

Transcript

(Intro music)

Jason GALE

Welcome to the ASEM Info Board Podcast, episode two: Understanding the AMR (Antimicrobial Resistance) Threat – and why it matters for Asia and Europe Yeah, increasingly around the world, the medicines we rely on to treat and prevent infections are losing their power. Scientists call this phenomenon antimicrobial resistance, or AMR.

It's one of the most urgent threats to global health and the focus of today. Today's conversation I'm Jason Gale, Health editor with Bloomberg News in Melbourne. The next global perspective issue, Doctor Ketevan Kandelaki, technical Officer for Antimicrobial Resistance, Governance and Stewardship with the World Organisation Regional Office for Europe, based in Copenhagen. Professor Hsu Li Yang, director of the Asia Centre for Health Security at the National University of Singapore's Saw Swee Hock School of Public Health and in Lisbon, doctor Guilherme Duarte, executive director of Unite, a global network of parliamentarians working to strengthen health systems through better, more sustainable policies.

Ketevan. Let's begin with you. When people hear that medicines designed to kill germs aren't working, they often think of antibiotic resistance. But antimicrobial resistance is broader than that. Can you explain what AMR encompasses?

Ketevan KANDELAKI

So when we talk about antimicrobial resistance, this refers to the ability of the various microbes, including bacteria, viruses, fungi and parasites to resist the effects of the medications that are designed to kill them or to stop their growth. So indeed, the antimicrobial resistance is broader term than antibiotic resistance, but antibiotic resistance is also part of the antimicrobial resistance and it's a subset of AMR specifically referring to the bacteria becoming resistant to antibiotics. But globally we are also facing the issues of antiviral resistance. This is when viruses can develop resistance to antiviral drugs, making the treatment for viral infections like HIV, influenza, hepatitis less effective. We are also facing antifungal resistance, this is when fungus can become resistant to antifungal medications, complicating the treatment of infections like Candida and antiparasitic resistance is when parasites such as malaria can develop resistance to antiparasitic drugs, it makes various impacts also on various sectors and this goes beyond the human health and includes also veterinary medicine and agriculture.

Jason GALE

Right. And what's driving this process? Why is it accelerating now?

Ketevan KANDELAKI

The rapid escalation of antimicrobial resistance (AMR) is predominantly driven by the inappropriate and excessive use of antimicrobial agents. A key contributor is the overprescription of antibiotics, particularly for viral infections such as influenza and the common cold, for which these medications are ineffective. Additionally, the widespread use of antibiotics in agriculture and animal husbandry significantly exacerbates the problem. The unsupervised use of antibiotics—often without medical consultation or prescription—further compounds the issue, especially when medications are taken at incorrect dosages, for inappropriate indications, or when treatment courses are not completed. The availability of antibiotics over the counter, despite their classification as prescription-only medicines, remains a critical concern. Addressing these challenges necessitates a coordinated global response, encompassing enhanced stewardship of existing antimicrobials, investment in the development of new therapeutic options, and the implementation of robust infection prevention and control measures.

Jason GALE

Got it. Li Yang. Antimicrobials aren't just used in human medicine as we just heard, they're widely used in agriculture and food production too. Can you explain how they're used in farming contributes to AMR?

HSU Li Yang

Thank you, Jason. I think Doctor Kandelaki has put it across very well earlier and I think the best way to think about it is in evolutionary terms. So if we think of antimicrobial agents as a kind of selection pressure, then the more we use of it, whether appropriately or inappropriately, the more likely it is to trigger a response in the microbes who will want to adapt and survive the amounts of antimicrobials, in the environment, in animals and in us. So by feeding antimicrobials to animals, using it in farming, we drive the process by which the bacteria in the environments and in these animals become more resistant to the antimicrobials

Jason GALE

I'm wondering if you can explain a little bit more about why this isn't just a problem for animals, but at serious risk for human health as well.

HSU Li Yang

Two things can happen. The 1st is that's the bacteria in animals when they become resistant to antibiotics, sometimes they can jump across to infect humans. This is, I guess, analogous to the process where viruses jump species to humans as well, as we recently observed during the Covid 19 pandemic and which is also true for all kinds of different other viral outbreaks, that the world has experienced. So the bacteria can crossover from animals to humans and perhaps the most well-known case is that sort of medicine resistant Staphylococcus aureus, a type of drug resistant bacteria that jumped

across from pigs originally first discovered in the Netherlands to humans and which has then caused multiple hundreds of human infections around the world. It's not just the bacteria that can leap across, but also the resistance genes that they have within them, because these genes are not confined generally to one type of bacteria, but sometimes they can be transferred across to other species of bacteria as well, so in that case anti-microbial resistance genes from animal bacteria can be transferred across to human bacteria, which then can cause infections in humans and be more difficult to treat.

