counterfeit medicine and sale of medicine by people who are not qualified.

Official website: [www.searpharm.org](http://www.searpharm.org).



## About *i-CARE Bulletin*

The objective of *i-CARE Bulletin* (a quarterly publishing e-news bulletin) is to disseminate the new knowledge and practices evolved to curtail antimicrobial resistance (AMR) and will address the issues in primary health care support, medication errors, rational use of medicine, case studies, utilisation of skills of pharmacists, use of off label drugs and legislation, disposables and medical devices and internet pharmacies.

The *i-care bulletin* structure is designed to with primary focus on insights on antimicrobial resistance and health care activities of various organizations in SEA region, news related to initiatives of WHO, FIP, Common wealth association, SEARPharm forum and its members /pharmaceutical associations. It also accept the manuscripts of author interest including short review, opinion, commentary, new knowledge, new practice, new initiatives, problems, case report, medication errors, etc.

## Submission procedure

Authors / experts are advised to prepare the manuscript in word document with times new roman 11 font (text), 16 (title-bold), 12 (author-italic), double space not more than 3-4 pages (review/report/original research), 1-2 pages (Commentary/opinion/short review/Case report/report/proceedings). The manuscript should be structured where table and figures are required to be incorporated at appropriate place. Maximum of two figures and two table is allowed. In case of case report or clinical data or news, the author are solely responsible for ethical clearance, copyright issues and consent from co-authors. The reference style should be as per Vancouver style. Authors Photograph in JPEG image (optional) and complete affiliation with email and country information is essential in the first page of manuscript. All submissions shall be forwarded as email attachment to [icaresear@gmail.com](mailto:icaresear@gmail.com).

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Recent news from World Health Organization on Antimicrobial Resistance



**Professor Ashok Sony**  
Vice President  
International Pharmaceutical Federation

Dear SEARPharm Forum Members,

It is a great pleasure for me to be able to write to you through the auspices of the i-care bulletin, and especially in an issue released on World Pharmacists Day, which is administered by the International Pharmaceutical Federation (FIP).

As a vice president of FIP, it was an honour to be asked to support the SEARPharm Forum as one of my responsibilities. I am also the immediate past president of the Royal Pharmaceutical Society in the United Kingdom. We have seen many changes in the role of pharmacists there, for example, the emergence of pharmacists working with primary care physicians, pharmacists working with elderly care facilities and pharmacists working in emergency departments. These are all due to the recognition of the importance medicines play in health and well-being and, consequently, the importance of pharmacists because of their greater knowledge around medicines and their optimization through pharmaceutical care. One of my hopes is to be able to support you in your developments to enhance and increase the value of pharmacists in your countries.

We are also seeing changes in community pharmacy, with an increasing focus on outcomes and services. This move is from an arrangement of supply with some services attached to an arrangement of services with supply as the added element. This all continues to recognise the clinical role that pharmacists play in the care of the public. I commend the i-care bulletin on its aims to extend knowledge and its special emphasis on pharmacists' interventions to combat antimicrobial resistance, which is a priority area of FIP.

There are many opportunities that continue to emerge, and that I would like to see as part of the global recognition of pharmacists. The theme of World Pharmacists Day this year, as designated by FIP, is “Safe and effective medicines for all”. It aims to emphasise and mark the crucial role our profession plays in safeguarding people through improving medicines use and reducing medication errors.

I look forward to continuing to contribute to the i-care bulletin and promoting the exciting future for pharmacists around the globe, particularly in the South-East Asia region.

**Professor Ashok Sony**

OBE, FFRPS, FRPharmS

Vice President

International Pharmaceutical Federation



**T.V. Narayana**  
President  
Indian Pharmaceutical Association

Dear Readers,

In my capacities as President Indian Pharmaceutical Association (IPA), and Member Executive Committee - SEARPharm Forum, I extend my best wishes and congratulations to the great initiative taken up by the SEARPharm Forum, for coming up with its official e-news bulletin i-Care Bulletin, on Antimicrobial Resistance, which is a need of hour; since microbial threat is a major global risk. Antibiotics are one of the most commonly used medicines in hospitals and have substantial share from the hospitals' budget. As their inappropriate use has both medical, economic and public health consequences, substantial efforts are needed to rationalize their use.

I congratulate the entire editorial team, on the upcoming publication of inaugural issue of i-Care Bulletin to be released during the 79<sup>th</sup> FIP (International Pharmaceutical Federation) World Congress of Pharmacy and Pharmaceutical Sciences: 22<sup>nd</sup> – 26<sup>th</sup> September 2019, to be held at Abu Dhabi, United Arab Emirates on World Pharmacists Day 25<sup>th</sup> September 2019.

**TV Narayana**  
President  
Indian Pharmaceutical Association



**Prafull D. Sheth**  
**Founding Professional Secretary**  
**SEARPharm Forum**

It's a pleasure to write a message for the first edition of the i-care bulletin of SEARPharm Forum to be released during the World Pharmacists' Day at FIP 2019, Abu Dhabi.

It was my honor to be the President of Indian Pharmaceutical Association twice in 1998 and 2002. During that period, I also served as observer from developing countries in the Community Pharmacy Section of FIP. At that time there used to be regional representatives for developing countries from six regions of WHO on FIP Council as observers. I replaced Mr. Pankaj Patel who represented the SEARO Region as observer at that time. I was first elected as Vice President of FIP in Brazil in 2006 and thereafter in Lisbon in 2010. During this periods I had the unique fortune to visit several countries to attend FIP Congresses in Brazil, Beijing, Basel, Istanbul, Hyderabad, Amsterdam (FIP Centennial), Bangkok and Ireland. Due to this long association I was a witness to the creation and development of FIP-WHO pharmaceutical forums of National Pharmaceutical Associations of South East Asia.

