

Laboratory Assessments: Report (AMR Testing Laboratories in India)

ICMR- AIIMS HAI Surveillance Network

Dr Vikas Gautam PGIMER, Chandigarh

Dr A Siromony Valan, CDC-India



Introduction

- ✿ The Global Health Security Agenda (GHSA) is an effort by nations and international organizations to accelerate progress toward a world safe and secure from infectious disease threats
- ✿ Antimicrobial Resistance (AMR) one of the 11 GHSA action packages
- ✿ The AMR action package focuses on
 - ✿ Strengthening laboratory capacity to detect AMR
 - ✿ Implementation of AMR surveillance
 - ✿ Report and follow resistance trends.

GHSA

Countries interested in joining GHSA should contact the **Italian Secretariat**. New commitments should be addressed to the current GHSA Chair, noting which Action Package(s) you would like to join and providing points of contact at both the technical and political level.

For more information, please contact the Italian Secretariat (ghsaitaly@sanita.it).

- Afghanistan
- Argentina
- Australia
- Azerbaijan
- Bangladesh
- Burkina Faso
- Cameroon
- Canada
- Chile
- China
- Colombia
- Côte d'Ivoire
- Democratic Republic of Congo
- Denmark
- Ethiopia
- Finland
- France
- Georgia
- Germany
- Ghana
- Guinea
- Guinea-Bissau
- Haiti
- India
- Indonesia
- Israel
- Italy
- Japan
- Jordan
- Kenya
- Lao People's Democratic Republic
- Liberia
- Malaysia
- Mali
- Mexico
- Mongolia
- Netherlands
- Nigeria
- Norway
- Pakistan
- Peru
- Philippines
- Portugal
- Republic of the Congo
- Republic of Korea
- Saudi Arabia
- Senegal
- Sierra Leone
- Singapore
- South Africa
- Spain
- Sweden
- Switzerland
- Thailand
- Togo
- Turkey
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
- United Republic of Tanzania
- United States of America
- Viet Nam
- Yemen
- Zimbabwe

**Countries updated as of 20 May 2018*



World Health
Organization

WHO list of AMR pathogens

- ✿ *Staphylococcus aureus*
- ✿ *Streptococcus pneumoniae*
- ✿ *Neisseria gonorrhoeae*
- ✿ *Escherichia coli*
- ✿ *Klebsiella pneumoniae*
- ✿ *Salmonella* species
- ✿ *Shigella* species
- ✿ *Acinetobacter baumannii*

Assessment tool

* Purpose

* Baseline assessment of capacity

- * individual laboratories included in the National AMR surveillance network in India

* Through evaluation

* develop an action plan

- * to improve laboratory capacity to Identify, detect and report AMR pathogens

Laboratory Antibacterial Resistance Surveillance Readiness Tool

Updated June 2017

Modified for India September 2017

India Annex

AFTER ANSWERING QUESTION 25 IN THE MAIN DOCUMENT, ANSWER QUESTION A BELOW

A. Does the laboratory have separate incompatible activities

Yes

No

AFTER ANSWERING QUESTION A, PROCEED TO QUESTION 26 ON PAGE 9 OF THE MAIN DOCUMENT

AFTER ANSWERING QUESTION 28 IN THE MAIN DOCUMENT, ANSWER QUESTION B BELOW

B. Does the laboratory have quality certificates like installation qualification (IQ), operational qualification (OQ) and performance qualification (PQ) for the equipment

Yes

No

AFTER COMPLETING QUESTION B, PROCEED TO QUESTION 29 ON PAGE 10 OF THE MAIN DOCUMENT

AFTER ANSWERING QUESTION 54 IN THE MAIN DOCUMENT, ANSWER QUESTION C BELOW

C. Review each specimen-specific collection guideline. Are guidelines present and do they address the following items?

If no guidelines exist, circle 'no' under the first column and do not answer the subsequent questions for that specimen type (This is part of Q 54)

	Present?	Collection technique	Approved containers	Min/Max volume	Proper labeling	Transport temperature	Transport time
e. Wounds/Pus	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
f. CSF	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
g. Sputum/BAL/ETA	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No

