

ANNUAL REPORT

“The experience from
the past to today”

ANNUAL REPORT 2077/078 (2020/021)



Tribhuvan University
Institute of Science and Technology
Central Department of Microbiology
(Estd. 14 November 1990)

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FY 2077/078 (2020/021)



Central Department of Microbiology

Tribhuvan University

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(Estd. 14 November 1990)

August 2021

Report Preparation Team

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Executive Summary

This annual report summarizes the different activities conducted and progress made by the Central Department of Microbiology, Tribhuvan University in the fiscal year 2077/2078 (17 July 2020 to 16 July 2021). Central Department of Microbiology has 3 Professors, 5 Associate Professors, and 8 Lecturers. Most of the faculties have PhD and others are in the process of completing PhD. The department is providing administrative services through seven administrative staff. There are six laboratory support staff in the department. The department has 30 students enrolled in the first semester of MSc program every year. The proportion of female students in the MSc program increased every year in the last three years. In case of PhD microbiology program, in academic year 2077/078, 2 male and 2 female students were enrolled. In this fiscal year, Department is equipped with CCTV in the class room and laboratories. The department purchased Computers (Lab top computers for most of the faculties and advanced desktop computer), hot and cold-water dispensers, Garbage collection unit in FY 2077/078. The teachers of the department involved in national and international activities including academic and consultancy services. Three PhD students and 21 MSc students from the department were graduated in microbiology in FY 2077/078. The faculties of the department published more than 50 research articles in the national and international journals in this fiscal year.

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Background

Central Department of Microbiology established in 1990 under Institute of Science and Technology (IOST) at Tribhuvan University is providing advanced level Microbiology education in the country. The department is offering Master's and PhD Degree courses in Microbiology. Since its establishment, department is able to produce more than 558 Masters graduates and 11 doctoral level graduates. The department is enriched with highly qualified, skillful and competitive faculty members having specializations in various fields of microbiology: medical, public health, biotechnology, environmental, food and agriculture microbiology. In addition to the expert level faculties, department also has good support staff in the laboratory, administration and finance to support departments day to day operation of teaching learning and research activities.

Masters level Microbiology course of Tribhuvan University is designed and timely revised in such a way that it has been able to include global developments in science and technology in the curriculum. Initially for first 15 years, the Masters course was based on annual system, which was revised in 2013 to move on semester-based system. The course from the very beginning has made provision of a compulsory dissertation based on the short original research, which student is supposed to complete with supervision of the faculty supervisor; providing opportunity to learn research methodology and document research findings in the form of a thesis and or original research published in a peer reviewed journal.

Recently, there is increasing trends of publishing the articles in national and international journals. The department also encourages the faculties for research and grant applications, as and when available. The department from its beginning has been able to conduct, research in milk, meat, water, other foods, medical/health particularly in vector borne diseases, vaccines, laboratory capacity assessment and strengthening, conducting trainings in quality assurance systems, conducting training on malaria microscopy, climate change and its impact on vector borne and water borne diseases, assessment of antimicrobial use and resistance status in the country in collaboration with the different agencies of the Government and UN agencies.

The department has its own building with teaching/demonstration rooms and teaching laboratory equipped with basic instruments required for day-to-day student experimentations. Internet and small departmental library facilities are added assets in the department for research activities.

This annual report summarizes the different activities conducted and progress made by the department in fiscal year 2077/2078 (16 July 2020 to 17 July, 2021). This annual report comprises human resource capacity of the department, academic progress of the department including pass rate trend analysis, academic programs, educational pedagogy, physical structure status, activities of the faculties, students graduated in the fiscal year, and publications of articles from the department in national and international journals.

Human Resources

Central Department of Microbiology has 3 Professors, 5 Associate Professors, and 8 Lecturers. Nine faculties have PhD degree and most of others are in the process of completion of their PhD degree. Six faculties have already enrolled in the PhD program and they are in different stages of their research and completion process (Table 1). Details of the teaching faculties is given in Table 2 and Annex-I.

