Webinar Q&A from Monday 7 February 2022 : Antimicrobial consumption - data for action

Q1. Do we focus on all antimicrobials or « only » on antibiotics ? In French we most of all talk about "antibiotic resistance" and not on "antimicrobial resistance", which is much broader and then more difficult to evaluate and understand.

> *For antimicrobial consumption, WHO looks at all classes of antimicrobials (antibacterials, antifungals, TB medicines, malaria medicines and antivirals) as we know there are cross dynamics between classes.*
> *For antimicrobial resistance, the AMR division is focusing mainly on resistance in bacteria and fungi. Other divisions (malaria, HIV, TB) are looking at resistance in their respective pathogens.*

Q2. Accurately measuring AMR burden requires a fully described scientific measurement framework. Is there a reference framework for use across countries and survillance sites?

> *This webinar deals with AMC/AMU surveillance. Please see GLASS & the Tricycle Project on the WHO website for AMR surveillance in human health & using a One Health approach respectively.* Alos look at the paper published in the Lancet from the GRAM project
>
> GLASS website for AMR surveillace: https://www.who.int/initiatives/glass/glass-routine-data-surveillance
>
> WHO tricycle website page: https://www.who.int/initiatives/glass/glass-modules-7

Q3/Comment: An evaluation of AMR response highlighted the need for a more robust animal surveillance system, and better One Health integration. Although data-linking is a priority, the absence of consistent antimicrobial susceptibility testing and reporting standards impedes comparison of subnational datasets.

> *This is something the tripartite organizations (FAO, OIE and WHO) are aware and need standardization.*

Q4: How about the use of WHO PPS in different countries? This survey does not provide community level

> *The current WHO protocol indeed focuses on hospitals. We intend to provide surveys targeting community/primary care in the future.*

Q5. Poor documentation and passive extraction methods limit the utility of community antibiotic prescribing data. How can this challenge be overcome?

For community antibiotic prescribing data, countries can do surveys to understand the patterns of use. To improve the utility of data, partnership between actors who collect data and prescribers are vital. Prescribers need to see their performance at individual level and in relation to other prescribers. It is also important to define the indicators and targets in order to improve the use of antibiotics.

Q6. Analyzing the national prescription data, primary care level, from e-prescription system, would it be considered as AMU?

Yes

Q7. Do these recommendations also touch on corporate regulation? especially for the agricultural industry?

Antimicrobials medicines are like other medicines under national regulations. WHO support regulators for human medicines. OIE support regulators for animal medicines. As part of tripartite, we have high level discussion through for instance the AMR One Health Global Leaders Group that discussed high level policies.

Q8. What support do you provide to countries for the generation of AMR evidence from routine data (analysis, interpretation and publication) to contribute to systematic reviews?

The Surveillance, Prevention and Control department in the AMR division provides support to countries for AMR surveillance and strengthening laboratories. GLASS website for AMR surveillace: https://www.who.int/initiatives/glass/glass-routine-data-surveillance

WHO tricycle website page: https://www.who.int/initiatives/glass/glass-modules-7

Q9. good morning. can we have the slides

slides will be made available by email after the session, and on the WHO website: https://www.who.int/teams/surveillance-prevention-control-AMR/who-webinar-series-to-support-implementation-of-national-action-plans-on-antimicrobial-resistance

Q10 How frequently PPS be done ? Financial resources could be constrain

PPS surveys are resource intensive and for that are not planned to be run very frequently. At least every 5 years and when resources are available, on annual basis. In between smaller surveys (like audits, or in specific wards) could be conducted as part of hospital antimicrobial stewardship programs

Q11. Thanks for the presentation, for the AMU can you present antibiotics prescribed by syndrome or disease diagnosed? this would be important for identifying appropriate interventions to reduce AMU

In the WHO PPS protocol, we can report by diagnosis (meaning after interpretation by the physician), we don't collect by syndrome information.

Q12. How much of GLASS data is publicly available? How can it be accessed by external researchers?

The results from GLASS data analyses are publicly available. The raw GLASS data are owned by the countries, and access to these data are to be discussed with the countries.

Global Antimicrobial Resistance and Use Surveillance System (GLASS) Report: 2021: https://www.who.int/publications/i/item/9789240027336
GLASS data summaries: https://www.who.int/data/gho/data/themes/topics/global-antimicrobial-resistance-surveillance-system-glass/glass-country-profiles

Q13. How your consumption data been used? Any intervention and effects of intervention? Did your study include community consumption as well?

