FIRST DRAFT

REPORT

OF

THE COMMITTEE CONSTITUTED

TO

LOOK INTO THE ASPECT OF IMPROVEMENT IN STANDARD OF RESEARCH ACTIVITIES IN AUTONOMOUS INSTITUTES OF MEDICAL EDUCATION UNDER THE MINISTRY OF HEALTH & FAMILY WELFARE

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FOREWORD

The autonomous institutions of medical education under the Department of Health & Family Welfare, Ministry of Health & Family Welfare have established reputation of highest order in the field of education, patient care and medical research. Though the achievements of these institutions in various fields including the field of research have been given due recognition nationally as well as internationally, a need is felt to further improve the standards of research in these institutions in view of the changing needs and expectations in the field of medical research in the international arena.

Keeping in view the above, A committee was constituted to look into the aspect of improvement in standards of research activities in autonomous institutions of medical education under the Ministry of Health & Family Welfare.

The committee held **3** meetings and had interactions with various stakeholders including Directors, Faculty Members, Young Scientists, etc. of various institutes to seek their views on existing set up for research activities and scope of improvement.

I am thankful to individuals and officers of various institutes for giving their precious time for interacting with the committee and their valuable comments/views on various issues. I would like to acknowledge contributions made by the individuals concerned in the Ministry and heartfelt appreciation to Shri Debasish Panda, Joint Secretary and Member Secretary of this Committee for extending full cooperation and hard work put in for finalizing this report.

I feel highly privileged for having done an important exercise for betterment of premier institutions of medical education and hope that the observations and recommendations of the committee would help in improving/strengthening standards of medical research in these institutions.

(M.K. Bhan)

Secretary, Department of Biotechnology

Dated the ____

New Delhi

BACKGROUND

A number of autonomous institutions of medical education like All India Institute of Medical Sciences (AIIMS), New Delhi, Post Graduate Institute of Medical Education and Research, Chandigarh, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry etc. have been set up by the Government of India under the administrative control of the Department of Health & Family Welfare, Ministry of Health & Family Welfare. All these institutions are not only involved in demonstrating high quality medical education and patient care but also medical research.

Keeping in view the need for further improvement in standards of research in these institutions of medical education, a Committee comprising of following members was constituted by the Ministry of Health & Family Welfare on 06.05.2010 to look into the aspect of improvement in standards of research activities in autonomous institutions of medical education under it:

1. Dr. M.K. Bhan, Secretary,
   Department of Biotechnology - Chairman
2. Dr. Sneh Bhargav, Ex. Director, AIIMS - Member
3. Dr. Indira Nath, Ex. HoD(Bio-tech), AIIMS - Member
4. Dr. P.N. Tandon, Ex. HoD (Neurosurgery), AIIMS - Member

5. Dr. Ranjit Roy Chaudhury,
Ex. Chairman INCLEN Board of Trustees - Member
6. Shri Debasish Panda, JS, MoH&FW -Member Secretary

The order regarding constitution of the Committee is at Appendix.

The terms of reference of the Committee were as under:

i. To study existing research policies in AIIMS, New Delhi, PGIMER, Chandigarh, JIPMER, Puducherry etc.
ii. To assess the quantity and quality of research activities undertaken vis-à-vis overall national and international standards.
iii. To examine the achievements and shortfall in the research being undertaken in these institutes.
iv. To specifically examine the factors contributing to decline in the standard of research.
v. To suggest/recommend revised research policy and ways and means to improve the research activities to match with the international standards.
vi. To suggest the need for infrastructure and other facilities and their financial implications.
vii. To also suggest manpower and institutional requirement to oversee the implementation of research policies from time to time.

The Committee met thrice to discuss the existing research set up in various institutions and to deliberate on as to how to improve the existing set up to further improve the standards of research activities in these institutes. The committee also had interaction with the Directors, Faculty Members, Young Scientists of various institutes to understand the prevailing system and scope of improvement.

