

## MOVING FORWARD WITH INNOVATION: TAKING DENTISTRY TO NEW FRONTIERS

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### ABSTRACT

**Background:** The oral healthcare landscape is ever changing, and it needs new and innovative solutions more than ever. The continuous demand for improved quality treatment and prevention, efficient service and improved prognosis and outcomes requires the dental industry to be proactive in accelerating inventions and innovations for the betterment of oral health care.

**Aim:** To this end, the International Invention and Innovation in Dentistry Exhibition (IIIDentEx) was conceptualized and realized in the year 2019 as the first dentistry driven invention and innovation platform. To date, this programme is entering its fifth installment.

**Methods:** IIIDentEx is a platform for inventors, innovators, and designers to present their work to the public and network with potential collaborators and business partners/investors in the oral healthcare sector. The competition-based event was categorized into three skill-based categories, namely the professional category, the young inventor/ innovator category, and the junior inventor/innovator category. The competition was evaluated based on a set of rubrics which included novelty, commercialization value, clarity of concept, applicability and relevance of the product and effectiveness of the product pitching or presentation.

**Conclusion:** IIIDentEx has become the leading dentistry driven innovation platform in Malaysia and is fast gaining an international presence.

**Keywords:** Innovation, IIIDentEx, Healthcare, Dentistry

### 1. INTRODUCTION

Innovate or invent? Both actions could result in betterment of the future in healthcare. As today's culture desires robust and sound evidence in creating new ideas or ways of doing things, innovation and invention in healthcare provides a promising future for better delivery and quality. What drives these innovations and inventions is the need to maximize the people's capacity to meet public and individual healthcare demands, accomplished by optimizing the effectiveness of every healthcare system.

Over these few years, the healthcare sector experienced substantial transformation, with unconventional business models, unexpected collaborations, and accelerated timelines requiring organizations to rethink how they operate. The persistence of evolving technology in healthcare and understanding in best practices and an organization's ability to acquire, assimilate, transform, and apply

these practices to their specific organization is part of the absorptive capacity conceptual model (Godfrey et. al, 2023). This conceptual framework is one of the examples that can be realized through innovation from the perspective of healthcare. Furthermore, healthcare organizations or governing bodies operating in emerging markets must have the flexibility and ability to cope with heterogeneous customer requirements (Wu et al., 2022).

The oral healthcare landscape is ever changing, and it needs new and innovative solutions more than ever. The continuous demand for improved quality treatment and prevention, efficient service and improved prognosis and outcomes requires the dental industry to be proactive in accelerating inventions and innovations for the betterment of oral health care.

While innovation is not a new concept in Malaysia, within dentistry and until recently, innovation was limited within certain industries or specialized laboratories. There were no dedicated platforms or arenas to showcase, discuss, and recognize innovative ideas. The pathway from conceptualization to proof of concept and commercialization was indefinite and uncertain especially among dental professionals.

Realizing this, we felt that there was a need to create an environment which would take innovation out of specialized labs of industries to the end users within the dental profession, namely the dentists, technicians and dental auxiliaries. To this end, the International Invention and Innovation in Dentistry Exhibition was conceptualized and realized in the year 2019 as the first dentistry driven invention and innovation platform. To date, this programme is entering its fifth installment.

## **2. METHOD**

The International Invention & Innovation in Dentistry Exhibition is an exhibition of new and innovative products and concepts developed for oral healthcare. Through this exhibition, inventors, innovators and designers will have the opportunity to present their work to the public and network with potential collaborators and business partners/investors in the oral healthcare sector.

The competition-based event was categorized into three skill based categories, namely the professional category made up of professionals from the health sector or relevant industry or staff of higher education institutions including private and public universities including polytechnic, community colleges, nursing and dental colleges and SME industries; the young inventor/ innovator category made up of students from all Higher Education Institutes including public and private universities, polytechnic, industrial learning colleges, nursing and dental colleges and international student participation. The last category was the junior inventor/innovator category made up of school students (Age 17 and below) from government and private schools including vocational colleges. Competition themes included Oral Health Education, Promotion and Disease Prevention, Information Technology, Treatment Enhancement and Oral Health Care Delivery, Sustainable & Green Dentistry, Advocacy & Governance and Nutrition in Health. The competition was evaluated based on a set of rubrics which included novelty, commercialization value, clarity of concept, applicability and relevance of the product and effectiveness of the product pitching or presentation. Judging was done by at least 2 judges from the relevant field or specialty but not limited to dentistry.

As part of the exhibition, participants were also exposed to copyright and patenting procedures through the involvement of MyIPO. Collaboration with other industries such as Nano Malaysia Berhad,

Haleon, Colgate Palmolive and other local dental companies were also established as the exhibition also served as a platform to matchmake between inventor/ innovator and the industries.

A book is also published annually, showcasing write ups of innovation/invention ideas presented at each annual exhibition. Key opinion leaders and leaders in the dental world are also being brought in during the exhibition to give keynote speeches on relevant topics to the participants. An online platform is also made available for international participants who are unable to come and participate physically. During the pandemic when physical conferences were not possible, the entire event was conducted online as a virtual exhibition.

### 3. RESULTS AND DISCUSSION

#### 3.1. Participants Demographic

Table 1 shows the distribution of projects, visitors, and industry collaborators from the first year of IIDentEx conception in 2019 to the latest in 2022. In general, there was a stable movement in the number of projects and industry collaboration. However, the number of visitors increased indicating heighten interest on innovation.

**Table 1.** Statistics of participation

	2019	2020	2021	2022
No of Projects	61	69	65	70
No of Visitors	163	187	156	220
No of Industry Collaborations	17	18	15	17

#### 3.2. Outcomes

Table 2 shows the impact of the event in terms of gold medals awarded intellectual property registration, publications and income generated.

**Table 2:** Impact of the event

	2019	2020	2021	2022
Gold Medals	23	22	20	23
Intellectual Property Registration	14	15	18	20
Publications	22	30	29	26
Income Generated	68,110.00	70,388.89	39,750.00	66,340.00

#### **4. CONCLUSION**

IIIDentEx has managed more than 300 inventions/innovations projects for the past four years and more than 700 participants from various organizations. It has also led to more than 20 industrial collaborations with the event. This year, the fifth IIIDentEx will be held in Bangi Resort as a physical and virtual event. It will be conducted in collaboration with The International College of Dentist (ICD) as an effort to further promote the international presence of IIIDentEx.

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