Table 1: Teaching faculties in the department, FY 2077/078

Particulars	Total	Male	Female	PhD	Non-PhD
Professors	3	2	1	3	-
Associate Professors	5	5	-	5	-
Lecturers	8	3	5	1	7
Teachers on leave	5	2	3	-	-

The department has been providing administrative and laboratory services through fourteen non-teaching staff. There are eight administrative and six laboratory support staff in the department to ensure smooth running of the department (Table 3). Details on the administrative and laboratory support staff is given in Table 4.

Table 2. List of faculties and contact details, FY 2077/078

Name	Position	E-mail
Komal Raj Rijal, PhD	Associate Professor and Head	komal.rijal@cdmi.tu.edu.np
Anjana Singh , PhD	Professor	anjana.singh@cdmi.tu.edu.np
Dwij Raj Bhatta, PhD	Professor	dwij.bhatta@cdmi.tu.edu.np
Prakash Ghimire, PhD	Professor	prakash.ghimire@cdmi.tu.edu.np
Binod Lekhak, PhD	Associate Professor	binod.lekhak@cdmi.tu.edu.np
Megha Raj Banjara, PhD	Associate Professor	megha.banjara@cdmi.tu.edu.np
Dev Raj Joshi, PhD	Associate Professor	dev.joshi@cdmi.tu.edu.np
Shyam Prakash Dumre, PhD	Associate Professor	shyam.dumre@cdmi.tu.edu.np
Reshma Tuladhar, PhD	Lecturer	reshma.tuladhar@cdmi.tu.edu.np
Shaila Basnayat	Lecturer	shaila.basnet@cdmi.tu.edu.np
Supriya Sharma	Lecturer	supriya.sharma@cdmi.tu.edu.np
Purnima Baidya	Lecturer	purnima.baidya@cdmi.tu.edu.np
Manita Aryal	Lecturer	manita.aryal@cdmi.tu.edu.np
Nabaraj Adhikari	Lecturer	naba.adhikari@cdmi.tu.edu.np
Upendra Thapa Shrestha	Lecturer	upendra.shrestha@cdmi.tu.edu.np
Sanjib Adhikari	lecturer	sanjib.adhikari@cdmi.tu.edu.np

Table 3: Administrative and laboratory staff, FY 2077/078

Particulars	Total	Male	Female
Officer level	2		2
Non-officer level	5	3	2
Laboratory support staff	5	5	-

Table 4. List of Supporting Staffs of Central Department of Microbiology

Name	Position
Nilam Chaudhary	Section officer
Parmila Thakur	Account Officer
Raiman Shakya	Main Office Assistant
Ramesh Ghimire	Main Account Assistant
Bimala Pandey	Main Office Assistant
Madhukar Thapa	Senior Lab Boy
Ramesh Maharjan	Senior Lab Boy
Hikmat Lal Shrestha	Senior Lab Boy
Diwakar Thapa	Senior Lab Boy
Ramesh Khadka	Senior Lab Boy
Akal Man Maharjan	Office Helper
Shyam Tamang	Office Helper)

Academic Progress

Student enrolment trend

In every academic year, the department enrolled 30 students in the first semester of MSc program. In the following semesters, there was drop out of some students. The proportion of female students in the MSc program was more every year than male students. The proportion of female students in the MSc program increased every year in the last three years. In academic year 2077/078, 24 female and 6 male students have been enrolled in the MSc Microbiology first semester (Table 5).

For the PhD microbiology program, 2 male and 2 female PhD students were enrolled in academic year 2077/078 Table 5).

Table 5: Level wise enrolment trend analysis of the last three years disaggregated by female students

Year	MSc		PhD	
	Male	Female	Male	Female
2074/075	8	22	2	2
2075/076	7	23	2	3
2076/077	6	24	3	3
2077/078	7	23	2	2

Pass rate trend

The pass rate trend analysis showed that the pass rate of the students is greater than ninety percent every year (Table 6). Pass rate is relatively high in female students than the male students.

The pass rate of students enrolled in AY 2076/077 in the MSc first semester was hundred percent.