Dr. Peter Keilgast the then President of FIP, was very keen to build relationships between FIP and WHO through the regional forums. He travelled to New Delhi in 2001 and led a delegation of Presidents of National Pharmaceutical Associations of South East Asia to WHO SEARO in New Delhi to hold a meeting with Dr. Poonam Kheterpal Singh, who was at that time the Deputy Director of WHO-SEARO. She was very enthusiastic about this initiative and agreed to support the forum to promote the role of pharmacists in WHO's health programs in the region. This meeting was attended by Presidents of National Associations of India, Thailand, Bangladesh, Indonesia, Sri Lanka and representative of Bhutan.

Later in a meeting held at my office at DLF, Gurugram we decided to form the FIP-WHO Forum of National Associations of South East Asia (SEARPharm Forum, the name was styled after EUROPharm Forum which was already in existence and served as the role model). Initially, India, Indonesia and Thailand became major contributors as founding members contributing USD2000 per annum while Bangladesh, Sri Lanka became founding members contributing USD 500 per annum as membership fee. Both Bhutan and Nepal remained as special invitees. Both FIP and WHO-SEARO were gracious enough to contribute USD 6000 each and became observers. The Forum Secretariat was based at my office in New Delhi and I became the Founding Professional Secretary of the SEARPharm Forum.

SEARPharm activities were well linked with WHO agenda in the region and gave opportunity to carve out role of pharmacist in Good Pharmacy Practice, Tuberculosis, HIV-AIDS, Counterfeit medicines, Tobacco cessation and Rational Use of Medicine *etc.* SEARPharm Forum held several important regional conferences and supported the travel of national representatives and represented the pharmacists of the region at World Health Assemblies in Geneva. The Forum also promoted its activities during FIP Congresses and kept FIP bureau and Council informed of its programs. By virtue of being FIP Vice President during this crucial period, I had the privilege to keep the forum members informed about the aspirations of FIP Bureau from the Forum.

It is important to acknowledge the FIP Presidents, Bureau and the General Secretary for their unstinted support to the SEARPharm Forum during the first decade of its existence. I also thank the National Presidents of Member Countries for their participation and support. I am pleased to know that the *i-care* bulletin is aimed to illuminate the knowledge on the current practices, health care support, medication errors, rational use of medicine, case studies, and challenges and with special emphasis on pharmacist intervention to curtail antimicrobial resistance (AMR) in South East Asian Region. I extend my best wishes.

**Prafull D. Sheth**

Former Vice President, International Pharmaceutical Federation  
Founding Professional Secretary SEARPharm Forum



**Chinta Abhayawardana**  
Past President  
SEARPharm Forum

I am glad to write this message on the release e- news bulletin of the SEARPharm Forum, called i-CARE, during the World Pharmacists Day September 25, 2019 at FIP Congress, Abu Dhabi. I appreciate that the bulletin i-CARE is aimed to disseminate the new knowledge and practices evolved to curtail antimicrobial resistance (AMR). I hope this bulletin will spread the new trends related to medication errors, rational use of medicine, case studies, utilisation of skills of pharmacists, use of off label drugs and legislation, disposables and medical devices and including internet pharmacies. I could see this bulletin also publish short review, opinion, commentary, new knowledge, new practice, new initiatives, problems, case report, medication errors, etc. Therefore, I request all pharmacy fraternity belonging to WHO-SEA region to support this bulletin to become as the quality bulletin of antimicrobial resistance in future endeavors

At the capacity of past president of SEARPharm forum, I congratulate the entire editorial team and all our SEARPharm Forum members for bringing this news bulletin.

**Chinta Abhayawardana**

Past President, SEARPharm Forum.  
Past President, Pharmaceutical Society of Sri Lanka.  
Independent National Consultant on Essential  
medicines for the WHO country  
office of Sri Lanka



**Rao Vadlamudi**  
Professional Secretary  
SEARPharm Forum

I am extremely delighted to note that the quarterly news bulletin of the SEARPharm Forum, i-CARE, is all set to be released on September 25, the World Pharmacists Day during the FIP Congress being held in Abu Dhabi and all efforts are being made to get this bulletin released by the Honorable President of FIP, Mr. Dominique Jordan and the CEO of FIP, Ms. Catherine Duggan. The name i-CARE is coined to reflect the main objective behind this news bulletin which is to promote the initiatives to curb antimicrobial resistance.

This news bulletin is aimed to reach out to pharmacists, pharmacy students and other pharmacy professionals located in the SEA region countries through the national pharmaceutical associations, which are members of the SEARPharm Forum as well as the FIP. Through this news bulletin, important information and approaches to contain Antimicrobial Resistance (AMR) in the SEA region countries will be brought to the awareness of pharmacists, Government authorities, public health workers and the general public. Educational material, guidelines and reports issued from time to time by the WHO, the FIP and the regional and national pharmaceutical associations will be published in this news bulletin for circulation among the pharmacists of the SEA Region. This bulletin will also carry short review articles, case studies and success stories of rational antibiotic use, antimicrobial stewardship and commentaries by opinion leaders and many more features that would make this news bulletin highly informative. I congratulate the editorial team working hard to make this news bulletin a reality and sincerely wish the i-CARE bulletin a huge success.

**Rao Vadlamudi**  
Professional Secretary,  
SEARPharm Forum

Dear Readers,

*We're happy to share that the inaugural issue of **i-CARE Bulletin**, is released during the 79<sup>th</sup> FIP World Congress of Pharmacy and Pharmaceutical Sciences: 22 – 26 September 2019 at Abu Dhabi, United Arab Emirates on World Pharmacists Day 25<sup>th</sup> September 2019.*

This is the first (inaugural) issue of the **i-CARE Bulletin**: a quarterly publishing official e-news bulletin of SEARPharm Forum - The International Pharmaceutical Federation (FIP) Forum of National Pharmaceutical Organizations in collaboration with World Health Organization (WHO) Regional Office for South East Asia, secretariat is based in Bangalore, India. We would like to thank all members of the SEARPharm Forum, all members of the editorial advisory board, reviewers, all authors, and the secretary office for their support toward this e-news bulletin.