Standard: ISO 15189: 5.4

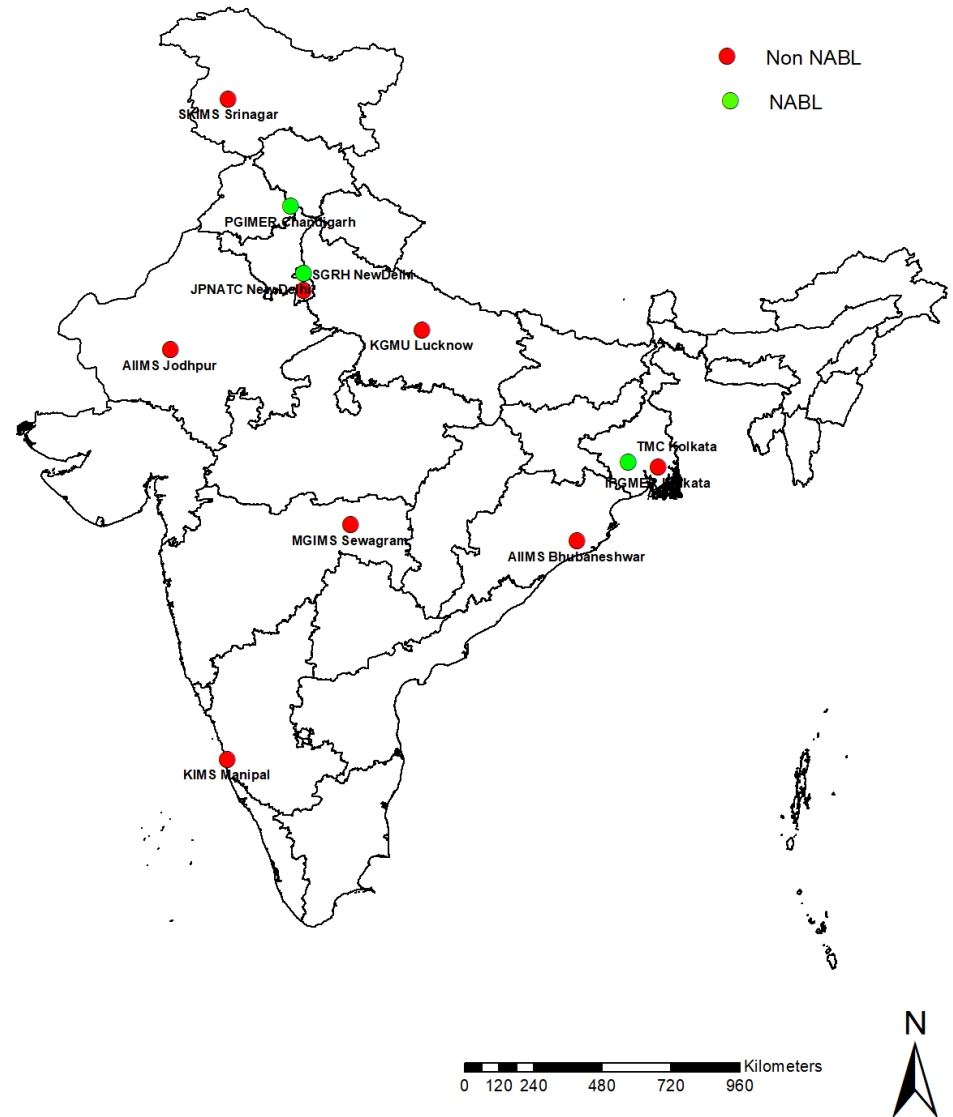
AFTER COMPLETING QUESTION C, PROCEED TO QUESTION 55 ON PAGE 15 OF THE MAIN DOCUMENT

Assessment Process

- * Pilot tested at
 - * AIIMS Trauma Centre
 - * AIIMS Jodhpur
 - * TMC Kolkata

8/ 16 Non NABL
3/8 NABL accredited

AIIMS - ICMR HAI Surveillance Network AMR Laboratory Assessment 2017 - 2018



Assessment Teams

Lab Assessments: AIIMS- ICMR HAI Surveillance - Non NABL Sites

S.N.	Hospital Name		Date of Assessment
1	JPNATC, All India Institute Of Medical Sciences, New Delhi	Delhi	02 November 2017
2	Sher-i- Kashmir Institute of Medical Sciences, Kashmir	Kashmir	13 November 2017
3	AIIMS Jodhpur	Rajasthan	1 September 2017
4	Kasturba Medical College, Manipal	Karnataka	15 November 2017
5	Mahatma Gandhi Institute of Medical Sciences, Sevagram	Maharashtra	08 December 2017
6	King George's Medical University, Lucknow	UP	23 November 2017
7	IPGMER, Kolkata	WB	9 November 2017
8	AIIMS, Bhubaneswar	Odisha	20 November 2017

