Integration of Medical Education with Health-care Delivery System in India for Competency-based Learning

At present, India’s health-care systems consist of a mix of public and private sector providers. Health in India is a state responsibility with overall policy established by the center. There has been consistent evolution of this policy oriented at meeting the health needs of the community.

The Medical Council of India has revised MBBS curriculum after 21 years titled, “Competency based UG curriculum for Indian Medical Graduate.” It essentially makes a significant shift from a classroom-based learning to one which stresses on competency-based learning and teaching programs, with focus on medical ethics, better doctor/patient relationship, and outcome-based learning.[1] In view of competency-based undergraduate curriculum, it becomes mandatory to integrate medical education with health-care delivery systems in the country. Moreover, in the last two decades, “fasttrack changes and developments” have occurred in the health system. In view of changed protocols of almost all the national health programs in general and new initiatives particularly on the prevention and control of noncommunicable diseases, the Indian Public Health Standards (IPHS) were evolved in 2005 and revised subsequently in 2012. To achieve “United Nations Declaration on Sustainable Development Goals,” the nation has rolled out National Health Policy (NHP) 2017 and Ayushman Bharat in 2018 and is fast progressing in the direction of universal health coverage.

Competency-based Learning in Community Medicine

The NHP 2017 states that the medical and paramedical education are to be integrated with health-care delivery system, so that the students learn in real environments not just in the confines of medical colleges.[2] In hospitals, most of the interactions of the faculty and medical students occur with patients to meet their curative demands by the management of presenting illness in a social context. Most often, it addresses neither the underlying determinants of health, nor effective means of promotion of health at community level. It can be best described as, “Medicine in hospital/patients in contrast to “Community Medicine.”

Competency-based learning in community medicine is to be integrated with community. People are the most important human resource in health-care delivery system; they should not be viewed as mere recipients of health care but as more than equal partners in the planning process of health-care delivery. Under the paradigm shift, “Community Health Needs Assessment (CHNA) approach,” health needs are assessed by health volunteers (accredited social health activists [ASHAs] and anganwadi workers [AWWs]) with the support of auxiliary nurse midwives (ANMs). They carry out household surveys and surveillance activities on a regular basis. This process involves consultation with people and their organizations. Health needs of every family and individual are assessed, and a village health action plan is developed which serves as, “Memory trigger” for health team at village level. By rooting medical education in the “community as patient,” the students and faculty are able to learn: assessing CHNA (community diagnosis); planning with people; delivering need-based services; developing work plan; ensuring universal coverage; monitoring process and supervision, effects, and impacts of services/interventions (evaluation); and getting feedback from community (community monitoring). By interacting with people, leaders, and their organization Panchayati Raj Institutions (PRIs), the roles and responsibility of people’s in health at village/ward level (community participation) can be demonstrated.

Integration of Medical Education with Health-care Delivery System

District in India is a unit for planning, implementation, coordination, supervision, monitoring, and evaluation of health services. State, district, block and primary health center (PHC) managers are real practitioners of public health/community medicine. One of the areas of teaching and training to undergraduates (UGs) is to acquire basic management skills related to health-care delivery system. The question is: How to learn health management principles and practice?

For competency-based learning, efforts must be made to achieve improved liaison between medical colleges and state/district/community health center (CHC)/PHC/subcenter (SC) organizations. Health service personnel should be involved to a greater extent in teaching and research program of medical faculties. It should be more than asking for delivering an occasional lecture. Their inclusion in the planning of curriculum in management and health-care delivery system, development of competency-based teaching methods, and evaluation of medical students should become a core activity. Their official recognition as a part-time teaching staff or honorary teachers/faculty would be an incentive. Sustainable interaction with district health organization and other sectors (chief medical officer; program managers; Integrated Child Development Services (ICDS) program manager; and education, water, and sanitation program managers) is of paramount significance. Faculty must attend their monthly review and planning meeting at district level.
and become part of continuing medical education program at district training center. This will lead on to competency-based learning in the following areas:

- Structure of health-care delivery system and job description of functionaries
- Recent advances on national health programs
- Principles and practice of health management in health-care delivery system, apart from intersectoral coordination
- IPHS and standard treatment protocols.

