

Editorial

Innovations in biomedical device development in dentistry: Harnessing technology for brighter future

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Dentistry is an amalgamation of art and science. It is influenced by developments in biomaterials and technology to a great extent. The last few decades have witnessed tremendous advances in these sectors completely revolutionizing the way we practice. Various new techniques have replaced the conventional ones and made the treatment outcomes more predictable and affordable.

Numerous biomedical devices such as dental implants, articulators, apex locators, endomicroscopes, CBCT machines, and RVG machines have brought about paradigm shift in the conventional dental practices. As a result of these policies various dental start-ups providing novel, cost-effective and comprehensive solutions and services have successfully been launched. Innovation can help to solve the clinical problems in a better way and/or to make existing solutions more accessible and economical.

There is a systematic approach to solving clinical problems involving following steps:

1. Define the unmet clinical need
2. Think creatively, out of the box to design new device/product
3. Develop a prototype
4. Conduct tests in laboratory
5. Pilot test in patients
6. Obtain certifications from regulatory authorities
7. Manage the intellectual property rights
8. Production and marketing
9. Feedback and improvements.

There is an urgent need to inculcate this problem-solving attitude and conduct training programs among dental professionals. We can team up with our engineering colleagues especially CAD-CAM background and bring out the most incredible solutions to improve our patient satisfaction.

Dental institutes can collaborate with engineering institutes and incubate ideas and provide necessary support in this process. VSPM's Dental College and Research Center is one of the few dental institutes to have their own pre-incubation center and shares facilities with BeTiC center at G H Raisoni College of Engineering, Nagpur, for the benefit of faculty as well as students.

The Government of India has also been very proactive to promote the culture of innovations and entrepreneurship in all sectors. The National Innovation and Startup Policy 2019 enables the institutes to actively engage students, faculties, and staff in innovation and entrepreneurship-related activities. This framework also facilitates Ministry of Human Resource Development in bringing uniformity across higher education institutes (HEIs) in terms of intellectual property ownership management, technology licensing, and institutional startup policy, thus enabling creation of a robust innovation and start-up ecosystem across all HEIs.

As a result of these policies, various dental start-ups providing novel, cost-effective, and comprehensive solutions and services have successfully been launched.

In a nutshell, biomedical device development is a promising field wherein young as well as experienced dental professionals can come up with exciting new developments for ultimate benefit of our society.

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