

# REPORT OF THE MISSION TO ASSESS THE CAPACITY OF LABORATORIES INVOLVED IN THE DIAGNOSIS AND SURVEILLANCE OF CHOLERA IN CAMEROON

**9<sup>TH</sup> MEETING OF GTFCC-EGYPTE 2024**

*Presented by*

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# Plan

- Background and justification
- Objectives
- Aim
- Methodology
- Results, strengths and difficulties of the assignment
- Next steps

# Background and justification

- Numerous cholera epidemics worldwide, also in Africa
- Cameroon, endemic country, Outbreak: 2021 - 2023

21,304 reported cases, 504 deaths Case (lethality 2.4%), laboratory confirmation 9.8%

- Cholera surveillance based on reporting of suspected cases (clinical signs and epidemiological context, little laboratory confirmation)
- Major challenge for the GTFCC = Strengthening the capacity of laboratories involved in cholera response.
- Laboratory assessment: GTFCC/LWG pilot initiative in 4 countries

# Objectives

## **General**

Assessing the laboratory surveillance system and diagnostic capabilities for confirming cholera in Cameroon

## **Specifics**

1. Present all aspects of the organisation and management of registered laboratories
2. Identify methods used to diagnose and confirm suspected cases
3. Describe the supply and distribution chain of inputs
4. Assess the technical competence of laboratory staff

# Aim

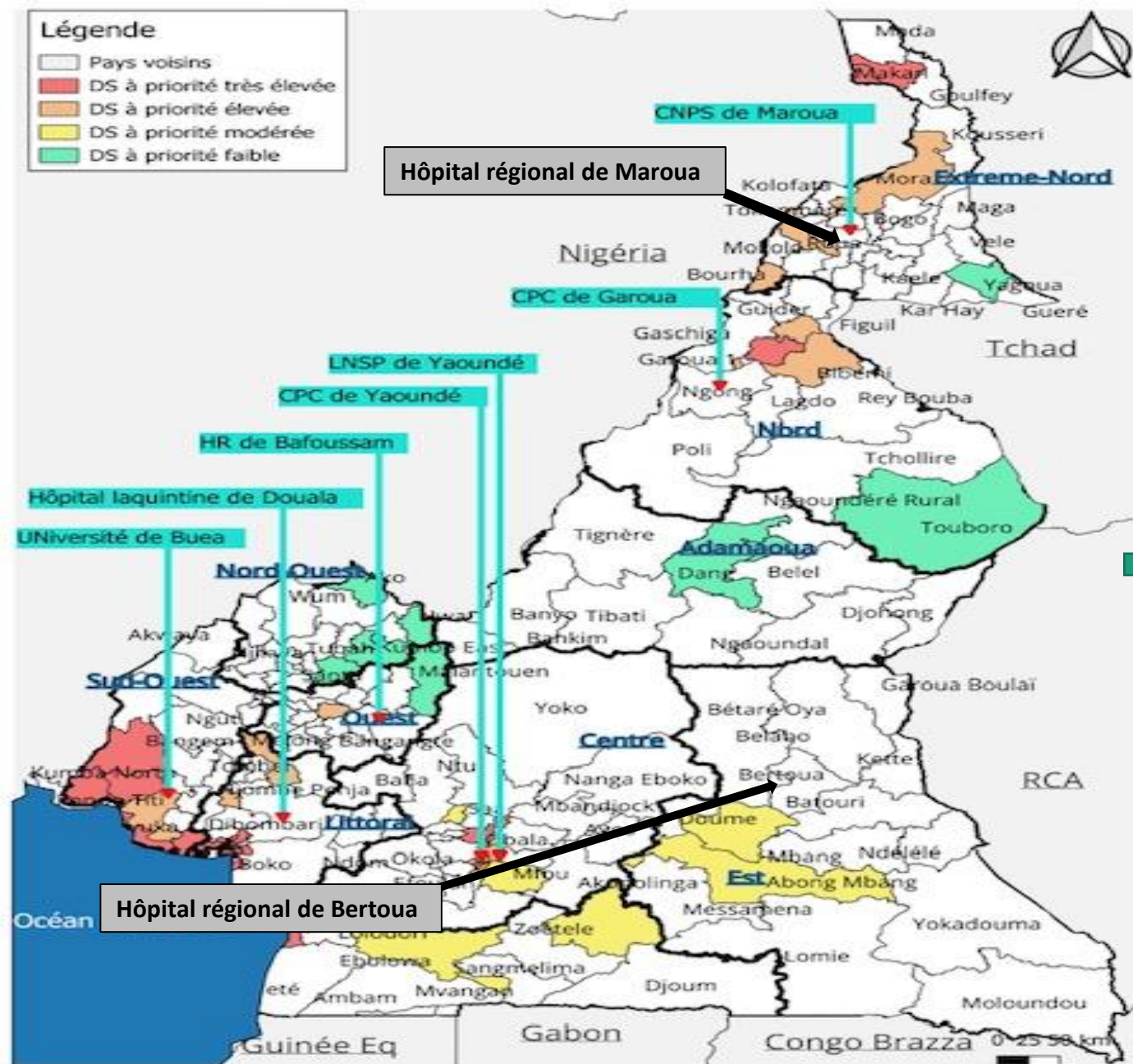
- Identify weaknesses in the laboratories involved in cholera control in Cameroon
- Highlight the shortcomings of the laboratory surveillance system
- Identify the needs according to the specificities of each region
- Make appropriate recommendations
- Advocacy for support to strengthen the capacity of these laboratories

# Methodology:

**Period :** 14 – 26 April 2024

## **Participants**

- Central evaluators: Department of disease, epidemics and pandemics control, National Public Health Laboratory (NPHL), Centre Pasteur de Cameroun
- Regional evaluators: CERPLE coordinator
- Stakeholders in the field: public health regional delegation/manager of the structures/staff of the laboratories visited
- Technical and financial partners: CDC, WHO and GTFCC



## • Selection of laboratories:

### 9 laboratories in 7 regions

(07 already involved in cholera confirmation + 02 potential)