OBSERVATIONS OF THE COMMITTEE

Role of centrally funded institutions of medical education

Life sciences arena is undergoing an explosion of new knowledge in both biological science and in platform technologies. The increasing convergence of biological science with clinical, physical and chemical disciplines has raised possibilities of changing paradigm of medicine and public health thereby making incorporation of new advances into our medical and health care systems inescapable. Apart from basic sciences, the state of clinical and translational research will determine the contribution India can make, and more importantly, the relevance and affordability of the emerging regimes for our people. Medical Colleges and Institutions have a role in all types of research but have a crucial role to play in clinical and translational research.

Clinical and translational research is both from **'bench to bedside' (T1)** and thereafter, **to population (T2)**. T1 requires individuals and teams with strengths in biology, bioengineering, chemical science, genomics, proteomics, immunology,

microbiology, pathology, pharmacology, quantitative medical research (Clinical epidemiology and bio-stats) and bioinformatics. T2 requires skills in epidemiology, social science, health economics, biostatistics, programme & policy research and health systems management. AIIMS, PGIMER and JIMPER have important responsibility, mandate and potential to become leaders in both T1 and T2.

Research output is critical for designing impact relevant investments in health sector for innovation in delivering available health relevant knowledge and technologies to people in a meaningful way.

Within the institutional network, vision for research in the coming decades should be on generating affordable healthcare solutions and creating innovative ways of diffusing these across the health care system and to bring innovation and effectiveness into the health system itself. It is important that centrally funded medical institutes provide leadership, produce research leaders and create a world class benchmark in research productivity.

Characteristics of Institutions that sustain research excellence

Apex medical institutes have given the nation much to be proud of but in recent years, their research output has been stagnant. The research ecosystem is under stress and decisive measures are needed to strengthen it. Following are several commonly accepted attributes of institutional research excellence to gain insights for design of the future ecosystem:

(i) Leadership with a practical research vision and strategy that is capable of responding to new opportunities and challenges.

(ii) Recognition of the right of individual faculty and other scientists to nurture and use their creativity and innovativeness to the fullest.

(iii) Protected faculty time for research.

(iv) Reward for good research performance.

(v) Participatory, Innovative Research Governance.

(vi) Quality Ph. D, Post Doctoral and niche research programmes for bio medical health and other relevant researchers.

(vii) Ability of individuals to participate in knowledge networks.

(viii) Easy access to quality technology platforms, clinical and population research infrastructure.

(ix) Brand value to attract research interested faculty, scholars and students.

(x) Hassle free research capability enhancement possibilities at all levels.

(xi) Career paths that allow some to concentrate relatively more on research while pursuing patient care and/or teaching.

(xii) Physical infrastructure and access to information.

(xiii) Mentorship

Governance of Research at Premier medical institutions

The vision and mandate of the autonomous institutes of medical education under the Department of Health & Family Welfare asks them to excel in advanced patient care, medical/interdisciplinary education and biomedical/health research. For sustained excellence it is important that the governance of these interconnected verticals be itself characterized by world class policies, strategies and processes.

Examination of prevailing system at these institutions shows that the current research governance is essentially administrative

and limited largely to ensuring that extramural grants by faculty and scientists are handled as per government rules, very modest intramural grants for faculty are dispensed and ethics review is carried out where relevant. The committee has noted that the Academic Committees at these institutes have little influence on research. The committee feels that the governance system of research needs to be modified and strengthened for more effective policy formulation, strategy development and services. The Governance role of an effective system should include the following:

- Vision and strategy development on 5 yearly basis and specific plans, biennially.
- Establishment and governance of centralized technology platforms (including animal models and In vivo imaging), clinical research and population research resource support systems.
- Research capacity and career development support for young faculty.
- IP and technology transfer/ management services.
- Research information access.

