

**SPECIFIC TERMS OF REFERENCE FOR THE MDRO NRCS
INCLUDING
01a-b GRAM NEGATIVE BACILLI
(a.PSEUDOMONAS/ACINETOBACTER AND b.ESBL/CPE),
13. ENTEROCOCCI
34. STAPHYLOCOCCUS AUREUS AND OTHER SPP.**

AIMS

- Each National Reference Centre (NRC) must meet both the general and the specific terms of reference.
- In the specific terms of reference, the NRC tasks dedicated to each selected pathogen or group of pathogens are described.
- These aim to guarantee the knowledge, the know-how and the epidemiological surveillance expertise of each NRC.
- The task list is not exhaustive and can be modified in function of the requirements and the evolution of knowledge and techniques.
- In the event an NRC is unable to perform a specific task, this can be subcontracted to preserve the knowledge in the NRC. If this is the case, quality of the subcontracted task has to be proven and assured.
- Each list of specific terms of reference is divided into three parts: 1) a reminder of the specific missions, 2) a description of the tasks that the NRC must be able to do including the competencies and 3) a list of the tasks that will be asked in a particular context.
- The type of analysis indicated for each specific pathogen in each particular situation (diagnosis or confirmation, typing, antimicrobial susceptibility, virulence...) is defined.
- The collaboration with existing national and international surveillance systems (e.g. ECDC) and when relevant with other reference centres (European Medicines Agency, food safety reference centres, veterinary reference centres, ...) is also a priority.

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SPECIFIC MISSIONS

1. To confirm the identification of strains presenting with atypical/unusual characteristics at the species level.
2. To confirm the multi-drug resistance profile/pattern of clinical isolates.
3. To confirm the presence of acquired/transferable resistance determinants of epidemiological importance by phenotypical and molecular methods.
4. To genotype the strains on request, if relevant for outbreak investigation.
5. To follow the distribution of types (lineages, clones), putative virulence factors, antibiotic resistance characteristics of circulating strains and to characterize their resistance mechanisms.
6. To monitor the emergence of new resistance mechanisms that are important for public health.
7. To provide recommendations (algorithms) for laboratory detection of epidemiologically important (or of emerging) resistance mechanisms.
8. To participate to existing national and international networks.
9. To participate in national surveillance, transfer microbiological data (through e-health reporting) and contribute to the presentation and interpretation of the results in a public health approach.
10. To collaborate with Sciensano, other MDRO NRCs and BAPCOC to develop an integrated national surveillance programme and to participate to a joint report.

THE NRC MUST BE ABLE TO (LEVEL OF COMPETENCES)

1. Identify species in the scope of their activity of the NRC by the most appropriate phenotypic and/or molecular methods.
2. Confirm and determine by phenotypic and/or molecular techniques the presence of acquired resistance mechanisms that are relevant among bacteria species within their scope.
3. Perform genotyping by internationally recognized methods and to manage the fingerprints collection, allowing to investigate clonality of strains.
4. Have access to whole genome sequencing and expertise in species specific bioinformatics analysis.
5. Manage collections of relevant strains.
6. Monitor the susceptibility and resistance of conventional antimicrobials and to evaluate the in vitro activity of new drugs by the most appropriate methods before and after their introduction on the market.

TASKS THAT WILL BE ASKED IN A PARTICULAR CONTEXT

1. To validate antibiotic resistance data reported to the national and European surveillance programmes (Sciensano, EARS-net, ...).
2. To contribute to the quality control of resistance mechanism identification in collaboration with the national quality control system (Sciensano EQA, NAC).
3. To provide/deposit selected reference strains in collaboration with a coordinated collection management organization (Sciensano, NAC, BCCM).
4. To validate new screening and diagnostic tests.
5. To perform periodical microbiological analysis including characterization/genotyping of resistance mechanisms on an informative subset sample of MDRO isolates from hospitals participating to the national surveillance programmes (in collaboration with Sciensano/BAPCOC/Federal platform of hospital hygiene).
6. To conduct periodic pilot surveys on resistance detection methods used by laboratories in order to assess their proficiency level.
7. To ensure the surveillance representativeness for the different health sectors (acute and chronic care sectors, community) and/or by collaborative work with food and veterinary networks.
8. To participate (frequency to be defined) in collaboration with OST (Sciensano and Regional Governments of Flanders, Wallonia or Brussels) to the regional platforms of hospital hygiene (fostering participation to surveillance programmes; information/guidelines).
9. To interact with OST (Sciensano and Regional Governments of Flanders, Wallonia or Brussels) for the notification, investigation and management recommendations of health-care associated clusters/outbreaks of MDRO.
10. To perform microbiological reference analysis in the context of nosocomial (close collaboration with OST and Regional platforms of hospital hygiene) or community outbreak.
11. To participate to a yearly specific MDRO NRC meeting (in collaboration with other MDRO NRC, TC-MDRO, Sciensano, Federal Platform of Hospital Hygiene).