Table 6: Pass rate trend analysis of the last three years of MSc students disaggregated by female

Enrollment year	Semester	Total students		Passed students	
		Male (%)	Female (%)	Male (%)	Female (%)
2073/074	First	7 (23.33)	22 (76.67)	6 (85.71)	21 (91.30)
	Second	7 (25.0)	21 (75.0)	7 (100.0)	21 (100.0)
	Third	7 (25.0)	21 (75.0)	7 (100.0)	21 (100.0)
	Fourth	7 (25.0)	21 (75.0)	7 (100.0)	21 (100.0)
2074/075	First	8 (26.66)	22 (73.33)	7 (87.5)	21 (95.45)
	Second	8 (26.66)	22 (73.33)	8 (100.0)	22 (100.0)
	Third	8 (26.66)	22 (73.33)	8 (100.0)	22 (100.0)
	Fourth*	-	-	-	-
2075/076	First	7 (23.33)	23 (76.67)	7 (100.0)	21 (100.0)#
	Second*	7 (25.0)	21 (75.0)	-	-
	Third	-	-	-	-
	Fourth	-	-	-	-

*Students enrollments of Academic year 2077 have been postponed because of COVID-19 pandemic, Only Entrance examination for MSc Microbiology is going on in this fiscal year.

#Two students drop-out in the first semester and all students who appeared in the examination passed the first semester examination.

Academic Programs

Central Department of Microbiology offers courses on MSc and PhD degree in Microbiology. The course of PhD Microbiology has been scheduled for three years with two semesters courses and other semesters dissertation. The course of MSc Microbiology has been divided into four semesters within two academic years. The first semester course covers the disciplines of General Microbiology, Immunology, Microbial Genetics, Microbial Biochemistry and practical on these courses. The second semester offers track selection among four different disciplines of Microbiology for specialization. Among four disciplines from second semester the department has offered Medical Microbiology and Public Health Microbiology. The fourth semester is completely skill development and research oriented that includes internships and dissertation.

Educational Pedagogy

There is close communication between the student and teacher. The class room teaching is divided into theoretical subject matter conducted in the class room as well as practical content delivered in the laboratory. The class rooms are equipped with LCD-projector, overhead projector, and white board. The students also visit laboratories and industries. The students are given enough opportunity to address their query in the subject matter. Class assignment, project work, internal assessment and final examination are conducted to evaluate the students. The fourth semester of MSc is completely skill development and research oriented that includes internships and dissertation.

Physical Progress

The department purchased and maintained the following equipment during the FY 2077/078:

- CCTV sets-1
- Binocular Humans Microscope: 20
- Laptop Computer-12
- Advanced Desktop computer-1
- Hot/cold water dispenser-1
- Waste disposal system-1

The department purchased few newer books required for the students. The department requested Central Library to purchase reference books for MSc microbiology.

Participation of Faculties in International Activities/ National Seminars/ Workshops, FY 2077/078

1. Prof. Dr. Anjana Singh participated in an international conference Webinar on Science Advice and Diplomacy in the Battle against COVID-19. To understand the current science advice landscape in Nepal and its associated challenges and concerns, particularly in response to the ongoing COVID-19 pandemic, highlight the value and importance of science advice and diplomacy in managing current and future health crises 21st Jan, 2021. Organized by: International Network for Government Science Advice (INGSA) Asia, NHRC and Young Scientist Forum Nepal (YSFN).
2. Prof. Dr. Anjana Singh participated in the 1st International Webinar, Corona Spread and Control, Organized by: Department of Botany, Faculty of Science, Eastern University, Sri Lanka in Collaboration with Microbiologists Society, India, 25th Jan 2021. Topic entitled Covid-19 effect on women. Google meet.
3. Prof. Dr. Anjana Singh participated As a Chair. AASSA-AIPI International Webinar on Digital Scholarly Communication Series 1, conducted on 31st March 2021, Jointly Organized by Association of Academies and Societies of Sciences in Asia (AASSA) Indonesian Academy of Sciences (AIPI) Supported by Inter Academy Partnership (IAP) Academy of the Social Sciences in Australia (ASSA). "Regional Patterns of Digital Scholarly Communication and Publication" Wednesday, 31 March 2021; 13:00 – 16:00 (Jakarta time).