Jason GALE

Right. So it's not just the bacteria, but the genes that they carry that we have to worry about. But just to underscore how serious this is a Lancet study published in September 2024 estimated more than 39 million deaths from antibiotic resistant infections between now and 2050. Li Yang, when people hear those numbers, it's easy to think this is someone else's problem or a problem for the future. Can you explain it? You know, is this really the case in a place like Singapore, for example, it's not a major food producing country. Would you expect lower level of AMR? Or is that a misconception?

HSU Li Yang

I think this is the problem of big numbers and us being humans, right? Big numbers just sound so abstract. Millions don't matter more than a single case that we know. But in Singapore, we definitely have the problem of antimicrobial resistance and there are probably over 1000 deaths every year that can be attributed to drug resistant infections in humans. Across the border to other low middle income countries in the region, my colleagues have conducted research that showed that a high proportion of patients with these drug-resistant infections die because they are either given the wrong treatment or they are not given the right treatment in time.

Jason GALE

What are some of the ways AMR is already impacting human health across Asia?

HSU Li Yang

I think this has shaped how hospital treatments of patients with infections has been done in hospitals in Singapore, in Thailand, in India, for instance, when a patient develops a fever in a hospital, we assume straight away that we could be dealing with the drug resistant infections and we start by giving very broad spectrum antibiotics, that is antimicrobials that target a whole bunch of different bacteria and you can see that there's a potential there as we use more and more of these antibiotics, we have the risks of creating more and more resistance bacteria as well. In some countries, certain surgical procedures that are lifesaving become a real risk because when patients become infected with drug resistant infections after such surgery, then treatment becomes very prolonged and they don't recover as well as they would if they had never experienced an infection with such bacteria. So definitely you can see that in Asia, both in low, middle and high

income countries like Singapore, the presence of AMR has shaped our healthcare and has affected a lot of patients who otherwise would have had better outcomes to their illnesses.

Jason GALE

To what extent does having sort of easier access to antibiotics in many parts of the region, often without a prescription?

HSU Li Yang

In Singapore, which is very small, an island, we are quite lucky. You can only get antibiotics with a prescription and you can't walk into a pharmacy and just get antibiotics across the counter. But in Singapore you can find a doctor very easily as well. They're all over the island.

In bigger countries, especially those with rural communities, it is very hard to find a doctor, and sometimes people have to travel many hours just to see one. In that case, it's impossible to have a law that says that antibiotics should only be given if there's a prescription, hence these patients should have access to antibiotics, but that creates a problem of antibiotic misuse and inappropriate antibiotic use.

Jason GALE

Yeah, Ketevan, let's come back to you. What about in Europe, how is AMR affecting modern medicine, things like surgery?

Ketevan KANDELAKI

Indeed, in WHO European region alone, AMR is directly responsible for over 133,000 deaths each year and it's directly linked to over half a million deaths. And there's also a huge economic impact costing the European Union and European Economic Area over €11 billion annually due to increased healthcare expenses and productivity loss. We also see there are geographic variations. There's not simple north to south, west to east gradient in resistant rates and the higher rates observed in the southern and eastern European part of the region compared to the northern and Western Europe, with regards to the links of AMR to the other healthcare aspects, AMR indeed exacerbates the burden of non-communicable diseases by complicating the treatment, increasing mortality rates and infections in patients with chronic diseases like you mentioned, cancer or diabetes become harder and more difficult to treat due to resistant pathogens. This of course leads to prolonged illness, higher healthcare costs, treatment failures. We also see that climate change has significant impact to the spread of infectious diseases and this is leading to a higher demand for antibiotics and contributing to the development of AMR. We also know that ageing population is expected to be doubled by 2050 in the region and AMR also poses significant threat to vulnerable populations. Elderly individuals often have weakened immune system and they require more frequent visit to healthcare centres and the risk of acquiring healthcare associated infections are more risky for those groups of people and as they are more susceptible to infections that could be harder to treat.

Jason GALE

Right, given your role at WHO you're also monitoring the global landscape, are there wider trends or risks beyond Europe that you find especially concerning?

Ketevan KANDELAKI

Of course, globally speaking, we know that antimicrobial resistance has no recognition of borders, so migrations people moving, as I mentioned, agricultural practises, trade travels, all this contribute to the sharing of the resistance genes. Then countries that have really good stewardship practises will also be exposed to the resistant infections through the globalisation and the exchange of travels, foods, etc. So this is another reason why the WHO has established the GLASS (Global Antimicrobial Resistance and Use Surveillance System), which is a global surveillance of antimicrobial resistance that helps to monitor the trends across the globe from all countries and helps to identify the needs and actions to address those upcoming threats on a timely basis.