NABL Sites

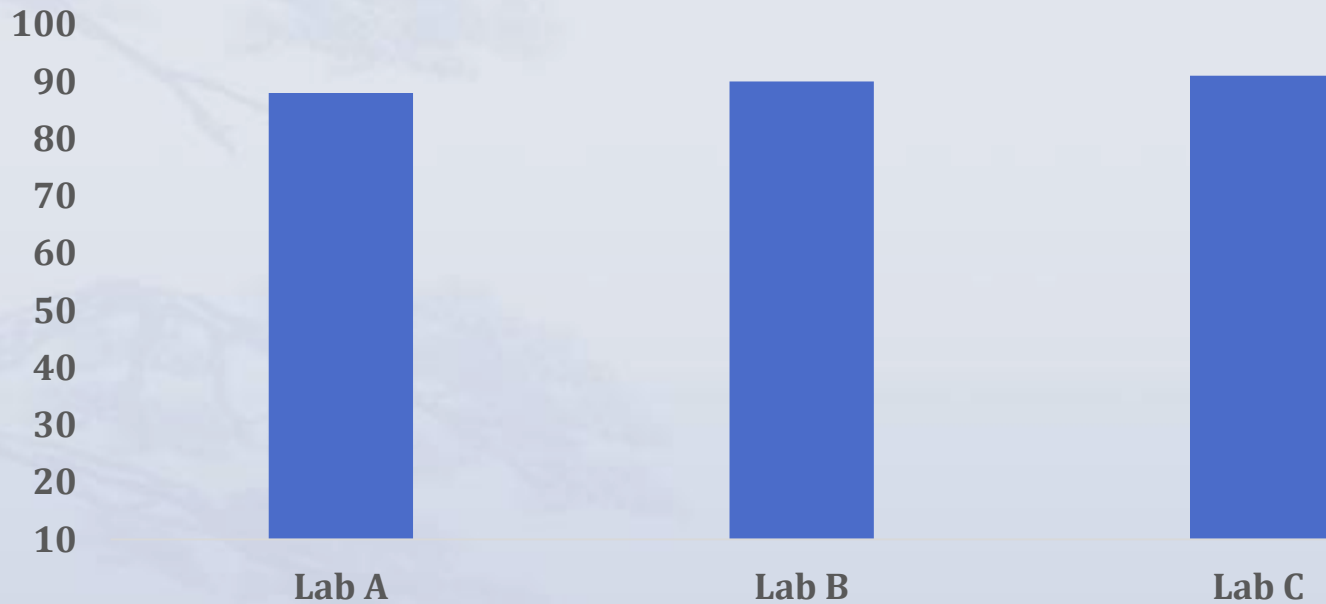
1	Sir Ganga Ram Hospital, Delhi	Delhi	10 April 2018
2	PGIMER, Chandigarh	Chandigarh	27 March 2018
3	TMC Kolkata	WB	28 August 2018

Assessors

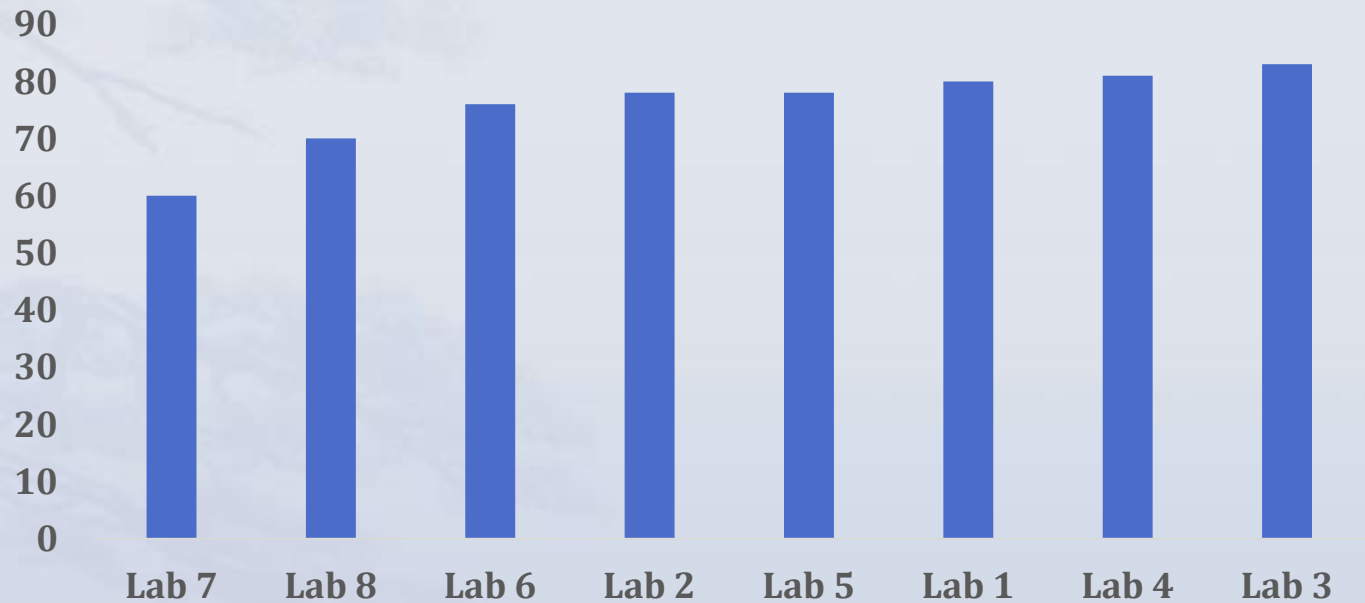
- ❁ Dr Vikas Gautam, PGIMER Chandigarh
- ❁ Dr A.S. Valan, CDC India, New Delhi
- ❁ Dr Sujata Baveja, LTMC, Mumbai
- ❁ Dr Sanjeev K Singh, AIMS, Kochi
- ❁ Dr Purva Mathur, JPNATC, New Delhi
- ❁ Dr. Sanjay Bhattachayra , TMC , Kolkata
- ❁ Dr Indranil Roy, CDC India, New Delhi
- ❁ Dr Neeraj Goel, SGRH, New Delhi
- ❁ Col Saurav Sen, AFMC Pune
- ❁ Dr Smita, ICMR, New Delhi

