

What's In Your Antimicrobial Assay Report

Andrew Lovering
UK NEQAS for Antimicrobial Assays
Antimicrobial Reference Laboratory
North Bristol NHS Trust

What's in your NEQAS Antibiotic Assay Report?

- Overview of the scoring scheme
- Identification of where the results can be found on the NEQAS report
- Some of the common questions raised by participants

We Assess if a Laboratory Has:-



Poor Accuracy
Poor Precision

Poor Accuracy
Good Precision

Good Accuracy
Good Precision

Scoring in Antibiotic Assay Scheme

- **Absolute error in assaying a single sample**
>30% = repeat sample = ? Blunder

- **Performance over a six month rolling period**

Mean % Error + 2(SD) (95% Confidence Interval)

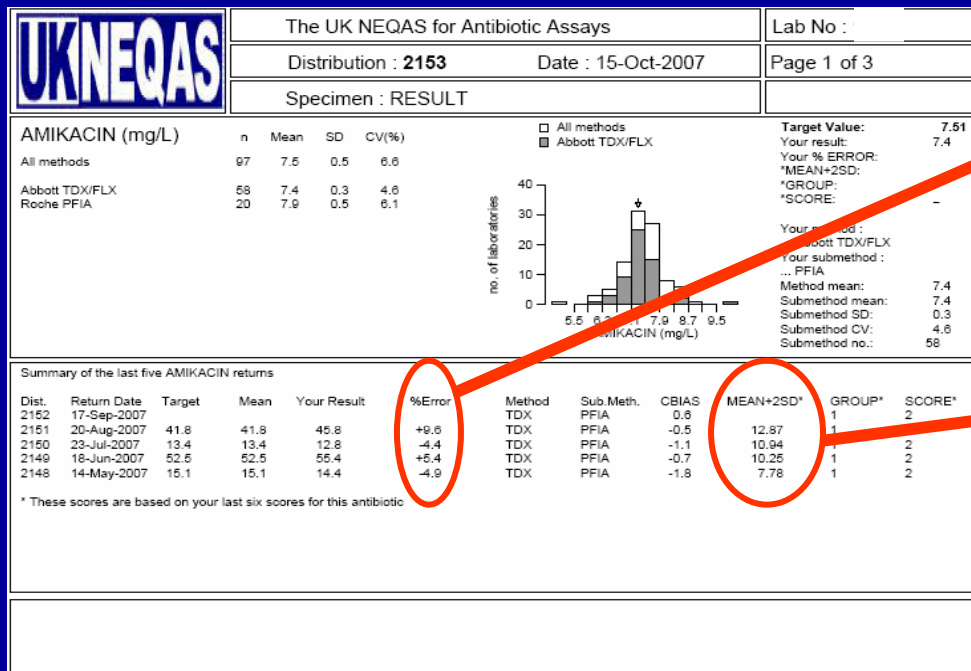
- 0-30 = Groups 1&2 = score 2 = OK
- 30-50 = Groups 3&4 = Score 1 = Borderline
- 50-100 = Groups 4-9 = Score 0 = Poor
- >100 = Groups 10&11 = Score -1 = Very poor

What's in your Report?

UKNEQAS	The UK NEQAS for Antibiotic Assays				Lab No :	
	Distribution : 2153		Date : 15-Oct-2007		Page 1 of 3	
	Specimen : RESULT					
AMIKACIN (mg/L)		n	Mean	SD	CV(%)	
All methods		97	7.5	0.5	6.6	
Abbott TDX/FLX		58	7.4	0.3	4.6	
Roche PFI A		20	7.9	0.5	6.1	
						<input type="checkbox"/> All methods <input checked="" type="checkbox"/> Abbott TDX/FLX
						Target Value: 7.51 Your result: 7.4 Your % ERROR: 0.7 *MEAN+2SD: 13.8 *GROUP: 1 *SCORE: 2
						Your method : ... Abbott TDX/FLX Your submethod : ... PFI A Method mean: 7.4 Submethod mean: 7.4 Submethod SD: 0.3 Submethod CV: 4.6 Submethod no.: 58
Summary of the last five AMIKACIN returns						
Dist.	Return Date	Target	Mean	Your Result	% Error	
2152	17-Sep-2007	19.0	19.0	20.1	+5.9	
2151	20-Aug-2007	41.8	41.8	45.8	+9.6	
2150	23-Jul-2007	13.4	13.4	12.8	-4.4	
2149	18-Jun-2007	52.5	52.5	55.4	+5.4	
2148	14-May-2007	15.1	15.1	14.4	-4.9	
* These scores are based on your last six scores for this antibiotic						

On the Answer Phone 1

- “Our result last month was spot on, why are we still in a c**p group!!!!”
 - **Because you are scored over a six month period**



% Error

-95.3

+5.6

+9.6

-4.4

+5.4

Mean+2SD

65.92

12.87

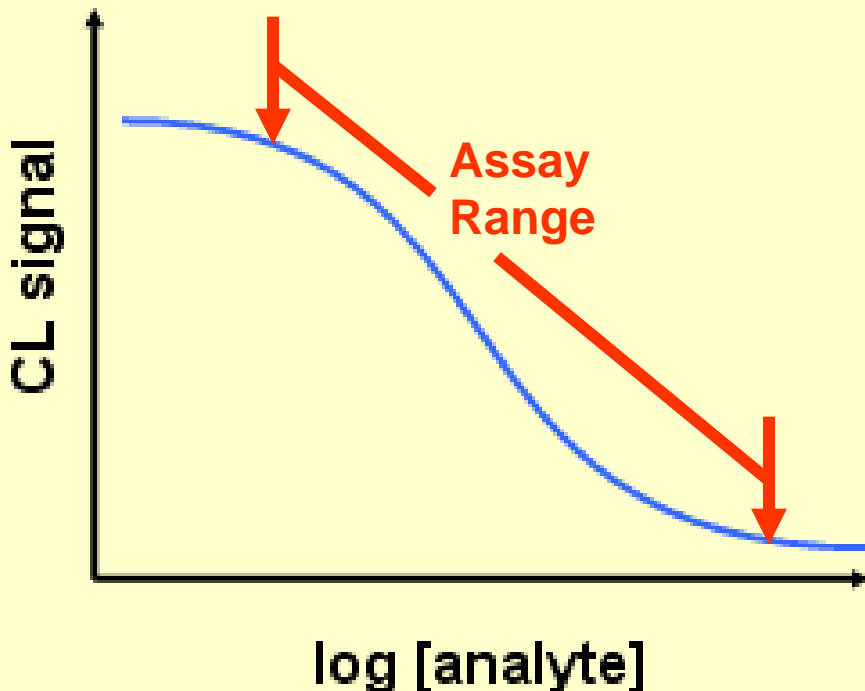
10.94

10.25

11.12

On the Answer Phone 2

- “Why do you send out so many high and low concentrations?”



- Can you assay concentrations at the bottom of the standard curve?
- Can you assay concentrations near the top of the standard curve?
- Can you assay concentrations above the top of the standard curve?
- Laboratories should not return results as > values

On the Answer Phone 3

- “Why don’t you score against the spike value?”

**This would introduce another source of imprecision
– making up the samples**

**For some analytes, vancomycin, there are different
approaches to potency (biological >100%)**

On the Answer Phone 4

- “Why don’t you use method means?”

There are generally too few users in an individual sub-method to generate robust statistics

This could lead to a result being scored differently depending on the method

Most sub-method means are within 10% of the overall mean and the effect on scores is limited