## • Phases: preparatory – evaluation -report

## • Distribution:

04 pools North/Far North, Littoral/South-West, East-West and Centre

# Methodology

## Approach used:

- Site visit,
- Documentary review,
- Interviews with resource persons

## Evaluation tool:

- GTFCC evaluation grid for observation of the cholera laboratory diagnostic system

**11 items and gap analysis at the end**

## Points addressed in the grid

1-Organisation and management

2-Documents

3-Specimen collection, handling and transport

4-Information and data management

5-Consumables and reagents

6-Equipments

7-Laboratory test performance

8-Facilities (infrastructures)

9-Human resources

10-Management of biohazards

11- Public health functions

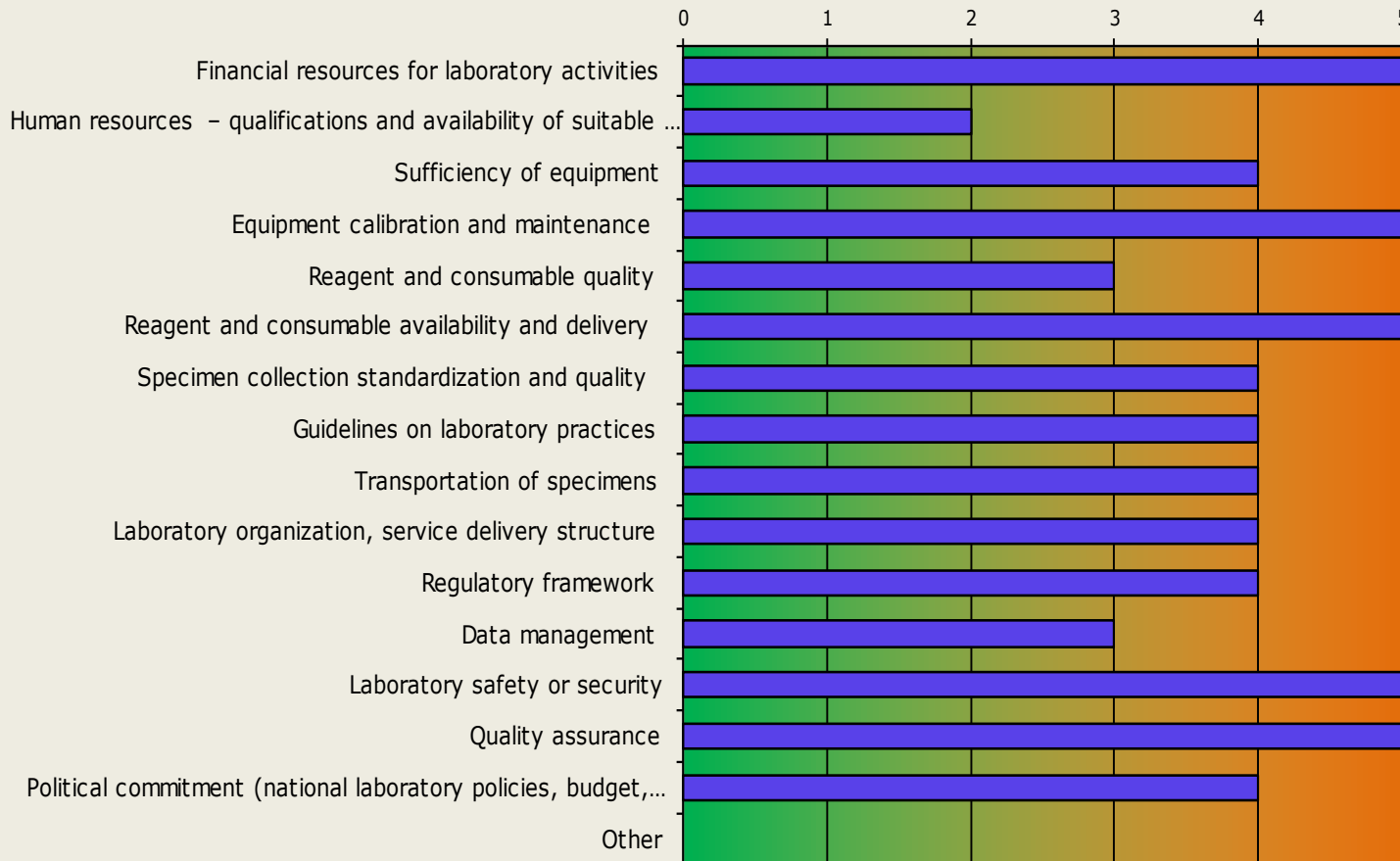


# RESULTS

# Results (1/10)

## National Public Health Laboratory (NPHL)

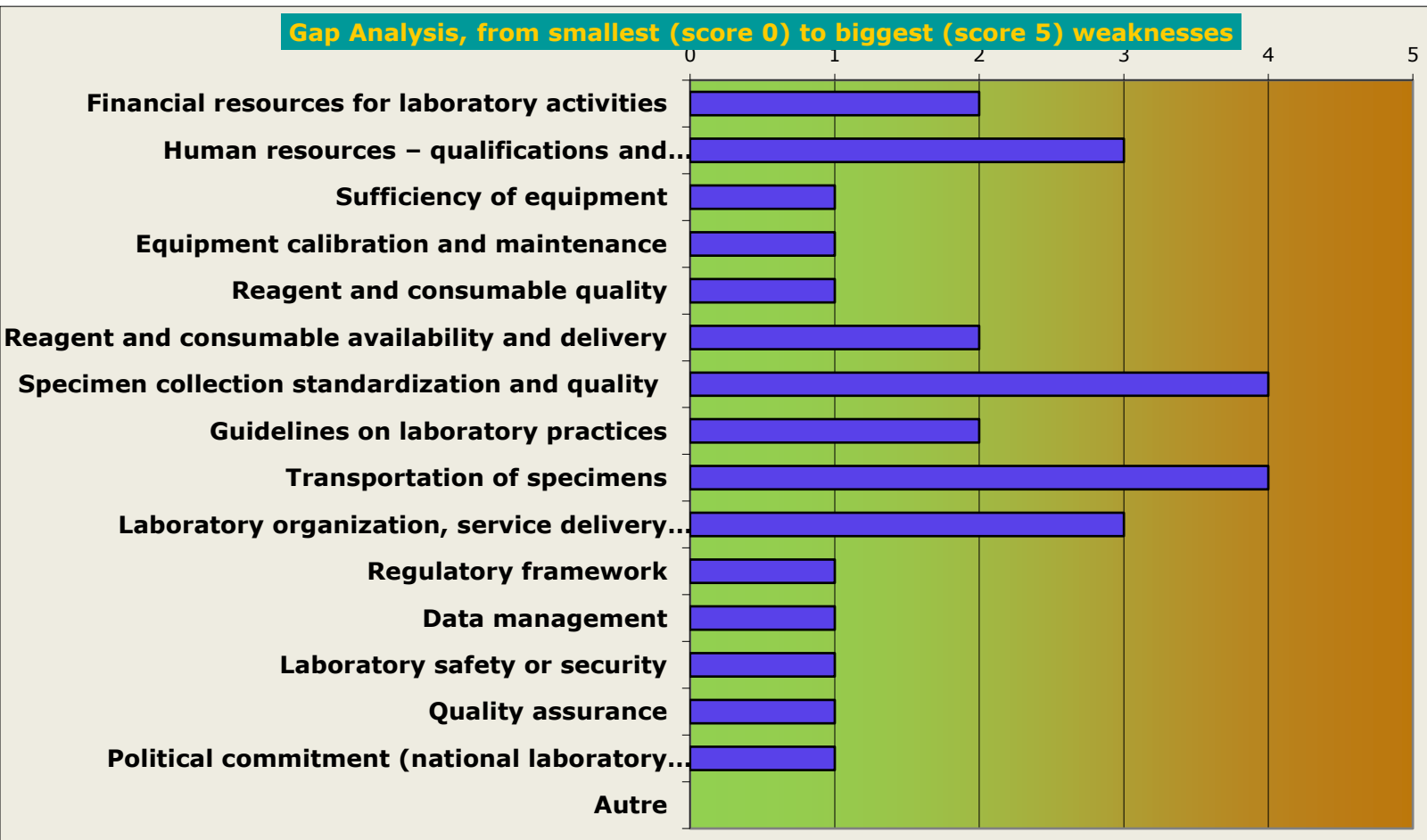
Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses



- Insufficient support and lack of legal framework
- Equipment: no automated equipment in bacteriology laboratory and waste management
- Equipment maintenance problems
- Quality assurance
- Limited working space

# Results (2/10)

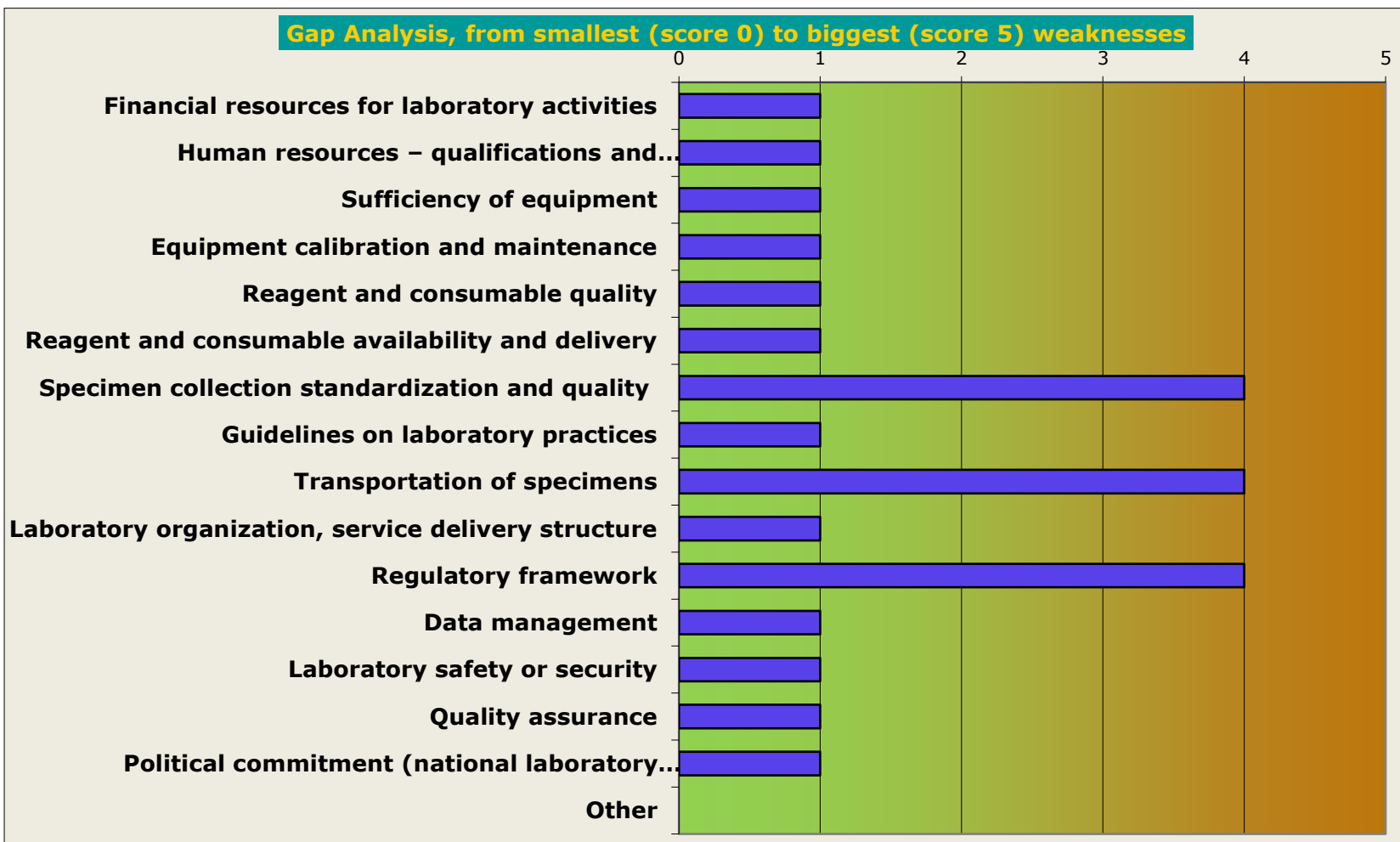
## Bactériology Laboratory of Centre Pasteur du Cameroun (CPC) Yaoundé