Assessment scores

NABL Accredited Hospitals



Assessment Scores Non NABL labs





Domain Scores

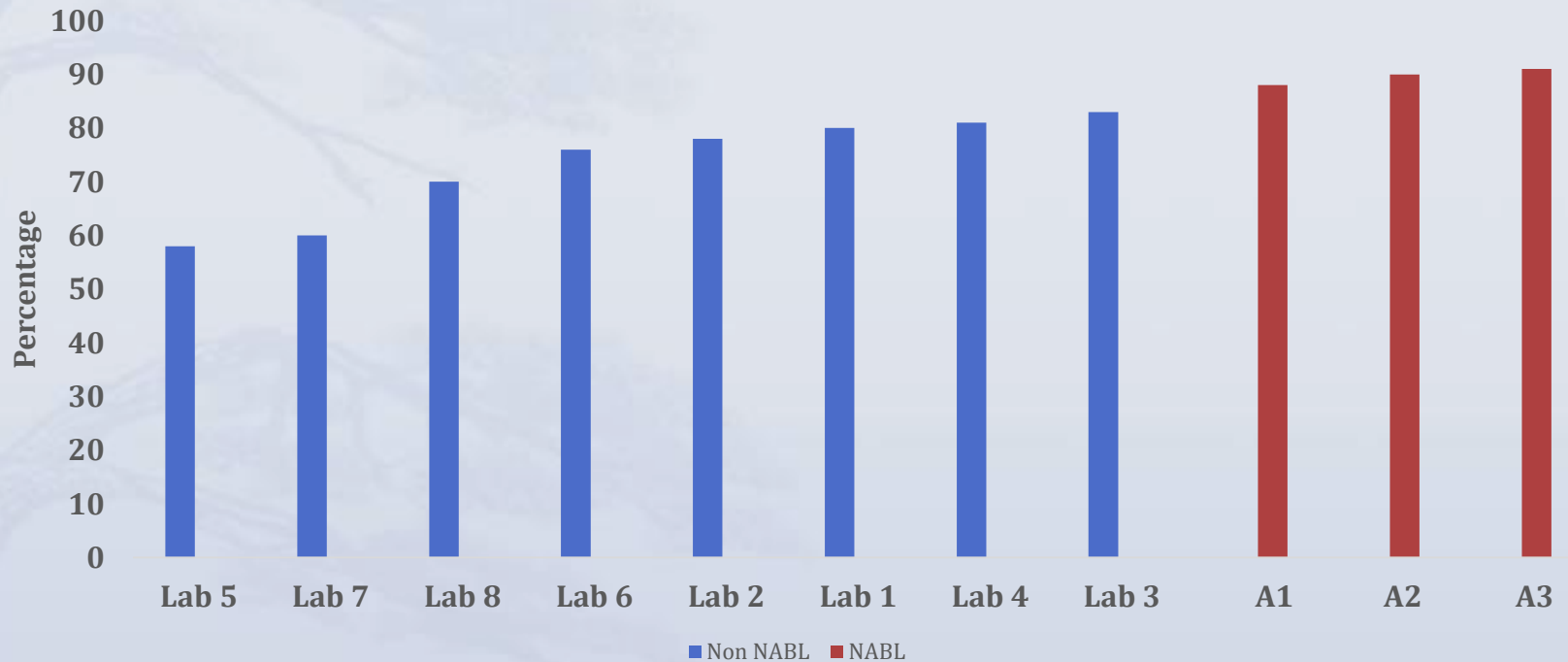
AMR Laboratory Assessments 2017 -18

ICMR- AIIMS Network



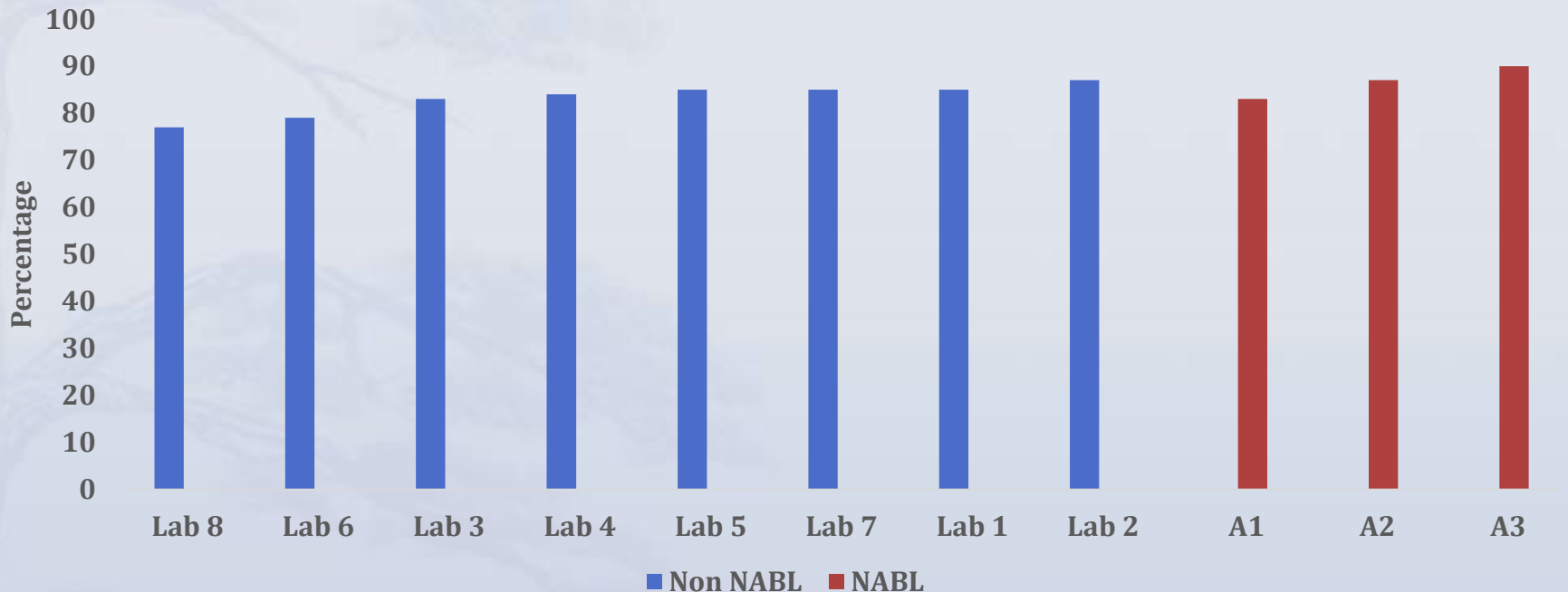
Total Scores

(All domain scores aggregated to 100%)



