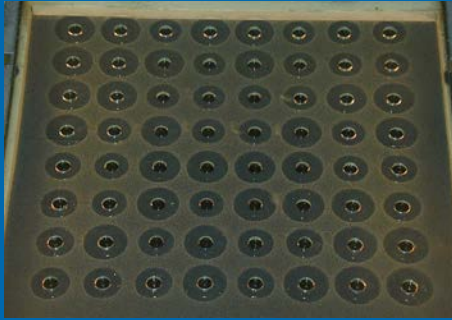


Feedback from the Antibiotic Assay Scheme

Andrew Lovering
UK-NEQAS for Antibiotic Assay
North Bristol NHS Trust



Antibiotic Assays – A Brief History!



Bioassay
1960-1980



Bench-top analyser
1980-2008



High volume analyser
2005+

UK NEQAS for Antibiotic Assays

- Started 1972
- Distribute 12 samples per year
 - Gentamicin, Vancomycin, Tobramycin, Amikacin & Teicoplanin
 - Flucytosine, voriconazole, posaconazole & itraconazole
 - (Chloramphenicol & netilmicin)
- Score laboratories on each sample vs. mean
- Score laboratories on a six monthly running total based on accuracy and precision

Key Changes Since 2005

	2005/6	2011/2	% Change
Gentamicin	245	168	↓ 31%
Vancomycin	252	181	↓ 28%
Amikacin	96	74	↓ 23%
Tobramycin	109	81	↓ 26%
Teicoplanin	25	19	↓ 24%

Changes to UK Assay Provision

	2005/6	2011/12	% Change
Microbiology	166	67	↓ 60%
Blood Science	17	67	↑ 294%
Pathology	14	10	↓ 30%
Total	197	144	↓ 27%

Assay Methodology Changes

	2006 Methods	Market Leader	2011 Methods	Market Leader
Gentamicin	11	49%	41	20%
Vancomycin	11	48%	35	23%
Amikacin	8	72%	17	28%
Tobramycin	8	54%	32	14%
Teicoplanin	1	100%	2	89%

Method Specific Bias - Gentamicin

	Users	Bias
Abbott (<i>Architect</i>)	38	-2.1%
Roche (<i>Modular</i>)	27	1.0%
Abbott (<i>AxSym</i>)	24	-3.0%
Roche (<i>PFIA</i>)	23	2.9%
Siemens	15	2.7%
Cedia	13	3.7%
Range	>4 users	-6.1% to 17%

Method Specific Bias - Vancomycin

	Users	Bias
Abbott (<i>Architect</i>)	39	-4.7%
Abbott (<i>AxSym</i>)	28	0.7
Roche (<i>Modular</i>)	26	2.0%
Roche (<i>PFIA</i>)	24	12.1%
Siemens	14	-18.7%
Beckman	14	3.7%
Range	>4 users	-25% to 13%

Summary

- Considerable change since 2005 (Consolidation and internal transfer)
- Increased diversity in methodology
- Bias between major methods - small for gentamicin but larger for vancomycin
- Methods with low number of users are difficult to assess, but appear to perform less well
- Little information on change management, but 25% of laboratories requested back samples