**District Health Action Plan**

District and block program management units have been set up under the National Rural Health Mission (NRHM) to supplement building of management and public health skills in the existing workforce. District health plan is a culmination of health action plans of village, SCs, PHCs, and CHCs. Each district undertakes a detailed situational analysis by facility/household surveys and using service statistics/secondary data. It provides a snap shot of where the district stands with respect to key program indicators. The “facility survey” provides critical information on the gaps of infrastructure and human resources which need to be addressed through planning process. Household surveys are conducted at the village level by health teams of ASHA, AWWs, and skilled birth attendants. Household surveys assess the health needs of each household and thereby of total population.

The District Health Action Plan (DHAP) processes help in competency-based learning in planning, implementation, monitoring, and evaluation. How the objectives are framed, expected outcomes and means of verification of outcomes are listed, strategies evolved and converted into activities, costing of each activity, timeline to complete the activity, and responsibility levels are determined. In short, the total planning process and planning cycle and management processes can be best learned from this exercise. Medical colleges were used as mentor for DHAPs. Case studies of DHAP can be prepared for learning.

**District epidemiology unit/district surveillance unit**

These units have been set up at district level under the NRHM to implement and manage integrated disease surveillance program (IDSP). Various reporting units send weekly reports to district on standard forms. Syndromic surveillance by health workers on “S” form, probable cases determined by clinical examination by medical officer on “P” form, and laboratory-confirmed cases on “L” form are transmitted to the district surveillance unit. The IDSP program can be learned actively by tracking all activities undertaken by health workers, medical offices, laboratories, and district-level epidemiologists. Theoretical classes on IDSP achieve little, while actual participatory observation leaves an indelible impression on the mind of students. Outbreak investigations and controlling of outbreaks by varied interventions can only be learned from this unit. The process of data analysis which transforms raw data into “information for action” by the principle of count, divide, and compare (arriving at incidence rates) for time, person, and place distribution can be a real-time learning of outbreak investigation. In our experience, this is the most rewarding experience to acquire the competency of investigating an epidemic and its control measures, leading to learning of emergency epidemiology.

**Prevention and Control of Noncommunicable Diseases and Upgradation of Subcenters to Health and Wellness Centers**

Recently, population-based screening of noncommunicable diseases (NCDs) has been rolled out, wherein ASHA enumerates the target population of persons aged above 30 years. She prepares a population-based assessment checklist for risk assessment in target groups. Risks such as age, physical inactivity, use of tobacco and alcohol, and obesity and family history of NCDs are assigned scores to identify high-risk individuals for priority assessment and interventions at facility level. Screening of all persons enlisted by ASHAS is being undertaken by ANMs at health and wellness centers at the village level. In addition, the screening tool includes questions related to the symptoms of cancer cervix, breast and oral cancer, epilepsy, and chronic obstructive pulmonary disease, so that such persons can be identified and referred to appropriate facility for management.

This is a golden opportunity to impart competency-based learning in live situations, wherein the faculty and students learn the process of screening of NCDs at the community level (health and wellness centers) for early diagnosis of NCDs, referral system for the management of NCDs, promotion of healthy behaviors and lifestyle modification at community level, disease burden of common NCDs, and role of health functionaries and mid-level providers inducted recently in the program. Faculty of medical college may become part of this program or else use the database of the screening program, converting it into case studies for classroom learning. Interaction with NCD cell at the district level updates the faculty on recent advances in tracking the epidemic of NCDs and massive efforts for primordial, primary, secondary, and tertiary prevention. Apart from this integration of NCD program with Revised National Tuberculosis Control Program, health care of elderly people and adolescents can be learned in real-life situation.

**Health Management Information Systems**

Health managers at all levels require information for making evidence-based decisions. They need information on all aspects of health systems such as inputs, processes, outputs, effects, and impacts. Recently, the Health Management Information Systems (HMIS) has been upgraded and updated to incorporate various changes made in all national health programs and in response to new initiatives undertaken on the prevention and control of NCDs and universal health coverage.

**Mother and Child Tracking System**

Integrated Reproductive, Maternal, Newborn and Child
Health (RMNCH) register is being used for tracking each and every eligible couple, pregnant woman, lactating mother, and young child longitudinally lifelong for delivery of an integrated service package. HMIS can be a rich source of information for assessing coverage, quality, and utilization of services and impact of services in terms of reduction of disease, deaths, and disability and improvement of nutritional status. The HMIS thus serves a rich source of learning observational, analytical (cohort studies), and experimental epidemiology. The health workers who collect voluminous service data are unrecognized epidemiologists at village level, and one can learn from them how to make use of these data for local planning, monitoring, and evaluation.