The objective of **i-CARE Bulletin** is to disseminate the new knowledge and practices evolved to curtail antimicrobial resistance (AMR) and will address the related issues in primary health care support, medication errors, rational use of medicine, case studies, utilization of skills of pharmacists, use of off-label drugs and legislation, disposables and medical devices and internet pharmacies.

In this issue, there are three articles contributed by authors. The author Diane Ashiru-Oredope presented a case study of supporting antimicrobial stewardship in commonwealth countries as a contribution to WHO AMR action plan. The author Chinta Abayawardana described about the pharmacist role in combating AMR. The author Azger VN highlighted the prevalence of existing mutants pertaining to the drug resistant tuberculosis and various challenges ahead. The editorial team is happy to publish the annual report (June 2018-May 2019) of SEARPharm Forum received from Dr Rao Vadlamudi, Professional Secretary of SEARPharm Forum.

Thank you and Best wishes,

**Dr P Ramalingam**  
Editor

**Dr Mohanraj M Rathinavelu**  
**Dr G Sumalatha**  
Associate Editors

# Tackling Antimicrobial Resistance: A case study of supporting Antimicrobial Stewardship in Commonwealth Countries and contributing to WHO Global AMR action plan objectives

*Dr Diane Ashiru-Oredope, Global AMR Lead, Commonwealth Pharmacists Association*

Antimicrobial resistance (AMR) is a significant patient safety, public and global health threat.<sup>1</sup> It is important to take concerted efforts towards tackling AMR. It has been estimated that by 2050, there will be 10 million deaths every year due to antimicrobial resistant infections if AMR is not addressed.<sup>2</sup> And this burden is likely to be higher in low-middle income countries.

The World Health Organization (WHO) endorsed a global action plan on AMR in 2015 and in 2016, 193 Heads of States committed for the first time, to taking a broad, coordinated approach to address the root causes of AMR across multiple sectors (human health, animal health and agriculture) as well as the development and publication of national action plans based on the WHO Global Action Plan on Antimicrobial Resistance.<sup>3</sup> This was only the fourth time a health issue has been taken up by the UN General Assembly (the others were HIV, non-communicable diseases, and Ebola).<sup>2</sup> Whilst governments, public health institutes, professional organisations have a key role, all healthcare workers and the public also have a role in supporting tackling AMR. Multiple factors including poor infection prevention and control measures, overuse of antimicrobials, lack of regulatory restrictions to antimicrobial access in the community, overuse and misuse of antimicrobials contribute to the development of AMR.<sup>4</sup> A crosssectoral one-health approach is important to tackle AMR as it recognises the interconnectedness of human health, animal health, agriculture and the environment.<sup>3</sup> There is need for concerted effort within and among nations to mobilise the necessary tools to tackle the threat of AMR. This can be achieved through the development of regulations and guided by a global action plan to tackle AMR.<sup>3</sup>

The WHO global action plan on AMR outlines 5 strategic objectives which are<sup>2</sup>:

1. To improve the awareness and understanding of antimicrobial resistance through effective communication, education and training
2. To strengthen the knowledge and evidence base through surveillance and research
3. To reduce the incidence of infection through effective sanitation, hygiene, and infection prevention measures
4. To optimize the use of antimicrobial medicines in human and animal health
5. To 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.

Having action plans and guidelines are an important first step in influencing clinical practice as this influences the direction of change in practice and context in which care is delivered. Although implementation of WHO-level action plans requires engagement of multiple stakeholders and changes at several levels before impact on practice is seen, the guidance set by WHO does have significant direct and indirect influence on care.<sup>5</sup> All 53 countries in the Commonwealth signed the UN declaration in 2016. Analysis of the WHO self-assessment survey results highlighted progress made by 79% (154/194) of WHO's Member States for the period 2017-2018. Commonwealth countries' progress with national action plans is similar to global progress when comparing data for 2017-2018; 51% of Commonwealth countries had a national action plan compared to 48% of countries globally; 25% of Commonwealth countries compared to 26% of all countries, had a

national action plan currently under development; lastly 6% and 5% of Commonwealth countries and all countries had no action plan on AMR, respectively.<sup>6</sup>

The Commonwealth Pharmacists Association has been supporting member organisations and commonwealth countries in a number of ways which support implementation of the WHO Global AMR Action Plan objectives:

### ***Supporting participation in World Antibiotic Awareness campaigns – WAAW and Antibiotic Guardian (AG) Pledges***

WHO global AMR action plan objective 1 is to improve the awareness and understanding of antimicrobial resistance through effective communication, education and training. Over the last 3 years CPA has provided educational webinars, toolkits and resources collated from WHO or other relevant international published resources to member organisations.<sup>7</sup> From responses to the CPA survey in 2016, 76% (20/26) of respondents representing national pharmacy organisations were aware of World Antibiotic Awareness Week (WAAW), however only 38% of the national pharmacy organisations had plans for WAAW in 2016. All responders were aware that tackling AMR was a global priority and were willing to become Antibiotic Guardians. Antibiotic Guardian pledges from Commonwealth countries (excluding the UK) for the period between 2015 and 31/12/2018 totalled 1209 pledges, an increase from 432 pledges as at 31/12/2016.

WHO Global Action Plan objective number 4 is: to optimize the use of antimicrobial medicines in human and animal health. CPA has supported through:

### ***Assessment of Medicines Legislation for Antimicrobials***

Of the 36 Commonwealth countries through national pharmacy organisations that the survey was sent out to in 2016, 26 responded (72%). Of these, 92% of respondents had legislations preventing sale of antibiotics without a prescription.

However, only 57% of the responding organisations stated that the legislation was adhered to in their countries. 95% had legislations stating that a pharmacist must be present when supplying an antibiotic, but only 57% of Commonwealth countries reported this legislation was enforced. 57% knew of at least one antimicrobial stewardship programme in their country and all had a pharmacist included.

