Towards a fully functional AMR Surveillance system: key data challenges in low income settings and possible solutions

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Introduction

* The need for a system to monitor the level and trends of microbial resistance cannot be over be emphasized.
* The benefits of the surveillance to clinical decision making, infection control interventions, and AMR containment are immense (Hindler & Stelling 2007)

Current lab related routine data

* Facility lab monthly reports
* Quarterly reports
* Uganda National Health Laboratory Services (UNHLS) Microbiology registers
* Microbiology reports
* Lab order forms

Typical surveillance system

* 1. Establish objectives
* 2. Develop case definitions
* 3. Determine data sources data-collection mechanism (type of system)
* 4. Determine data-collection instruments
* 5. Field-test methods
* 6. Develop and test analytic approach
* 7. Develop dissemination mechanism
* 8. Assure use of analysis and interpretation
* Source: excerpted from *Teutsch S, Thacker S: Planning a public health surveillance system. Epidemiological Bulletin 1995,* 16(1), pgs.1-6)

Current system

* There's a system but not fully functional
* Draft surveillance plan available
* Operating in Arua Jinja, Apac, Kabale, Mbale, Fortportal,
* Some of the sites have functional labs but many times the specimen are referred to national level

Current system

* Modeled on WHO launched the Global antimicrobial resistance surveillance system (GLASS)

Uganda Antimicrobial Resistance Surveillance Plan 2017 - 2022

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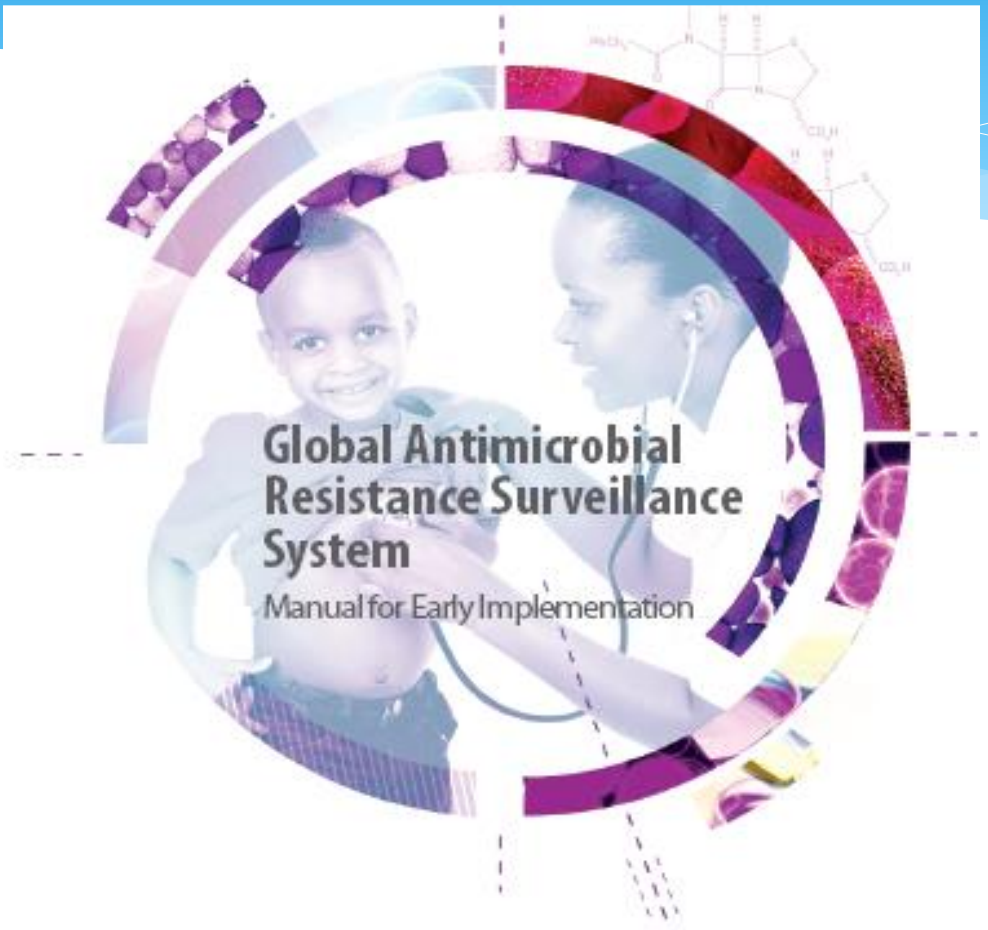
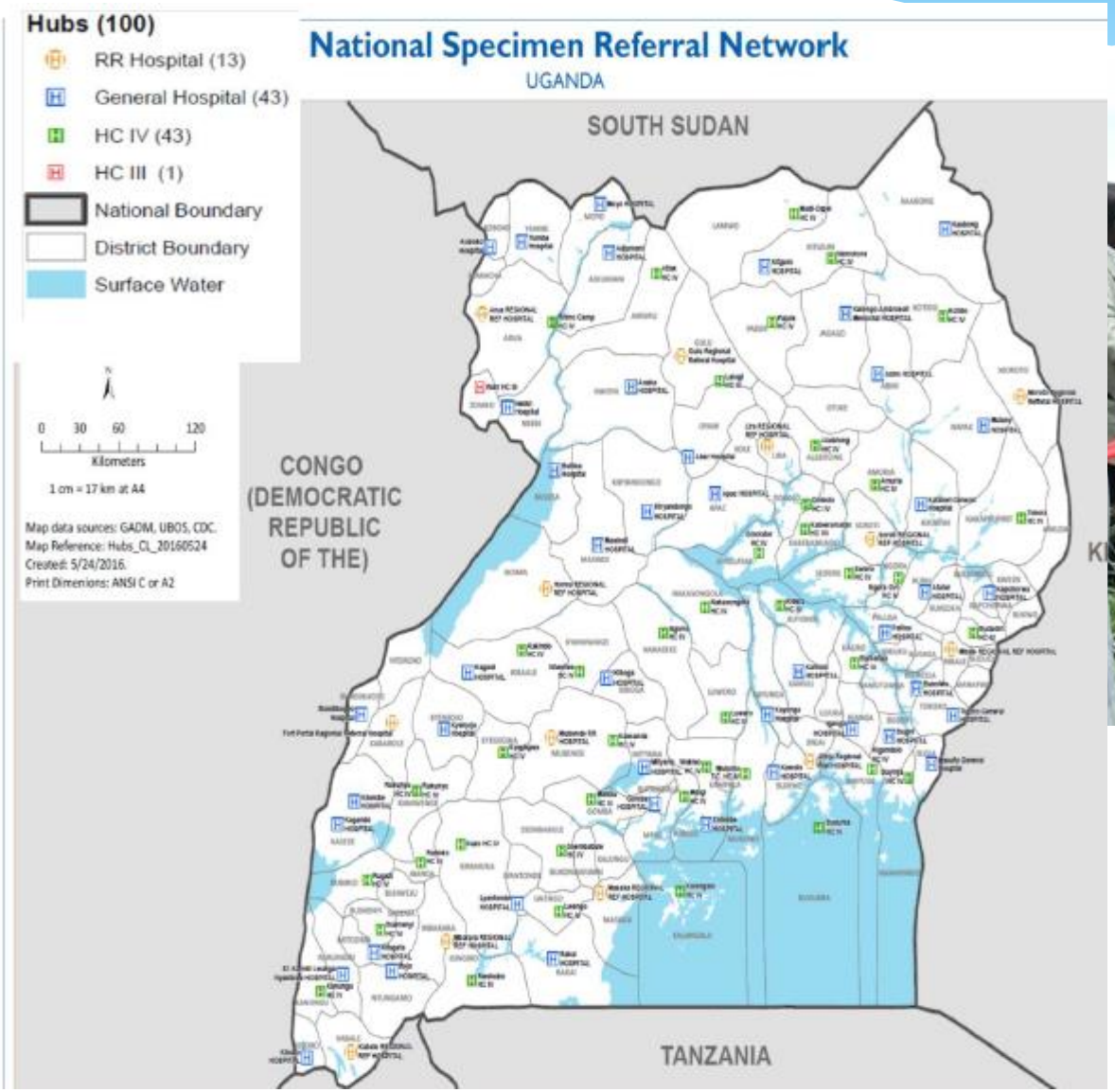
WHO launched the Global antimicrobial resistance surveillance system (GLASS)



