

**ENTREPRENEURSHIP, INNOVATION AND COMMERCIALIZATION CURRICULUM  
FOR POSTGRADUATE MEDICAL AND HEALTHCARE STUDENTS AT THE  
CENTRE OF EXCELLENCE FOR REPRODUCTIVE HEALTH (CERHI),  
UNIVERSITY OF BENIN, BENIN CITY**

**Summary**

*The current reality in Nigeria is that many healthcare graduates lack the necessary entrepreneurship knowledge and tools to contribute significantly to innovation, economic activities, and the national gross domestic product. It is unacceptable that institutions such as the University of Benin have not developed medical and biomedical entrepreneurship curriculums, unlike their counterparts in developed countries. Therefore, there is an urgent need to create a student-driven elective entrepreneurship curriculum that will focus mainly on the peculiarities of medical and healthcare systems, goods, and services. A needs assessment survey targeting critical stakeholders such as the target students/end-users of the curriculum, the lecturers who will execute the curriculum, university policymakers, and current professionals in the medical and healthcare industry will be conducted. The survey will elicit opinions on the extent to which medical and healthcare students require a special entrepreneurship development course as part of their academic curricula, the number of such students that have ideas they hope to convert to marketable products upon graduation, the number of such students that wish to undertake a medical or healthcare-based business enterprise upon graduation, and the type of topic that is expected to be included in the entrepreneurship curriculum. We must ensure that every medical and biomedical student is equipped with relevant knowledge in entrepreneurship, innovation, and the development of innovative products, services, and processes for commercialization.*

*To carry out this project, a committee with the following membership and terms of reference has been appointed by Professor Friday Okonofua, Centre Leader, CERHI:*

**INNOVATION AND ENTREPRENEURSHIP ECOSYSTEM COMMITTEE**

**Membership**

- |   |   |          |
|---|---|----------|
| 1. Dr Stephen Obeki Obeki – Ag Head, Dept of Entrepreneurship | - | Chairman |
| 2. Professor Anthony Ogbeibu – Director, IPTTO                | - | Member   |

- |   |   |           |
|---|---|-----------|
| 3. Dr. Grace Aziken – Dept of Computer Science  | - | Member    |
| 4. Mrs Christiana Omwanghe - Project Auditor    | - | Member    |
| 5. Dr. Osasu Obaretin – Assistant Director, CED | - | Member    |
| 6. Mrs Onoh Vivian – Program Manager            | - | Secretary |

### **Terms of Reference**

- a. Conduct a needs assessment survey.
- b. Identify and engage stakeholders/faculty.
- c. Develop curricula with stakeholders.
- d. Submit a report of needs assessment and draft curricula to CERHI.
- e. Ensure that curricula are approved by the Senate.
- f. Train faculty and students using the curricula.

## **DRAFT REPORT**

### **Introduction**

Students in the healthcare disciplines in Nigeria (medicine, nursing, public health, reproductive health, health economics, biomedical sciences, etc.) graduate to become part of the societal economic and entrepreneurial ecosystem, in which they are expected to contribute significantly to innovation, economic activities, and the national gross domestic product through the provision of goods and services. Unfortunately, many of these Nigerian graduates lack the requisite entrepreneurship knowledge and tools to face the economic reality in society.

While some schools in developed countries like Rutgers University (New Jersey) and Robert Wood Johnson Medical School have created a biomedical entrepreneurship network and corresponding medical school curriculum and noncredit elective aimed at offering insight on entrepreneurship, innovation, and business management, similar institutions in Nigeria, including the University of Benin, have not developed such medical and biomedical entrepreneurship curriculum, save for the general, foundation entrepreneurship courses taken at the Centre for Entrepreneurship Development.

## **NEEDS ASSESSMENT SURVEY**

The health care systems, goods, and services are ever-changing with new viruses or disease-causing organisms, new products, new processes, and new opportunities. A typical example of this dynamism was the just-experienced COVID-19 pandemic when “the healthcare systems were forced to restructure how they delivered care, and it also propelled the rapid development of diagnostic technologies.” (Murphy, 2022). The rigors of medical school are abundant. Still, some medical students find time amid the heavy workload to pursue their passion for improving health care through innovation. To ensure that every medical and biomedical student is allowed to acquire relevant knowledge in entrepreneurship, innovation, and development of innovative products, services, and processes and their commercialization.