- Human resources: limited + need of training (PCR, metrology, sequencing)
- Limited working space

# Results (3/10)

## CPC environment and water laboratory Yaoundé

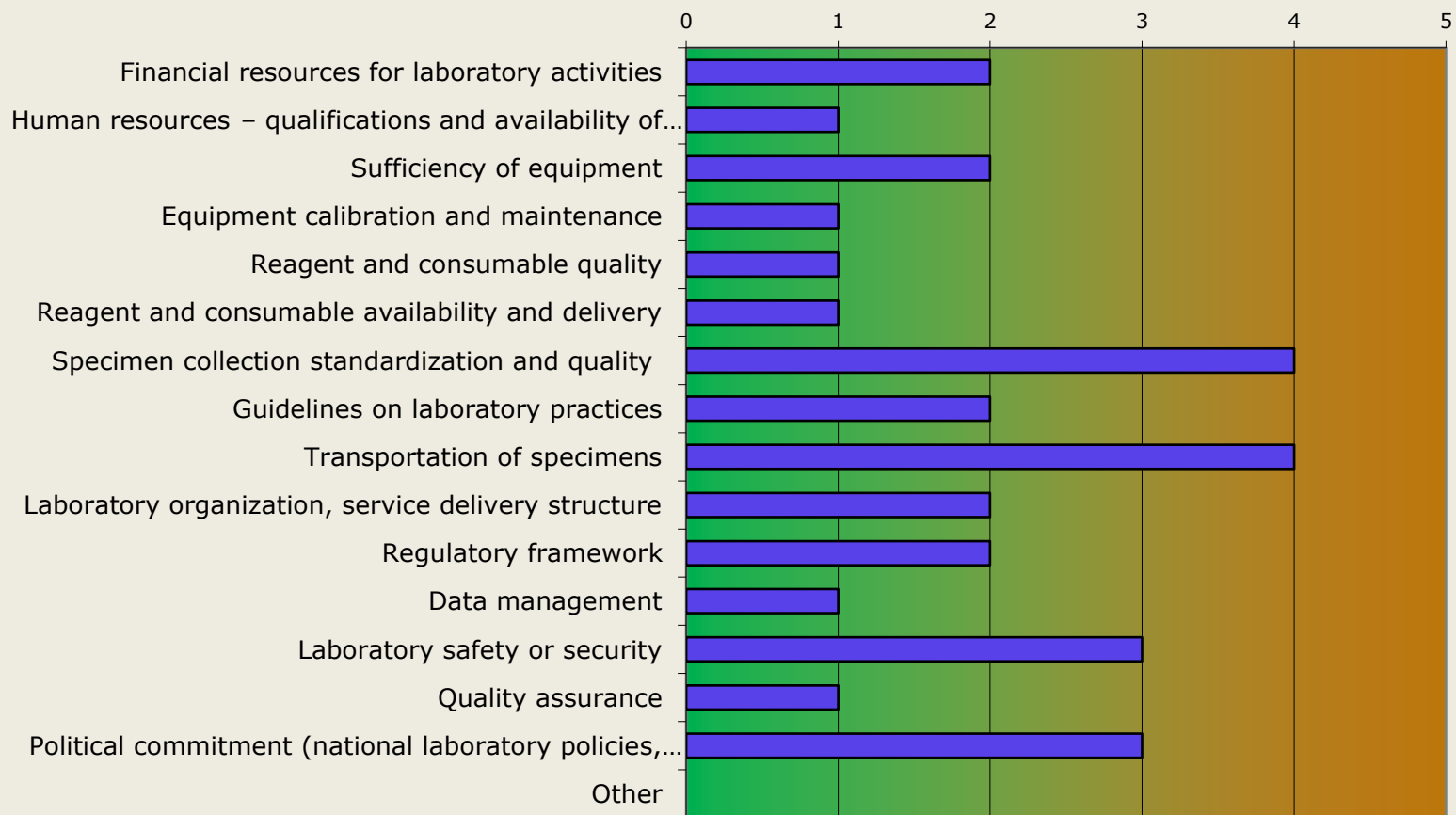


- No commitment from management
- Not included in surveillance system

# Results ( 4/10)

## CPC Garoua annex

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses



- Equipment : for data management and storage, no automated identification systems