4. Prof. Dr. Anjana Singh participated Presentation entitled “Access to Digital Scholarly Publications: Strategies, Applications & Impacts”, In International Webinar on Access to Digital Scholarly Publications: Strategies, Applications & and Impacts, Series 2. The Indonesian Academy of Sciences (AIPI) under the collaboration with AASSA and IAP and ASSA. 28 April 2021. Zoom App. 13:00 – 16:00 (Jakarta time).
5. Prof. Dr. Anjana Singh participated Impacts of COVID-19 on women in the STEM workforce, Asia-Pacific’ workshop on Tuesday 4 May 2021. Organized by The Australian Academy of Science. Virtual ZOOM App.70.
6. Prof. Dr. Anjana Singh participated The Webinar of Digital Scholarly Communication Series 3, “Publication and Dissemination of Digital Scholarly Communication” Wednesday, 19 May 2021, 13:00-16:00 (Jakarta time). The Indonesian Academy of Sciences (AIPI) under the collaboration with AASSA and IAP and ASSA Virtual ZOOM App
7. Prof. Dr. Prakash Ghimire nominated as Member, WHO-COVID-19 Ethics & Governance Working Group,
8. Prof. Dr. Prakash Ghimire nominated Member of WHO-Ethics & COVID-19 working Group-2020-2021, Member, WHO-ACT accelerator and Ethics Working Group-2020-2021 and
9. Prof. Dr. Prakash Ghimire Member, Vaccines Research & Development (COVID-19) working Group-2020-2021.
10. Prof. Dr. Prakash Ghimire Worked as Consultant-Ethics capacity development and ethics coordination in countries of the WHO Western Pacific region and Consultant- (2021-

2022)- Assessment of UK/DHSC/Fleming Fund support to Royal Govt of Bhutan for AMR/C/U surveillance capacity strengthening.

11. Prof. Dr. Prakash Ghimire was nominated as Chairperson National Ethical Review Board, Nepal Health Research Council, NHRC/ERB received FERCAP accreditation in 2019 with leadership role.
12. Prof. Dr. Prakash Ghimire was nominated as Member, Institutional Review Board, (2019-2022) Institute of Science & Technology, Tribhuvan University, Kathmandu and Member, Institutional Review Board, (2021-2023) B P Koirala Eye Foundation /CHEERS Hospital, Kathmandu, Nepal.
13. Assoc. Prof. Dr. Megha Raj Banjara delivered lecture on title Challenges of Covid-19 control in Nepal in the internal seminar organized by London School of Hygiene and Tropical Medicine, United Kingdom on 15 June, 2021.
14. Assoc. Prof. Dr. Komal Raj Rijal delivered lecture as Keynote Speaker in the International Seminar The 5th MSU International Veterinary Conference “Update on Infectious Diseases: Challenges and Opportunities for Veterinary Practice” held in Mahasarakham University Thailand, on June 9-10, 2021.
15. Associate Professor Dr. Shyam Prakash Dumre delivered lecture as key note Speaker on Infectious diseases in the developing world and international collaboration (North-South): Experience sharing. HIGO Program Overseas Internship - Healthcare system and response to COVID-19 in various countries. Kumamoto University, Japan; 28-29 June, 2021.

News/Activities in the Department FY 2077/078

1. Assoc. Prof. Binod Lekhak, was awarded PhD in Microbiology from Tribhuvan University. The title of his thesis is "Screening and Characterization of bioactive *Actinomycetes* and their products from Nepal against multi-drug resistant bacteria and fungi".
2. Dr. Shyam Prakash Dumre was appointed as Associate Professor of the department on 11/8/2077 through lateral entry on the basis of academic excellence.
3. Assoc. Prof. Dr. Megha Raj Banjara completed his four year's tenure as Head of the department on 19/8/2077.
4. Assoc. Prof. Dr. Komal Raj Rijal has been appointed as HoD on 19/8/2077 and resumed the post on 22/8/2077.
5. Sanjib Adhikari, Lecturer was transferred to this department from Birendra Multiple Campus, Chitwan and joined the department on 11/10/2077.
6. Tribhuvan University Journal of Microbiology (TUJM)- Volume 7(1) was published on the occasion of Microbiology Day on 14 November, 2020.
7. Assoc. Prof. Dr. Dev Raj Joshi received grant from PATH/USA on "Waste Water Based Epidemiology of SARS-CoV-2 for averting COVID-19 Outbreaks in Nepal". The project got approval for its execution from Office of the Rector, Research Directorate on 2077/12/12.
8. Central Department of Microbiology intensified the remaining task of SSR preparation and submitted its first report to QAA.