***The Commonwealth Partnerships for Antimicrobial Stewardship (CwPAMS)***<sup>8</sup> which is a pioneering programme run by Tropical Health Education Trust (THET) and Commonwealth Pharmacists Association (CPA). It is funded by the UK Government Department of Health and Social Care's Fleming Fund. The programme design has been informed by a scoping study conducted in October 2018 to assess antimicrobial stewardship (AMS) related gaps and opportunities.

CwPAMS takes a partnership approach to build AMS capacity by sharing skills and knowledge, bringing together multidisciplinary teams from the NHS and hospitals in four Commonwealth countries. It has a focus on:

- AMS, including surveillance
- Infection prevention control
- Antimicrobial pharmacy expertise and capacity

Following a grant call informed by CPA's scoping study 12 partnerships were selected for a 15 month programme from February 2019 until April 2020. Multidisciplinary healthcare teams led by Pharmacists were awarded funding. The emerging impacts and tools developed which can be easily adapted for other resource challenged settings are highlighted in figure 1.

### **Acknowledgements:**

Ayodeji Matuluko , Victoria Rutter , Amy Chan, Commonwealth Pharmacists Association (CPA)\*

\*The CPA is a charity dedicated to enhancing the capacity of the pharmacy profession – particularly focused in low resource and disadvantaged settings - to provide safe effective medicines for all.

# The Commonwealth Partnerships for Antimicrobial Stewardship (CwPAMS)

Diane Ashiru-Oredope<sup>1\*</sup>, Chloe Tuck<sup>1</sup>, Sarah Cavanagh<sup>1</sup>, Victoria Rutter<sup>1</sup>, Richard Skone-James

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## Optimising medicines use for a healthier Commonwealth

### Background

- The Commonwealth Partnerships for Antimicrobial Stewardship (CwPAMS) is a pioneering programme run by Tropical Health Education Trust (THET) and Commonwealth Pharmacists Association (CPA). It is funded by the UK Government Department of Health and Social Care's Fleming Fund
- The programme design has been informed by a scoping study conducted in October 2018 to assess antimicrobial stewardship (AMS) related gaps and opportunities.
- CwPAMS takes a partnership approach to focus on:
  - AMS, including surveillance
  - Infection prevention control
  - Antimicrobial pharmacy expertise and capacity

### Aims of CwPAMS

To build AMS capacity by sharing skills and knowledge, bringing together multidisciplinary teams from the NHS and hospitals in four Commonwealth countries

### 12 CwPAMS Partnerships in 4 African countries

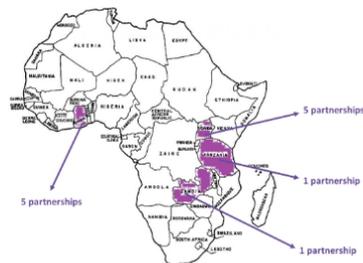


- Following a grant call informed by CPA's scoping study 12 partnerships were selected
- Multidisciplinary healthcare teams led by Pharmacists were awarded funding
- 15-month programme from February 2019 until April 2020

## Emerging Impacts of the CwPAMS Programme

### Sharing knowledge through Inception workshops in the UK and Partnership countries

1. Birmingham, UK- February, 2019
2. Accra, Ghana- April, 2019
3. Kampala, Uganda (joined by partners from Tanzania and Zambia)- April, 2019



### AMS Checklist

- Developed from an international consensus by Pulcini et al (2019)
- Tailored to CwPAMS partnerships after a modified Delphi technique with representatives from partnerships
- Checklist tool deployed as an online survey for partnerships to collect baseline data

### Supporting workforce development

- CPA providing support to clinical pharmacy workforce to deliver AMS
- Including through: conferences; high level policy events; blogs, podcasts, articles and social media

### Health Education England (HEE- Global Health Fellowship)

- UK Pharmacists selected for yearlong fellowship
- CPhO Global Health Fellows

### CwPAMS Microguide App

- Medicines management tool being developed to fill gap highlighted through the scoping study
- Using WHO AWaRe categories
- Inclusion of national standard treatment guidelines (STGs)
- Medicines information and management tools
- Links to other key resources

### Global Point Prevalence Survey (PPS) support

- Only one (1) Global PPS study available across the 4 countries prior to commencing the programme
- CwPAMS supporting surveillance of antimicrobial use with the Global PPS team from Belgium
- All partnerships to conduct at least 1 PPS study

### Behaviour tool

- CPA scoping highlighted lack of understanding of behavioural drivers of AMS
- Key behaviours selected as part of modified Delphi technique
- Tool developed in collaboration with The Change Exchange

### Sharing learning between partnerships

- Events and workshops
- Webinars
- Networking platform (cwpams.co.uk) which hosts sets of international resources and country specific reference packs

### Conclusion

For the duration of the 15-month programme the 12 partnerships will be rigorously evaluated to show the impact of AMS interventions and capacity building using tools provided by the CPA and THET. The CwPAMS project will lead to bi-directional learning and improved leadership which will increase our understanding of AMS in a global context. This project could potentially be expanded into other Commonwealth countries in the future.

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The CPA is a charity dedicated to enhancing the capacity of the pharmacy profession – particularly focused in low resource and disadvantaged settings - to provide safe effective medicines for all

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Poster designed by Ayodeji Matuluko

Figure 1: Commonwealth Partnerships for Antimicrobial Stewardship: background, aims, emerging impact and AMS tools available for wider dissemination and adoption.

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*Dr Diane Ashiru-Oredope*  
Global AMR Lead,  
Commonwealth Pharmacists Association



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# Combating antimicrobial resistance - Contribution of pharmacists

*Chinta Abayawardana, Immediate Past President, SEARPharm Forum*

*Independent National Consultant on Essential medicines for the WHO country office of Sri Lanka*

Antimicrobial resistance (AMR) has become a challenge to global health compromising the treatment of infectious diseases and undermining many other advances in health and medicine. Developing countries are more vulnerable to the adverse health impacts of AMR. Antibiotic resistance is accelerated by the misuse and overuse of antibiotics, as well as poor infection prevention and control. Although there are some new antibiotics in development, none of them are expected to be effective against the most dangerous forms of antibiotic-resistant bacteria. Steps can be taken at all levels of society to reduce the impact and limit the spread of resistance and pharmacists should be at the forefront to support the appropriate use of antimicrobials and reduce AMR.