- Interdepartmental and inter institutional research and research training linkages.
- International collaboration.
- Academia- Industry collaboration.
- Research training linked to medical education at various levels, and Ph. D. and Post-Doctoral programmes.
- Research oriented short term training.
- Administrative and Financial support for extramural and intramural projects.
- Resource mobilization through proactive partnerships with funding agencies.

Research Cadre

The increasing patient load on faculty over the years poses a great challenge to scaling up quality clinical research. There are however, spirited clinicians who continue to manage both well. In such cases, exposure to a senior academic mentor often serves as an inspiration. Nevertheless, modern clinical research of high class is a complex undertaking and quality time is critical. The committee has noted that none of the new centres in any of the medical institutions including one's under development, have given any role for research in their design and conceptualization. Many of these actively discourage Ph. D. Programmes.

In the past, the research cadre was mooted as a possible solution to augment faculty research output. However, the contribution of scientists has varied depending upon the senior mentors with whom they were placed and the emphasis on research in the departments. The cadre is unattractive as promotional avenue are sub optimal as compared to ICMR, DBT, DST and CSIR. The quality of input of scientists is mixed because there has been little direct recruitment. The cadre was essentially used to respond to legal directives for absorption of ad hoc project employees who had completed 15 years; many but not all of them have been productive. Finally, the best value of these scientists would be in clinical/para-clinical departments that have research leadership, in specialized interdepartmental centres, and in the proposed biomedical centre. In basic departments, optimizing faculty size rather than running parallel career paths may be a wiser course.

The other approach to redressing this issue is to expand faculty size, in general, and make faculty more interdisciplinary within departments and centres. A simple comparison of faculty size at Harvard Medical School and say, AIIMS, New Delhi would bring out the glaring disparities.

Medical Education and Research Education/Training

Leadership in scientific disciplines is too thin, in general but the lacunae in biomedical and health research is even more striking. The human resource creation role of central medical institutions must have emphasis not only on doctors and para-medics, but also on biomedical and health researchers. How this can be achieved requires an in-depth analysis.

Recommendations of the Committee

Based on the deliberations, interaction with various stakeholders and inputs provided by them, the committee makes the following recommendations:

1. Model of Research Governance

There are several potential research governance models that may be considered. A relatively easy to introduce model may have the following components.

i. Standing (or Advisory) Committee for Research (extramural and intramural membership for policy and strategies), purely based on research merit and research policy formulation, comprising of an external Chairman, Director of the institute as Co-chair, Dean (Research) as Member Secretary with external and internal outstanding faculty/scientists as members.

ii. Executive or Management Committee, essentially internally, chaired by Dean (Research) and supported by internal management panel or committee for major decisions.

iii. Service units for activities identified above including the existing administrative cell for research.

An alternate model is to establish a society or foundation for research. This model has advantages over the aforementioned model as it allows for a contract based carrier path to be developed without conflict with the faculty system and an opportunity to develop more efficient governance processes. It also makes it easier to forge sustainable alliances. Knowledge network are key to spontaneous emergence of interdisciplinary teams and facilitate inter-institutional and inter-departmental collaborative programmes. A core support from the institute ideally and also by research funding agencies would allow multiple, creative initiatives. However, the barriers, if any to create this model from legal, administrative angle need to be examined further. Examples of both systems exist in the country today and innovative research management models are under consideration in IITs, Management Schools, Universities and some Medical Schools as well.

Iv A democratic Peer Review based system, displayed transparently to all stakeholders, must be put in place for selection of Dean (Research), Member of Research Standing (or Advisory) Committee and Research Management Committee. senior faculty with research educational need to contribute to laying down these processes.

2. Central Platform Technology Facility

A Central platform technology facility within a core biomedical research centre should be established. The key component would include:

i. Centralized equipment facilities with multiple technology platforms, animal models and in vivo imaging facilities. The services should include assistance for use, short term training and collaboration based support.

ii. Clinical research support services which should include data management services, medical writing, assay validation, project management, regulatory advice, organizing data safety monitory boards, support for multi institutional human studies, bio banking, short term training for principal investigators, trial auditing and monitoring.

iii. It would be ideal to provide, within the same infrastructure, clinical research labs for some of the existing clinical centres and departments with strong research interests as an integral part of the departments/centres. There is little scope for locating supporting labs within existing clinical departments or centres as they have little physical space. As clinical centres

and department are essentially clinical faculty based, induction of new faculty in various disciplines would be required to make them interdisciplinary.

