Harmonisation trajectory of Global-Point Prevalence Survey (Global-PPS) and WHO-PPS on Antimicrobial Use, HAI and Resistance

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BACKGROUND & OBJECTIVES

A Point Prevalence Survey (PPS) is used for the assessment of antimicrobial use (AMU) and healthcare Associated Infections (HAI) in healthcare settings worldwide.

- ❑ **Global-PPS** (2014) and **WHO-PPS** (2019) have developed **parallel methodologies,** yet **differences exist** which involve challenges in a time of constrained public health investments:
  - ➤ confusion / hesitance in hospitals worldwide
  - ➤ duplication of efforts
- ❑ **Aim : Harmonization between Global-PPS and WHO-PPS** that would enable hospitals to participate in Global-PPS or WHO-PPS with a single dataset.
  - ➤ inform **jointly hospital-based tailored antimicrobial stewardship (AMS) interventions** to curb AMR worldwide.

METHODS

- ❑ **2024:** Start with a series of online **meetings between scientific and operational teams** from Global-PPS and WHO-PPS.
  - ➤ Evolve towards a **joint methodology** : describing actual scope, aims of both PPSs, methodologies and services offered in both systems.
  - ➤ **Interoperable** PPS approach : defining common goals, differences and possible adjustments to reach harmonization.
- ❑ **Step 1**: **Explore in-depth differences** between the two systems and obtain one common protocol and data collection templates.
  - ➤ Iterative process: implementation of harmonization steps to progressively achieve an interoperable PPS system.
- ❑ **Step 2**: Update web-based application and obtain exchanged web-based data involving technical IT expertise.
- ❑ **Next steps**: Develop coordinated feedback reporting, governance, data sharing process, communication,...

RESULTS : comparing Global-PPS and WHO-PPS data collection systems for inpatients

Main differences identified: 1) survey initiation and frequency, 2) amount of detailed patient characteristics, 3) antimicrobials studied, 4) tools for data entry and validation, 5) availability of feedback reporting and training, 6) data ownership, 6) outpatient module available for the Global-PPS only.

	Global-PPS	WHO-PPS
Regulatory scope	*Worldwide voluntary participation* for single or network of hospitals.	*Nomination via Ministry of Health* at regional, national and single hospital level.
Main aim	Surveillance antimicrobial use (AMU) / Data-driven sustainable capacity building on antimicrobial stewardship (AMS).	Surveillance AMU / Public Health to inform national AMS policies and hospitals AMS programmes.
Frequency, national sampling	*Maximum 3 surveys/year* between Jan-April, May-August, September-December.	*Surveys at least every 2 years* at supranational, national (pool of hospitals selected representatively or conveniently), and single hospital levels.
Modularity	Target *any hospital or healthcare facility* where patients are admitted: basic + optional HAI module targeting invasive devices.	Target *healthcare facilities for acute care*: one main module with core and optional variables (process indicators and HAI)
Within hospital sampling	*No patient-level sampling*, but possibility to target selected ward types if repeated PPS.	*Sampling of patients* for hospitals >500 beds while including all wards (1 out of 2/3 patients depending on hospital size).
Eligible patients	<u>Denominator</u>: 'all' inpatients at 8am in included wards on day of PPS. <u>Numerator</u>: 'all' inpatients with ongoing antimicrobial (AM) prescription. Sampling at patient level not allowed to ensure comprehensive data coverage + avoid selection bias.	<u>Denominator</u>: sampled inpatients at 8am of included wards on day of PPS. <u>Numerator</u>: sampled inpatients with an ongoing antibiotic prescription.
Collection detailed patient characteristics	*Only for inpatients on AM*. For all inpatients: details on indication (medical, surgical, ICU); for HAI module: use invasive devices.	Systematically collected *for all eligible inpatients*: age/gender, admission date, underlying conditions and risk factors, use of invasive devices.
Animicrobials (AM) targeted	Antibiotics (J01, A07AA, P01AB), antimycotics (J02), antifungals (D01BA), antivirals (J05), anti-TB drugs (J04A), antimalarials (P01B)	*Antibiotics* (J01, A07AA, P01AB)
Collection of detailed AM prescribing information	• *Detailed AM data collection starts from AM prescription*, each linked to 1 diagnosis with unlimited number of AM for same or different diagnosis. • For each AM: dose, frequency, route of administration is reported.	• *Detailed antibiotic data collection starts from indication* with max of 4 indications, each assigned max 6 antibiotics. • One antibiotic can be linked to multiple indications. • For each antibiotic: dose, frequency, route of administration is reported.
Process quality indicators	• Include culture sample taken and which one, *use of biomarker or WBC* to guide therapy, reason in notes, surgical prophylaxis duration, guideline compliance (type), *stop/review date*, missed doses, treatment type (targeted/empiric).	• Include culture sample taken and which one, reason in notes, surgical prophylaxis duration, and *optionally oral switch*, parenteral type, missed doses, guideline compliance (type), treatment type (targeted/empiric), *prescriber type*.
Data entry and feedback reporting	• *Web-based application* for data entry, validation, export of own raw data supplemented with ATC codes, AWaRE class, … (Excel). • *Real-time feedback reporting with benchmarking* results at country, region & hospital type (Pdf + interactive feedback dashboard for customized analyses).	• Countries/hospitals build *own data entry & analysis tool* beside available *WHO tool* for data entry & analysis (*Excel*). • Online application for data entry/data upload, data validation, automatic reports and raw data download under development in DHIS2.
National form & hospital characteristics	• *Geographical information* reported during web-based data entry. • Infrastructure, policy and practice for diagnostic and antibiotic stewardship captured via *hospital profile* (structure indicators).	• *Hospital profile*: Characterise national level surveys, captures infrastructure, policy and practice for diagnostic and antibiotic stewardship + several variables on hospital size (structure indicators).
Training & support	Regular *training webinars* on method and interpretation results, translated protocols and materials, FAQ and antimicrobial list, tutorial videos on data entry, *helpdesk*.	Training through *country visits + provided on demand*: data entry & analysis.

CONCLUSION

- ❑ Identified differences can be harmonized through (1) adaptations in both data collection systems and (2) the implementation of an interoperable IT infrastructure.
- ❑ Ultimately, harmonization simplifies data collection, entry, validation, feedback reporting and interpretation,
- ❑ A single unified method would enable hospitals and countries to focus on data-informed, contextualized AMS interventions.

Scan for more info on Global-PPS