

# ANTIMICROBIAL RESISTANCE IS EVERYONE'S BUSINESS!

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***"Tackling antimicrobial resistance must be seen in the broader of context of efforts to strengthen health systems and achieve UHC"*** wrote WHO Director General Dr Tedros Adhanom Ghebreyesus, in the introduction to this edition of *AMR Control*.

The coming of a new team to head the World Health Organization could bode well for the necessary effort against antimicrobial resistance. Throughout the developing sector, the essential element of success would demand building up health systems' capacities.

If the campaign for Universal Health Coverage (UHC) combined with a revival of the Alma Ata goal of Health for All and primary healthcare everywhere, advocated by WHO leaders – the Director General Dr Tedros, Dr Soumya Swaminathan, the Assistant Director General in Charge of Programmes, and AMR Secretariat Coordinator Dr Marc Sprenger – are given substance, then 2018 could be a turn-around year.

## **But, for that to succeed, we need to mobilize**

### **Dr Soumya Swaminathan: We need all parties for UHC!**

"As Dr Tedros often says, you need basically all parties for UHC and similarly you need UHC to make progress in any of the other SDG goals, so it's basically to help countries to strengthen their health systems in all their different aspects. WHO's role is going to be focused on the countries and what the countries need.

And we see that as a change in the way we operate, so we will no longer be content just to do the normative work or the guidelines work or recommendations but we will be going a step further and actually providing and handling any other kind of support countries could ask for.

And this is to be done by insuring that the HQ here in Geneva and country offices are working as one.

So, for example, if a country doesn't have the technical expertise, it will be our responsibility to arrange that either from HQ or from a country office.

And this to be done on top of the normative work.

Yet there is a need for civil society to get involved because health has never been high on political agenda for any country, unlike infrastructure or education, unlike energy

or electricity. Healthcare infrastructure is never on the list of demands."

*Dr Soumya Swaminathan, to AMR Control editor-in-Chief, Garance Upham (January 2018).*

## **Public awareness is key in the OECD as in the LMICs**

Understanding that among the most dangerous drug-resistant bacteria - those at the source of enteric diseases and urinary tract infections - don't even need evolution to transmit their capacity for resistance to antibiotics, is really needed for governments to assume their responsibility in making sure that all public and private entities act responsibly: which means enough health staff, well trained, to ensure the highest hygiene levels in health centres and highest level of waste disposal and water sanitation systems for the environment.

The catch word is investment: decreasing budgets for health may put millions of lives in danger in the immediate future.

The United States Centers for Disease Control lead team on Healthcare Quality advocates strongly for investments in IPC.

It is the same team of Dr Denise Cardo which recently reported on the incredibly massive savings achieved by containment of drug-resistant outbreaks in healthcare facilities over the past five years.

Now it is important for this fact to enter into the consciousness of policy-makers.

### **US CDC: Investing in infection prevention and control to contain antibiotic resistance can be achieved and should be prioritized**

"In many low- and middle-income countries, infection prevention and control (IPC) is an often overlooked, but critical, capacity for safe clinical care, including the reduction and containment of antimicrobial-resistant (AR) pathogens. Around the world, there remain fundamental gaps in IPC capacity and implementation, with many efforts limited to temporary stop-gap measures, e.g., during emergencies. However, it is critical to identify and implement sustainable solutions to address those gaps in all healthcare settings. Progress can be achieved and should be prioritized. All countries have a stake."

***No one should be ignorant of the faecal threat!***

And it ought to mean, in many if not most of our wealthy but “dirty” countries, a public targeted effort to improve understanding and respect for basic hygiene.

Were any gastro-intestinal severe epidemics to arise with drug-resistant microbes, it could be as devastating as the “Spanish flu” according to experts, and there is really insufficient consciousness of the risks; in France as in Southern Europe, for example, even basic school hygiene is terrible.

The rise and campaign on preparation against HIV risks, sadly, is in part linked to an explosion of severely drug-resistant “super-gonorrhoea”.

**WAAAR Vice-President Dr Vincent Jarlier and Sandra Fournier, Central IPC team, APHP, France**

We have emphasized above that the “classical” measures successfully used for controlling MRSA cross-transmission (contact isolation procedures) were not effective enough to control CPE/GRE outbreaks.

Only the reinforced procedures, implemented in 2006 (in France), finally allowed such control. The reasons for this apparently striking fact are actually obvious. CPE/GRE (and ESBLs as well) share several critical features concerning their dissemination potential: (a) they are hosts of the digestive tract and consequently are easily disseminated by faecal route (or urines in case of urinary infection) whereas MRSAs are hosts of nasopharynx, a more remote site, (b) their resistant traits are harboured on mobile elements, increasing the risk of bacteria to bacteria dissemination whereas methicillin resistance is chromosomal and (c) the bacterial loads are far higher for CPE/GRE (10<sup>8</sup>/gr of feces, i.e. ~10<sup>10</sup> excreted per day by a carrier) than for MRSA (maximum ~10<sup>8</sup> bacteria in nose).

It is a good example of the need to adapt infection control policy to the characteristics of the targeted organism.

We should raise the point that limitations in nursing staff may be an obstacle to dedicating healthcare workers to a single index CPE/GRE case

*CPE: carbapenemase-producing enterobacteria*

*GRE: glycopeptide-resistant enterococci*

**Preserve antibiotics!**

*“Antibiotic prescription is still considered everywhere like a trivial act!”*

**We have proposed to UNESCO to list antibiotics in their World Heritage Programme! Dr Jean Carlet**

The gut is the silent epicentre of antibiotic resistance, because the antibiotics modify profoundly the gut

microbiome, and allow resistant microorganisms to grow and to colonize this organ for prolonged periods of time. Those resistant strains can then be transferred to other patients in the hospitals, or to relatives in the community.

Antibiotics and resistant microorganisms present in the effluents can contaminate the environment. Microorganisms carried by animals can contaminate humans via either the environment or the food chain.

Antibiotics are overused nearly everywhere.

Those are the main reasons why we have proposed to UNESCO to list antibiotics in their World Heritage Programme.

*(UWH), Jean Carlet, President WAAAR*

**Phages can help: Time to act in the European Union**

In the United States, the decision to create, for the first time, an R&D centre on phage therapy. The Center for Innovative Phage Applications and Therapeutics (IPATH) at the University of California San Diego (UCSD) – highlights the importance of “older” and yet futuristic modes of ecological control to face antibiotic resistance.

We at WAAAR have always supported phage research and we are glad to present two important authors in this edition: Dr Nagel with her United States-Africa team developing R&D know-how in sub-Saharan countries and, in France, a lead team with Professor Tristan Ferry, on drug resistant bone and joint infection; a “first” success using a phage cocktail. This shows the urgency of reform in the legislation for the European Union to permit development of use of phage therapy.

**R&D**

Lots of action on R&D with the launch of a new AMR R&D Hub, an idea that emerged from Germany (which will be investing 500 million euros) and the past two G20s when AMR was coming on the agenda, while CARB-X, featured in this edition of *AMR Control* can boast of increased funding, notably from the United Kingdom, while the DHDi-WHO initiative on AMR is gaining more support as well.

One Health interest is growing, Chatham House in the United Kingdom with Professor David Heymann’s group is advocating and meeting on vaccines to improve prevention for AMR infections both in the animal and human health sectors.

As always, the incredible news and trends in AMR are such that a yearly publication such as *AMR Control* finds it hard to cover all tracks.