The data we get from countries are annual AMC data. Countries have been used to understand and improve their data collection methods, understand the market for antimicrobials, and improve rational use of antimicrobials at national level (via EML, AWaRE, treatment guideleines, etc.) Re: community level AMC data, some countries may be able to differentiate the AMC at community and hospital level if the data is reported separately. For WHO data upload, countries share aggregated national data.

Q14/comment Assesing AMU in veterinary sector is a challenging task.

This is under the mandate of the OIE. At WHO, we are working closely with them on surveillance of use of antimicrobials.

Q15. Usage patterns of antimicrobials is largly underdocumented, and there is no established standardized framework for antimicrobial consumption as well as importation data to estimate the national level of antimicrobials administered. What are the mitigation measures for this problem especially in sub-saharan Africa?

Countries can set up their national AMC team, define the objectives of the surveillance, define the data sources, and train staff in ATC/DDD methodology and how to collect data. WHO has developed a tool for data collection and analysis as WHO Excel template and it can be shared with countries. We invite all countries to enroll in GLASS AMC, so we can provide support.

Q16. Moxifloxacin and levofloxacin use can be influenced by TB management. Was there an analysis of appropriateness of medicines use.

There are two options here, either doing patient level surveys to assess the reasons for receiving these fluoroquinolones (either TB or something else), or through antimicrobial consumption, if you can differentiate the supply channels for TB program vs procurement by central medical stores. Some African countries are able to do this and count in AMC what is coming through Global Fund.

Q17. Fascinating presentation from Thailand, thanks. How big a problem is illegal import and smuggling thought to be?

Sorry that we dont have data on the illegal importation and smuggling. It is difficult to capture. Perhaps, we could start to understand it from the research project.

Q18. Do you have some date on the consumption of AM in animal sector

OIE collects this data, see the latest report from last year: https://www.oie.int/en/document/fifth-oie-annual-report-on-antimicrobial-agents-intended-for-use-in-animals/

Q19. Is data is available, is there support to translate this into information, that is analysis into DDD. The excel sheet was not easy to use

We have GLASS AMC manual on how to use the template. Please see WHO Tools slide in our presentation for the link. Additionally, countries can also talk with WHO country office and request training on AMC surveillance. We will soon develop WHO Academy training on AMC monitoring.

Q20. Are countries using such data to establish some mitigation hard and timebound targets in their NAPs?

There are some countries that have set up target (often reduction) on total national AMC as part of the their NAP. It is at the moment mainly high resource coutnries with good history of AMC e.g. Norway, Sweden.

Q21. L'OMS peut-elle organiser une formation sur l'utilisation de l'outil pour l'analyse des données après collecte?

WHO is providing technical support on demand of countries through ad-hoc meetings.

In addition, we are developing a course on the WHO academy that should be released in the coming year or two.

Q22. How many countries are able to collect and share consumption data at subnational level (to avoid obscuring potential local differences in overuse/misuse and lack in access across different regions within a country)?

GLASS AMC platform collects national level AMC submitted to WHO annually. Countries may have regional/provincial data as well and we encourage them to use subnational data for national/regional analysis.

Q23. Is there a standardised data collection tool or performa by WHO in place for AMR related data and is it freely accessible ? elaborate more on current databases or data collection tools regarding AMR

We can talk about antimicrobial consumption data monitoring (as WHO AMC team.). For that we have AMC standard tools. For AMR specific question, please contact glass@who.int https://www.who.int/initiatives/glass

Q23. If use is the main driver, then why does WHO use the much more ambiguous term "consumption?". I suspect the general public doesn't know what that means.

The use of antimicrobials (by patients) is the main driver. However, as mentioned before, it is very difficult to collect data on the use of antimicrobials at patients level. We collect aggregated sales because it is easier, but is a proxy for actual use by patients, and we technically called these data antimicrobial consumption (like consumption of goods used in more economic domains)

Q24. Can a country just start with a few antibiotics at a sentinel site? To make it achievable?

Focusing on just few antibiotics will not be representative. If countries are able to use existing administrative databases for import or procurement of medicines as AMC data sources when starting the data collection, countries can then pick up the macro signals about consumption of antimicrobials, and move on with some targeted audits or surveys to address the problematic areas.

Q25. Measuring over the counter sales/use of antimicrobials may be imprecise given the variable compliance and also given black market sales so how can one be assured about the accuracy of this collection method?

Indeed, it is difficult to measure the OTC sales of antimicrobials. If these OTC sales are part of formal channels (e.g. pharmacies) then it is captured by the surveillance programs, if it is done outside official channel (e.g. street market), then it is not captured. To understand the amount of OTC sales, it is necessary to make specific surveys at patient level to understand how patients purchase antibiotics.

