



Advances in Diagnostic Methods: Quality Management

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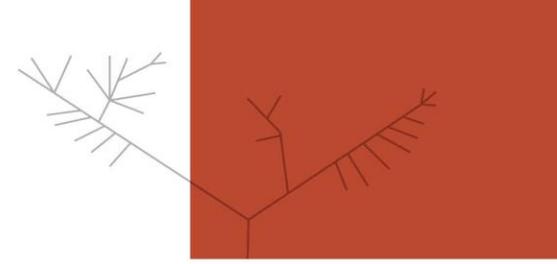
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American Society for Microbiology

October 22, 2019



What is *QUALITY*?



Guidelines & Policies

Laboratory Systems

Facility

Person

New Results

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Discordant bioinformatic predictions of antimicrobial resistance from whole-genome sequencing data of bacterial isolates: An inter-laboratory study

 Ronan M. Doyle, Denise M. O'Sullivan, Sean D. Aller, Sebastian Bruchmann, Taane Clark, Andreu Coello Pelegrin, Martin Cormican, Ernest Diez Benavente, Matthew J. Ellington, Elaine McGrath, Yair Motro, Thi Phuong Thuy Nguyen, Jody Phelan,  Liam P. Shaw, Richard A. Stabler, Alex van Belkum,  Lucy van Dorp, Neil Woodford, Jacob Moran-Gilad, Jim F. Huggett, Kathryn A. Harris

doi: <https://doi.org/10.1101/793885>

This article is a preprint and has not been certified by peer review [what does this mean?].

Abstract

Full Text

Info/History

Metrics

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Abstract

QUALITY in Laboratories: New Technologies?

- “whole-genome sequencing (WGS) has emerged as a ‘one-step’ test for epidemiological and predictive AST results”
(Doyle, R., et al., 2019)

- New technologies

Here’s the problem....

- Standardization
- Quality measures
- Not used properly

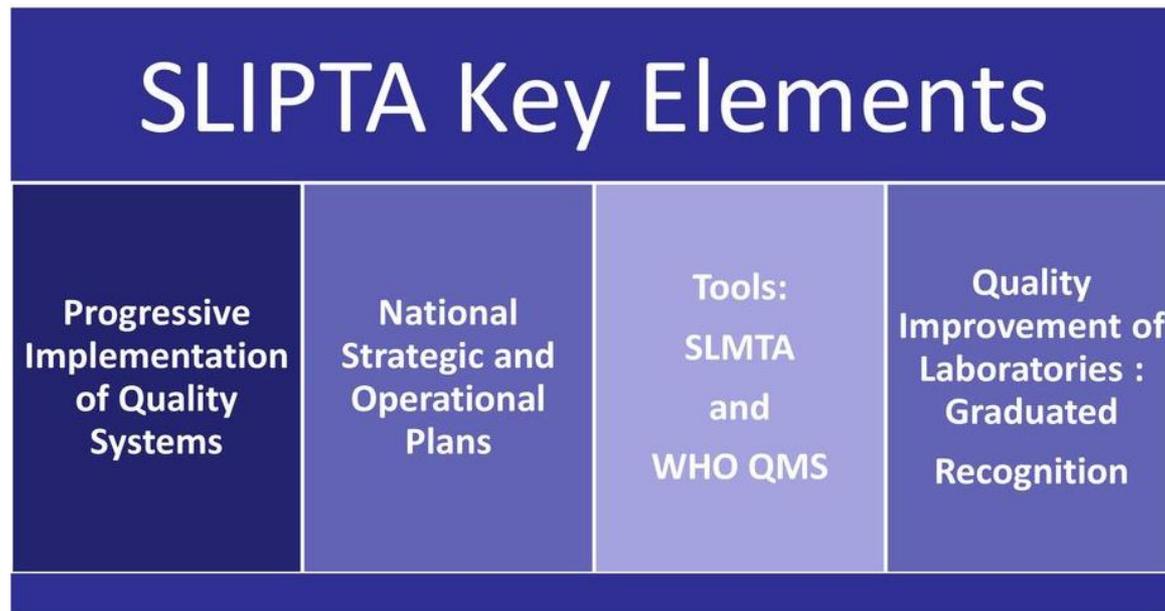
Results in...

