Workshop Summary and Action Items

Strengthening SASCM Surveillance for Antimicrobial Resistance

Venue: Sandton Hilton **Date**: 14 February 2015

Workshop Objectives:

1. To develop a list of action items in order of priority to strengthen surveillance in SA and identify possible resources to take these forward
2. To develop a clear understanding of roles and responsibilities of SASCM, NICD, SAASP and the AMR mapping group in coordinating and reporting on AMR surveillance in SA
3. To discuss objectives of AMR surveillance reports and agree upon a format

List of workshop attendees – attached

Summary and action items (compiled by Nelesh Govender):

Discussion	Consensus	Action items (responsible person)
Aims and objectives for SASCM laboratory-based surveillance Olga Perovic, Chetna Govind, Adrian Brink and Kim Faure proposed several versions of aims and objectives for SASCM surveillance.	Aims: 1. Impact on policy and planning for AMR (i.e. within context of national AMR strategy framework) 2. Impact on empiric treatment for AMR infections at national and provincial level 3. Support public health-focused research on AMR (note: for access to surveillance data, [public health] researchers will require approval from each lab group that provided data) Objectives: 1. Primary - Provide trends of laboratory-confirmed AMR by place, time and person (by producing dynamic national AMR maps) for selected pathogen-agent combinations in SA public and private lab sectors	**All members of SASCM** – comment on consensus aims and objectives

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	2. Determine prevalence of laboratory-confirmed AMR infections (on an annual basis) 3. Add antimicrobial consumption data for selected agents to AMR surveillance data on national AMR maps Agreed that an additional reporting mechanism other than the current SASCM surveillance may need to be set up to detect emergence of novel resistance mechanisms or resistance to newer antimicrobial agents	
Format of AMR surveillance reports Warren Lowman raised the following issues: 1. Private and public sector SASCM reports are not aligned in terms of format: maps/ graphs vs. tables; pathogen-agent combinations; specimen types, etc. 2. Trend data are not presented despite this being the primary objective 3. Statistical "gaps", e.g. no 95% CI 4. Different populations under surveillance – NHLS: largely hospital population vs. Private labs: outpatient and hospital	1. The alignment will be easily achieved when data from both sectors are combined and reports are generated from a single allocated "site" (most likely NHLS CDW). 2. Software changes may be required for some private laboratories to improve surveillance data management. 3. Ideal SASCM report should have clear case definitions, some clinically-relevant data and be equally user-friendly for non-microbiologists	**Warren Lowman**– update format of SASCM report based on recommendations (in presentation)
Pathogen-agent combinations 1. WHO includes the following pathogens: a. Blood: *E. coli, K. pneumoniae, S. aureus, S. pneumoniae, Salmonella, A. baumannii and*	Priority pathogen-agent combinations for SASCM surveillance: 1. ESBL-"producing" *E. coli, K. pneumoniae, Salmonella*. ESBL defined as 3rd generation cephalosporin resistance 2. CRE defined as *E. coli or K. pneumoniae* that are fully-resistant (MIC ≥4) to any of the 4 carbapenems	**Warren Lowman**– summarise changes to SASCM pathogen-agent combinations (create full case definitions) **Olga Perovic**– review *E. coli* and

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Pseudomonas aeruginosa b. STI: *Neisseria gonorrhoeae* c. UTI: *E. coli* and KP d. Diarrhoea*: Salmonella and Shigella* e. 2nd tier – Enterobacteriaceae, *P. aeruginosa, A. baumannii, Enterococcus faecalis and faecium.* 2. South African regulations on notifiable medical conditions (revised) specify the following pathogens (specimen type not specified): carbapenemase-producing Enterobacteriaceae (CPE), glycopeptide-resistant enterococci, glycopeptide-intermediate or resistant *S. aureus*, carbapenem-resistant *P. aeruginosa and A. baumannii, C. difficile* *3.* NICD GERMS lab-based surveillance includes the following pathogens (mostly from normally sterile site specimens from hospital-based population at sentinel sites): ESKAPE pathogen group, *Candida*, *Salmonella, Shigella*, *S. pneumoniae, H. influenzae, N. meningitidis, Cryptococcus* 4. SASCM reports currently include the following pathogens (from blood and	(imipenem, meropenem, doripenem, ertapenem). This includes *E. coli* that is resistant to ertapenem only. CPEs will NOT be included in SASCM surveillance reports. 3. *A. baumannii* –include pip-taz, tigecycline and colistin; no cotrimoxazole 4. *S. aureus* – only cefoxitin or oxacillin 5. Enterococci – both *E. faecalis and E. faecium*; ampicillin, vancomycin/ teicoplanin (GRE), linezolid, daptomycin 6. *Candida* – to species level for 5 common species (*C. albicans, C. parapsilosis, C. tropicalis, C. glabrata* and *C. krusei*); fluconazole, voriconazole and anidulafungin/ micafungin (as proxy for echinocandin class) 7. Continue with *E. coli* urine reporting for both sectors (NB! From the perspective of community antimicrobial use and perhaps agricultural use). 8. Aim to include statistical analysis of data with 95% CI and trend analysis. Weighting of data is part and parcel of the statistical analysis and should be incorporated.	urine reporting from public-sector labs for 2015 report