Realizing the seriousness of the issue of antimicrobial resistance (AMR), the World Health Organization (WHO) and Ministries of Health in countries have taken various steps towards the containment of AMR.

Tackling antibiotic resistance is a high priority on the WHO agenda. The World Health Organization at its Sixty-eighth assembly held in May 2015 endorsed a global action plan to tackle antimicrobial resistance. The goal of the global action plan 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. To achieve this goal, the global action plan sets out five strategic objectives and out of those five, the following main strategic objectives are very much related to pharmacists:

1. to improve awareness and understanding of antimicrobial resistance;
2. to strengthen knowledge through surveillance and research; and
3. to optimize the use of antimicrobial agents

The World Health Assembly also urged all Member States to develop and have in place by 2017, national action plans on antimicrobial resistance that are aligned with the objectives of the global action plan.

The 20<sup>th</sup> Model List of Essential Medicines published by the WHO in 2017 also provides new advice on which antibiotics to use for common infections and which to preserve for the most serious syndromes, based on a thorough review of all essential antibiotics. In order to assist in the development of tools for antibiotic stewardship at local, national and global levels and to reduce antimicrobial resistance, three different categories of antibiotics were developed – ACCESS, WATCH and RESERVE groups:

## **ACCESS Group**

Antibiotics of this group be available at all times as treatments for a wide range of common infections. For example, it includes amoxicillin, a widely-used antibiotic to treat infections such as pneumonia.

## **WATCH group**

This group includes antibiotics that are recommended as first- or second-choice treatments for a small number of infections. For example, the use of ciprofloxacin, used to treat cystitis and upper respiratory tract infections (such as bacterial sinusitis and bacterial bronchitis), should be dramatically reduced to avoid further development of resistance.

## **RESERVE Group**

This group includes antibiotics such as colistin and some cephalosporins that should be considered last-resort options, and used only in the most severe circumstances when all other alternatives have failed, such as for life-threatening infections due to multidrug-resistant bacteria.

In 2008, International Pharmaceutical Federation (FIP) published a revised statement on AMR entitled, FIP Statement of policy - control of antimicrobial medicines resistance (AMR), whereby FIP takes responsibility for the professional leadership through a range of activities. It urges pharmacists to:

- provide proper counselling and appropriate written information when dispensing antimicrobials;
- encourage patients to take the full prescribed regimen and, if not possible, to dispose of any unused antimicrobial medicines appropriately;
- work with prescribers so that dosages prescribed are sufficient for the completion or continuation of a course of therapy;
- recommend therapies other than antimicrobials for minor ailments;
- provide updated information on antimicrobial medicines to prescribers as well as health-care professionals who administer or otherwise influence the use of medicines;
- be actively involved in matters of hygiene and infection control in all health-care settings;
- effectively monitor the supply and use of antimicrobials by their patients.

At the health-system level, FIP urges governments and health authorities to take the following action directly related to community pharmacy:

- develop and implement measures for the appropriate use of antimicrobials and prohibit the dispensing and sale or supply of these medicines without a prescription from or order of a qualified health-care professional;
- strengthen the legislative and regulatory control of authorizations to market, import, export, prescribe, dispense and otherwise supply antimicrobial medicines, and enhance the enforcement of statutes and regulations;
- ensure that only authorized channels of distribution are used to minimize the availability of counterfeit and substandard medicines, thus assuring that available antimicrobials meet the required standards of safety, quality and efficacy;

- conduct health-education campaigns that promote the appropriate use of antimicrobials;
- collaborate with health-professional societies and associations to develop and facilitate the implementation of educational and behavioural interventions that will assist prescribers in appropriate antimicrobial prescribing.

It is essential to have the contribution of pharmacists for successful implementation of action plans at both global and national levels. While contributing to these efforts pharmacists should make use of the opportunity of being themselves well placed to interact directly with patients. Counseling patients and advising them to take antibiotics at regular intervals and complete the prescribed course as well as advising them on possible side effects and interactions with food, and other medicines are prime responsibilities of pharmacists in the best use of this important category of medicines. In addition, the national pharmacy associations should play a leading role at country levels in conservation of effective antibiotics

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# Drug resistance, prevalence of existing mutants and challenges in addressing tuberculosis an epidemic

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Tuberculosis is a treatable and curable infectious disease which prevails from ancient times. It imposes a serious threat and burden to global public health. The basic complexities involved are accurate diagnosis, time lapse between diagnosis and treatment and completing the course of treatment. For a wild type strain four standard drug treatment regime (front line drugs) is recommended for a span of 6 months. The front line drugs (Isoniazid, Rifampicin, Ethambutol and Pyrazinamide) treatment can be successful on wild type strains, but proven futile against drug resistive strains. The structure of the bacterium and its biochemical response to the stimuli (drug) is observed to induce chromosomal mutation as a defense mechanism, which is the key challenge in the treatment i.e emergence of drug resistance.

## *Mycobacterium tuberculosis*

The causative agent *Mycobacterium tuberculosis* (MTB) is an acid fast bacillus which is transmitted aeri ally. The pathogen primarily resides in lungs and invades the alveolar sac. The cellular make up and the biochemical response of the bacillus makes it more interesting to study and much more challenging to treat once infected. It has significant role in combating against the drugs, turning the treatment deemed ineffective. The hydrophobic cell wall composition of MTB i.e the thick waxy lipid layers (mycolic acid) is identified to render repulsiveness to the hydrophilic small molecules and lack of fewer porins in the cell wall minimizes the permeability of the cell wall<sup>[1]</sup>. A cascade of mechanisms are triggered by the organism at biochemical level when the drug penetrates the cellular envelop. The drugs are structurally modified by the bacterial enzymes so the function of the drug is effectively altered eg. methylated or acetylated and few drugs are enzymatically cleaved e.g.  $\beta$ lactam antibiotics<sup>[1]</sup>. This intrinsic feature of MTB limits the therapeutic success of many drugs.

