Best Practices

1. Title of Best Practice:

"COMPREHENSIVE RESEARCH PROMOTION PRACTICE"

2. Objectives of the Practice:

The aim was to foster research participation amongst undergraduate and post graduate students of the University and contribute to the national pool of young scientists.

a) To institutionalize a comprehensive system for promotion of research at all levels of educational training.
b) To enhance student participation in research activities
c) Facilitate and provide enhanced support and opportunity for research
d) To provide a platform to emerging researchers to express their own innovative ideas and creativity leading to research initiative
e) To give an opportunity to scholars to gain interim feedback on the research projects from senior experienced faculty and experts in the field.
f) Provide opportunity to research scholars to interact with Eminent Scientists & Teachers.

3. The Context:

The need to generate scientific temper and inquiry amongst students to create tomorrow's researchers was felt along with a recognition of the scope for improvement in the research output of the University. A focused planning to improve the research in the University was made. A commitment had been made to the visiting NAAC Peer team to improve our research output and recommendations made in the Peer Team Report referred to strengthening research efforts.

4. The Practice:

A **Comprehensive Research Promotion Practice** was designed and instituted in 2013 in definitive steps to achieve the desired outcome within a pre-determined duration. The Research Policy of the University provided the vision and mandate. Standing mechanisms to promote, improve and support research education and planning accompanied by better systems and facilities to promote and facilitate research. Details of each practice is given with the activity introduced.

UNIQUE TO THIS UNIVERSITY is the practice of **Research Presentation Platforms at the level of Undergraduate, Post-Graduate and Doctoral studies** providing budding and career scientists an opportunity to present their work and interact with senior researchers.

The outcomes are due to team work on logistical, financial, administrative and academic fronts.

COMPONENTS OF COMPREHENSIVERESEARCH PROMOTION PRACTICE

OUTCOME:

- The University has organized 32 research awareness and educational programs.
- Regularity in the delivery of the structured Research Training Module has seen improvement in the quality of student and faculty research.
- The increase in number of publications from 73 to 825 (over 1300%) is evidence of the efforts made by the University.
- The Impact factor of journals to which University has contributed has increased with a range of 0.5 - 7.2 (earlier 0.5 - 2.0). Faculty publications in Scopus-indexed journals are 119.
- The University faculty have been awarded 2 international patents and have filed for 10 patents.
- There is a 100% increase in the faculty: publication ratio (0.5 to 1).
- Undergraduate students have undertaken research projects which are not mandated by their syllabus. One hundred and fifty (150) student projects have been conducted in this University since 2012.
- The University has active research MoUs with 10 International and 12 national institutes.
- Advanced Research Centre and the RICH Cell have been set up. These have contributed to interdisciplinary collaboration & translational research.

- The appointments of Research Director, Coordinator R & D in Centre for Interdisciplinary Research and a RICH Cell Coordinator with the services of the biostatician have helped to improve the quality and numbers of research output.
- Regular review and input into ongoing research has improved the quality of research. This has amplified an overall culture of research and quality.

RESEARCH EDUCATION: Research Training Module is conducted for all post-graduate students at the beginning of their PG course has been prepared. The module was prepared by a team of faculty from different departments. The opinion of external experts was sought on the draft and their suggestions incorporated before finalization.

Capacity Building for delivery of the module was not a challenge with the existing expertise available in the University. Optimal utilization is ensured with the module being compulsory for all post-graduate students in the University.

Module details: Conducted over a duration of 2 days (12 hours), within the University premises. Program of the Module is shown.

External Experts are also invited as part of the faculty for these workshops.

Research Training Module

Day1	
Time	Topic
9.00-9.15am	Objective of Medical Education
9.15-10.15am	Descriptive studies
10.15-10.30am	Tea Break
10.30-11.00am	Analytical studies
11.30-12.00pm	Performing and electronic literature survey
12.00-12.45pm	8-steps approach to design research projects
12.45-1.45pm	Define the research problem
1.45-2.15pm	Working lunch
2.15-3.00pm	Ethical issues and research and guideline for GCP
3.00-4.00pm	Preparation of Research Proposal-interactive, supervised
Day 2	
9.00-9.45am	Communication skills
9.45-10.45am	Statistics in Research
10.45-11.10am	Tea Break
11.00-11.30am	Data entry/collections
11.30-12.15pm	Art of writing synopsis
12.10-1.00pm	Proposal preparation
1.00-1.30pm	Working lunch
1.30-3.00pm	Presentation of proposals developed by groups

RESEARCH GUIDELINES PUBLICATIONS: The University has published a Book on Research Methodology for Post Graduate Dissertations, written by 2 faculty members. This is given free of cost to all students at the end of the 2-day workshop on research methodology.

ASSISTANCE & COORDINATION: To promote, support and facilitate research within the University the following functionaries are available:

- Research Director – new appointment
- Dean – Research & Development
- Coordinator R & D for Centre for Interdisciplinary Research – new appointment
- Coordinator, RICH Cell – new appointment
- Biostatistician – new appointment

FACILITIES:

RICH Cell was set up in 2013-2014. As elaborated in Criteria III (3.3.1), the purpose of the cell was to carry translational and interdisciplinary research and promote bench to bedside research.

Advanced Central Research facility in Centre for Interdisciplinary Research (CIR): As elaborated in Criteria III (3.3.2), this facility houses advanced research equipment.

MoUs: Detailed in Criteria III (3.7.3), the University has active research MoUs with 10 International and 12 national institutes.

Cadaver Laboratory setup: Set up with Industry collaboration, this provides both training and research potential.

