

**PATTERN OF BACTERIAL FLORA IN VARIOUS OUT
PATIENT DEPARTMENTS OF TUTH**

A

Dissertation

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Master of Science in Microbiology
(Environment and Public Health)**

by

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This is to certify that Ms. Rachana Manandhar has completed this dissertation work entitled “**Pattern of Bacterial Flora in Various Out Patient Department of TUTH**” as a partial fulfillment of M. Sc. degree in Microbiology under our supervision. To our knowledge, this work has not been submitted for any other degree.

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ABSTRACT

A cross sectional study was conducted during April to July 2005 with the aim to access the pattern of bacterial flora prevailing in air and various inanimate samples of 10 out patient departments of TUTH. Culture, microscopy and antibiotic susceptibility testing of potentially pathogenic isolates were done. Altogether 281 samples collected from new and used bed sheets, health care personnel's apron, air and equipments used for treatment of patients.

In 56 samples of new bed sheets and 64 samples of used bed sheets, the most predominant organisms were Coagulase negative Staphylococci (94.6%) and *Staphylococcus aureus* (96.8%) respectively. Out of 76 apron samples collected from health care personnel, the most predominant organism was CoNS (98.6%).

Among 10 air samples collected by gravity settling method for 5 minutes, air was found to harbor predominantly Gram positive microorganisms (CoNS, *S. aureus*, *Bacillus* spp., Micrococci) in comparison to relatively fewer Gram negative microorganisms.

In 23 samples collected from Dental department, CoNS was the most predominant organism. Similarly, in 15 sterilized samples collected from endoscopy department, CoNS and non haemolytic *Bacillus* spp. were present in 4 samples each, *S. aureus* in 3 samples, haemolytic *Bacillus* spp. and *Acinetobacter* spp. in 1 sample each. Likewise, in 12 sterilized samples collected from ENT department, CoNS was present in 6 samples, *S. aureus* was present in 5 samples. Haemolytic *Bacillus* spp., non haemolytic *Bacillus* spp. and *Micrococcus* spp. in 3 samples each. And *Pseudomonas* spp. was present in 2 samples. In 17 samples collected from general surgery department, the predominant organisms were *S. aureus* and CoNS. Similarly, among the 9 sterilized speculum samples collected from gynaecology department, CoNS was present in 7 samples and *S. aureus* was present in 2 samples. Similarly haemolytic and non-haemolytic *Bacillus* spp. in 4 samples each.

Antibiotic susceptibility tests of 207 *S. aureus* isolates showed that Cephalexin was the most effective drug and least effective was Ampicillin. Similarly, for 45 isolates of *Acinetobacter* spp., Gentamicin was found to be the most effective drug and the least effective was Ciprofloxacin.

Since infections transmitted in outpatient settings are not systematically monitored like in inpatient departments, this study supports that outpatient facilities should be considered as the part of the inpatient facilities of the hospital so far as infection control activities are concerned. Thus the study provides a good basis for further detailed studies of this kind on a regular basis as a part of hospital acquired infection control program.

TABLE OF CONTENTS

	Page No.
Title page	
Recommendation	ii
Certificate of approval	iii
Board of examiner	iv
Acknowledgement	v
Abstract	vi
Table of contents	vii-ix
List of abbreviations	x-xi
List of tables	xii-xiii
List of figures	xiv
List of photographs	xv
List of appendices	xvi
CHAPTER I: INTRODUCTION	1-3
CHAPTER II: OBJECTIVES	4
CHAPTER III: LITERATURE REVIEW	5-36
3.1. Hospital and its outpatient department	5-7
3.2. Nosocomial infection	7
3.2.1. Definition	7-9
3.2.2. History	9-10
3.2.3. Problem statement	10-12
3.2.4. Chain of infection	12
3.2.4.1. Source of infection	12-18

3.2.4.2. Modes of transmission	18-20
3.2.4.3. Host	20
3.2.5. Microorganisms causing hospital infection	21-36
3.2.5.1. Gram positive cocci	22-27
3.2.5.2. Gram negative rods	27-32
3.2.6. Antibiotics and hospital infections	32-35
3.2.7. Prevention and control of hospital infections	35-36
CHAPTER IV: MATERIALS AND METHODS	37-42
4.1. Materials	
4.1.1. Equipments	37
4.1.2. Media	37
4.1.3 Reagents	37
4.2. Methods	38
4.2.1. Sample collection	38
4.2.1.1. Collection of sample from bed sheets	38
4.2.1.2. Collection of sample from apron	38
4.2.1.3. Collection of sample from equipments	39
4.2.1.4. Collection of indoor air samples	39
4.2.2. Processing of the sample	39
4.2.3. Culture of the specimen	39
4.2.4. Isolation of the organisms	39
4.2.5. Identification of organisms	40
4.2.6. Sensitivity testing	41
4.2.7. Purity plate	42
4.2.8. Quality control for test	42

