EASTERN SYDNEY AREA HEALTH SERVICE

Eastern Sydney Area Health Service,
Cnr. High & Avoca Streets,
Randwick. N.S.W. 2031.

SMB/VAE

22nd November, 1990.

Dear Colleague,

C.D.S. USERS GROUP

Welcome to the C.D.S. Users Group. Enclosed is a copy of the first Newsletter which I hope may be of some interest to those who carry out antibiotic susceptibility testing by the C.D.S. method. I would like to emphasize that the staff of the Antibiotics Laboratory welcome any enquiries, comments or suggestions you may have regarding susceptibility testing.

Kind regards.

Yours sincerely,

S. M. BELL.

C.D.S. USERS GROUP NEWSLETTER

Antibiotics Laboratory:

Developments, modifications and other studies on the C.D.S. method are carried out in the Antibiotics Laboratory of the Department of Microbiology at The Prince of Wales Hospital. The staff are Syd Bell, Barrie Gatus, Jeanette Pham, Alex Jimenez and Melissa Hardy. All of us are happy to discuss any aspect of susceptibility testing with enquirers and we would appreciate any comments or suggestions. We would also like to receive cultures of strains which yield unusual results or create problems with susceptibility testing.

Our telephone numbers are:-
'Phone: (02) 399-4053
399-4054 - (Vilma Emerson, Secretary)

Facsimile: (02) 399-1120

Acceptable Range of Zone Sizes for Reference Strains:

Enclosed are tables of mean standard deviation and acceptable range of zone sizes (95% confidence limits) for each antibiotic and the appropriate reference strain. The values for the majority of antibiotics, shown without asterisks, were calculated from approximately 200 measurements collected during 1990 in the routine laboratory. The values for the less commonly used antibiotics (marked with asterisks) were calculated from the results of 135 tests carried out by five operators with three batches of Sensitest Agar and three batches of discs on three separate occasions. From 1991 on we intend to obtain the data for all antibiotics from measurements made in the routine laboratory. We will then update the values at the end of each year as, over time, changes do develop in the mean zone sizes of some antibiotics and the reference strains. Generally the changes are minor and probably arise from changes in constituents of the media or the introduction of new techniques for production of media or discs.

Interpretation of the Mean, Standard Deviation and Acceptable Range: A satisfactory control test is one where the observed annular radius falls within two standard deviations of the mean shown in the table for the appropriate reference strain. This acceptable range (i.e., 95% confidence limits) for each antibiotic is shown in the last column of the table. Values outside the acceptable range indicate that the control test has failed and where this occurs technique and/or materials should be reviewed. Staff of the Antibiotics Laboratory will assist any laboratory which reports unexplained failures of the control test.

Developments in 1991:

Early next year we will be sending to members of the C.D.S. Users Group two recalibrations with *Staphylococcus aureus.* Penicillin G 0.5 u and methicillin 5 μg discs are now in the final stages of calibration and testing. These discs appear to have advantages over the discs now in use and, hopefully, with the help of some members of the C.D.S. Users Group, we will be able to field test them in the New Year.

Antibiotic disc content, mean annular radius, standard deviation and 95% confidence limits of reference strains used in the C.D.S. Method

Antibiotic and Disc content (μg)	Mean annular radius ± standard deviation (mm)	Acceptable range (95% confidence limits) (mm)
Staphylococcus aureus NCTC 6571		
Benzylpenicillin (1.5 u)	15.0 ± 1.5	12.0 - 18.0
Chloramphenicol (30)	9.7 ± 1.0	7.7 - 11.7
Ciprofloxacin (2.5)	11.0 ± 0.9	9.2 - 12.8
Erythromycin (5)	9.3 ± 0.9	7.5 - 11.1
Fusidic acid (2.5)	10.0 ± 1.0	8.0 - 12.0
Kanamycin (50)	7.3 ± 0.7	5.9 - 8.7
Methicillin (10)	11.4 ± 0.8	9.8 - 13.0
*Nitrofurantoin (200)	8.7 ± 0.9	6.9 - 10.5
Rifampicin (1)	10.5 ± 1.0	8.5 - 12.5
*Sulphafurazole (300)	12.3 ± 1.3	9.7 - 14.9
Tetracycline (30)	13.2 ± 1.4	10.4 - 16.0
*Trimethoprim (2.5)	7.3 ± 0.6	6.1 - 8.5
Vancomycin (60)	6.1 ± 0.7	4.7 - 7.5
Escherichia coli NCTC 10418		
Amikacin (30)	9.1 ± 1.0	7.1 - 11.1
Ampicillin (25)	9.2 ± 0.7	7.8 - 10.6
*Aztreonam (10)	13.0 ± 0.6	11.8 - 14.2
Cefotaxime (5)	11.8 ± 0.9	10.0 - 13.6
*Cefotetan (10)	12.6 ± 0.5	11.6 - 13.6
Cefoxitin (30)	11.2 ± 1.2	8.8 - 13.6
*Ceftazidime (10)	10.4 ± 0.6	9.2 - 11.6
*Ceftriaxone (5)	12.9 ± 0.7	10.5 - 14.3
*Chloramphenicol (30)	9.4 ± 1.0	7.4 - 11.4
*Ciprofloxacin (2.5)	13.4 ± 0.9	11.6 - 15.2
Gentamicin (10)	8.9 ± 0.9	7.1 - 10.7
*Imipenem (10)	12.5 ± 0.8	10.9 - 14.1
Kanamycin (50)	9.0 ± 1.4	6.2 - 11.8
Nalidixic acid (30)	10.5 ± 0.8	8.9 - 12.1
*Netilmicin (30)	10.0 ± 0.5	9.0 - 11.0
Nitrofurantoin (200)	7.7 ± 0.8	6.1 - 9.3
Norfloxacin (10)	14.1 ± 1.2	11.7 - 16.5
Sulphafurazole (300)	7.9 ± 1.1	5.7 - 10.1
*Tetracycline (30)	8.2 ± 0.9	6.4 - 10.0
*Tobramycin (10)	7.4 ± 0.5	6.4 - 8.4
Trimethoprim (2.5)	8.6 ± 0.9	6.8 - 10.4
Escherichia coli NCTC 11560		
Augmentin (60)	7.7 ± 0.7	6.3 - 9.1
*Timentin (85)	7.2 ± 0.5	6.2 - 8.2
Pseudomonas aeruginosa NCTC 10662		
Amikacin (30)	9.1 ± 0.9	7.3 - 10.9
*Aztreonam (30)	9.7 ± 0.8	8.1 - 11.3
Ceftazidime (10)	9.8 ± 1.2	7.4 - 12.2
Ciprofloxacin (2.5)	11.4 ± 1.3	8.8 - 14.0
Gentamicin (10)	7.9 ± 0.8	6.3 - 9.5
*Imipenem (10)	8.7 ± 0.7	7.3 - 10.1
Netilmicin (30)	8.3 ± 0.9	6.5 - 10.1
Piperacillin (50)	10.2 ± 1.2	7.8 - 12.6
Ticarcillin (75)	9.5 ± 1.1	7.3 - 11.7
*Tobramycin (10)	8.5 ± 0.6	7.3 - 9.7