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Jason GALE

This this crisis has been building for decades, and it's not just a matter of science, it's about politics and policy too. Guillaume, putting your policy hat on to what extent are our political leaders truly aware of the AMR threat and how motivated are they to act?

Guilherme DUARTE

I would like to also to take the opportunity to thank you for thinking of us UNITE parliamentarians, because it's not a common group to be invited and it's quite relevant due to the responsibilities in not only legislation, but budget setting and as well Government Accountability, but going back to your question, I think that political, I would say that awareness is growing, but motivation still varies and the drawing out on recent experience with parliamentarians, national strategy and multilateral work through the wedge of into others, I would say that this is definitely growing and it's getting the motivation that needs. So, I would say that many political leaders have heard of AMR, especially in context of post COVID preparedness and global health security, but few understand. Still, it's systemic implications, how we threaten everything from routine care to very specific and specialised care and the and you can see these then in the lack of proper legislation or the specific or the technically aware legislation based on evidence that sometimes it's hard, it's harder to legislate because to get the common status and the implemented status. So of course, we understand that as motivation tends to spike after crisis or international events, for example G7G20, even the UNGA high level declarations. We also recognise this is wanes quickly without political pressure or public demands.

Jason GALE

What kinds of policies have already been introduced to reduce antimicrobial misuse and are any proving particularly effective?

Guilherme DUARTE

I would say that there there's a lot of policies, a lot of actions out there. Maybe we need to systemise them more. So, I would say that most countries now have an actual national action plan. It's aligned with WHO global action plan. It covers issues already mentioned here like anti-microbial, super shipping, hospitals guide. reliance prescription audits regulations on veterinary agricultural use, for example, banning certain antibiotics for animal feed, even specific policies or actions to improve surveillance systems, public awareness campaigns and initiatives for research and development of new antibiotics. Vaccines and diagnostics, for example, GRDP. But I would say that they all needed need a bit more accountability. They need a bit more impact and they definitely need to be taken a bit more seriously by the legislators, both from resource allocation, but also from the accountability perspective. In parliamentarian settings, we're starting to see national legislation limiting over the counter antibiotic sales, budget allocations for especially for lab capacity and data sharing, which is also very important and inclusion of AMR in broader health system reforms, for example, and just to notion that to mention that I think AMR was a present issue and quietly rightly so during the negotiations of the of the pandemic treaty and with the notion of one health as well.

Jason GALE

Right. And what are some of the key lessons from countries that are getting this right?

Guilherme DUARTE

So I would say that first of all, and I apologise for pushing for this head, but start making AMR political. I would say that it's important to frame it as a development and economic issue, not just an out threat, because this is usually what gets the attention of other areas in the Government the ones that allocate resources and actually can support moving the society into the right direction, then empower legislators. And I think that all of us here contribute to that directly or indirectly. But just to recall that, you know, legislators in almost over every countries, they can push for budget lines, old ministry accountable and reach human animal and environmental health. And this last issue is quite important as usually these areas they still work in a very silent way. Everyone likes to have their own hats or individual work and indeed for some issues. I think all of us should be already thinking about one health and not only a human or animal or even environmental health. And then I would say that we still need to invest in people. This, this podcasting example of it, we need really to bring awareness out there. And then lastly, but not least important, in fact one of the most important things, I think this the regulation still needs to be strengthened and enforced,

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Jason GALE

As we've heard, AMR isn't just a problem for lower income countries or isolated regions, it's a global challenge and it's evolving quickly. Ketevan is there a coordinated global effort underway to fight AMR and what is The Who doing to support countries right now?

Ketevan KANDELAKI

Indeed in 2015, who at the World Health Assembly adopted the global action plan to address antimicrobial resistance and the aspect that Guillerme was also mentioning, like improving awareness, strengthening knowledge and evidence for surveillance and research, looking into effective infection prevention control measures, and optimising the use of antimicrobials in human and animal health have been identified as the key objectives for the global action plan. Additionally, what was also identified important was engagement and investment in research and development of new antibiotics, because one of the challenges and issues that we're facing with the AMR is lack of new antibiotics coming on the market and another aspect that also touched upon was behaviour and accountability. These are also aspects that makes us responsible all of us, regardless of what had we are carrying, whether we are stakeholders, policy makers, healthcare providers or general public. Because our behaviour is what drives the development and spread of resistance. Globally speaking, WHO will be also reviewing global action plan because this has been adopted almost 10 years However, many countries still struggle in translating the policies into actions. We are now developing antimicrobial resistance accountability index. So this index will ensure meaningful impact will safeguard the health economies, while tackling one of the greatest challenges of our time and we'll provide also transparency in efforts to address AMR and track the progress of the countries in implementing the AMR strategies.

Jason GALE

Guillerme, like climate change, AMR knows no borders. Where do you see the biggest opportunities for Asia- Europe collaboration?