List of PhD Graduates (PhD in Microbiology) from the Department (as of Ashad 2078)

Name of the student	Title of PhD thesis	Supervisor	Award year
Bharat Mani Pokharel	Clonal analysis of <i>Hemophilus influenzae</i>	Prof. Dr. Achyut Prasad Sharma	1997
Basista Prasad Rijal	Study of Multi-drug resistance Tuberculosis in Nepal	Prof. Dr. Prakash Ghimire	2008
Bishnu Raj Tiwari	Immune status of HIV Patients in Nepal	Prof. Dr. Prakash Ghimire	2009
Keshab Parajuli	Standardization of PCR for the diagnosis of malaria in Nepal	Prof. Dr. Prakash Ghimire	2011
Ganesh Raj Pant	Epidemiological study and molecular characterization of Rabies virus in Nepal	Prof. Dr. Dwij Raj Bhatta	2016
Dharma Raj Bhatta	Phenotypic and molecular characterization of methicillin- Resistant <i>S. aureus</i> (MRSA)	Prof. Dr. Dwij Raj Bhatta	2018
Jagat Bahadur Khadka	Detection of Rifampicin Resistance Genes in Nepalese <i>Mycobacterium</i>	Prof. Dr. Prakash Ghimire	2018

<i>tuberculosis</i> isolates using Rapid molecular techniques			
Dhurba Kumar Khadka	Identification of mutations in rpoB gene (β -subunit f DNA-dependent RNA polymerase) in Rifampicin Resistant Mycobacterium tuberculosis among retreatment tuberculosis patients in Nepal	Prof. Dr. Anjana Singh	2019
Bishnu Prasad Upadhyaya	Molecular Epidemiology and antigenic characterization of Influenza virus circulating in Nepal	Assoc. Prof. Dr. Megha Raj Banjara	2020
Kirtika Gautam	Studies on extended spectrum β -lactamase (ESBL), producing <i>Salmonella</i> and <i>E. coli</i> isolates from clinical samples of Nepal	Prof. Dr. Dwij Raj Bhatta	2020
Binod Lekhak	Screening and Characterization of bioactive <i>Actinomycetes</i> and their products from Nepal against multi-drug resistant bacteria and fungi	Prof. Dr. Dwij Raj Bhatta	2020

List of MSc Graduates (MSc in Microbiology) from the Department (as of Ashad 2078)

Master of Science (M. Sc in Microbiology)

1. Ms Upama Gaire: Screening of biofilm producers and detection of *mecA* gene among *Staphylococcus aureus* isolates from different clinical specimens
2. Ms Pratiksha Shrestha:
3. Mr. Bikram Malla: Molecular detection of *gyrA* and *parC* mutation in *Salmonella* Typhi and Paratyphi A by Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP)
4. Ms.Susmita Kuinkel: Antimicrobial resistance in *Klebsiella* spp. isolated at National Public Health Laboratory
5. Ms. Anu Maharjan: Antibiogram and molecular characterization of nalidixic acid resistant *Salmonella* species isolated from blood samples
6. Mr. Ram Shankar Prasad Sah: Detection of TEM and CTX-M gene in Gram negative bacteria isolated from clinical specimens at tertiary care heart hospital
7. Ms. Kaushal Nepal: Screening of biofilm producers and detection of *mrkA* and *fimH-1* genes among *Klebsiella pneumoniae* isolates from cancer patients
8. Ms. Rakshya Baral: Detection of *blaKPC* gene from Carbapenemase producing *Klebsiella pneumoniae* from different clinical specimens at tertiary care hospital in Nepal