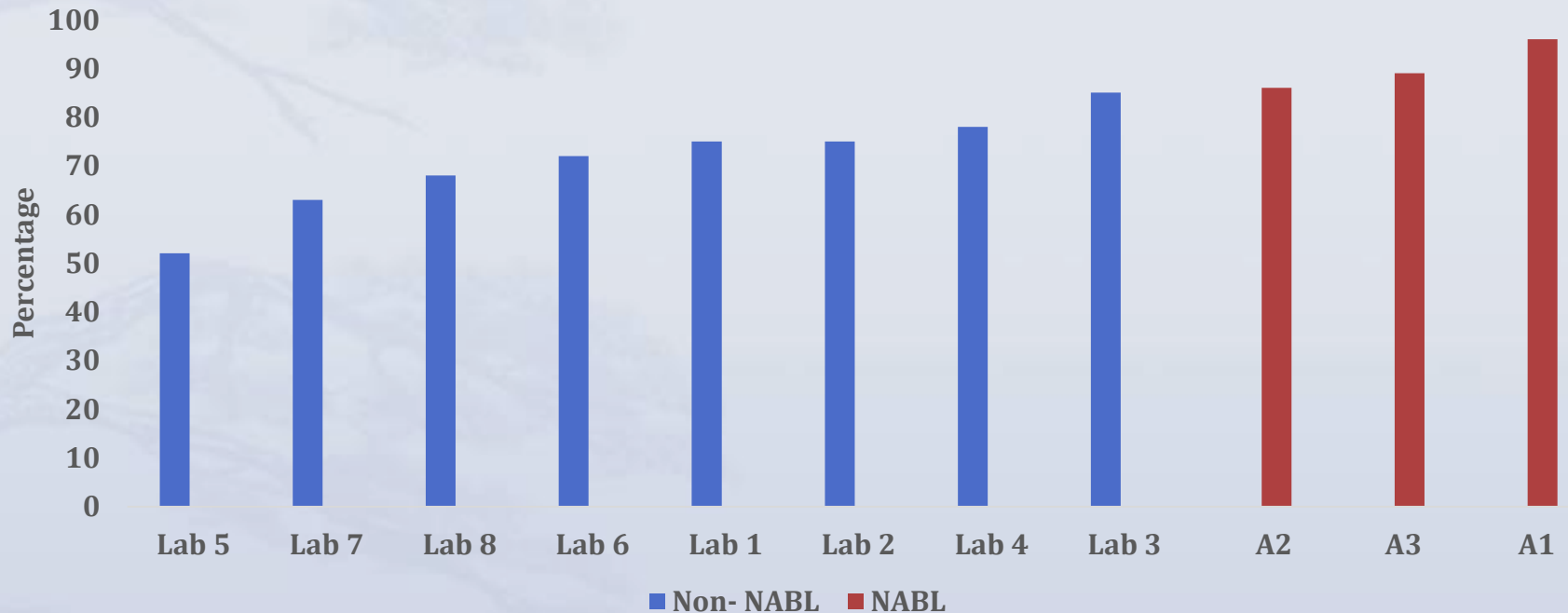
Basic Lab Capacity and Infrastructure

(All domain scores aggregated to 100%)



