

IQAC/279  
05/09/13

**Dr. Gopal Nath**  
*M.D., Ph. D.*  
Professor & Head



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No. MB/NAAC/2013-14/ 213

Dated: 31.08.2013

4/9/13

**The Deputy Registrar**  
Internal Quality Assurance Cell  
BHU

**Subject: Cycle-II FOR NAAC assessment**

Dear Sir,

Please find enclosed herewith the Evaluation Report of the Department of Microbiology in reference to your reminder dated 26.07.2013 regarding the subject cited above for your information and necessary action.

Thanking you

Sincerely Yours

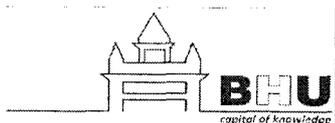
*G.N.*  
*31-8-13*

**GOPAL NATH**  
Prof & Head

Enclosure: As above  
**Prof. & Head**

**Department of Microbiology**  
**Institute of Medical Sciences**  
**Banaras Hindu University**  
**Varanasi - 221 005 India**

*ABR*  
*2*



**DEPARTMENT OF MICROBIOLOGY**  
**INSTITUTE OF MEDICAL SCIENCES**  
**BANARAS HINDU UNIVERSITY**

Date: 31.8.13

**Evaluative report of the Department**

1. Name of the Department: **Microbiology**
2. Year of establishment: **1966**
3. Is the Department part of a School / Faculty of the university? **Faculty of Medicine, IMS**
4. Names of programmes offered : **MBBS, MD, PhD**
5. Interdisciplinary programmes and departments involved: **Medicine, General Surgery, Paediatrics, Gastroenterology, Otolaryngology, Ophthalmology etc (For MD thesis) , Botany, Zoology, Physics, Pharmaceuticals, Biochemical Engineering, Biotechnology, Biochemistry, Biomedical Engineering, Ras Shastra, Dravya Guna, Medicinal Chemistry, Kay Chikitsa, Shalya, Shalakya, Prasuti Tantra, Vikriti Vijnan**
6. Courses In Collaboration with other universities industries, foreign institutions etc **NIL**
7. Details of Programmes discontinued , if any ,with reasons: **NIL**
8. Examination System: **Semester**
9. Participation of the department in the courses offered by other departments:  
**MSc (Applied Microbiology) by Department of Botany**  
**MD (Vikriti Vigyan) by Department of Vikriti Vigyan, Faculty of Ayurveda**
10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/ Asst.Professors/Others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	2	2	4*
Associated Professors	5	1	1
Asst.Professors	4	1	1

\*2 Superannuated Professors on re-engagement

## 11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance.

Name	Qualification	Designation	Specialization	No. of years of experience	No. of MD/ Ph.D./M.Phil. students guided for the last 5 years
Dr Anil Kumar Gulati	MBBS, MD (Microbiology)	Professor	Virology	37 years	4 M.D. and 4 PhD
Dr M R Sen	MBBS, MD (Microbiology)	Professor	Immunology, Serology	33 years	4 M.D. and 4 PhD
Dr. Gopal Nath	MBBS, MD, PhD (microbiology)	Professor & Head	Enteric Bacteriology, Molecular Biology	24 years	32 M.D. and 3 PhD
Dr. Shampa Anupurba	MBBS, MD (Microbiology)	Professor	Mycobacteriology, Antimicrobial Resistance	23 years	10 M.D. and 4 PhD
Dr. Ragini Tilak	MBBS, MD (Microbiology)	Associate Professor	Medical Mycology	15years	8 MD
Dr. Pradyot Prakash	MBBS, MD (Microbiology)	Assistant Professor	Bacteriology, Diagnostic Molecular Microbiology	8 years	6 M.D.