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urine [E. coli) and sputum [S. pneumoniae]: carbapenemase-resistant Enterobacteriaceae (CRE), ESBL-"producing" Enterobacteriaceae, *E. coli, K. pneumoniae, Salmonella, S. aureus, P. aeruginosa, A. baumannii, E. faecalis and E. faecium, S. pneumoniae, H. influenzae*, *Candida* <u>Discussion</u>: 1. CRE vs. CPE – CRE less specific group but most labs check MICs; currently, only a small proportion of CREs are confirmed to be CPE by molecular tests ("tip of iceberg" with no real trends - unless a sentinel surveillance project is set up); molecular tests are not exhaustive at NICD (only 6 genes tested); non-susceptible (MIC ≥2) vs. resistant (MIC ≥4); all carbapenems vs. some 2. *A. baumannii* – WHO recommends all except netilmycin; EUCAST does not recommend inclusion of piperacillin-tazobactam; include tigecycline and colistin; no cotrimoxazole *3.* Exclude *S. pneumoniae* (LRTI) and *H. influenzae* 4. *E. coli* –urine (will be included in 2015 public-sector reports after discussion		

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with NHLS CDW team)		
A single data repository for NHLS and private lab data 1. NHLS CDW is currently able to generate real-time maps of AMR for NHLS dataset. 2. Ideal to keep SA AMR data <u>in country</u> using sustainably-funded IT infrastructure 3. NHLS CDW proposed hosting and managing all line list data from NHLS and private sector - including generating maps 4. CDEPP is able to provide additional technical assistance	Phase 1: Sue Candy will generate maps from historical SASCM published reports (2010-2014) – deadline: April 2015 Phase 2: SASCM surveillance working group will work on ethics, permissions, integrating line list data from NHLS and private-sector and generating full national AMR map by end of 2015 <u>Proposed members of SASCM surveillance working group</u>: SASCM Exco members, Kim Faure, Olga Perovic, Sue Candy will join the SASCM-constituted surveillance working group to ensure representation from all stakeholders.	For Phase 1: 1. **Chetna Govind** will send all SASCM reports to Sue Candy 2. **Sue Candy** will generate preliminary AMR map by April 2015 3. **Chetna Govind** will send a letter to all SASCM stakeholders informing them of this plan For Phase 2: 1. **Kim Faure** will set up meetings with gatekeepers of data (NHLS CEO and private lab partners) 2. **SASCM surveillance working group** will develop or refine existing data-sharing agreements
Surveillance methods 1. <u>Survey on current test methods</u> for AST – NHLS and private-sector labs 2. <u>Place of diagnosis for mapping</u> – currently sentinel NHLS sites (mostly academic hospitals) and private labs with no clear geographic boundaries.	Alignment in the interpretation and reporting of AMR results by microbiologists needs to be strengthened	**Olga Perovic and the NAC** will work on test method survey **Sue Candy** will work on merging historical SASCM data by

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In Phase 2, need to move to (ideally) facility-level location but this has always been an issue in the private sector. In the meantime (Phase 1), we will use province as location. In Phase 2, we will move to health district and then maybe facility (anonymous, e.g. private hospital A, B, etc.) 3. Role of individual microbiologists – create hospital-level antibiograms so that AMR data are analysed at local level; optimise lab data entry for AMR; capture date of admission where possible (NHLS minimum dataset vs. private labs – phlebotomy service); push for unique identifier; educate prescribers		province A meeting to harmonise inconsistencies will be arranged by SASCM
Ethics and permissions 1. NICD has university ethics approval for GERMS surveillance 2. Line list data – will need national ethics committee approval 3. Line list data – if labs de-duplicate data first, then no identifiers apart from age and sex are required 4. Definitely need ethics approval if plan to publish data		**Kim Faure** – look into national ethics approval
Antibiotic consumption data 1. CDEPP has access to private sector data via pharma 2. Public sector – provincial depots		**Kim Faure** will define sources of antibiotic consumption data

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Notifiable medical conditions regulations – changes summarised in Juno Thomas's presentation		**Juno Thomas** will circulate NMC regulations **All SASCM members** – review and comment on NMC regulations within next 2 weeks
Other related SASCM AMR activities 1. SASCM (microbiology and related) diagnostic stewardship guidelines for private and public sectors – guidelines already exist but focused on public sector only (SAASP, UCT, etc.) 2. SASCM master class for microbiologists on AMR mechanisms, reporting, treatment, etc.		**Warren Lowman and Olga Perovic** will organise SASCM master class – possibly linked to FIDSSA-6 conference or organise a diagnostic stewardship working group under SAASP (proposal by Adrian Brink) - need to find funding **Olga Perovic, Elizabeth Prentice and Chetna Govind** volunteered to work on diagnostic stewardship guidelines