

# Editorial

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## Medical Research at Crossroads

Medical education and research in India is in a state of metamorphosis wherein there is a paradigm shift from conventional rigid methodology to need-based issues. The present state of medical research in India is in quagmire owing to some being industry-driven, some for academic accomplishments, with very few actually addressing the felt needs of our country. The health of any country is unique and customized research can only address plethora of challenges arising in our ecosystem. Medical education presently is focusing on developing healthcare resources where primary stress is on superspecialization. This has to be revisited and the old concept of family physicians be ushered in, which will ease the load from the superspecialists, and health care can permeate to deep interiors of our society. While graduates generally possess reasonably sound knowledge of medical science, they are generally found deficient in performance of clinical skills and clinical competence. The application of evidence-based medicine has taken a backseat, because of constraints of basic research outcomes.

While technological advances appear stupendous and attractive, one must not forget that their roots are deeply embedded in knowledge gained through basic research carried out by passionate people whose only objectives were to unravel mysteries of nature. It is imperative that basic research should focus on more of wellness of society than innovating for costly equipments. The aim should be to gain affordable and integrative health care.

The National Health Research policy states several examples of Indian research providing the evidence for the formulation of strategies, policies, and programs (Vitamin A prophylaxis, National Vector Borne Diseases Control Programme, National Immunization Days, the use of bivalent vaccine for poliomyelitis, DOTS regimen for the treatment of Tuberculosis in the Revised National Tuberculosis Control Programme, new regimens for leprosy and kala azar, which are likely to lead to elimination). The challenge is that there is no long-term planning.

Continuity of research is also not maintained so that scholars while satiating their academic quest work on different topics rather than extending a topic of common interest. Various research projects which are undertaken lead to silos of knowledge and the continuity is lost. As a result, the research output remains rather disappointing and the enormous advantages offered by the human resource, on the one hand, and the diversity of Indian population, on the other, are almost completely lost. We continue to rely, for diagnosis as well as prognosis, on data generated in other countries with very different genetic and physiological backgrounds.

The support to healthcare research in our country is from multiple sources. The government is doing its bit by trying to promote through very robust institutes, such as the Indian Council of Medical Research (ICMR) and the National Health System Resource Centre (NHSRC). But a lot desires to be changed. For academic analysis, the total Twelfth Plan outlay (2012–13 to 2016–17) earmarked for the Department of Health Research (including the ICMR) was Rs. 10,029.00 crore. The actual expenditure was Rs. 3,180.99 crore for the entire Twelfth Plan period (up to February 2017). So, there was a huge mismatch to the tune of Rs. 6,762.50 crore between outlay and expenditure. The Parliamentary Committee, chaired by Prof Ram Gopal Yadav, observed that though it is always possible to generate more value for the funds allocated, it would be unrealistic to expect to achieve key goals of health research or to make spectacular breakthrough in the newly emerging frontier areas of health research with only 32% of the approved outlays. Honorable Prime Minister of India has also expressed his concern over the current status of medical research in our country which has led to spiraling cost of drugs and increased dependency on foreign countries. We are increasingly dealing with trade-related intellectual property rights (TRIPS) issues and challenges of intellectual property right.

To reboot, the conditions as are existent today in various healthcare institutes need to be deliberated. The Government on its part has launched three ambitious programs, namely “Make in India” for indigenization, “Start-up India” for innovation, and *Aayushman Bharat* for health coverage. The scenario for routine research is still deficient in basic requirements, such as proper financing, remuneration to researchers, and their social well-being. In healthcare institutes, the formal teaching load of a typical medical college faculty is usually not as high as those teaching in basic science departments in a university or college, although in most of the clinical disciplines, teaching continues in outpatient departments (OPDs), wards, and on the operation table as well, somewhat parallel to “teaching” that goes on in basic research labs. A common explanation for the rather limited novel research output from medical institutions is that the medical college faculty members have patient load amidst meager infrastructure which leaves

them with little time and energy to think about any serious research. However, the medical faculty in eminent medical institutions may not be engaged with OPDs/surgeries or wards on every working day and, therefore, the average per-week workload may not be exceptionally or unduly high.

In India, academic positions are largely given out in a time-bound fashion irrespective of any real output or any real contribution. There are no explicit incentives of being a researcher. Let us accept the fact that research in itself is not an independent specialty and is always the domain of respective sciences. This in turn pegs it at a lower stratum in the pecking order of professional needs of most scholars. Research also needs infrastructure and money. In Western societies, this money comes from various sources, such as Government and charity. Charities are busy promoting their own goals and most universities do not have dedicated funds.

In the present scenario, affordable health care is the cornerstone for our populace, but public sector hospitals struggle to provide treatment. The country has long battled infectious diseases, such as tuberculosis, malaria and dengue and is now facing rising numbers of noncommunicable illnesses, including diabetes and coronary heart disease. A 2014 report from the World Economic Forum and Harvard School of Public Health estimates that noncommunicable diseases and mental illness could cost India \$4.58 trillion by 2030. In the biotech sector, India has gone a long way to create a thriving enterprise in developing new drugs. The country's success in the generic industry relies on a different set of skills: reverse-engineering pharmaceuticals created elsewhere by breaking them into their components and remaking them through cheaper routes.

The way ahead for facilitating medical research can be achieved by providing dedicated infrastructure, earmarked budget, and incentivizing scholars. Centers of Excellence for health research can be an integral zone in all institutes. Separate budget should be earmarked for the same. Encouragement and incentives as marks and money should be available. Private organizations can be roped in for funding, albeit considering ethical issues. It is time that the government steps in for providing adequate financial benefit, stability of tenure, and career growth to scholars involved in research activities. Accommodation near place of work will augment their productive hours and will help them achieve better results.

Undoubtedly, the government and private sector are doing their bit by providing infrastructure and financial support to start-ups. It is time that private players step up and augment the academic resources by contributing financially as well as providing fertile ground for medical research as a career.

At the institute level, responsive and responsible governance and management structure needs to be developed in every research institution. These bodies should be empowered as well as accountable with strict timelines for deliverables.

At the government level, stewardship, quality assurance, administrative and financial support should be provided to ensure research productivity and evidence-based care to the community. This is the time when interventions, if applied in right proportion, would cascade our academic resources to zeniths of excellence.

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