## Anti-Microbial Resistance in TB

Systematic investigations on AMR in MTB reveal that chromosomal mutation as the core driving factor for the development of drug resistance.

Mycobacterium species has very low genetic diversity unlike other Actinobacterial counterparts. There are evidences that neither horizontal gene transfer nor other mobile elements are responsible for acquiring antimicrobial resistance in MTB<sup>[2]</sup>. Though MTB has specific mechanism to acquire resistance against each drug, the process is broadly achieved by three means<sup>[1]</sup>. 1. By altering the drug target conformation. 2. Disrupting the catalysis of prodrug activation. 3. Overexpressing the drug targets. The molecular and biochemical cascades of the bacterium gears up for this battle in response to the environmental cue such as presence of drug in the blood stream.

## Prevalence of existing Mutants

The drug resistive strains are labelled as MDR when it has shown resistance to isoniazid and rifampicin, its labelled pre-XDR when it acquires resistance to isoniazid, rifampicin and second line drugs such as fluoroquinolones or amikacin, kanamycin or capreomycin, it is identified to be XDR when it develops resistance to above mentioned first and second line drugs<sup>[1][3]</sup>.

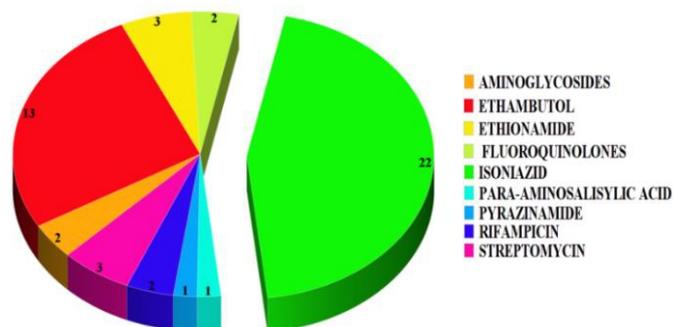


Fig 1 shows number of drug resistant mutant genes against drugs present in H37Rv strain\* data collected from TB drug resistance mutation database <https://tbdreamdb.ki.se/Info/>

XDR is comparatively rare to MDR but treatment is critical, more challenging and the mortality rate is higher. Most of the case of drug resistance against first line or second line drug is acquired by either of the one mechanism mentioned earlier. For instance, isoniazid is a prodrug which inhibits the mycolic acid synthesis by a gene *InhA* and its activated by *katG* gene<sup>[1]</sup>. If the *katG* is mutated the organism becomes resistive to isoniazid. The genes and rate of mutation is growing higher in an alarming rate<sup>[4]</sup>. The number of mutant genes present in H37Rv a model strain of MTB against the therapeutic agents is represented<sup>[4]</sup> in Fig 1.

### **Progress**

Increase in the detection and diagnosis coverage is given the higher priority. In 2020 the TB incidence should fall at 4-5% per year and the mortality rate should reduce at 10 % per year<sup>[5]</sup>. In the diagnosis front, rapid detection and diagnosis methods are developed. GeneExpert is a PCR based technique which involves detection of mutant strains in the samples at molecular level. The GeneExpert method is proven to be very effective replacement of the conventional sputum smear test as it provides the diagnosis in two hours, while the later takes around four to six weeks<sup>[6]</sup>. New drugs such as Bedaquiline and Delamanid give new hope for treating MDR and XDR strains<sup>[7]</sup>. Bedaquiline offers a great promise as it is reported to have relatively less side effects and effective against MDR TB cases.

### **World Health Organization Guidelines and Strategy**

End TB is the moto adapted by WHO, which has an ambitious target of achieving its feet in global scale by 2030<sup>[8]</sup>. Three key policies are conceptualized for eradication of TB. a. patient care and prevention b. bold policies and support system geared with duel contribution of government and private sectors c. research and innovation. In 2016 exclusive guidelines were framed to handle the MDR/RR-TB. A new grading system of ATD (Antituberculosis drugs) was proposed and they were classified based on

its grades<sup>[3][8]</sup> by Guideline Review Committee (GRC) which is an independent panel which reviews and recommends policies.

The GRC met in 2018; were the composition and duration of the treatment was evaluated based on the reported evidence<sup>[8]</sup>. A short term treatment with Bedaquiline and Delmanid is recommended for treating MDR cases<sup>[8]</sup>. Five countries which are reported with most MDR cases and have intense prospects of expansion are China, India, Pakistan, Russian federation and South Africa.

### **India's roadmap in combating MDR, RR & XDR TB**

A national estimate of 2.76 million cases is reported by WHO in 2016<sup>[9]</sup>. The incidence of MDR/RR-TB is estimated to be 1,47,000<sup>[8][9]</sup>. India records highest share of drug resistant cases (24%)<sup>[10]</sup>. India's has set strong resolution in ending the TB and making it as TB free nation. End TB campaign was set by prime minister of India (2018) and urged the government and private sectors to show high level commitment to attain the goal by 2025, five years before the WHO 2030 target. In the summit India has pledged to raise US \$14 billion as a global fund for fighting TB<sup>[9]</sup>. The critical component identified for limiting or preventing the emergence of MDR cases is identifying and treating the drug susceptible cases. For existing MDR cases infection and transmission control is crucial. Fundamentals of case management should be adhered for effective prevention and expansion of drug resistance in TB.

### **Conclusion**

Poor economy, low living standards, inadequate access to detection and treatment facilities are core reasons for the rapid expansion of MDR TB. Considering the greater scheme of things the eradication of TB should be the prime goal, were the private sectors, NGO's and governmental bodies should effectively expedite its role. The success of this assignment also relies in detection of cases, patient follow up and educating the impact of MDR to rural public.