*Assessment of Garoua annex, Centre Pasteur*  
*18 April 2024*

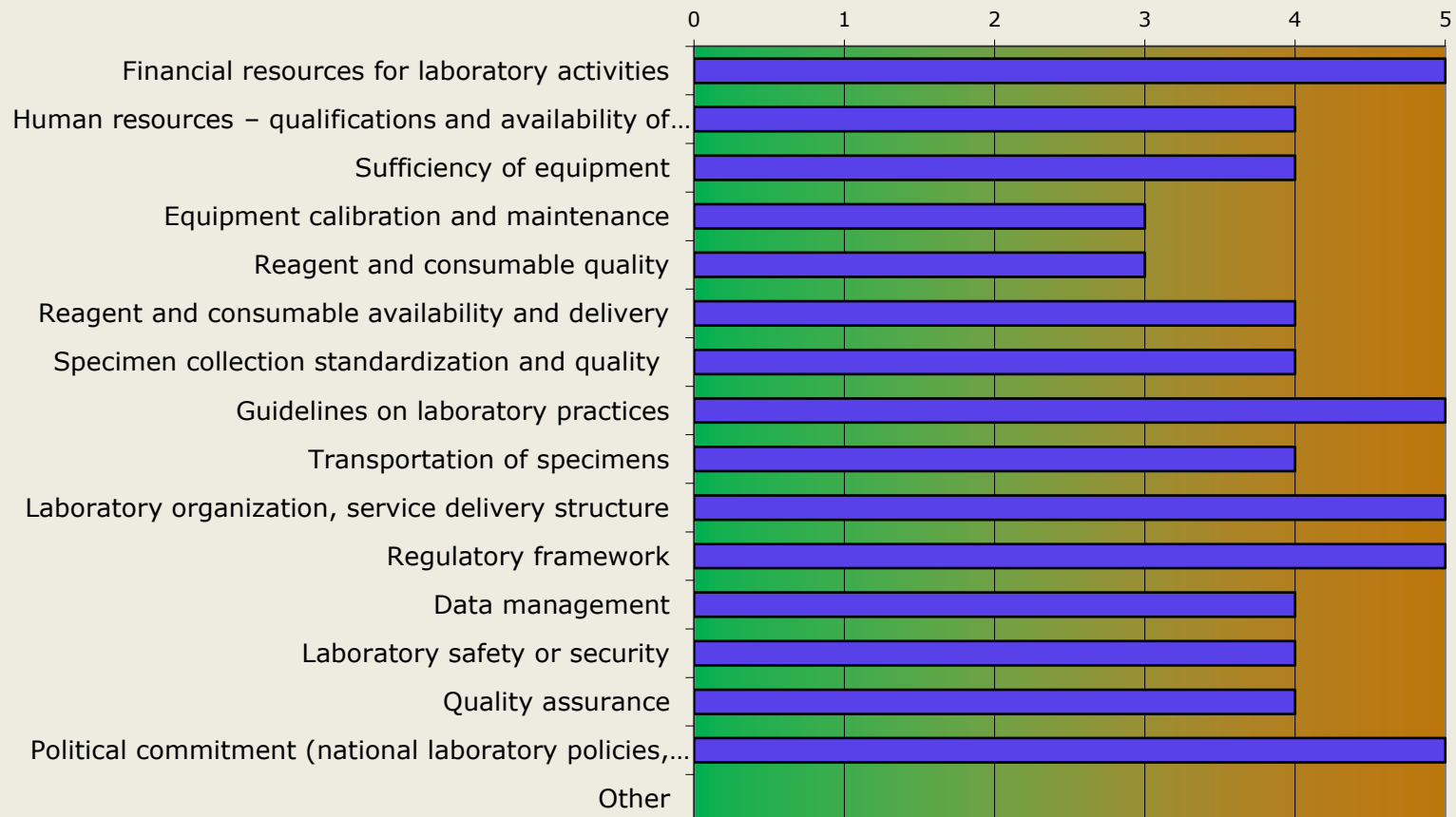




# Results (5/10)

## Medical and Social Center CNPS Maroua

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses

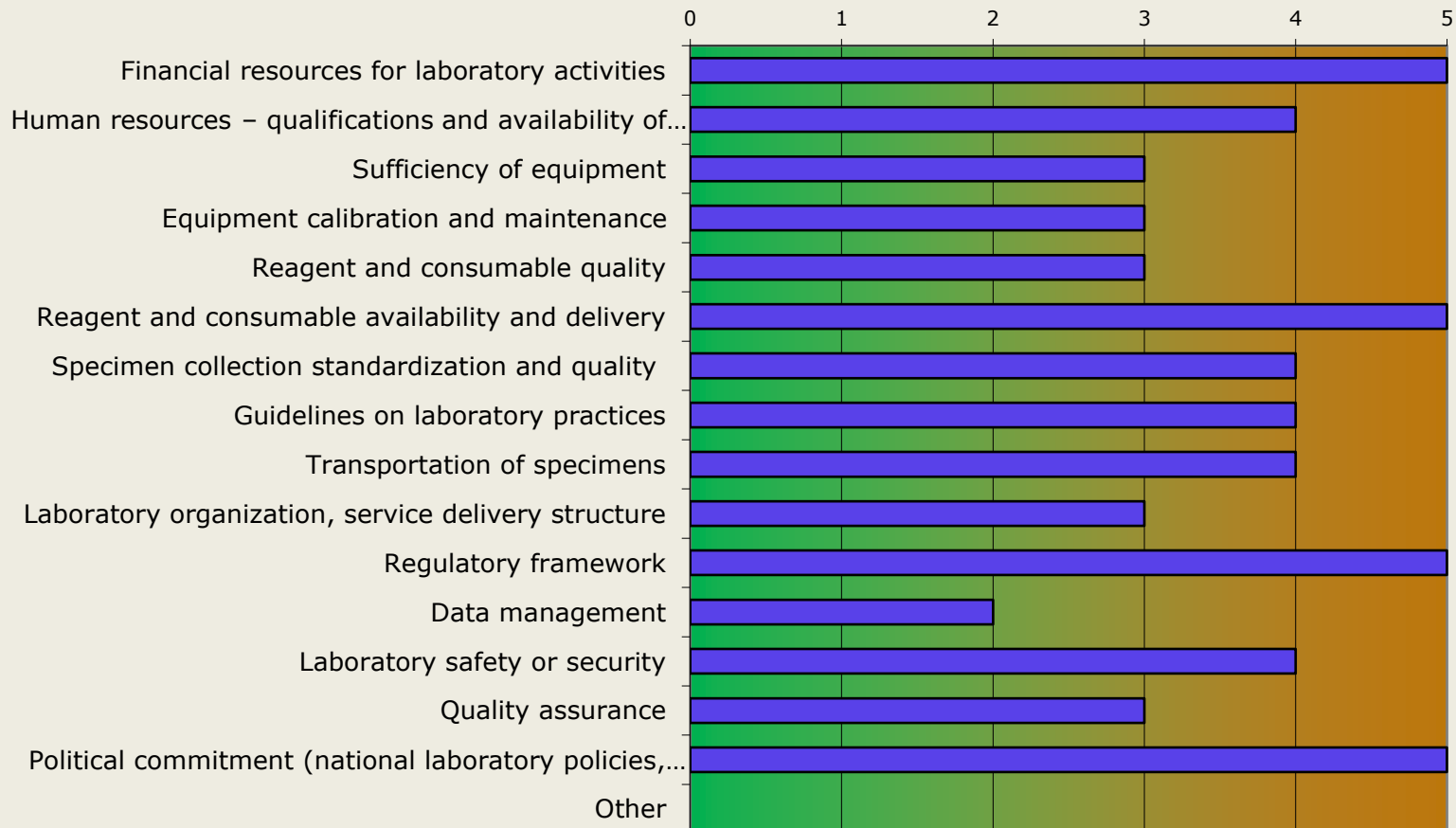


- Human resources: few staff involved in confirmation, training and investigations team
- Poorly equipped for bacteriology
- No Standard Operating Procedures
- Dilapidated infrastructure and limited dedicated space
- End date to participation of laboratory in cholera surveillance

