News from here and there

MBBS course in Marathi medium

Readers of this news page would remember that the MBBS course in Hindi language has been started in the state of Madhya Pradesh (*News from here and there* 2022;**35:**382–3; available at *https://nmji.in/news-from-here-and-there-40*). Now, Maharashtra is all set to start an MBBS course in Marathi. The Prime Minister of India, announced this while virtually inaugurating 10 new government medical colleges and hospitals in Maharashtra: Amravati, Gadchiroli, Buldhana, Washim, Bhandara, Mumbai, Ambernath, Nashik, Jalna and Hingoli on 9 October 2024. Studying the MBBS course in their mother tongue will be a boon for those who find it difficult to study medicine in English. It will help more students from rural backgrounds fulfil their dream of becoming a doctor. However, as with Hindi, preparing quality medical textbooks and teaching materials in the Marathi language for all subjects would be challenging for academicians.

ALLADI MOHAN, *Tirupati, Andhra Pradesh*
ORCID ID: 0000-0002-3214-9884

Drone service for healthcare delivery

In a virtual event coinciding with *Dhanvantari Jayanti* and the 9th Ayurveda day at the All India Institute of Ayurveda in New Delhi, the Prime Minister of India, Shri Narendra Modi, launched a drone service for healthcare for 11 tertiary care centres, including the All India Institute of Medical Sciences (AIIMS) at Bibinagar, Telangana and Mangalagiri, Andhra Pradesh. At AIIMS, Bibinagar, two drones are being used to deliver tuberculosis (TB) medications to primary health centres in remote villages in the tribal and hilly areas of Yadadri–Bhuvanagiri district and transport sputum samples from suspected TB patients back for testing as a part of a pilot project (a feasibility study), by the Indian Council of Medical Research (ICMR) under the National TB Elimination Programme (NTEP). The Ministry of Civil Aviation licensed drone operator agency (TSAW Drone Private Limited) operated small unmanned aerial vehicles (payload capacity of 3–8 kg; coverage area of 30–60 km). Another innovation was the help rendered by the active participation of women from local self-help groups trained to operate drones ('Drone *Didis*'). The drones could cover the round trip spanning 10 km in just 5 minutes.

AIIMS Mangalagiri has also introduced a drone service to expedite healthcare delivery. The inaugural flight marking the event, transported a blood sample from the Centre for Rural Health (CRHA) in Nutakki to AIIMS Mangalagiri in just 9 minutes. The programme will facilitate the transport of blood samples needing advanced diagnostic testing to AIIMS Mangalagiri twice a week for prompt analysis.

Regarding this innovation, Dr V. Suresh (Professor and Head, Department of Endocrinology, AIIMS Mangalagiri) stated that 'While we hear news of the use of drones in modern warfare, a much more meaningful and salutary role for this ultramodern technology is in the field of medicine and disaster management. It can help to supply vaccines, blood, medicines, diagnostic kits, and other essential medical supplies to teams in remote and difficult-to-access field areas while bringing back pathology and laboratory samples for analysis in a central laboratory—thus giving true meaning to the hub and spoke model of healthcare delivery.

In addition, it may help in search and rescue operations by rapidly locating patients suffering from acute medical emergencies, including trauma or accidents. With the use of medical drones, it is possible to deliver defibrillator shocks to patients undergoing out-of-hospital cardiopulmonary resuscitation (CPR) through specialized drones that can fly to the site of patient collapse faster than any ambulance team. As the payload, range, and guidance systems of drones improve, the applications of this technology will increase and help to provide equitable healthcare to underserved areas.'

ALLADI MOHAN, *Tirupati, Andhra Pradesh*
ORCID ID: 0000-0002-3214-9884

First in human phase 1 clinical trials to be launched in India

The Indian Council of Medical Research (ICMR), the foremost government organization for biomedical research in India, announced on 14 September 2024, that it had formalized memoranda of agreements (MOAs) with several prominent industry and academic partners to promote self-sufficiency in clinical development and to advance domestic pharmaceutical agents.