Guilherme DUARTE

Absolutely. AMR like climate change is definitely transponder retracted, demands share responsibility in coordinated action. I believe that Asian Europe are unique position to lead this charge, each bringing strengths that are benefit from. And they can also give the example of being able to talk. I mean, nowadays there's a shortage of arrival of multilateralism and I think that the fact that we can all agree in a way forward, that would be already a very good example of how to collaborate. But I'll leave three main ideas. The first jointly surveillance and data sharing, then on the second thing

I think one health innovation, we've also worked today why it matters and as I understand Asia's pioneers, one health models in countries like Thailand and Vietnam. While Europe offers a strong regulatory strength and research and development funding, so perhaps there could be an opportunity to set up some pilot projects between the regions focused on specific things like alternative to antibiotics. Namely, the poultry reforms, vaccines, phage therapy. Of course, Co-financed it and led by technicians from both regions and in the end, and again with the policy. But I would say policy harmonisation, of course, we have to understand what works exactly, respecting cultural differences and expectations, because when we also understand that policy is a very local thing, but the US strong antibiotic use restrictions in agriculture and this could lead to launch, for example, policy reform, a policy forum on AMR, where what readers could participate and we're parliamentarians and regulators with Lyme standards for human, animal and also environmental, health and also a not less important strengthening global alliances.

Jason GALE

Li Yang, from your vantage point in Singapore, where do you see the most potential for cross regional cooperation between Asia and Europe in tackling AMR?

HSU Li Yang

I feel I'm just going to repeat things that Guillerme has already touched on, but from my perspective, I think there are three areas. Firstly, regulation of antimicrobial use in agriculture, research, innovation and partnerships and then finally capacity developments in infection prevention and antimicrobial stewardship. Europe is ahead of Asia, and in fact the rest of the world when it comes to stringent regulations for antimicrobial use in farm animals. For instance, I believe the European Union and the use of antibiotics as growth promoters as far back as 2006 in Asia. This is a really touchy issue with strong pushback from the agricultural industry. But I think if the European Agriculture, industry and regulators are able to share their techniques and experiences and success stories in raising animals without antibiotic growth promoters there could be a way forward on this matter in the future. You'll think many years, but I think it's important to start and this to me is key. Secondly, there can definitely be more research and innovation investments in antimicrobial resistance, including developments of new antimicrobial diagnostics and more collaborative research in general. Europe has much more international funding for research that can benefit and uplift the low- and middle-income countries in the region and Singapore, I think should, can, in the should play a part in this as well. Finally, antimicrobial stewardship programmes vary widely across Asia, and European hospitals have more experience and institutionalised approaches. In fact, Singapore, many years ago we went to learn from the Scandinavian countries how they kept their infection rates and drug-resistant infection rates low. So, I think there can be opportunities for sharing and capacity developments that will benefit not just the Asian hospitals, but also European clinicians inside this.

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Jason GALE

Before we wrap up, maybe a quick final thought from each of you. One short take away or a personal reminder you'd like listeners to leave with.

Ketevan KANDELAKI

Antimicrobial resistance (AMR) is not a challenge of the future—it is a pressing and serious threat today. Effectively addressing AMR demands coordinated, cross-sectoral action encompassing human health, animal health, agriculture, and the environment. It is imperative that the commitments made at national and global levels are swiftly translated into concrete, urgent action. A key message to remember is this: every time we use antibiotics, we give bacteria an opportunity to become stronger. Therefore, antibiotics must be used wisely, only when truly necessary, and strictly as prescribed. The fight against antimicrobial resistance begins with each of us—through informed choices and responsible use.

Guilherme DUARTE

Say not being to scaremonger or fearmonger, but I I would say that we should look at this AMR issue as something that can really threaten our current health system and if we're comfortable understanding and with the notion that if we've got a small infection, we go to the hospital or we go for assistance and get it treated, this we can only do while by respecting the process and by understanding that sometimes we should get treated with an antibiotic and sometimes we don't, and we need to have patience. If the professionals or technicians tell us that, OK, this time we cannot use antibiotics.

HSU Li Yang

Well, I think antimicrobial resistance and its syllable term can seem very abstract and far away and not likely to affect the average person. But nonetheless, I think it's important to be aware of it, and there are things that the individual can do as well, which can help in our own little way to reduce or mitigate the impact of this problem. And that would include, for instance, observing hand hygiene, making sure that we are updated on our vaccines

Jason GALE

Yeah, clearly, we all can play a role in in tackling this problem. I'd like to thank penallists for their insights. We've heard how antimicrobial resistance threatens lives, healthcare systems and economies and how it requires a coordinated global action.

If you'd like to learn more, The WHO website offers excellent resources and tool kits on AMR and the Asia Europe Foundation welcomes your feedback. Visit their website or connect with them on social media to keep their conversation going.