

Bioethics Biotechnology & Biosafety- An Indian Perspective

Col (Dr) Derek SJ DSouza, MDS, MBA, FIIOPM
Director, National Bioethics Curriculum Implementation Centre
MIMER Medical College, Talegaon Dabhade, Pune India



Abstract

Whenever a discussion of bioethics is initiated for healthcare professionals a number of counter questions immediately arise - Are all medical professionals not ethical? Do we need to be taught ethics? Will the teaching of ethics make us better professionals? The answer to this is Yes, Yes and Yes. Many a time we end up doing unethical acts or are forced to perform an action that we know is morally wrong – yet find enough justification of circumstances to do otherwise.

The uncontrolled use of Biotechnology and Biomaterials in healthcare, becomes more challenging because now in addition to the biological concerns we need to understand the technical details and materials sciences as well. There is an urgent need, therefore, to have an understanding of Biosafety.

Biosafety deals with an approach that aims at preventing, minimizing or eliminating the hazards associated with activities such as research, production, teaching, technological development and utilization of biomaterials. The ethical way of practice is to minimize any risks that could jeopardize good health, the environment or the quality of healthcare being offered. When we consider the use of materials in the human body we must see that the material when applied to the body will not trigger a biological response, a chronic inflammatory reaction, foreign body reaction or toxicity, from interaction of the cell/tissue and the biomaterial. Despite all the claims, few materials, if any, are completely inert from the physiological point of view since, most of the components are having some toxic potential or are irritating. Chemical reactions during ‘curing’ or ‘setting’ might also produce undesirable effects. Unexpected side effects may occur in both soft and hard oral tissue as a result of contact with the material, exposure to leachable components, or from by-products of galvanization and corrosion. Concurrent use of different alloys may lead to galvanic corrosion and ingestion of by-products may lead to local or systemic reactions. When implants are placed inside the human body we need to ask additional questions - What are the effects of the nano-sized particles on the osteo-implant interface? Further studies of biosafety evaluation of nanoparticles with study of nano-toxicology but also the environmental safety and biomedical aspects must be carried out. The need of the hour therefore, is to have controlled clinical trials used to check clinical response to materials. Even though these tests have limitations we must undertake all steps to maximize patient

safety because that is the an ethically-driven healthcare approach. Practice-based research networks and use of practitioner databases maybe additional approaches rather than just controlled clinical trials, but they must be conducted with care and suitable precaution.

Biography:

International trainer and Consultant – Organisational Psychological Medicine

Track record of over 2 decades of meritorious service with Indian Army spearheading Healthcare Management, HR Administration, Learning & Development initiatives

Extensive experience in conceptualizing and implementing SOP’s, training programmes, process improvement, resource allocation, costing and utilization in healthcare operations

Director National Bioethics Curriculum Implementation Centre, Pune India

National Faculty Member - 3T Bioethics Training Indian Programme of the UNESCO Chair Bioethics (Haifa)

Consultant Maxillofacial Prosthodontist and Professor Prosthodontics, recognized by DCI with teaching experience of 16 yrs.

An esteemed professional with over 25 years of total experience; presently associated with MIMER Medical College Talegaon, Pune as Director, National Bioethics Curriculum Implementation Centre & Professor Dept of Dental Surgery. Rich and varied expertise in managing entire healthcare operations with key focus on top line & bottom line profitability by ensuring optimal utilization of resources.

Attended/ organised high profile professional seminars and workshops in India and abroad to keep abreast with latest developments in trends as well as administrative techniques; versatile professional accredited with research works, publications and presentations

Track record of maintaining excellent relationships with businesses, communities, vendors and other stakeholders to promote newer business opportunities, resulting in increased revenue for the organization.

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