9. Ms. Chandri Lama: Evaluation of GeneXpert MTB/RIF assay and line probe assay for detection of MDR TB in AFB smear negative specimen
10. Ms.Sajina Dhungel: Determination of antimicrobial resistance in bacterial isolates and detection of *mecA* and *vanA* genes in *Staphylococcus aureus* isolates in patients attending the cardiac tertiary care hospital in Nepal
11. Ms.Priyanka Shah: Methicillin resistant *Staphylococcus aureus* in health care workers of a tertiary care infectious disease hospital in Nepal
12. Ms Sirjana Bhandari: Screening of efflux pump mediated antibiotic resistance by detection of *mexA* and *mexB* gene among *Pseudomonas aeruginosa* isolated from clinical specimens
13. Ms. Muna Khanal: Methicillin-Resistant Coagulase Negative Staphylococci from Healthy dogs and their owners.
14. Mr Shirshak Lamsal: Biofilm formation and susceptibility test among *Candida albicans* isolated from different clinical samples.
15. Ms Apsara Khadka: Drinking water quality analysis on ground water from Bagmati River tributaries in Kathmandu Valley.
16. Ms. Mamata Suwal: Molecular characterization of blaCTM Type A and bla CTM-2 genes isolated from *E. coli* and *Klebsiella* spp among Cancer patients visiting at Tertiary care cancer Hospital, Lalitpur, Nepal
17. Ms Bindeswori Baral: Study of Environmental Bacterial pollution (Indoor) of the carpet industry of Kathmandu valley and its health hazard.

18. Mr Gajendra Raj Osti: Microbial quality Assessment of Pasteurized milk of Dairy Industries.
19. Ms Rubina Gurung: Efficacy of urine Dipstick test in diagnosing urinary tract infection and Detection of blaCTX-M among ESBL producing *Escherichia coli*.
20. Ms Pratikshya Shrestha: Antibiotic Resistance Bacteria and their genes in Relation to organic pollutants in Bagmati River.
21. Mr Nirajan Nepal: Screening of vancomycin Resistant genes among methicillin resistant *Staphylococcus aureus* isolated from a tertiary care hospital in Nepal.

Publications from the Department, FY 2077/078

1. Karki D, Dhungel B, Bhandari S, Kunwar A, Joshi PR, Shrestha B, Rijal KR, Ghimire P, Banjara MR. Antibiotic resistance and detection of plasmid mediated colistin resistance *mcr-1* gene among *Escherichia coli* and *Klebsiella pneumoniae* isolated from clinical samples. *Gut Pathog.* 2021 Jul 5;13(1):45. doi: 10.1186/s13099-021-00441-5.
2. Rijal KR, Banjara MR, Dhungel B, Kafle S, Gautam K, Ghimire B, Ghimire P, Dhungel S, Adhikari N, Shrestha UT, Sunuwar DR, Adhikari B, Ghimire P. Use of antimicrobials and antimicrobial resistance in Nepal: a nationwide survey. *Sci Rep.* 2021 Jun 2;11(1):11554. doi: 10.1038/s41598-021-90812-4.
3. Pokhrel A, Rayamajhee B, Khadka S, Thapa S, Kapali S, Pun SB, Banjara MR, Joshi P, Lekhak B, Rijal KR. Seroprevalence and Clinical Features of Scrub Typhus among Febrile Patients Attending a Referral Hospital in Kathmandu, Nepal. *Trop Med Infect Dis.* 2021 May 13;6(2):78. doi: 10.3390/tropicalmed6020078.
4. Adhikari B, Pokharel S, Raut S, Adhikari J, Thapa S, Paudel K, G C N, Neupane S, Neupane SR, Yadav R, Shrestha S, Rijal KR, Marahatta SB, Cheah PY, Pell C. Why do people purchase antibiotics over-the-counter? A qualitative study with patients, clinicians and dispensers in central, eastern and western Nepal. *BMJ Glob Health.* 2021 May;6(5):e005829. doi: 10.1136/bmjgh-2021-005829.
5. Maharjan A, Dhungel B, Bastola A, Thapa Shrestha U, Adhikari N, Banjara MR, Lekhak B, Ghimire P, Rijal KR.