# Results (6/10)

## Maroua Regional Hospital

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses



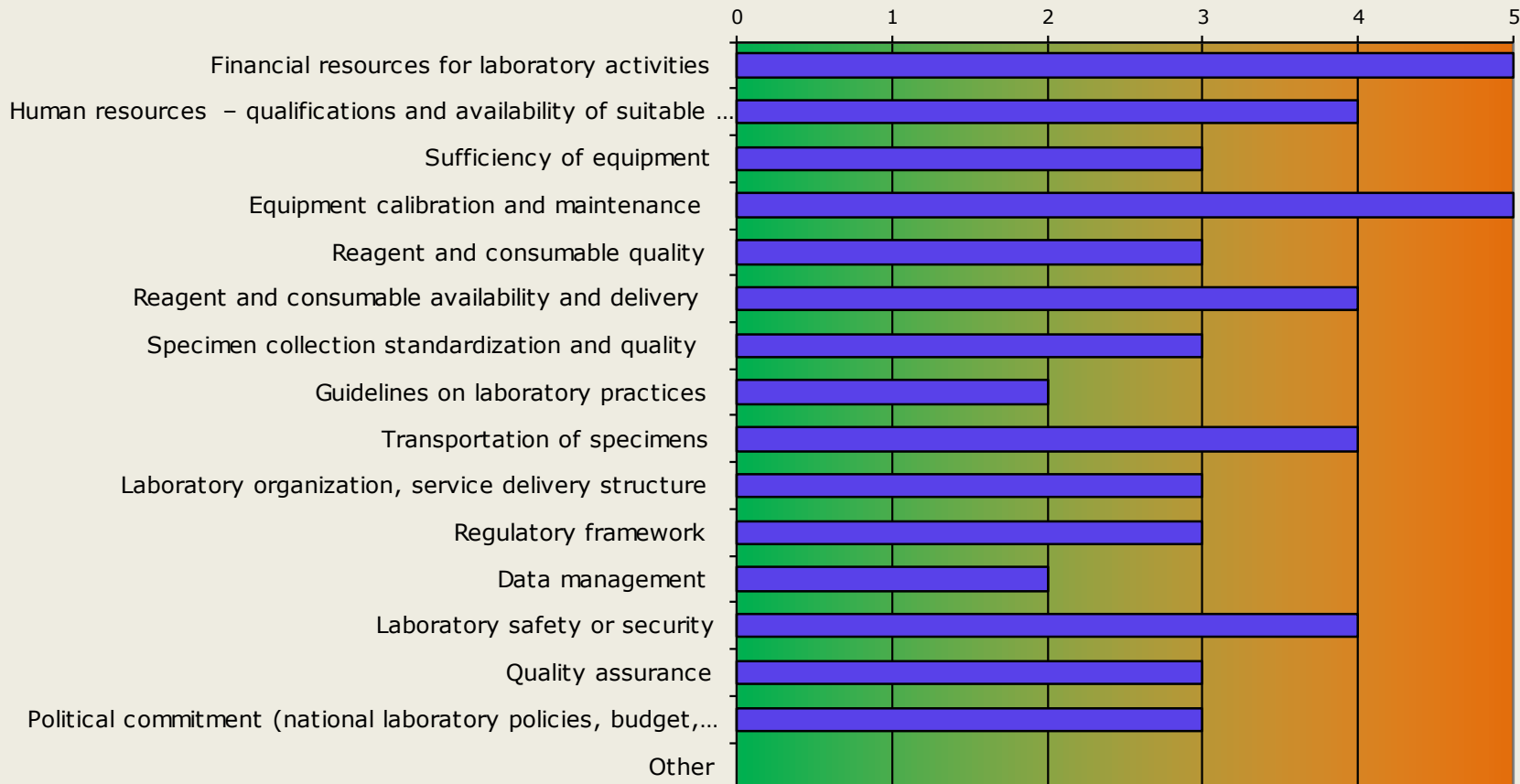
- Human resources: qualified, motivated staff, few trained on cholera confirmation
- Regulatory framework: CTC available but not involved in cholera confirmation
- Limited working space



