

News from here and there

New frontiers in Indian medical education

Medical education in India is heading for a major change with the advent of competency-based medical education. These new frontiers have been in the offing for some time, for undergraduates pursuing medical education in India. The existing Graduate Medical Education Regulations (GMER) of 1997 did not describe a 'competent doctor'. A series of meetings and deliberations held from 2011 resulted in the Medical Council of India launching 'Vision 2015', which laid clear, specific, achievable competencies that would define the 'Indian medical graduate'. As per 'Vision 2015', an 'Indian medical graduate' ought to have a set of specific skills in each of the subjects taught in medical schools. The aim is to achieve the goals of universal health assurance through preventive, promotive, curative and palliative healthcare. The Indian medical graduate ideally should represent the need of the hour—a socially sensitive physician who helps attainment of the national goal of 'Health for all'. The role of an Indian medical graduate for the achievement of 'Health for all' is to mould the medical student into the roles of a clinician, leader, communicator, professional, researcher and life-long learner.

The new medical curriculum will come into force from the latest batch of students (2019–20) entering medical colleges all over India in August 2019. As per Dr Sanjay Zodpey, Director, Public Health Foundation of India (PHFI), New Delhi and the current president of the Indian Association of Preventive and Social Medicine (IAPSM): 'The new curriculum is set to change the outlook of the current compartmentalized view of the subjects taught in medical schools. It considers the impartation of medical knowledge based on application of knowledge, rather than merely the acquisition of knowledge, especially in professionalism and medical ethics. The new curriculum not only takes cognizance of the competencies but also of their implementation. However, implementation has to be followed in both letter and spirit.'

The competency-based medical curriculum focuses on vertical and horizontal integration among various medical topics. The integration will be in terms of knowledge impartation, temporal coordination, correlation, and nesting of the different competencies and sub-competencies in each of the medical subjects. The currently subject-driven impartation of medical education will be re-organized into cross-cutting competency-based assessment based on the ability to demonstrate, observe, assist and perform fundamental skills expected of an Indian medical graduate. It also ensures the best use of latest teaching and learning methods and tools of pedagogy. Early exposure (in the first year of medical school) to clinical medicine, options for elective subjects in preclinical and clinical disciplines, phased formative assessment for each of the knowledge, skills, attitudes, communication abilities are some of the highlights of the new curriculum.

More than 2949 preconditional skills have to be achieved in a phased manner before the medical graduates exit the portals of Indian medical schools in future. However, this shift from the current model of the medical curriculum is a daunting endeavour.

The formidable task ahead is the implementation of the new curriculum by framing the objectives aligning with and integrating various subjects both vertically and horizontally as well as their assessment.

ANKEETA MENONA JACOB, *Mangalore, Karnataka*

RTS,S/AS01 antimalarial vaccine: A ray of hope

Malaria is endemic across much of the world, and sub-Saharan Africa is disproportionately prone to it. Globally, about 228 million cases were reported in 2018 with over 400 000 deaths. Children less than 5 years old are a particularly vulnerable age group.

The complex life cycle of malaria parasite creates a considerable hindrance in the development of an effective vaccine. Of the more than 20 vaccines under evaluation, RTS,S/AS01 has shown some promise. The RTS,S/AS01 malaria vaccine acts against the circumsporozoite protein, inducing antibodies associated with the prevention of *Plasmodium falciparum* infection.

The theme of World Malaria Day 2019 celebrated on 25 April annually is 'Zero malaria starts with me'. World Malaria Day 2019 saw the beginning of a large-scale pilot implementation of RTS,S/AS01. RTS,S/AS01 (also known as Mosquirix™) is presently recommended in children of the age group of 5–9 months in sub-Saharan Africa, of moderate-to-high parasite transmission. This advanced vaccine candidate is prepared against the most deadly form of malaria caused by *Plasmodium falciparum*.

Almost a decade ago, in May 2009, a phase 3 trial had been launched in seven sub-Saharan African countries—Burkina Faso, Gabon, Ghana, Kenya, Malawi, Mozambique and Tanzania. This multisite trial was conducted at 11 sites involving 15 460 children. The study and review of the data by WHO and the European Medicines Agency have suggested an acceptable risk–benefit balance. The RTS,S/AS01 vaccine protected young children and pregnant women against severe and uncomplicated malaria. Another clinical trial was conducted to assess the incidence of severe malaria as the primary outcome over three additional years (January 2014 to December 2016), which found a low incidence in all groups (*Lancet Infect Dis* 2019;19:821–32.)