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors: **NIL**13. Percentage of classes taken by temporary faculty – programme-wise information : **NIL**14. Programme-wise Student teacher Ratio:**15:1 (MBBS), 5:3 (MD)**

15. Number of academic support staff (technical ) and administrative staff: sanctioned ,filled and actual

Sanctioned	Filled	Actual
16	6	7*

\*1 superannuated Technical assistant on re employment

16. Research thrust areas as recognized by major funding agencies: **Antimicrobial resistance,**

17. Number of faculty with ongoing project from national project title and grants received project wise:

SL No	Faculty	Project	Amount
1	Prof M R Sen	DBT funded: Molecular analysis of AmpC Beta Lactamases, their association with integrons and the role of gene cassettes in transfer of Multiple Drug Resistant Determinants in Gram Negative Clinical Isolates (Co investigator, <b>DBT, 2013</b> ongoing)	31lakhs

2 -	Prof Gopal Nath	<ol style="list-style-type: none"> <li>1. Single nucleotide polymorphism in HSP 60, the most conserved gene of <i>Helicobacter pylori</i>: Is it site and disease specific?" <b>DBT</b>, Govt. of India</li> <li>2. Comparison of genome sequences of phages infecting <i>Pseudomonas aeruginosa</i> for developing bacteriophage therapy against multidrug resistant infections" <b>DBT</b>, Govt. of India</li> <li>3. Anticestodal activity of glands and hairs of fruit of <i>Mallotus phillippinensis</i> (Kampillaka plant) in experimental animal model</li> <li>4. Drug resistance of <i>Salmonella typhi</i> in eastern Uttar Pradesh with special reference to ciprofloxacin.</li> <li>5. Development of indigenous molecular and immunodiagnostic assays for <i>Helicobacter pylori</i> infection and immunological and molecular characterization of <i>H. pylori</i> strains in relation to causation of disease. Multi centre project (Multicentric <b>DBT</b> sponsored)</li> <li>6. A multicentric hospital based study on clinical diagnosis of <i>E. histolytica</i>, <i>E. dispar</i> and <i>E. moskchkovskii</i> in India" ICMR (Started in June 2013)</li> <li>7. Cell cycle regulators and <i>H. pylori</i> in Gastric Carcinoma (Co investigator, <b>DBT</b>)</li> </ol>	<p>(25lakhs)</p> <p>21lakhs</p> <p>8 Lakhs</p> <p>50,000/=</p> <p>9 lakhs</p> <p>3,63693/=</p> <p>27 lakhs</p>
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18. Inter-Institutional collaborative projects and associated grant received. **NIL**

a) National collaboration b) International collaboration

19. Departmental projects funded by DST-FIST, UGC-SAP/CAS, DPE DBT, ICSSR, AICTE, etc; total grants received. **NIL**

20. Research facility /centre with- **National Recognition**

- State recognition
- National recognition
- International recognition

21. Special research laboratories sponsored by / created by industry or corporate bodies: **NIL**

22. Publications:

No. of papers published in peer reviewed journals (National and Internationals)

Prof Anil Kumar Gulati	88
Prof Malay Ranjan Sen	54
Prof Gopal Nath	157
Prof Shampa Anupurba	52
Dr Ragini Tilak	31
Dr Pradyot Prakash	22

**Chapter in Books:**

Prof Anil Kumar Gulati	6
Prof Malay Ranjan Sen	4
Prof Gopal Nath	8
Prof Shampa Anupurba	4
Dr Pradyot Prakash	1

**Citation index since 2008: Source Google Scholar**

Prof Anil Kumar Gulati	535
Prof Malay Ranjan Sen	450
Prof Gopal Nath	1679
Prof Shampa Anupurba	314
Dr Ragini Tilak	216
Dr Pradyot Prakash	192

23. Details of patents and income generated: **Patent: 1      Income NIL**

24. Areas of consultancy and income generated:

**Diagnostic services to the patients attending SS Hospital, BHU;      Income: 16 lakhs/ year**

25. Faculty selected nationally /internationally to visit other laboratories/institutions/industries in India and abroad: **1**

26. **Faculty serving as:**

a) **Prof Gopal Nath:** Member- Editorial Board::World J of Gastroenterology

Visitor nominee Kolkata University for the subject Microbiology

b) **Prof. Shampa Anupurba:** Examiner - DNB: Organized National Academy of Medical Sciences

27. FACULTY RECHARGING STRATEGIES (UGC,ASC,Refresher/orientations programs,workshoips, training programs and similar programs):