CHAPTER V: RESULTS	43-59
5.1. Pattern of samples collected	43
5.2. Patterns of results	44
5.2.1. Pattern of bacterial isolates from new and used bed sheets	44-45
5.2.2. Pattern of bacterial isolates from aprons	46
5.2.3. Pattern of bacterial isolates from air	47-48
5.2.4. Pattern of bacterial isolates from instruments	49-58
5.3.5. Antibiotic susceptibility profiling of bacterial isolates	58-59
CHAPTER VI: DISCUSSION AND CONCLUSION	60-71
6.1 Discussion	60-70
6.2 Conclusion	71
CHAPTER VII: SUMMARY AND RECOMMENDATIONS	72-74
7.1 Summary	72-73
7.2 Recommendations	74
CHAPTER VIII: REFERENCES	75-82
APPENDICES I-IX	i-xxii

LIST OF ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
AK	Amikacin
AMP	Ampicillin
AST	Antimicrobial susceptibility testing
ATCC	American type culture collection
BA	Blood agar
CDC	Center of disease control and prevention
CFU	Colony forming unit
CIP	Ciprofloxacin
CL	Cephalexin
Co	Co-trimoxazole
CoNS	Coagulase negative <i>S. aureus</i>
E	Erythromycin
HAI	Hospital acquired infection
HCW	Health care worker
IV	Intra venous
MA	MacConkey agar
MHA	Mueller Hinton agar
MRSA	Methicillin resistant <i>S. aureus</i>
MSA	Mannitol salt agar
NA	Nutrient agar
NCCLS	National committee for clinical laboratory standard
NNIS	National nosocomial infection surveillance
OB	Cloxacillin
OPD	Out patient department
SARS	Severe acute respiratory syndrome

TU	Tribhuvan university
TUTH	Tribhuvan university teaching hospital
USA	United States of America
VRE	Vancomycin resistant entericocci
WHO	World health organization

LIST OF TABLES

Title	Page No.
1. Reagents and chemicals used for different tests	40
2. Pattern of samples collected	43
3. Pattern of bacterial isolates from 56 new bed sheets from 10 OPD	44
4. Pattern of bacterial isolates from 64 used bed sheets from 10 OPD	45
5. Pattern of bacterial isolates from 76 apron samples from 10 OPD	46
6. Pattern of bacterial isolates of 10 air samples from 10 OPD	47-48
7. Pattern of bacterial colony count of 23 equipment samples from dental department	49
8. Pattern of bacterial isolates in 23 instrument samples from dental department	50
9. Pattern of bacterial colony count of 15 equipment samples from endoscopy department	51
10. Pattern of bacterial isolates in 15 instrument samples from endoscopy department	52
11. Pattern of bacterial colony count of 12 equipment samples from ENT department	53
12. Pattern of bacterial isolates in 12 instrument samples from ENT department	54
13. Pattern of bacterial colony count of 16 samples from general surgery department	55
14. Pattern of bacterial isolates in 17 samples from general surgery department	56
15. Pattern of bacterial colony count of 9 samples from gynaecology department	57
16. Pattern of bacterial isolates in 9 instrument samples from gynaecology department	58

17. Antibiotic susceptibility pattern of the <i>Staphylococcus aureus</i> in various samples	58
18. Antibiotic susceptibility pattern of the <i>Acinetobacter</i> spp. in various samples	59

LIST OF FIGURE

- Figure 1. Flowchart of the methodology followed in sample processing
- Figure 2. Pattern of samples collected
- Figure 3. Total number of samples collected from OPDs
- Figure 4. Type of samples collected from OPDs
- Figure 5. Percentage of bacterial isolates from new bed sheets
- Figure 6. Percentage of bacterial isolates from used bed sheets
- Figure 7. Frequency of microorganisms in new and used bed sheets
- Figure 8. Percentage of bacterial isolates from apron
- Figure 9. Bacterial density in air in OPDs
- Figure 10. Antibiotic susceptibility pattern of *S. aureus*
- Figure 11. Antibiotic susceptibility pattern of *Acinetobacter* spp.
- Figure 12. Percentage of opportunistic pathogens isolated from OPDs

LIST OF PHOTOGRAPHS

Photograph 1. Culture plate of *S. aureus* and CoNS on MSA

Photograph 2. Microscopic photograph of *S. aureus*

Photograph 3. Slide coagulase test of *S. aureus*

Photograph 4. Antibiotic susceptibility testing of *S. aureus* on MHA

Photograph 5. Culture plate of *Acinetobacter* spp. on MA

Photograph 6. Sample processing in bacteriology laboratory at TUTH

LIST OF APPENDICES

	Page No
APPENDIX-I: Questionnaire and record keeping	i-ii
APPENDIX-II: I. Composition and preparation of different culture media	iii-iv
II. Composition and preparation of different biochemical tests	v-vii
III. Staining and test reagents	vii-ix
APPENDIX-III: Gram staining procedure	x
APPENDIX-IV: Biochemical tests for identification of bacteria	xi-xvi
APPENDIX-V: List of equipments and materials used during the study	xvii
APPENDIX-VI: Zone size interpretative chart of antibiotics	xviii
APPENDIX-VII: Distinguishing reaction of commoner and pathogenic Enterobacteriaceae	xix
APPENDIX-VIII: Antibiotic susceptibility pattern of <i>S. aureus</i> in various samples	xx-xxi
Antibiotic susceptibility pattern of the <i>Acinetobacter</i> spp in various samples	xxii