RESEARCH COMMITTEES:

a. The University has 2 research bodies **Research and Recognition Committee** and the **Board of Postgraduate teaching and Research.**

b. There is an additional research committee at the College level – **Institutional Research Committee.**

All these committees have institutionalized functioning as per the prepared and approved Standard Operating Procedures and have vibrant, interactive meetings.

RESEARCH ACTIVITIES:

The University recognized the need to introduce research training and experience for students, to be able to provide the nation qualified professionals with high level of research understanding. This is manifested in the following programs which are elaborated below:

- UG Student Projects
- SMART (Second MBBS Alliance for Research and Training) for UG students
- COURT (Campaign on University Research and Training). for PG students
- AMAR (Annual Meet for Advanced Research) for PhD students
- Anveshan, the annual competition event by Association by Indian Universities for UG, PG and PhD students

UG STUDENT PROJECTS

Conducted under the guidance and supervision of the Department of Community Medicine, students, in groups of 5-6, undertake short research studies. These are mostly of descriptive nature and conducted either in the community or in the college.

Conclusions of the studies are discussed with the students.

Interventions that can be effectively performed.

SECOND MBBS ALLIANCE FOR RESEARCH AND TRAINING (SMART):

Practice: Since 2013, UG students from our institution participate in this annual event. Participation from other colleges is also solicited. The program consists of variety of competitive events which include:

a) Research done by UG medical students [ICMR-STS and non-ICMR projects]

b) Theme oriented competitions of essays, debate, poster presentation.
c) Academic Quiz

5. Evidence of Success:

a) Over 200 second MBBS students from medical colleges participate in this event.
b) Maximum attendance of students of other years
c) Long term benefits of SMART- present day interns who had participated in SMART have been noted to have greater interest in research related activities and keen scientific temper.

CAMPAIGN ON UNIVERSITY RESEARCH AND TRAINING (COURT)

Practice: This annual event has been conducted at our University for over a decade and formed the kernel of the CRP program instituted. Each year on the 18th February, 140-150 PG students present their research work to senior teachers and their presentations are evaluated by an eminent panel of referees. Students are awarded prizes in different categories. A senior researcher is invited to give a talk on research-related topic.

First & Second year MD/MS students and 1st year M.Sc. students participate in poster presentation, while final year students undertake a platform presentation.

Evidence of Success:

- Number and quality of publications by PG students sourced from their work have increased.
- Prizes won by PG students at state and national level conferences has increased.
- The keen sense of competition among new students to excel in their research work has been created.
- In last four years 600 PG students have participated in this program.

ANNUAL MEET FOR ADVANCE RESEARCH (AMAR)

Practice: This was started in 2014-15 and in2015-16 this was held jointly with ANVESHAN 2015 as prescribed by AIU (Association of Indian Universities). It mandates PhD scholars to make a power point presentation and participate in a discussion of their original research work. Experts evaluate the student performance for content and style and best paper is awarded a prize.
It also provides the University an opportunity to showcase thesis display, research publication, work done report of the Ph.D. students, patents filed, research journal published by the University.

Evidence of Success: is as follows-

- Number and quality of publications by Ph.D. students sourced from their research work have increased.
- The number of prizes won by our Ph.D. students at conferences at state and national level has increased.
- The keen sense of competition among new students to excel in their research work has been created.
- Participation of maximum Ph.D. scholars.
- Greater collaborative research work amongst different discipline has been noted in the University.
- Many Ph.D. Scholars have joined for Post-Doc Programs abroad.

Anveshan: Our University is a member of Association of Indian Universities, hence our PG and Ph.D. students participate there every year.

5. Evidence of Success:

- In 2015-16, one student stood First at zonal level in health sciences branch and then he stood 'Third' at National level. He was felicitated with a certificate, memento and cash price of Rs. 25000/-
- In 2016-17 one student stood 'Second' at zonal level in Health Science branch.

6. Problems Encountered and resources required:

Problems encountered	Solutions offered
Participation from other medical colleges not up to expectation in SMART	Advance information will be sent. More number of colleges will be invited. Publicize on website. Networking among faculty of other colleges will be improved.
Faculty awareness not uniform	Increase in faculty exposure and training for research.
Non uniformity in the standards of presentations displayed	Special training session is held each year for students which led to improvement in posters & power point presentations.
Experience in presentation with respect to timing, body language, content, vocabulary, stage presence was varied	Deliberate training of students. Use of post presentation summarization to highlight desired behavior. Verbal feedback given to MEU cell.
Lack of self-motivation among students	Mentoring. Importance of research knowledge in practice. Usefulness for international opportunities.

RESOURCES REQUIRED:

Resources Used	Additional resources needed
Research guides	Additional training in presentation and communication skills. Poster design & presentation To make a 2-day event of SMART, accommodation for visiting students will be needed.
Motivated students	
College Infrastructure	
Communication systems	

Add any other information that may be relevant for adopting/ implementing the Best Practice in other institutions

Some additional information:

- The first 2 years are difficult as medical students perceive research as an activity done by basic scientists and not by doctors. Hence, motivation of the research committees, team work and collaborative effort are very essential.
- Within 3 years, we have UG and PG students undertaking research activity voluntarily. These are research studies beyond the mandatory dissertations, or prestigious ICMR-STS projects. This has given a boost to all the faculty and University staff.
- Research studies are useful when done during UG years was realized by those students who applied for placements after clearing USMLE and PLAB exams for overseas education. They came back to their faculty and expressed their gratitude for being encouraged and guided to do those projects.
- Interventions that came out of Student (UG) projects became a vital component of acquainting them with the need for community extension work and its rewards.