Q26. The fee selected antibiotics at a sentinel site can maybe collected as consumption from pharmacy records? Not patient level data.

You can use different approaches in line with your monitoring objectives and resources. In your case, you may get some inside information about the types and quantities of antimicrobials consumed in those catchment areas.

Q27. Do you have any plans for a webinar on AMU Surveillance as well?

WHO has developed a pilot tool for AMU PPS in hospitals. We are planning to develop a new version this year based on the DHIS2 platform to allow to use it at global but also at national levels

Q28. For WHO - when will the guidance on the use of surveillance data guidance be available? Does it also estimate costs, HR requirements and potential barriers for the implementation of these different surveillance strategies?

The WHO guide on use of the surveillance data will focus on the data. The right data for the right purposes. We will discuss biases on data that can impede interpretation of data. We will not cover costs and HR requirements and potential barriers outside related to data. But these elements are key for success indeed and even if we assume in this guide these are all prerequisites.

In addition, WHO has recently published the following oublication and tool WHO Costing and Budgeting Tool for National Action Plans on Antimicrobial Resistance

https://www.who.int/publications/i/item/9789240036901.

The recording of the webinar on this tool can be found here(with a link to a Help Desk) https://www.who.int/teams/surveillance-prevention-control-AMR/who-webinar-series-to-support-implementation-of-national-action-plans-on-antimicrobial-resistance. It is a nice easy tool that can be adapted to different activities

Q29. Are there any initiatives to start monitoring resistance for the novel oral antivirals for COVID-19 (molnupiravir, Paxlovid)? There are some significant concerns of resistance occurring, particularly in those with suppressed immune systems and can't clear the virus completely.

The AMR division does not collect on resistance data on antivirals. We focus on bacteria and fungi. However we collect consumption of antivirals and we have seen in preliminary data increase of consumption of antivirals in some countries.

Q30. When collecting data on AMC, does the panel have advice on how best to collect data from local manufacturers and how to separate out AB manufactured for local consumption and those for export - what systems do you recommend for this? (the issue being that records on imports are generally already held centrally, but data on locally manufactured volumes and specifically those locally manufactured for local consumption are often not..)

In many countries, it is mandatory for local manufacturers to report production batches to the regulatory agency. In some cases, information is limited and sometines it is not enforced. In some countries, the local manufactures like in Thailand are asked to report separately production for domestic market or for export. It is about the trust/agreement with the manufacturers to provide this information. In Thailand, in addition to self reporting, they send inspectors that in addition to quality control checks, look also at quantities produced and compare with self reporting by pharmaceutical companies.

Q31. Is the preliminary consumption data publically available? It would be very interesting to look at!

We have published some 2015 and 2016 AMC data (from 64 countries) in our first global AMC report in 2018. Some of the new national AMC data will be published later this year in the upcoming GLASS report.

Q32. In countries like Nigeria, where antibiotics are bought from chemists, pharmacies and sometimes hawkers, using hopspital pharmacy data may be insufficient for consumption data.

This is a major bias in some countries where medicines are purchased outside the hospital pharmacy and indeed the consumption of the hospital would be understimated. In this case, the AMC data should be complemented by surveys to understand how many prescriptions are serviced by the hospital pharmacy or by external pharmacy. If this improves, then the AMC from the hospital pharmacy should increase.

Q33. What about measures of compliance - are people taking the full course antibiotics from OTC sales ?

This is another problem. We know that in many countries, people will not buy the full course because of costs of full treatment and may purchase sometimes by dose. In other cases, they will purchase the full course, but as soon as they feel better, will save some tablets for the next time they or relatives will be sick. In the first case, AMC will be probably lower compared to number of prescriptions. In the 2nd case, there will be a bias in the AMC data

Q34. Wouldn't consumption data have to be disaggregated for use

*If you can disaggregate consumption data, then you get closer to actual use. However, in order to be able to disaggregate, you need better source of data often more difficult to access***.**

Q35. Without disaggregation, consumption data cannot be used for patient specific use. Isn't this correct ?

Indeed, AMC data are ecological data, also they reflect use of antimicrobials by people.

Comment. Hopefully survey data might have a role to begin to capture this information - perhaps a digital solution.

For patient level survey, IT tools like tablet or phone apps are key to collect data and for the success of such surveys

Comment. For Thailand, I am surprised that there is no monitoring of consumption in the agricultural sector as antibiotics are known to be used for plant health.

Thailand cannot apply reimbursement data to capture antimicrobial, as three public health insurance schemes apply DRG for inpatients and Capitation for outpatient where there are not items on antibiotics in the reimbursement items. Unlike other countries which apply fee for services where all medicines are itemized and paid for.