- **Different** diagnostic results
 - “Had the results been used to predict AST and guide treatment a different antibiotic would have been recommended for each isolate by at least one laboratory” (Doyle, R., et al., 2019)

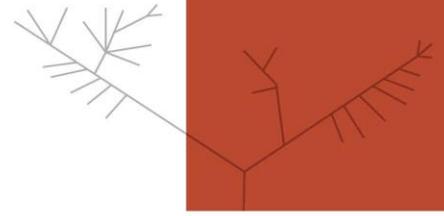


Why Quality is Important?

- We assess laboratories using the WHO SLIPTA checklist
 - Mentorship approach to help ↓ level laboratories
- We find there is not much in place for QMS
- In conjunction with QMS we focus on technical areas of the laboratory



Nampula's TB Reference Lab in Mozambique just received 3 Stars



Quality in the Laboratory

Quality Measures in Mentorship Facilitation:

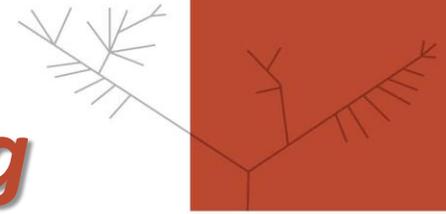
- Facilities and Safety
- Equipment Maintenance
- Purchasing and Inventory
- Documents, Records and Information Management
- Process Control (Quality Control)
- Personnel (Training and Competency Testing)
- Assessment (External Quality Assessment)
- Process Improvement (Quality Indicators)

Where Quality could FAIL

- Collecting & preparing specimen
- Transportation
- Testing procedures not followed properly
- Data management & analysis
- Turn around time
- Policies/guidelines/SOPs not followed
- Lack of Personnel (involvement due to poor incentives)
- Management Commitment
- Lack of essential supplies & equipment service & calibration



Strengthening Quality in the Laboratory Through Mentoring



- Provides a bridge between didactic training and lab practice
- Assists with preparation for the Stepwise Lab Improvement Process Towards Accreditation (SLIPTA)
- Enables long-term, two-way relationship between Mentor and Mentee working at site or off-site (continuous electronic communication)
 - Experienced expert/Mentor (external consultant or local Mentor)
 - Lab technologist/Mentee can practice new skills



ASM Laboratory Mentoring Program Structure



Project ECHO



American Society for Microbiology - Washington D.C.

Strengthening laboratories through community learning

- Sense of community
- Virtual didactic lectures and case presentations



Misidentification

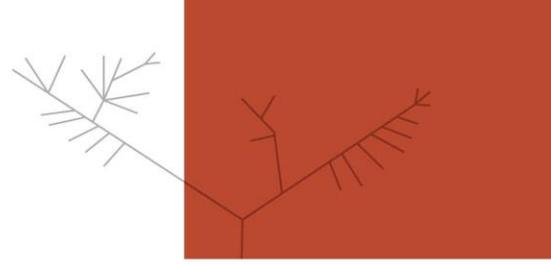
Organisms that can be misidentified in commercial and automated systems:

- *Brucella* spp. and *Francisella tularensis*; *Francisella* is frequently misidentified as *Haemophilus influenzae* or *Actinobacillus* spp. on automated systems
- *Brucella* spp. have been misidentified as *Ochrobactrum anthropi*
- Be aware of the potential for misID of these organisms; suspected *Francisella*, *Brucella*, should **not** be tested on an automated system

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Bottom Line



"I've got a great gift of knowledge from ASM and now I feel capable to give back to my community. So, I would like to thank ASM for their unlimited support!"



"We have been mentored by ASM since 2011. At this time our laboratory is fully functional to provide routine culture services on quality basis. Never leave us alone; we love ASM!"





Muito Obrigada!

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