TITLE:
REQUIREMENTS FOR THE ESTABLISHMENT OF A PROBLEM-BASED LEARNING SYSTEM FOR THE PRE-CLINICAL YEARS

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Introduction

- The rate at which new knowledge is being generated has increased and learning has become very dynamic
- Therefore:
  - The educational objectives need to be:
    - ✓Explicit
    - ✓Integrative [1]
    - ✓Only partially dependent on the teacher's interest and level of knowledge

Health Professionals' Training

- Training of health professionals needs to be through innovative teaching systems whose purpose is to:
  1. advance knowledge and understanding
  2. develop critical reasoning for reasoned decision making
  3. gain self-directed learning skills (for life-long learning)
  4. acquire team skills (collaboration).

Problem-Based Learning

- PBL, one of the innovative learning methods has been explored to improve:
  - ✓ Basic understanding
  - ✓ Critical thinking
  - ✓ Team work
  - ✓ Transition from basic sciences to clinical sciences
  - ✓ Application of basic knowledge to real-life problems
  - ✓ Effectiveness of learning and teaching modules

Problem-Based Learning Emphasis

- This learning system is expected to develop the learner's:
  - Critical thinking
  - Communication skills
  - Team working capabilities
  - Clinical judgement
  - Reasoning abilities
  - Self directed learning
- The system is designed to achieve the student's holistic development
- Focused on collaborative learning by involving roup interactions between student

Requirements for the Establishment a Pre-clinical Problem-Based Learning system

1. Creation of the Department of Medical Education
2. Curriculum design and Structure
3. Faculty training
4. Physical resources
5. Development of cases
6. Assessment strategies
7. Analytical frameworks

1. Creation of the Department of Medical Education

- Has a major role in all aspects of implementing and sustaining a PBL system
  - Supposed to have access to information about the evolving trends in Health Professional Education
    - Curriculum design
    - Faculty training and development
    - Student support
    - Quality assurance

2a. Curriculum design

- Identify
  - Knowledge, competencies and skills
    - A proper philosophy
    - Mission
    - Vision
    - Goals
    - Expected Learning Outcomes (ELOs)
    - Learning objectives
- Determine the learning spects that will require integration

2b. Curriculum design cont...

- Integration
  - Horizontal integration (interdisciplinary)
  - Vertical integration (inter-relationship between basic medical sciences, and clinical sciences
    - ✓ Changing emphasis with the learner's progression through the program

2b. Curriculum design cont...

- Integration
  - Knowledge, competencies and skills:
    - In addition to the highlighted health professional training needs
      - ✓Technologies (IT/ICT, Medical technologies, Clinical technologies)
      - ✓Research skills
      - ✓Community orientation

2c. Curriculum structure

1. Part 1: Basic Scientific Concepts and Principles
2. Part 2: Normal Tissues and Body Systems
3. Part 3: Pathological processes
4. Part 4: Patient Management Courses

- LEARNING / TEACHING STRATEGIES- Problem - Based Learning (PBL)

2d. Integration with the overall curriculum

- Align the PBL sessions with the other components of the curriculum
- Integrate PBL into the overall educational goal and objectives of the preclinical program
- Maintain horizontal and vertical integration
- If possible adopt the SPICES model

2e. PBL SPICES model

- Student centered
- Problem based
- Integrated
- Community (and research-orientated)
- Electives
- Systematic (Spiral)

3. Physical resources

- Space for small groups (tutorial processes)
- Core learning and Reference materials (Books including soft copies)
- Hard or soft copies of tutorial problem booklets and tutor guides
- Technology for research and presentations
- Provide rescourses for additional learning and assistance when needed

4a. Faculty and Faculty training

- Have adequate faculty who can run all the small groups
- Train the faculty on PBL and PBL facilitation
- Ensure that the faculty can help the learners navigate through PBL effectively
- Focus must be put on the knowledge, competencies and skills that the learners are expected to gain
- The faculty to support students in addressing challenges ecountered during PBL

4b. Faculty as facilitators

- Sole responsibility of the trained faculty is to guide the learners effectively
  - Facilitation
- Should:
  - not dominate in the discussions
  - Encourage:
    - ✓active participation
    - ✓critical thinking and
    - ✓teamwork (collaboration)

5. Development of Cases (Tutorial problems)

- Relevant and authentic cases Stimulate:
  - Critical thinking
  - Problem solving
- Should:
  - be aligned with the program goals, ELOs, and learning objectives
  - take into consideration all the integrated disciplines
    - ✓Knowledge, skill and competencies
  - Cover a variety of topics within the subject areas

6. Assessment strategies

- Individual learner and group assessment tools aligned with the PBL system
  - Peer assessment
  - Self assessment
  - Evaluation of problem-solving skills

7. Analytical Frameworks for Continuous improvement

- Monitoring, and Evaluation, and research
- Evaluate the effectiveness of PBL in achieving the ELOs
- Feedback from students and faculty
- Use evidence-based practices to refine and improve the PBL teachng system
  - Review the curriculum and teaching system based on the and evaluation results
- Review and update the PBL cases (TPs) regularly

What must be done by the Department of Medical Education

- Following the admission of learners:
  - The first course in such a system of learning should be directed by Medical Education
- The key areas:
  1. Philosophy and goals of the program
  2. Design, structure and implementation of the program
  3. Traditional and innovative learning methods in medical Education
  4. PBL, students and tutor roles
  5. Assessments and tests under the program

Recommendation

- *Any institution that is involved in the training of health professionals in this century should consider adopting:*
  - *Problem-Based Learning system*
  - *Any other evolving innovative health professional teaching systems*
  - *Hybride teaching systems geared towards achieving the same objective:*
    - ✓Critical thinking
    - ✓Communication skills
    - ✓Team working capabilities
    - ✓Clinical judgement
    - ✓Reasoning abilities
    - ✓Self directed learning

END

THANK YOU