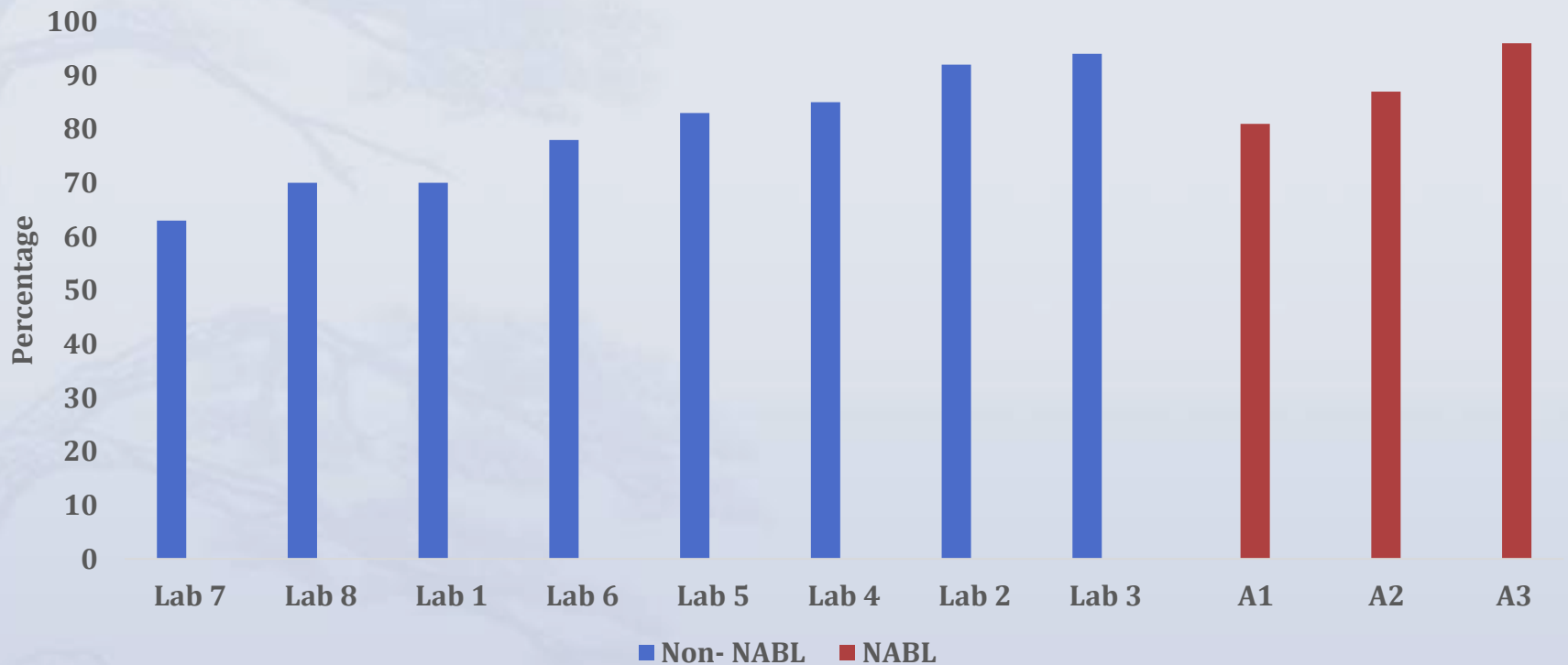
Quality Assurance

(All domain scores aggregated to 100%)



