Editorials:

INTEGRATED MEDICAL EDUCATION

"CLINICAL /BED SIDE TEACHING CANNOT BE DISINTEGRATED "Dr Janardan Bhatt

Integration is organization of teaching matter to interrelate or unify subjects frequently taught in separate academic courses or departments.

In current educational Strategies for Curriculum Development the SPICES model of education curriculum is emphasized .In SPICES model there are six alternate continuums of elements in teaching medical students. The six angels are

Student-centred vs Teacher-centred

Problem-based vs Information-gathering

Integrated vs Discipline-based

Community vsbased Hospital-based

Electives vs Standard Programme

Systematic vs Apprenticeship-based.

SPICES is a word made by first letter of modern education curriculum development approach .The proposed modern medical educational curriculum is **S**tudent-centred ,**P**roblem-based , **I**ntegrated, **C**ommunity-based **E**lectives and **S**ystematic . The SPICES model is supported by many research evidences and human cognitive psychologists.

In context to Integrated medical education , SPICES model support Integrated medical education. The traditional approach is discipline or department based curriculum .In traditional medical education in many medical colleges ,the teaching of individual disciplines i.e. physiology, Anatomy is done in the form of didactic lectures , tutorials ..in individual departments and contact of patients is usually later after basic sciences courses are over. In traditional teaching all disciplines are taught in different departments or compartments and students have to integrate themselves when facing clinical problem at bed side. But the integrated teaching curriculum emphasis on bringing all subjects together in meaningful way on bed side solving problem. So Integrated teaching is obviously both students centered and problem based .In the very early years of under graduate education, students are divided into small groups and explored to acute

or chronic clinical conditions and to understand problem , In such context students have to apply knowledge of basic medical sciences.

Let us consider a primary health center of India or private setup where a Indian medical graduate is working independently and individually. Now how can one think that he/she will manage the cases in disintegrated manner? If he/she /our competent Indian medical graduate is working and manage alone ,he/she have to work and manage the case in integrated manner. SO how the medical education system and curriculum can be disintegrated and discipline based? In context to integration of medical education Medical council of India has recommended modifications in the existing curriculum to accommodate the aspirations of the defined goals and competencies in vision Curriculum 2015 onwards ,i.e. alignment and integration (horizontal and vertical) of instruction, Integration of principles of Family Medicine ,integration of ethics, attitudes and professionalism into all phases of learning, assessment of newer learning experiences, competencies including integrated learning. There will be a Implementation Support Programme, which will assist the teaching faculty of the medical colleges to implement these changes especially integration of medical education at their own medical colleges. Even and above the information and communication technology ,the foundation courses ,early clinical exposure starting from the first year. Integration recommended is both Horizontal and Vertical .This innovative new curriculum has been structured to facilitate horizontal and vertical integration between disciplines, bridge the gaps between theory & practice, between hospital based medicine and community medicine. Basic and laboratory sciences (integrated with their clinical relevance) would be maximum in the first year and will progressively decrease in the second and third year of the training when the clinical exposure and learning would be dominant. The early Clinical Exposure from the first year and foundation course, focusing on communication, basic clinical skills and professionalism is key issue in these innovations. There would be sufficient clinical exposure at the primary care level and this would be integrated with the learning of basic and laboratory sciences. Introduction of case scenarios for classroom discussion/ case-based learning would be emphasized. It will be done as a coordinated effort by the pre, para-clinical and clinical faculty. Impact will lead to a new generation of medical graduates of global standards.

Improvements in the infrastructure and increased emphasis on faculty development will result in increase in the quality of the existing medical colleges. These in turn will lead to motivating young doctors into the academic career and will further enhance the quality of medical education and clinical research in the country. In context to competency based medical education, assessment must alien to teaching learning method and contract to traditional teaching, integrated medical teaching is far superior and going to be time tested and evidenced based method of education.