**Integration with Integrated Child Development Services and Urban Health Mission**

Integrated Child Development Services (ICDS) focus on early childhood care and all-round development of young children. The program is universal and covers rural and urban slums and tribal areas. It provides integrated services under one roof such as early childhood care and education and nutrition and health services to young children, pregnant and lactating mothers, and women in the age bracket of 15–49 years and adolescent girls. This program is a unique example of intersectoral coordination demonstrated by co-locating anganwadi centers with SCs; joint home visits by AWWs and ASHAs and ANMs for CHNA; organizing village health sanitation and nutrition day, for convergence of services at village level; geographical area co-terminus between health and ICDS supervisors for monitoring supervision and coordination; and joint preparation of monthly progress reports and planning of activities together at circle-level meeting.

Training of UGs – Family studies and longitudinal follow-up of eligible couples, pregnant and lactating mothers, and young children and adolescents should be linked with ICDS system. It provides a unique opportunity for competency-based learning of child growth monitoring; child development; improvements of infant and young child feeding practices at household level; Integrated Management of Childhood Illness; immunization; and screening of disease, defects, deficiency, and delayed milestones apart from the outcomes of integrated intervention programs.

**Rashtriya Bal Swasthya Karyakram**

Under the new initiative of RBSK screening of children from 0 to 18 years for 4Ds – Defects at birth, Diseases, Deficiency, and Development delays including disabilities have been launched. Screening program now covers thirty identified health conditions. Those children who are with any of the 4Ds are referred to District Early Intervention Centre for early interventions free of cost. Apart from this, mid-day meal program, eating healthy foods, avoidance of junk foods, using double-fortified salt, iron-folic acid supplementation, school mental health component, tobacco control program, adolescent health and deworming program to mitigate the problem of soil-transmitted helminths, promotion of sanitary latrines, and immunization programs are visible in school health services. Therefore, medical education must be linked with school health services. The students can participate and observe various activities and thereby acquire competency-based learning.

**Rashtriya Kishor Swasthya Karyakram**

The seven strategic priorities under Rashtriya Kishor Swasthya Karyakram (RKS) include nutrition, adolescent reproductive and sexual health, NCDs, prevention of substance use, prevention of injuries and violence, enhancing mental health, and decreasing school dropouts. Peer educator program (adolescent-to-adolescent program) can be observed, and diary maintained by peer educators can be seen for activities undertaken. Weekly adolescent health clinics at PHC and daily clinic for adolescents at CHC/district by counselor can be observed for fruitful activities. Life skill education program for adolescents has been developed by the Ministry of Youth Affairs for building skills which enable an individual to meet the challenges of everyday life. This must become part of UG curriculum, and UGs can participate in education program for adolescents for activities as elaborated above.

**Full Responsibility for a Defined Geographical Area**

Each medical college “Becomes part of and actively participates in health care delivery system.” It shall take responsibility for 50,000 population in urban slums for urban health center (UHC) and 30,000 population in rural areas for PHC, provides services for all the national health programs, and carries out household surveys for CHNA. Demonstrates to students use of an integrated RMNCH register for tracking beneficiaries, generate monthly progress reports on specified formats, and submit these reports to district program manager. Faculty must also attend monthly review and planning meeting to learn performance gaps; plan activities for the next month with district health organization; and indent drugs, supplies, and materials for national health programs from civil surgeon. In this way, faculty gets involved and linked with the health-care delivery system. Prepare Health action plan for SC, PHC, UHC and depute health personnel for continuing education and training at the district. UHCs and rural health centers are not viable units. These require continuous support from district health organization as the district is the basic unit of planning in the country. Regular interaction between director health services and director medical education is a must for integrating medical education with health-care delivery system. All these efforts can lead to competency-based learning in a comprehensive way. [3]

**Conclusion**

Greater involvement of medical colleges and community medicine departments in health-care delivery system to
Integrate teaching, training, and research pursuits is an imperative need for competency-based learning.

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How to cite this article: Lal S. Integration of medical education with health-care delivery system in India for competency-based learning. Indian J Community Med 2018;43:251-4.

Received: 23-11-18, Accepted: 11-12-18

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Quick Response Code:
Website: www.ijcm.org.in
DOI: 10.4103/ijcm.IJCM_358_18