**Dr Pradyot Prakash:** Attended refresher course at UGC academic Staff College

**Dr Ragini Tilak:** Attended refresher course at UGC academic Staff College and Workshop on Statistics

28. Student projects:

- Percentage of students who have done in house project including inter-departmental project: 3
- Percentage of student doing project in collaboration with other Universities /Industry/Institute:

29. Awards/ recognition received at the national and International level by:

- Faculty
- Doctoral/ post doctoral fellows
- Students: 1

30. Seminars / Conference/Workshops organized and the source of funding (national/international)with details of outstanding participants, if any:

Sl No	Conference	Funding Agency
1	35 <sup>th</sup> National conference of Indian Association of Medical Microbiologists at BHU in November 2011	DBT, DST, CSIR, ICMR, WHO
2	1 <sup>st</sup> Conference of UP Chapter of Indian Association of Medical Microbiologists at BHU in April 2005	Delegate Fee

31. Code of ethics for research followed by the departments: As per rule of IMS and BHU

32. Student profile programme-wise:

Name of the Programme (refer to question no.4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
MBBS	>50,000	60	30		
MD	>40000	4	4		
PhD	>100	8	2		

33. Diversity of students

Name of the Programme (refer to question no.4)	% of students from the same university	%of students from other universities within the state	% of students from universities outside the state	% of students from other countries
PG	25%	25%	50%	0%
PhD	25%	60%	10%	5%

34. How many students have cleared civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category –wise

35. Student progression:

Student progression	Percentage against enrolled
UG to PG	33.3%
PG TO M.Phil	NIL
PG to Ph.D.	20%
Ph.D.to Post –Doctoral	NIL
<b>Employed</b> <ul style="list-style-type: none"> <li>• Campus selection</li> <li>• Other than campus recruitment</li> </ul>	All Post graduates of the department till date are either working as <b>Faculty</b> : Medical Colleges <b>Senior Resident/ Consultant:</b> Hospitals/ Diagnostic Laboratories <b>(100% employment)</b>

36. Diversity of staff

Percentage of faculty who are graduates	
Of the same university	NIL
From other universities within the state	16.6%
From universities from other States	83.4%
From universities outside the country	NIL

37. Number of faculty who were awarded M.Phil, Ph.D , D.Sc and D.Litt during the assessment period: **NIL**

38. Present details of departmental infrastructural facilities with regard to

- a) Library :
- b) Internet facilities for staff and student: Available for each teaching staff and in common computer room for all PGs and PhD scholars
- c) Total number of class rooms: Seminar Room 1 (Capacity for 40 persons),

- d) Students' Laboratories; 1-PG Research Lab ; Department still share UG Practical lab of pathology for UG Practical Class
- e) Research Laboratories: Molecular Biology laboratory equipped with Thermal Cycler, DGGE apparatus

39. List of doctoral , Post- doctoral student and Research Associates

a. From the host institution / University

	Name	Designation
1	Dr.Praduat Prakash	Part time Ph.D Scholar
2	Dr.Tuhina Banerjee	Ph.D Scholar
3	Mr.Chandra Bhan Pratap	Ph.D Scholar
4	Mr.Dharmendra Kumar	Ph.D Scholar

b. From other institution / universities

	Name	Designation
1	Dr.Abhai Kumar	Post.Doctrnal Fellow
2	Mr.Ram Janam	Ph.D Scholar
3	Mr.Saurabh Kumar Patel	Ph.D Scholar
4.	Mr Ajay kumar verma	Ph.D Scholar
5	Ms.Shweta Mishra	Ph.D Scholar
6	Ms Pallavi Sinha	Ph.D Scholar
7	Mr Shesh Raj Patel	Ph.D Scholar

c. From University of other country

1	Mr Joel Philgona (Nigeria)	Ph.D Scholar
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40. Was any need assessment exercise undertaken before the development of new programmes (s)? If so, highlight the methodology.