# Results (7/10)

## Bafoussam Regional Hospital Laboratory

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses

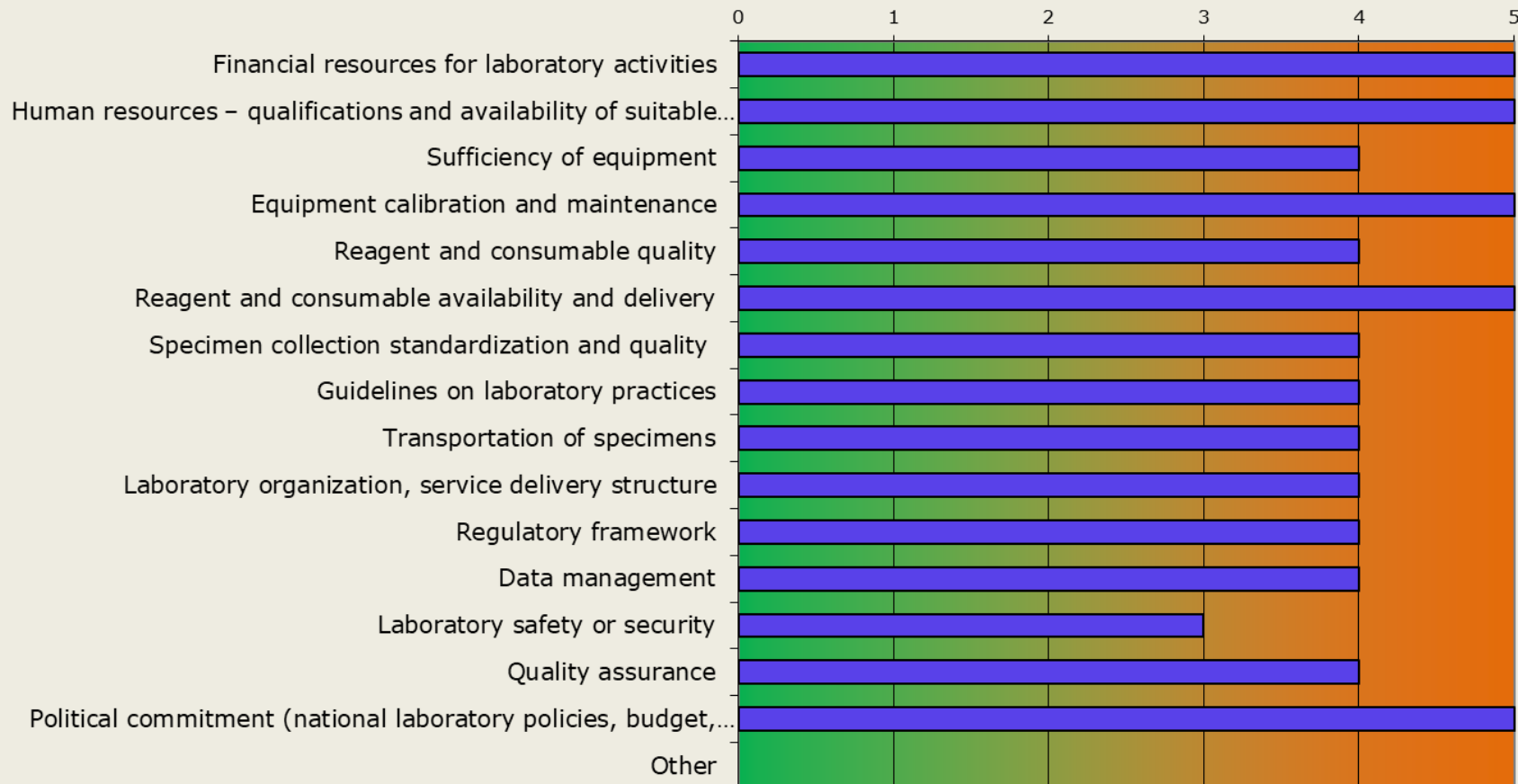


- Human resources:  
limited staff
- Waste management
- Limited dedicated space

# Results (8/10)

## Bertoua Regional Hospital Laboratory

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses

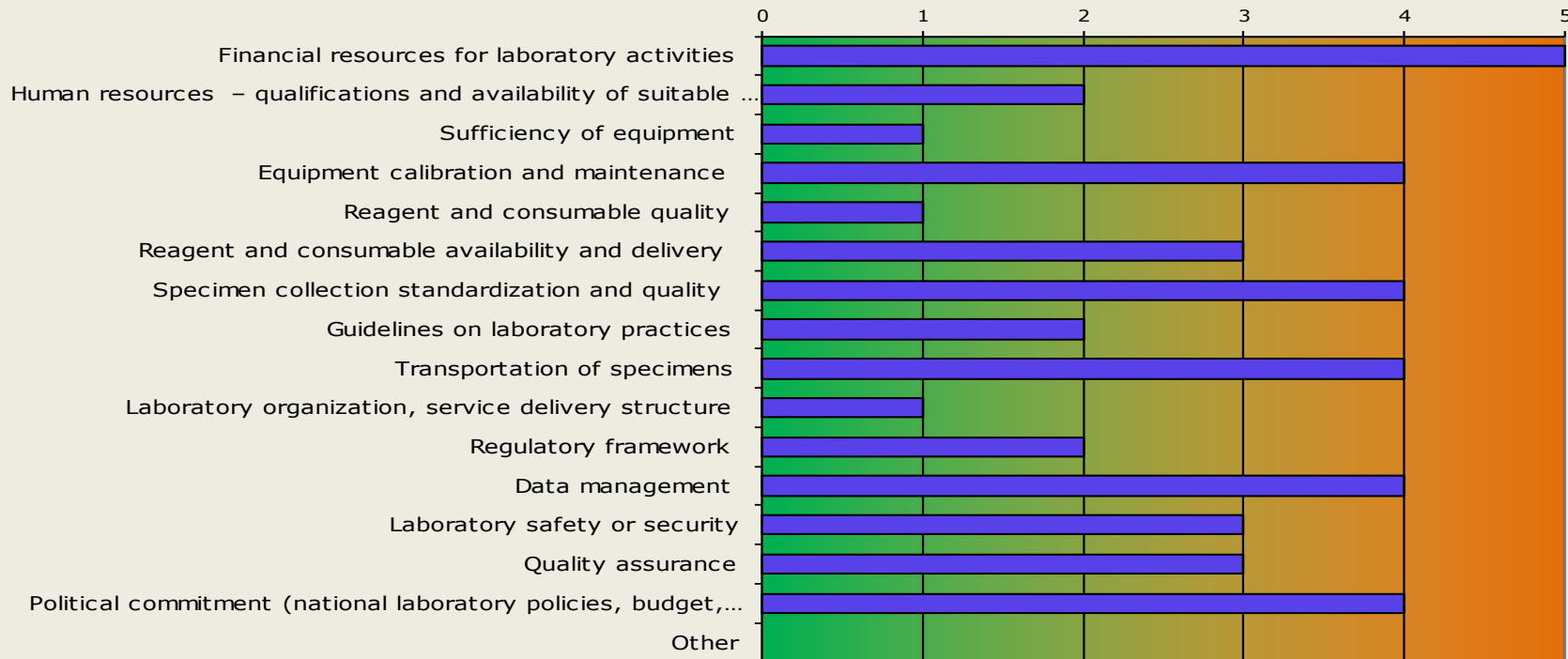


- Not yet dedicated to cholera confirmation
- No staff capacity
- Poorly equipped