- Antimicrobial Susceptibility Pattern of Salmonella spp. Isolated from Enteric Fever Patients in Nepal. *Infect Dis Rep.* 2021 Apr 21;13(2):388-400. doi: 10.3390/idr13020037.
6. Rijal KR, Adhikari B, Ghimire B, Dhungel B, Pyakurel UR, Shah P, Bastola A, Lekhak B, Banjara MR, Pandey BD, Parker DM, Ghimire P. Epidemiology of dengue virus infections in Nepal, 2006-2019. *Infect Dis Poverty.* 2021 Apr 15;10(1):52. doi: 10.1186/s40249-021-00837-0.
 7. Sah RSP, Dhungel B, Yadav BK, Adhikari N, Thapa Shrestha U, Lekhak B, Banjara MR, Adhikari B, Ghimire P, Rijal KR. Detection of TEM and CTX-M Genes in Escherichia coli Isolated from Clinical Specimens at Tertiary Care Heart Hospital, Kathmandu, Nepal. *Diseases.* 2021 Feb 7;9(1):15. doi: 10.3390/diseases9010015.
 8. Shah P, Dhungel B, Bastola A, Banjara MR, Rijal KR, Ghimire P. Methicillin Resistant Staphylococcus aureus in Health Care Workers of a Tertiary Care Infectious Disease Hospital in Nepal. *Tribhuvan University Journal of Microbiology,* 2020;7(1): 19-30.
 9. Aryal SC, Upreti MK, Sah AK, Ansari M, Nepal K, Dhungel B, Adhikari N, Lekhak B, Rijal KR. Plasmid-Mediated AmpC β -Lactamase CITM and DHAM Genes Among Gram-Negative Clinical Isolates. *Infect Drug Resist.* 2020 Nov 24; 13:4249-4261. doi: 10.2147/IDR.S284751.
 10. Kandel SN, Adhikari N, Dhungel B, Shrestha UT, Angbuhang KB, Karki G, Adhikari B, Banjara MR, Rijal KR, Ghimire P. Characteristics of *Staphylococcus aureus* Isolated from Clinical Specimens in a Tertiary Care Hospital, Kathmandu, Nepal. *Microbiol Insights.* 2020 Nov

11; 13:1178636120972695. doi:
10.1177/1178636120972695.

11. Bista S, Thapa Shrestha U, Dhungel B, Koirala P, Gompo TR, Shrestha N, Adhikari N, Joshi DR, Banjara MR, Adhikari B, Rijal KR, Ghimire P. Detection of Plasmid-Mediated Colistin Resistant *mcr-1* Gene in *Escherichia coli* Isolated from Infected Chicken Livers in Nepal. *Animals (Basel)*. 2020 Nov 7;10(11):2060. doi: 10.3390/ani10112060.
12. Adhikari B, Ozaki A, Marahatta SB, Rijal KR, Mishra SR. Earthquake rebuilding and response to COVID-19 in Nepal, a country nestled in multiple crises. *J Glob Health*. 2020 Dec;10(2):020367. doi: 10.7189/jogh.10.020367.
13. Muktan B, Thapa Shrestha U, Dhungel B, Mishra BC, Shrestha N, Adhikari N, Banjara MR, Adhikari B, Rijal KR, Ghimire P. Plasmid mediated colistin resistant *mcr-1* and co-existence of OXA-48 among *Escherichia coli* from clinical and poultry isolates: first report from Nepal. *Gut Pathog*. 2020 Sep 17; 12:44. doi: 10.1186/s13099-020-00382-5.
14. Gurung S, Kafle S, Dhungel B, Adhikari N, Thapa Shrestha U, Adhikari B, Banjara MR, Rijal KR, Ghimire P. Detection of OXA-48 gene in carbapenem -resistant *Escherichia coli* and *Klebsiella pneumoniae* from urine samples. *Infect Drug Resist*. 2020;13: 2311-2321.
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Some glimpses of the departmental activities





ANNEX-I Faculties



Komal Raj Rijal, PhD
Associate Professor & Head of Dept.