There are many clinical research facilities of this type in various medical centres globally and their experience could be helpful in planning.

An initial allocation of 75 crores and at least 30 positions of lab scientists, clinical epidemiologists, statisticians, programmers, data managers and project managers would be required.

3. 3. Population based Science Centres

The apex medical institutions have a department or centre based structure linked to education in patient care. Biomedical and health research needs to be carried out in populations as much as in patients. Population science centres must be established in ntionally important fields in an interdisciplinary manner

(i) Infectious disease

(ii) Chronic Diseases

(iii) Nutrition.

The platform technology facilities described above can be accessed by this centres.

We should consider inviting DHR, DBT and CSIR to open their centres as one of the options. These centres would each cost about ₹ 60 crores each to establish during the XIIth Plan and scientist positions about 20 per centre. Such events could transform our research capability in the country.

4. Protected Faculty time for research

i. The Scientists' cadre needs to be re-examined to define its role, size, how these scientists are placed & mentored, and assessment parameters. The cadre, if retained, should be largely direct recruitment based and with career path similar to DST, DBT and ICMR. The Manju Sharma Committee recommendations are quite appropriate for adoption. In their placement, clinical, interdepartmental and interdisciplinary centres and common use technology platforms should be given priority.

ii. New norms for faculty size in departments and centres should be evolved which are suitable for research centric national medical institutions than for general medical schools based on hospital requirements. The increase in the faculty strength should be tied to a renewed commitment of departments and centres to upgrade their research and to have a more interdisciplinary faculty to accommodate patient care, education and research

5 Incentives for research performance

Given the importance of patient care and education, it is easier, in practice, to reward an excellent research effort than reduce credit for lack of it. For non-service departments or where service demands are low, research effort and output must be, relatively, a more important element of assessment for promotion.

Within the policy framework, the following incentives are worth consideration :-

(i) **Units of Excellence:** Individual investigators, who excel, as judged by a external peer review process in research, could be given a research award that provides about Rs. 15,000/- per month, Rs. 5.00 lakh per year research grant for consumables and conference travel and two Post doctoral fellows for 5 year period.

(ii) **A certificate of research excellence:** Outstanding researchers should be recognized by the institute body by awarding a certificate of research excellence at the time of the Annual Convocations.

(iii) **Research Chairs:** These can be used as a vehicle to attract research leaders to the institute for 3-5 years period. 15-20 research chairs could be established in each institute in partnership with research funding agencies on cost sharing basis. Some of these could also be reserved for intra mural investigators while retaining their substantive positions.

(iv) **Centres of Excellence (CoE)**: The institutional leadership should proactively engage with inter-disciplinary groups that have performed exceptionally well to build strong nationally relevant disease-centred research programmes in mission mode, as centres of excellence. They need to receive separate flexible financial allocations and physical infrastructure. Such a programme could be developed on a cost sharing basis with national funding agencies. Some of the research chairs may be allocated to such mission mode programmes to bring in additional talent.

The CoE selection should be based on:

i. Proven track record of the lead investigators

ii. Disease burden of a disease induces coordination in India. At least 6-5 such mission programmes should be supported in the 12th Plan.

6 Ph. D. and Post Doctoral Programmes

i. The fellowship must, at least, equal the best payable in the country.

ii. Hostel accommodation must be made available.

iii. A core learning programme of about 6 months should be introduced as an essential requirement for PhD programme.

iv. Conference support should be extended to research scholars.

v. With regard to Post Doctoral Fellowship, major review is required as the current Post Doctoral Fellowship of CSIR, DST, DBT and ICMR are unattractive. The pool officership, while useful, is also inadequate.