# Results (9/10)

## Bacteriology Laboratory of the Laquintinie Hospital in Douala (HLD)

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses



- Problem of electrical stability (risk of loss)
- Problems with data management and archiving
- Problems with waste management

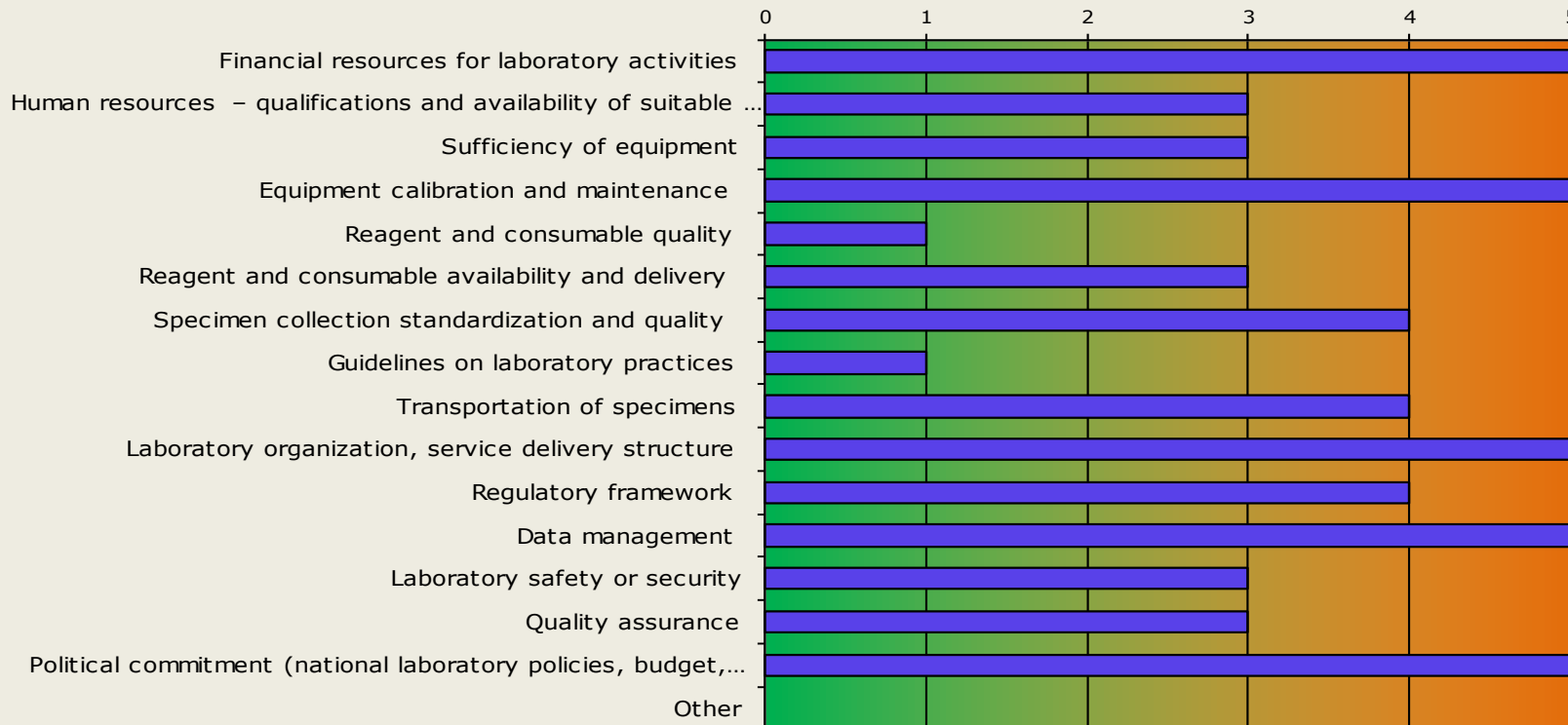


*Assessment Hôpital de Laquitinie de Douala, 19 April 2024*

# Results (10/12)

## Laboratory for Emerging Infectious Diseases (LEID) of Buea

Gap Analysis, from smallest (score 0) to biggest (score 5) weaknesses



- Dedicated research facility with partnerships
- No formal status (university structure)
- Limited space

# Results: strengths (11/12)

- Availability of minimum technical platform + storage capacity (-20°C, -80°C)
- Good technical skills of staff
- Staff motivated to carry out cholera surveillance activities
- Capacity for genomic analysis
- Partnership with other sectoral institutions: CNPS, University of Buea
- Good cooperation with the surveillance system
- Availability of accredited laboratory for environmental analysis

# Results : weaknesses (12/12)

- Lack of specific funding for cholera laboratories
- Frequent shortages of laboratory inputs (supply = donations ++)
- Sample transport system not integrated, lack of funding
- Few staff trained in sample collection, packaging and transport
- Few staff trained in the principles of biosafety and biosecurity
- No national quality control or management system for cholera
- Equipment maintenance problems
- Notification problems: various notification forms in Health Districts, no use of DHIS2



# Assessment mission conduct

## Highlights

- Joint mission, participation of all stakeholders
- Strong involvement of regional evaluators

## Difficulties encountered

- Organisational problems at the beginning (activity postponed)
- Some logistical problems
- Tool in pilot phase, with some functional problems
- Weather conditions (extreme heat): North/Far North



# Recommendations

- Formalise mapping of cholera reference laboratories
- Allocate funds to support laboratory surveillance of cholera
- Advocacy technical and financial partners for targeted support by region
- Improve the specimen transport system
- Provide regular supplies to laboratories
- Build capacity of health workers to collect, package and transport samples to laboratories
- Ensure maintenance of equipment

# Next steps

- Advocacy with TFPs
- Completion of 10-regions evaluation  
(3 regions)
- Reactivation of cholera sub-network
- System strengthening



• **THANK YOU**

All participants



*NPHL assessment, 22 April 2024*

• **FOR YOUR ATTENTION**