## Abbreviations

ATD – Antituberculosis Drugs  
DR – Drug Resistance  
GRC – Guidelines Review Committee  
INH – Isoniazid  
MDR – Multidrug resistance  
MTB – Mycobacterium tuberculosis  
RR – Rifampicin Resistance  
WHO – World Health Organization  
XDR – Extensively Drug Resistance

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## 2018-19 Annual Report of the Regional Pharmaceutical Forums to the FIP Council

### Executive committee members:

Position	Name	Country
President	Sindhchai Keokitichai	Thailand (deceased)
Past President	Chinta Abayawardana	Sri Lanka
Vice President	Nurul Falah Eddy Pariang	Indonesia
Member	TV Narayana	India
Member	Nasser S Zahedee	Bangladesh
Adviser	PD Sheth	India
Adviser	Teera Chakajnarodom	Thailand
Observer	Mr. Dominique Jordan	President, FIP
Observer	Dr. Klara Tisocki	WHO SEARO
Observer	Goncalo Pinto	FIP, Manager-Development Support

**Liaison Officer :** Mr. Ashok Sony, Vice President, FIP

### Secretariat (person in charge and contact details)

Position	Professional Secretary
Name	Dr. Rao Vadlamudi
Address	Flat F-6 , Vora Towers, 8-3-224, Madhura Nagar, Hyderabad, Telangana, India-500038
Country	India
Telephone numbers	+91 98665 59321
Email address	rao.vadlamudi@gmail.com / raovsvv@ipapharm.org
Website	www.searpharm.org

## Current Member Organisations (name of organisations, country):

	Name of Organisation	Country	Number of Members
1	Bangladesh Pharmaceutical Society (BPS)	Bangladesh	3000
2	Ikatan Apoteker Indonesia (IAI)	Indonesia	10000
3	Indian Pharmaceutical Association (IPA)	India	15000
4	Pharmaceutical Association of Thailand (PhAT)	Thailand	7185
5	Pharmaceutical Society of Sri Lanka (PSSL)	Sri Lanka	900
6	The Pharmaceutical Society of Korea (DPR Korea)	South Korea	
7	Nepal Pharmaceutical Association	Nepal	
8	Bhutan Pharmaceutical Association	Bhutan	
9	Myanmar Pharmaceutical Association	Myanmar	

## Main activities of the Forum between June 2018 and May 2019:

1. Transfer of SEAR Pharm Forum Secretariat from New Delhi to Bangalore in June 2018.
2. Change of Professional Secretary from Pradeep Mishra to Dr T. V. Narayana June 2018.
3. Participated in Pharma Bridge meeting on 2nd September 2018 at Glasgow during 78<sup>th</sup> FIP World Congress.
4. Conducted Annual general assembly of the Forum at Glasgow during 78<sup>th</sup> FIP World Congress on 4th September 2018.
5. Participated in meeting of FIP President with Forum Presidents' and Professional Secretaries' on 6th September 2018 at Glasgow during 78<sup>th</sup> FIP World Congress.
6. Participated in FIP online Survey of Member organization's in November 2018.
7. Screened applications of SEAR countries to FIP Travel grant in February 2019.
8. Change of Professional Secretary from Dr T. V. Narayana to Dr. Rao Vadlamudi from April 2019.
9. Participated in FIP Regional Conference at Amman, Jordan during 25-26, April 2019.
10. Organised training programme to Hospital Pharmacists in collaboration with member organization IPA at Mumbai in January 2019.
11. Initiated e-journal "i-CARE" (Initiative to curb Antimicrobial Resistance) from May 2019.
12. Updated the forum website "www.searpharm.org".

## Highlights of events in the region between June 2018 and May 2019 where the Forum was involved:

1. SEP 18- SPF Annual General Assembly at FIP Annual Congress, Glasgow, UK
2. Screened applications of SEAR countries to FIP Travel grant in February 2019.
3. Participated in FIP Regional Conference at Amman, Jordan during 25-26, April 2019
4. Organised training programme to Hospital Pharmacists in collaboration with member organization IPA at Mumbai on 24th January 2019.
5. Conducted webinar on AMR in association with IPA and reached more than 300,000 Pharmacists in India.
6. Organised Pharmacy students Congress in association with IPA during 16-17, February 2019
7. Participated in AASP meeting at Taiwan in January 2019
8. Participated in FAPA Congress in October 2018 at Manila.

## **Key collaboration with other stakeholders of the region (including the WHO Regional Office and other organizations):**

**WHO SEARO:** Counterfeit Media Reports of SEA Region

**WHO Country Office, Sri Lanka:** Pilot Project on GIS mapping of allopathic health care facilities providing care for non-communicable diseases in Sri Lanka

**MoH, Government of India:** Pharmacovigilance Program of India (PvPI)

**Revised National Tuberculosis Control Program, MoH, Government of India:** Pictogram Project on TB/HIV- FIP sponsored and under guidance from Régis Vaillancourt, CHEO, Canada

## **Current projects:**

### **APAC Regional Pharmacist Forum 2018:**

SPF is facilitating an initiative with Pfizer Inc. for APAC Region to build a platform for the pharmacists of the region to network, share and enhance their skills and education. Two Virtual Meetings (August 2018 & March 2019) involving 08 countries of the region. First outcome is a newsletter on Antibiotics Use (Working Title/name: i-CARE an acronym for Initiative to Curb Antibiotics Resistance) to be launched on World Pharmacy DAY 2019. The Forum submitted the budget proposal towards financial assistance to Pfizer Inc. (APAC Region) for approval.

### **Pictogram India Project:**

#### **FIP sponsored Project with MoH, Govt. of India (RNTCP and NACO):**

Design and Validation of a Pictogram based HIV-TB information leaflet/poster to support the role of pharmacists.

### **Maintaining and comparing database of media reports (in English language) on the incidence of counterfeit medicines of the SEAR:**

The SEAR Pharm forum has been updating media reports on counterfeits and SPF has collated the report from English Media from SEAR countries.