A new Post Doctoral Fellowship, as a career development award (3 years extendable to 5 years) with emoluments, closer to entry level faculty with NPA needs to be instituted. Partnership with research agencies is feasible and desirable in this context.

vi. Contractual faculty may be allowed, for not exceeding 5 years in duration, for those inter disciplinary mission programmes and specialized centres that are a part of the institutional medium and long term strategy to attract best talent and get them started.

7 Linking Medical Education and Research Education/Training

A Task Force should be constituted to give specific recommendations on implementable education and training programmes relevant to research. Among other ideas, MBBS or MD-PhD programmes, Research intensive DM programmes, Masters in clinical and translational research, Masters by thesis from young faculty may be considered. A plan for building research capacity in young faculty would make our effort more coherent. With creation of six more AIIMS like institutions, even an inter-institutional research training academy may also be considered.

8 Inter department programme/virtual centres

To incentivize deep and sustained alliances over relevant department (basic-clinical; Clinical and paramedical others),

programme support on 5 yearly basis should be provided for enabling and covering a research. This should be based on competition with external participations in peer review. These funds can be for electronic medical records; disease specific bio-banks and institute collaborative research which can be augmented with extramural competition grants.

9 Inter Institutional programme/ virtual centres.

A committee should be established with Director of AIIMS and representatives of IIT, Delhi to prepare a proposal for a collaborative centre on Biomedical-Bioengineering research, integrating biodesign approach as a strategic element. The committee should submit an upgradation proposal in 3 months time.

This collaboration can achieve the status of the famous MIT-Harvard Medical School partnership. In future, similar other alliances can be built.

10 Budget for research activities

During each plan and at each annual budget a specific allocation for research related activities must be provided. The budget should have the concurrence of the Research Advisory Committee before it is presented to the Governing Body.

APPENDIX

Immediate

No. V-16020/29/2010-MEI
Government of India
Ministry of Health & Family Welfare

Nirman Bhawan, New Delhi – 110 011
Dated the 6th May, 2010

ORDER

Subject: Constitution of a Committee to look into the aspect of improvement in standard of research activities in autonomous institutes of medical education under the Ministry of Health & Family Welfare.

It has been decided to constitute a committee comprising of following experts to look into the aspect of improvement in standard of research activities in autonomous institutions of medical education under the Ministry of Health & Family Welfare:

Dr. M.K. Bhan, Secretary, Department of Biotechnology	-	Chairman
Dr. Sneh Bhargav, Ex. Director, AIIMS	-	Member
Dr. Indira Nath, Ex. HoD(Bio-tech), AIIMS	-	Member
Dr. P.N. Tandon, Ex. HoD (Neurosurgery), AIIMS	-	Member
Dr. Ranjit Roy Chaudhury, Ex. Chairman INCLEN Board of Trustees	-	Member
Shri Debasish Panda, JS, MoH&FW	-	Member Secretary

2. The terms of reference of the Committee will be as under:-

i. To study existing research policies in AIIMS, New Delhi, PGIMER, Chandigarh, JIPMER, Puducherry etc.

ii. To assess the quantity and quality of research activities undertaken vis-à-vis overall national and international standards.

iii. To examine the achievements and shortfall in the research being undertaken in these institutes.

iv. To specifically examine the factors contributing to decline in the standard of research.

v. To suggest/recommend revised research policy and ways and means to improve the research activities to match with the international standards.

vi. To suggest the need for infrastructure and other facilities and their financial implications.
vii. To also suggest manpower and institutional requirement to oversee the implementation of research policies from time to time.
3. The Committee will submit its report within a period of three months from the date of constitution of the Committee. The Committee is at liberty to invite experts, if considered necessary.

Sd/-
(K.K. Jhell)
Under Secretary to the Govt. of India
Ph. 23061229

Distribution :
All members of the committee.

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