To drive the innovative, management, and commercialization potential among the medical and biomedical students at the University of Benin, there is a need to create a student-driven elective entrepreneurship curriculum, which will focus mainly on the peculiarities of medical and healthcare systems, goods, and services. To do that, a needs assessment survey will be conducted among the following critical stakeholders:

1. The target students/end-users of the curriculum
2. The lecturers execute the curriculum.
3. The University policymakers (Senate members)
4. The current professionals in the medical and healthcare industry.

The following curricula are being proposed for the CERHI medical and biomedical postgraduate students as part of their overall academic programmes.

## **THE CURRICULA**

The proposed curricula are for both 1<sup>st</sup> and 2<sup>nd</sup> Semesters for students undertaking M.Sc. and Ph.D. degrees in the following programmes at CERHI:

1. Nursing
2. Reproductive Health
3. Public health

#### 4. Health Economics

### **First Semester**

1. Introduction to Entrepreneurship (Definitions and theories of entrepreneurship)
2. Historical and economic roles of entrepreneurship
3. Characteristics of an entrepreneur
4. Reasons for becoming an entrepreneur.
5. Qualities of an entrepreneur
6. Business ideas and opportunities
7. Factors to be considered when selecting a business idea.
8. Feasibility study and business plan
9. Innovation and the concept of “creative destruction”
10. How to start a small-scale business
11. How to manage a small-scale business
12. Elements of a successful business and key performance indicators (KPI)

### **Second Semester**

1. Creativity, Innovation and Entrepreneurial Development
2. Strategic thinking and Problem-solving
3. Entrepreneurship Ecosystem and Research Collaborations
4. The Medical and Healthcare systems – Products and Services
5. Product development
6. Marketing
7. Small and medium-scale enterprises
8. Startup funding and Entrepreneurial Financing
9. Product Protection and Patenting: Elements of Intellectual Property and Technology Transfer

## 10. Commercialization and Entrepreneurial Marketing

### **Needs Assessment Survey Questionnaire**

To ensure that medical and biomedical students have a well-rounded and informed perspective on the importance of entrepreneurship and ecosystem activities, the committee members will conduct a needs assessment survey. Below is a draft questionnaire for the survey:

1. Given the pivotal role of entrepreneurship in innovation, business ventures, and economic development, should medical and healthcare students be required to take a special entrepreneurship development course as part of their academic curricula?
2. Do you have an idea that you hope to turn into a marketable product after graduating?
3. Do you hope to start a medical or healthcare-based business after graduating?
4. Are you currently involved in an entrepreneurial or business activity? If yes, what type of business is it?
5. What topics should be included in the entrepreneurship curriculum specifically for medical and healthcare students? (Please list or explain).
6. Have you ever wished you had a place to learn or undertake apprenticeship training in business management or entrepreneurship activities?
7. To what extent do you believe that your education should include creating medical products and processes, in addition to providing medical services?
8. Have you ever wished certain products or processes in your profession were made safer or able to function quicker and more effectively?
9. Have you ever wished that new instruments were produced that could help save more lives or reduce the cost of healthcare in certain diseases or medical situations?
10. Have you ever wished that new drugs were produced to combat diseases such as cancer, diabetes, or sickle cell, and would you like to be involved in their development?
11. Would you like to develop a healthcare application that could save time and money, or improve the diagnosis process for a specific ailment?
12. Would you like to start a healthcare startup on your own or with a partner after graduating?
13. Apart from attending to patients, have you considered other services or businesses you could provide in your community?

14. Do you know any medical or healthcare professional is running a profitable, medical, or non-medical business?
15. To what extent do you think that running a successful business requires innovation and entrepreneurial competencies?
16. Who do you think is better positioned to develop concepts for new medical and healthcare equipment and instruments: (A) the medical and healthcare professionals who will use them; (B) the engineers who will design them; (C) the patients who will benefit from them; or (D) the hospital management?
17. Which faculties and professionals should offer entrepreneurship and innovation courses to medical and biomedical students? Please provide a list.