Oct 2015 WHO launched the Global AMR Surveillance System (GLASS)

Hub based specimen referral network – Shall form backbone for referral of microbiology specimens



Current status

* The system is supported by the infectious disease institute
* The AMR related Indicators are in the lab information system but not in the national hmis/DHIS2 systems

Current status cont'd

* The indicators used are
  * % resistant to priority organisms (e-coli, Klebsiella pneumoniae, acinetobacter, Staphylococcus aureus, salmonella, shigella, Neisseria gonorrhoeae from priority specimen-blood, urine, genital swabs, stools
  * Susceptible or non-susceptible(resistant) (%)
* Note that From specimen they look for priority organisms and test

Challenges

* The number of specimens for microbiological lab tests are few. Different organisms share the few specimen. Imagine 100 specimen only 15 positive (have bacteria). One may have salmonella, another with other organisms

Challenges cont'd

* Capacity in terms of manpower, equipment and reagents is low
* You cant disaggregate by age sex and others variables because of few positive specimen
* Need high expertise that is not readily available
* Sensitivity of tests is still low because of the several factors-human, machinery.
* Some specimen are drawn from sterile environment such as blood. Others when you get the organims it may not be the one causing the the infection

Challenges- indicators missing

* Types of resistance cannot be got from the current system
* E.g % level Resistance to third generation drugs, resistant , which bacteria is resistant to what
* Quality of processes –completeness, consistence, validity, timeliness-USUAL problem
* Quality of specimen- % rejected, %growth in urine- many different organisms shows contamination

Challenges

* Availability of services
* Stock out of tracer lab supplies
* Microbiology labs are expensive to set up. At the moment they are feasible at regional level
* The culture of using labs is poor
* Ideally surveillance should be utilised at the facilities but this is not happening

Hope

* The current lab information system is being customised to handle surveillance
* Whonet AMR WHO supported system will handle AMR Data but its not yet networked.

Way forward: Diagnostic stewardship

* Training doctors to utilise labs properly
* Care on handling specimen. They get contaminated with the normal flora
* Appreciation, analysis and Interpretation of the results at primary data collection points like health facilities
* Dissemination and use of results at all levels
* More access to anonymised/decapitated data to qualifying researchers

Why AMR surveillance is likely to succeed

* Unlike some systems All regional facilities have a system to collect the data though analysis at the facility level is still not functional
* Good will of stakeholders
* Government full support

What to avoid- lessons from other systems in the country

* Over Dependence on donor funding
* Using non-customised/non-standardised tools
* Missing data. Several organisations do not record key background information of the clients and those that do still have missing information on key variables

What to avoid- ‘contd

* Low motivation- While institutions are willing to be part of the surveillance networks their staff see this as added work with no extra incentive
* Lack of staff dedicated to quality and full functioning of the system

THANKS FOR YOUR ATTENTION