NA

41. Number of post graduate students getting financial assistance from the university:

4

42. Does the department obtain feedback from

- a) Faculty on curriculum as well as teaching –learning – evaluation? if yes, how does the department utilize the feedback?-

**Through Departmental Committee meeting where all the faculty members discuss the changes to be offered in curriculum**

- b) Student on staff, curriculum and teaching –learning-evaluation and how does the department utilize the feedback? No

- c) Alumni and employers on the programmes offered and how does the department utilize the feedback?. No

43. List the distinguished alumni of the department (maximum 10):

1. Prof. S C Sanyal
2. Prof. R. Sambasiva Rao

3. Prof. Subhash Chandra Parija
4. Prof TM Mohapatra
44. Give details of student enrichment programmes (special lectures/ workshops/seminar) involving external experts.
45. List the teaching methods adopted by the faculty for different programmes:  
**a. Didactic lectures b. Seminars c. Journal Clubs d. Tutorials e. Demonstrations**
46. How does the department ensure that programmes objective are constantly met and learning outcomes are monitored?  
**By stepwise theory and practical examination**
47. Highlight the participation of students and faculty in extension activities?  
**Faculty members and PG and PhD scholars regularly attends the National and State Level Conferences**  
**Faculty members attended Faculty development programmes at ASC, Workshops on related fields to update their knowledge in Bio Statstics and Bio informatics to enrich their research related activities**  
**Faculty members attended Medical Education Technology Workshop at MAMC, New Delhi**
48. Give details of "beyond syllabus scholarly activities" of the department:
49. State whether the programme / department is accredited/graded by other agencies? If yes, give details:  
 Yes, department is approved by Medical Council of India for teaching UG and PG students.
50. Briefly highlight the contribution of the department in generating new knowledge, basic or applied.

The department introduced the molecular technique Nested PCR in diagnosis of typhoid fever and tuberculosis in patient care. The IMS, BHU is one of the few institute in India where this facility is available.

In the field of Antimicrobial Resistance, research work conducted in the department highlighted the emergence of Metallo beta lactamase and importance of antimicrobial policy in a big way.

The department has established association between chronic typhoid carrier and carcinoma gall bladder for the first time.

Department has fully developed laboratory for Phage therapy research.

51. Details five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

**Strength:**

The department is equipped with all the required sections viz Bacteriology, Mycology, Mycobacteriology, parasitology, Virology and Molecular Diagnostic laboratory which enable the PG and PhD student to execute their research work efficiently.

**Weakness:**

**The Department lacks the posts of regular Senior Residents.**

The clinical sample load has increased exponentially in the last 10 years and exceeds 95,000 specimens per year in various sections of the department for processing.

Senior Residents, are the main work force to execute the patient care services and are very much essential to induct culture of QUALITY TESTING among junior residents and technicians of the department.

The department of Microbiology, in spite of several request made in the last two 5-year plans, we do not get the permanent posts of Senior Resident.

The department needs at least 8 regular Senior Residents and 8 permanent posts of Lab technicians so as to execute the Diagnostic work smoothly and efficiently. Only then we can think of getting our laboratory accredited by NABL.

#### **Financial constraints for research**

#### **Opportunities:**

The department can be utilized as a centre which can execute evaluation study of Serological Kits for diagnosis of infectious diseases in relation to DNA based Molecular tests.

Centre can be upgraded in to centre for advanced study in the field of Antimicrobial resistance and research in alternative therapy to antibiotics (Plant product, Peptides, Probiotics, and Phage therapy)

#### **Challenges:**

Currently, we are having 4 regular teachers and 2 Superannuated teachers. For executing the research and academic activities apart from regular teaching smoothly, there is a need to increase the number of faculty positions, at least 2 Asst Prof, 2 Assoc Prof and 12 Prof, in light of increased number of Students both UG (MBBS, BDS, BSc Nursing), and PG (MD) in recent 3 years.

52. Future plans of the department.

#### **Thrust Areas**

The department is updating the infrastructural facilities for better patient care and high grade teaching, diagnostic as well as advanced research activities. The top most priorities of the department are:

- 1 Search for alternatives of antibiotics including Bacteriophage therapy Research
- 2 Study on relationship between microbes and carcinogenesis
- 3 Emergency clinical microbiology services
- 4 Hospital infection control
- 5 Molecular diagnosis and epidemiology of infectious disease
- 6 Antibiotic resistance monitoring including *Mycobacterium tuberculosis*
- 7 Regional training centers for laboratory services.