### **Membership Drive and Networking:**

The number of members of the Forum is only 9. The SPF is trying to attract and involve all countries of the region with various collaborative activities and participating in their events to network and work more collaboratively on projects, sharing of information, learning from each other experiences and to work on similar projects.

## **Main challenges:**

1. Identify a new Professional Secretary and relocation of the secretariat from Delhi
2. Communication with MOs at organization and individual level to build strong relationship
3. Communication with WHO SEARO to identify an observer/coordinator from SEARO
4. Inadequate funds to support multi-layered, multi-disciplinary, and multi-country projects and its oversight by the secretariat through the MOs
5. Identification and development of Second and third line of leadership
6. Dedicated resources for project implementation in MOs

# News & Announcements

Source: <https://www.who.int/news-room>

## **New Multi-Partner Trust Fund launched to combat antimicrobial resistance globally: FAO, OIE and WHO intensify One Health approach**

To combat one of the gravest risks to global health a dedicated funding vehicle allowing partners to devote resources to accelerate global action against Antimicrobial Resistance (AMR) was unveiled here at a Ministerial Conference.

The Tripartite joint effort by the FAO, OIE and WHO, launched the AMR Multi-Partner Trust Fund, which is being supported by an initial contribution of US\$5 million from the Government of the Netherlands. And has a five-year scope, through 2024, and aims to scale up efforts to support countries to counter the immediate threat of AMR, arguably the most complex threat to global health.

**19 June 2019 Noordwijk, the Netherlands**

## **The AWaRe tool: In the face of slow progress, WHO offers a new tool and sets a target to accelerate action against antimicrobial resistance**

With the 2017 update of the Model List of Essential Medicines, WHO proposed a new classification of antibiotics, the AWaRe classification (**A**ccess, **W**atch, **R**eserve), in the context of a comprehensive review of the optimal antibiotic choices for many common infectious syndromes in adults and children.

The AWaRe classification aims to help prescribers, pharmacists, antibiotic stewards and policy makers to address the AMR challenge. In 2019, the classification was further reviewed and expanded to the most available antibiotics and to reflect experiences collected between 2017 and 2019.

**18 June 2019 Geneva**

## **Antimicrobial resistance: World Health Assembly Update, 23 May 2019**

Member States at the World Health Assembly agreed a resolution calling for continued high-level commitments to implement and adequately resource multi-sectoral National Action Plans.

23 May 2019 Geneva

# News & Announcements

## **New report calls for urgent action to avert antimicrobial resistance crisis by World Health Organization (WHO)**

As per the UN, international agencies report on antimicrobial drug-resistance (AMR) crisis, if no action is taken, the drug-resistant diseases will cause 10 million deaths each year by 2050, it is expected that by the year 2030, antimicrobial resistance can force about 24 million people into poverty. The damage to the economy of the nations will be as 2008-2009 global financial crises.

As on today, about 700,000 people are dying in each year due to drug-resistant diseases, of which about 230,000 people are dying from multidrug-resistant tuberculosis (MDR-TB). The more common death causing diseases which are untreatable now, are respiratory tract infections (RTI), sexually transmitted diseases (STD) and urinary tract infections (UTI). Due this progressing severity of AMR, day by day medical procedures are becoming riskier day by day. The world has already realized that crucial medicines are becoming ineffective. Therefore the investment from countries in all income brackets are essential to fight AMR, if not the future generations will face the disastrous impact due to uncontrolled antimicrobial resistance. Considering that human, animal, food and environmental health are closely interconnected, the report called for a coordinated, multisectoral “One Health” approach. The report recommended all countries to

- prioritize national action plans to scale-up financing and capacity-building efforts;
- put in place stronger regulatory systems and support awareness programs for responsible and prudent use of antimicrobials by professionals in human, animal and plant health;
- invest in ambitious research and development for new technologies to combat antimicrobial resistance;
- Urgently phase out the use of critically important antimicrobials as growth promoters in agriculture.

The report reflected a renewed commitment to collaborative action at the global level by the World Food and Agriculture Organization of the UN (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO). The recommendations recognized that antimicrobials are critical to safeguard food production, safety and trade, as well as human and animal health, and it clearly promotes responsible use across sectors. The report highlighted the need for coordinated and intensive efforts to overcome antimicrobial resistance.

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World Health Organization. New report calls for urgent action to avert antimicrobial resistance crisis. Joint News Release, 29 April 2019, New York, <https://www.who.int/news-room/detail/29-04-2019-new-report-calls-for-urgent-action-to-avert-antimicrobial-resistance-crisis>.

Source: World Health Organization, Joint News Release, 29 April 2019, New York



71<sup>st</sup> INDIAN PHARMACEUTICAL CONGRESS



**71<sup>st</sup>  
Indian  
Pharmaceutical  
Congress**

20<sup>th</sup>, 21<sup>st</sup> & 22<sup>nd</sup>  
December 2019



Health Care System  
- Role of Regulators

**Theme :**  
**Health Care System**  
*- Role of Regulators*

**Organizer :**  
Indian Pharmaceutical  
Congress Association



**Hosted by :**  
All India Drugs Control  
Officers Confederation



**Exhibition Partner :**  
CIMGLOBAL



**Media Partner :**  
Express Pharma



**Venue :**



**SRI RAMACHANDRA**  
Institute of Higher Education and Research  
(Deemed to be University)  
Porur, Chennai, India

# 79<sup>th</sup> FIP World Congress of Pharmacy and Pharmaceutical Sciences



ABU DHABI 2019  
FIP WORLD CONGRESS  
22-26 September



Abu Dhabi,  
United Arab Emirates

22-26 September 2019

اليوم العالمي للصيادلة  
"سبتمبر" أيلول ٢٥

**World Pharmacists Day' 2019**

**September 25, 2019**

*Theme of the Year*

**"Safe and effective medicines for all"**

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