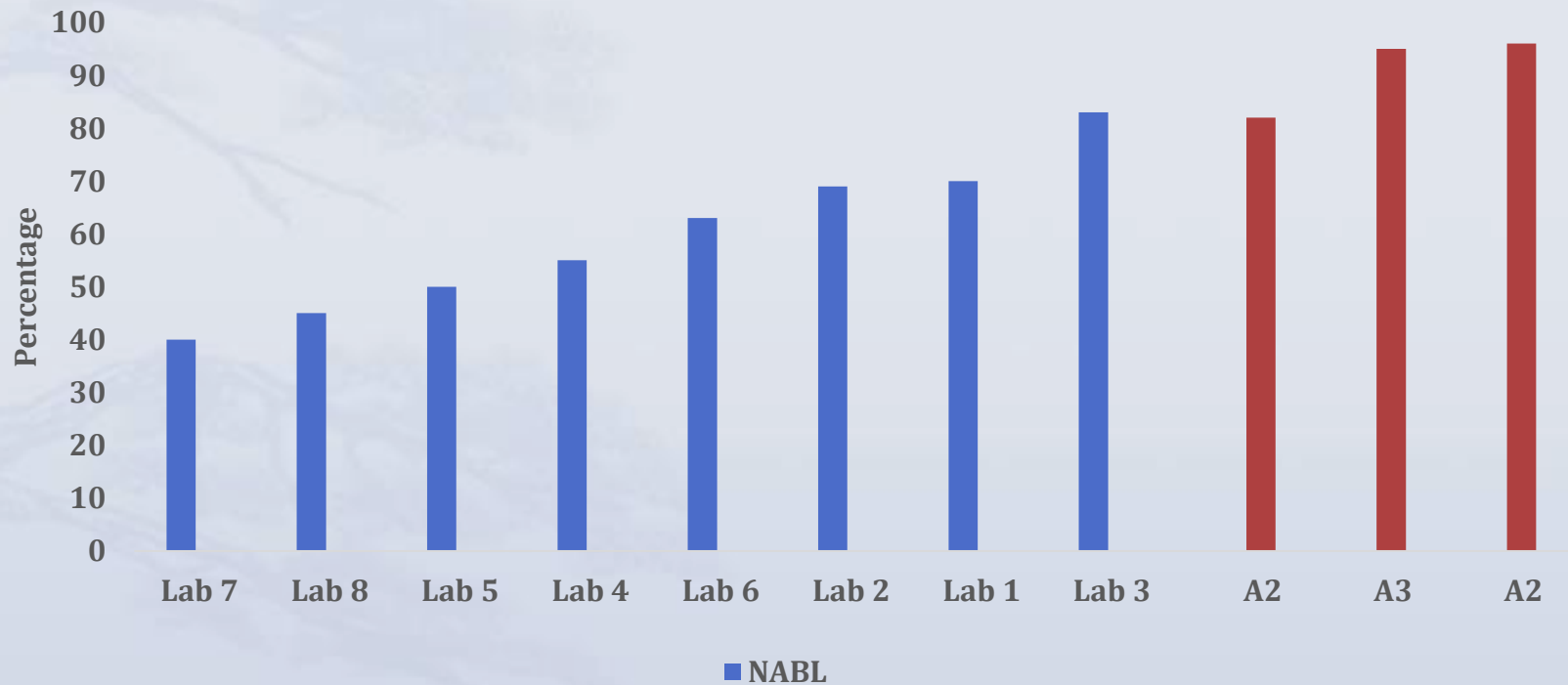
Specimen Processing and Organism Isolation

(All domain scores aggregated to 100%)