Because of its complexity integrated medical education is difficult to define but in nut cell the Integrated medical curriculum or course is a course that bring the basic sciences ,clinical sciences and social sciences together into one course. It has become norm in American medical colleges and schools .Conceptual theories , Evidenced based medicine and allied medical educational research has taught a lesson that Integrated medical education has created more competent medical graduates and clinicians. Bed side teaching and management cannot be disintegrated. This suggest the Indian medical education and curriculum need urgent reform in the form of development of and implementation of integrated medical education/curriculum. And this will need a lots of inter disciplinary teaching and collaboration and build an interdisciplinary links and resulting curriculum content . By integration the the barriers between subject are broken. There is better learning opportunities in and facilitate the clinical learning relevant & meaningful bed side practice .

As mentioned previously there are two type of integration ,Vertical integration brings basic and clinical science together especially in early and later years of graduate years .Horizontal integration bring all the
disciplines, topics, subjects together that suppose to apply together in bed side medicine.

To begin an curricular integration some models have implicated .One such Harden et al model is ladder model and is narrated here briefly .In Harden model curriculum development is viewed as a step ladder process begins with bottom of the ladder as isolation and end up with full integration in trans-disciplinary integration at the top.

The 1st step Isolation step of integration ladder. Isolation is completely separate delivery of education..Teaching staff members plan delivery - in isolation and are un aware of what goes on else where .

2nd stepAwareness step of integration ladder. Awareness is similar to isolation; there is communication between sub disciplines to ensure that The outcomes and content of each area are concepts are co ordinated. Cross-referencing may occur and duplication is usually avoided.

3rd step Harmonization step of integration ladder. Sometimes described as "connected ".there is attempts to ensure that sub disciplines coordinate and make use of points of commonality.

4th step Nesting step of integration ladder. Nesting is when material is still subject-based and skills, a directed by members of the individual discipline. However, the material is taught using context from another area. This step is sometimes referred to as "infusion."

5th step Temporal coordination step of integration ladder. Also known as parallel teaching. Same content/subject matter is taught at the same time. Content remains discipline specific and make student opportunity for Temporal coordination.

6th step sharing step of integration ladder: two or more subjects are taught together the areas ,most likely as a result of overlap particular disciplines .

7th step Correlation step of integration ladder. With correlation integration, there is separate, discipline-based teaching, but made together by further integrative session

8th step Complementary step of integration ladder : In Complementary step there is extension o f correlation, but the integration sessions play a much larger and pivotal role.

9th step Multidisciplinary step of integration ladder. Sometimes referred to as webbed with Multidisciplinary integration . typically clinical cases where students apply their all knowledge and skills to solve the clinical problem. tice-based problems. The discipline perspective is maintained but autonomy is lost.

10th step Interdisciplinary step of integration ladder . Autonomy and perspective of the individual discipline is lost. With all subjects being reduced to commonalities between discipline

11th step Transdisciplinary step of integration ladder :In Transdisciplinary students typically are immersed in a practice situation must integrate material from individual subjects in order to demonstrate the competencies in concerned task.

The author feels the model very practical to begin to develop an integrated curriculum. But because of its complexity , there is a great problem of acceptance and conceptualization of integrated medical education curriculum. As the stake holders , faculties and the students are used to with traditional compartment methods there is going to be a significant resistance in the beginning the implementation of integrated based curriculum in medical school. Integrated curriculum has been widely adopted in some medical college.

This approach is an holistic approach . And this process helps to create link between the different clinical areas. The learning is made explicit by interrelationships among various disciplines. The aim in integration is to beak separation of preclinical , para clinical and clinical studies and being student centered .The learning a life long phenomenon. The Change is eternal. This reform of integrated medical curriculum is inevitable but not without effective management of change commitment of faculty, departments, individual s; agreement on degree of integration ; development of teams to support planning and implementation .This is fundamental need to create a competent medical graduates in India.

References:

Paul Bradley and Karen Mattick

Integration of basic and clinical sciences - AMEE 2008 Paul Bradley and Karen Mat tick, Peninsula College of Medicine and Dentistry, UK

Harden R M, Susette Sowden, and DR Dunn (1984) ASME Medical Education Booklet No. 18

Blackwell Publishing Ltd 2008.MEDICAL EDUCATION 2008; 42: 778–785 785

Blackwell Science Ltd MEDICAL EDUCATION Curriculum 2000;34:551±557 551

Harden R M, Susette Sowden, and DR Dunn (1984) ASME Medical Education Booklet No. 18

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