Global Monitoring of Antimicrobial Consumption and Use

Arno Muller
Essential Medicines and Health Products
WHO
Why monitoring antimicrobial consumption

• Antimicrobial consumption (AMC):
  – aggregated data on sales of antimicrobials

• Which antimicrobials are used and in which quantities

• Strengthening national pharmaceutical systems
  – Access to antimicrobials
  – Quality of antimicrobials

• Links to antimicrobial resistance data
  – At national, local levels

• Links to interventions to improve the use of antimicrobials
WHO Methodology for Monitoring Antimicrobial Consumption

- Consultation on methodologies for monitoring antimicrobial consumption in March 2016

- Methodology for monitoring AMC developed and published in October 2016
  
  [Link](http://who.int/medicines/areas/rational_use/AMU_Surveillance/en/)
Principles

- **Antimicrobials:**
  - Antibacterials
  - optionally anti-malarials, TB drugs, antivirals, antifungals

- **Data collection:**
  - National register of all antimicrobial medicines
  - Annual number of packages sold at national level for each antimicrobial medicines

- **Using the ATC/DDD methodology**

- **Public/private sectors**

- **Hospital/community sectors**

- **Reported to the country population**

- **Comparability with animal AMC data assured**
Global Map for AMC monitoring (Oct 2017)
Overall consumption of antibacterials for systemic use (ATC J01) in 5 African countries

- From 2.4 DDD/1000 inh./day
- To 30.0 DDD/1000 inh./day
Distribution by antibiotic classes

- Main class: penicillins 38%-81%
- Followed by trim/sulfa and quinolones
Distribution of beta-lactam antibiotics

- **Penicillins:**
  - Main class: broad spectrum (amox and amox+clav)

- **Cephalosporines:**
  - 3 patterns based on consumption of 1-2 and 3-4 generations

- **Carbapenemems**
  - Very little consumption: 0.03% within other beta-lactam in average
Distribution between public and private sectors (country D)

- 1/3 covered by the public sector
- Aminoglycosides and trim/sulfa covered almost by the public sector
- Macrolides, cephalosporines and quinolones: 90% in the private sector
- Penicillins: 80% in the private sector
Number of products consumed (Country D)

- **Number of substances (ATC codes) reported**
  - Private sector: 67 substances
  - Public sector: 22 substances

- **Number of products reported**
  - Private sector: 805 products (12 products per substance in average)
  - Public sector: 41 products (2 products per substance in average)

- **Ceftriaxone**
  - 57 products in private sector, 3 in public sector

- **Amoxicillin + clavulanic acid**
  - 95 products in the private sector for 29 different presentations
  - 4 products in the public sector
Improving AMC data collection

- Consolidate data collection
  - Expand the number of countries
  - Countries with existing monitoring systems

- Develop expertise at regional level
  - Data collection & analysis

- GLASS platform

- 1st WHO global report on antimicrobial consumption planned for 2018
Next challenge: how to interpret and use AMC data?

• Translating monitoring antimicrobial consumption into policy actions

• Linking AMC data with the new EML categorization of antibiotics

• Linking AMC data with AMR data

• Improving integrated analysis of AMC in humans and animals
From consumption to use data

• Limitations of AMC data:
  – No information on how antimicrobials are used

• Collection of use data requires other tools
  – Prescription/purchase data
  – Patient/prescriber/dispenser data
WHO methodology for survey on antimicrobial use in hospitals

- Ad-hoc expert group meeting on methodologies for surveys on antimicrobial use in hospitals and community settings in October 2016

- Priority to hospital survey: WHO HAMU PPS

- Community survey important but complex
  - 3 levels: user, prescriber and dispenser
Objectives

• To provide quantitative and qualitative information on the use of antimicrobials
• Patient based data
• Links to indications, diagnoses and guidelines

• To be used as baseline survey
Methodology WHO HAMU PPS

• Point prevalence survey
  – Snapshot

• All inpatients
  – With or without antibiotics
  – Age, gender + risk factors

• Antibiotics
  – Name of antibiotics
  – Route of administration
  – Dose
  – Indication, diagnosis
Global survey on antimicrobial use in hospitals

- Protocol to be published soon
- Pilot project in Africa
- Request from countries
- Development of IT tools and training materials
Conclusion

• WHO supports countries in developing tools for monitoring of antimicrobial consumption and use

• WHO aims to provide a global database on antimicrobial consumption and use

• WHO will support countries in using these data for improving antimicrobial use
  – regulation, stewardship
  – At Global, regional, national and local levels