Anjana Singh, PhD
Professor



Dwij Raj Bhatta, PhD
Professor



Prakash Ghimire, PhD
Professor



Binod Lekhak, PhD
Professor



Megha Raj Banjara, PhD
Associate Professor



Devraj Joshi, PhD
Associate Professor



Shyam Prakash Dumre, PhD
Associate Professor



Reshma Tuladhar, PhD
Associate Professor



Shaila Basnyat
Lecturer



Supriya Sharma, PhD
Lecturer



Purnima Baidya
Lecturer

ANNEX-I Faculties



Manita Aryal
Lecturer



Nabaraj Adhikari
Lecturer



Upendra Thapa Shrestha
Lecturer



Nabaraj Adhikari
Lecturer

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ANNEX-II

Annual budget of the Department with details of income and expenditure
FY 2077/078

०७८ आषाढ

लेखा	वजेट	थप	आन्तरिक श्रोत	धरौटी	वर्षको	जम्मा	खर्च	हालको	जम्मा	वाँकी
	निकाशा	वजेट	बजेट	निकाशा	शुरु पेशकी			वाँकी पेशकी		
	2	3	4	5	6	2+3+4+5+6=7	8	9	8+9=10	7-10=11
01:001			0			0				0
01:002			14000000			14000000				14000000
01:004			1000000			1000000.00			0.00	1000000.00
01:006			10000000			10000000.00			0.00	10000000.00
01:007			30000000			30000000.00	6399776.50		6399776.50	23600223.50
01:008			400000.00			400000.00	1702.00		1702.00	398298.00
01:009			0.00			0.00	0.00		0.00	0.00
01:010			4000000.00			4000000.00	175499.98		175499.98	3824500.02
जम्मा	0	0.00	59400000.00			59400000.00	6576978.48		6576978.48	38823021.52
09:001 s										
09:001s	8820000	1384276.60				10204276.60	10204276.60	0.00	10204276.60	0.00
09:001v			400000.00			400000.00	31500.00		31500.00	368500.00
09:002	5096000	828920.38				5924920.38	5924648.00		5924648.00	272.38
09:003	928000	100946.00				1028946.00	1028946.00		1028946.00	0.00
09:004	1285000	170570.56				1455570.56	1455570.56		1455570.56	0.00

Contd.

लेखा	बजेट	थप	आन्तरिक श्रोत	धरोटी	वर्षको	जम्मा	खर्च	हालको	जम्मा	वाँकी
	निकाशा	बजेट	बजेट	निकाशा	शुरु पेशकी			वाँकी पेशकी		
09-005 उपदानकोष	360000	53286.46				413286.46	413286.46		413286.46	0.00
09-006			1200000.00			1200000.00	227611.00		227611.00	972389.00
09-007			200000.00			200000.00	72555.00		72555.00	127445.00
09-008			200000.00			200000.00	28926.00		28926.00	171074.00
09-011			1000000.00			1000000.00	40708.00		40708.00	959292.00
09-013			1000000.00			1000000.00	55390.00		55390.00	944610.00
09-017			1000000.00			1000000.00	305523.00		305523.00	694477.00
09-018			10000.00			10000.00	3000.00		3000.00	7000.00
09-019			100000.00			100000.00	0.00		0.00	100000.00
09-021			600000.00			600000.00	0.00		0.00	600000.00
09-023			2000000.00			2000000.00	204878.00		204878.00	1795122.00
09-024s			2000000.00			2000000.00	173709.00		173709.00	1826291.00
09-024#			1000000.00			1000000.00	14950.00		14950.00	985050.00
09-028			2000000.00			2000000.00	2139278.99		2139278.99	17860721.01
9.029			100000.00			100000.00	0.00		0.00	100000.00
09-030			6000000.00			6000000.00	2986994.87		2986994.87	3013005.13
9.031			3000000.00			3000000.00	138625.00		138625.00	2861375.00
कूल जम्मा	16489000	2538000.00	39810000			58837000.00	0.00		0.00	58837000.00
आम्दानी						0.00	0.00		0.00	0.00
जम्मा	16489000	2538000.00	39810000.00		0.00	58837000.00	25450376.48		25450376.48	33386623.52
कूल जम्मा	16489000	2538000.00	99210000.00		0.00	32027354.96	32027354.96		0.00	72209645.04



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