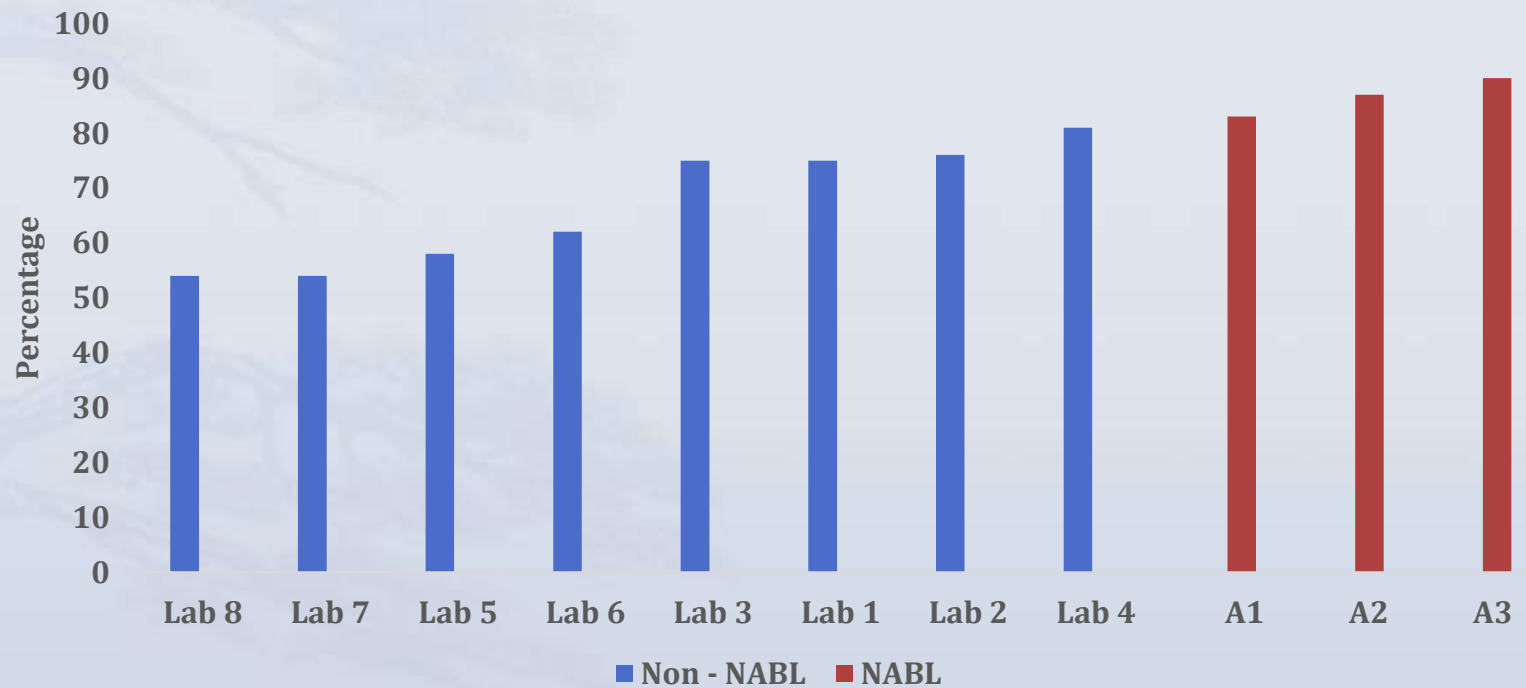
Organism Identification

(All domain scores aggregated to 100%)



AST

(All domain scores aggregated to 100%)



Challenges – Non NABL Labs

- ✿ Basic Lab capacity and Infrastructure
- ✿ Quality Assurance
- ✿ Specimen Processing and Isolation
- ✿ Organism ID
- ✿ AST

Basic Lab capacity and Infrastructure

- ✿ Human Resources
 - ✿ Attrition Rate
- ✿ Training
- ✿ Competency Assessment

Quality Assurance

- ✧ IQC
 - ✧ Availability of ATCC strains
 - ✧ Schedule not maintained
- ✧ Quality of Discs
- ✧ CAPA
- ✧ EQAS Participation



Figure 1: The same isolate resistant with BD discs (B) and one HiMedia disc (H), while false susceptible with another

[Indian J Med Microbiol.](#) 2013 Apr-Jun;31(2):207-8. doi: 10.4103/0255-0857.115244.
Importance of performing routine quality control testing of antimicrobial discs.
[Arora S](#), [Gautam V](#), [Ray P](#).

Specimen Processing and Isolation; Organism ID & AST

- * Documentation
 - * SOPs for (ID , AST, Media preparation)
 - * Latest CLSI break points – NA on benchside
 - * IQC
- * AST – Colistin & Vancomycin
- * AST Data Entry & Analysis

NABL

- ❁ EQAS
- ❁ Sample Collection and Transportation
- ❁ ATCC strains
- ❁ AST – Colistin & Vancomycin



Thanks