In children aged 5 months or older selected for pilot implementation, vaccination with four doses was delivered. This reduced clinical malaria episodes by 39% and life-threatening severe malaria episodes by 29% over a 4-year follow-up period, in addition to protection provided by bednets. In the initial 18 months of follow-up after three primary vaccine doses, the vaccine reduced clinical malaria episodes by 46% and severe malaria by 36%.

In a separate study, antibodies to certain antigens offering protective naturally acquired immunity are also enhanced by RTS,S/AS01 vaccination, adding to its efficacy. This has paved the way for a phase 4 post-marketing trial in Malawi, Ghana and Kenya, to be conducted by Glaxo-Smith-Kline and the European

Medicines Agency, to assess the safety, efficacy and impact of the vaccine for the future.

In endemic areas, even partial efficacy could potentially result in substantial public health benefits and could offer protection to children at risk of malaria and associated complications. The RTS,S/AS01 vaccine can be easily delivered through the current immunization delivery systems.

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US Preventive Services Task Force updates recommendations on risk assessment and genetic testing for BRCA-related cancers

Updating the original recommendations made in their 2005 and 2013 guidelines, the US Preventive Services Task Force (USPSTF) published, in August 2019, a statement based on results of its reviews of all available literature on potentially harmful mutations of *BRCA1* and *BRCA2* genes. This includes updating the panel's recommendations on risk assessment, genetic counselling and genetic testing for BRCA-related cancers. The updated guidelines suggest a negligible benefit of risk assessment, genetic counselling and genetic testing in women whose family history is not associated with an increased risk for harmful mutations in *BRCA1/2* genes. On the other hand, the harms associated with screening and risk-reducing interventions for this subset of women increases with moderate certainty, once testing is done. For women whose family history is associated with an increased risk for harmful mutations in

BRCA1/2 genes, the benefit of screening and profiling appears to be moderate.

The recommendations comprehensively cover women who are asymptomatic for *BRCA*-related cancers and women who have completed treatment and are considered free of cancer of breast, ovaries, tubes or peritoneal gland but have not been previously tested for *BRCA* mutations. Risk assessment tools evaluated by the USPSTF to accurately estimate the likelihood of carrying a harmful *BRCA1/2* mutation include the Ontario Family History Assessment Tool, Manchester Scoring System Referral Screening Tool, Pedigree Assessment Tool, 7-Question Family History Screening Tool, International Breast Cancer Intervention Study instrument (Tyrrer-Cuzick) and brief versions of BRCAPRO. The factors assessed in these risk assessment models, which predispose to an increased risk of harmful *BRCA1/2* mutations, include diagnosis of breast cancer before the age of 50 years, bilateral breast cancer, presence of both breast and ovarian cancer in one individual, male family members with breast cancer, multiple cases of breast cancer in the family, one or more family members with two primary types of *BRCA*-related cancer (such as ovarian cancer), and Ashkenazi Jewish ancestry. Evidence on the benefits or harms of risk assessment, genetic counselling, and genetic testing in men for *BRCA1/2* mutations was however not included in this USPSTF statement.

A draft version of the Recommendation Statement was posted for public comment on the USPSTF website from 19 February through 18 March 2019. The language was edited for greater clarity on risk assessment and additional information was added on the risk assessment tools referenced in the recommendation in an edited version uploaded in August 2019.

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The National Medical Journal of India is looking for correspondents for the 'News from here and there' section. We are particularly interested in getting newswriters from the north and northeast regions of India as well as from other countries. By news, we refer to anything that might have happened in your region which will impact on the practice of medicine or will be of interest to physicians in India. The emphasis of the news items in this column, which are usually from 200 to 450 words, is on factual reporting. Comments and personal opinions should be kept to a minimum, if at all. Interested correspondents should contact SANJAY A. PAI at sanjayapai@gmail.com or nmji@nmji.in