With these MOAs, India marks its entry into first-in-human clinical trials for multiple myeloma, Zika vaccine, seasonal influenza vaccine, and chimeric antigen receptor T-cell therapy (CAR-T) for chronic lymphocytic leukaemia (CLL).

ICMR will collaborate with Bangalore-based Aurigene Oncology Limited (CEO: Dr Murali Ramachandra) for research into multiple myeloma; Indian Immunologicals Limited, a Hyderabad-based company (MD: Dr K. Anand Kumar) for research into Zika vaccine; Bangalore-based Mynvax Private Limited (Co-founders: Dr Gautam Nadig and Dr Raghavan Varadarajan), for research into a seasonal influenza vaccine; and Navi Mumbai-based ImmunoACT (Founder and CEO: Dr Rahul Purwar), for research into a CAR-T therapy for CLL.

Commending these strategic collaborations, the Union Health and Family Welfare Minister, Shri J.P. Nadda stated that it was a crucial milestone in the quest for accessible and inexpensive state-of-the-art treatments for all Indians. He also emphasized that India is now poised to become a world leader in innovative healthcare strategies. The Director General of the ICMR, Dr Rajiv Bahl, who is also the secretary of the Department of Health Research, highlighted that the strategic partnerships proved ICMR's commitment to enhancing medical research in India.

The phase I clinical trials (i.e. first-in-human clinical trials) network includes Mumbai's King Edward VII Memorial Hospital

and Seth Gordhandas Sunderdas Medical College, SRM Medical College Hospital and Research Centre located in Kattankulathur, Tamil Nadu, the Advanced Centre for Treatment, Research and Education in Cancer, Navi Mumbai, and the Postgraduate Institute of Medical Education and Research, located in Chandigarh. These institutes will, in turn, be supported by the ICMR's Central Coordinating Unit in New Delhi. ICMR will provide the entire phase-1 clinical trial's funds, including conduct, investigation, and monitoring.

P.M. NISCHAL, *Mysuru, Karnataka*
ORCID ID: 0000-0003-3491-5500

MicroRNA discovery and research wins Nobel Prize in Medicine; paper planes make an appearance at 2024 Ig Nobel Awards ceremony

Victor Ambros and Gary Ruvkun were joint winners of the Nobel Prize in Physiology or Medicine for 2024 for discovering the presence of microRNA in *Caenorhabditis elegans* (*C. elegans*), a 1 mm-sized roundworm, and for their subsequent research into the role these non-coding RNA molecules play in post-transcriptional gene regulation pathways. The Nobel Assembly at Karolinska Institute, Stockholm, Sweden, announced the awards on 7 October 2024.

Victor Ambros, Professor at the University of Massachusetts Medical School, USA, is a developmental biologist. Gary Ruvkun, a professor of genetics at Harvard Medical School, Boston, is a molecular biologist attached to Massachusetts General Hospital, Boston, USA. Initially colleagues as post-doctoral fellows at the Robert Horvitz laboratory at Massachusetts Institute of Technology in the late 1980s, the duo reconnected in 1992 to exchange sequence data they had independently discovered on the *lin-14* gene using classical restriction fragment length polymorphism in the nematode *C. elegans*. This organism has been used since 1963 to study neural development in animals. Ambros validated the hypothesis that a *lin-14* mutant produced developmental timing defects, which were opposite to those of a *lin-4* mutant, indicating *lin-4* was a negative regulator of *lin-14*. Ruvkun identified several variants of the *lin-14* gene in the 3´UTR region, which prolonged the expression of the resultant protein for which the affected gene was coded. This confirmed the post-transcriptional regulation of *lin-14* and led to the discovery of a second microRNA gene, *lin-7*, in *C. elegans* worms with *lin-14* and *egl-35* loci mutations.

More than 2500 microRNAs in the human genome have been discovered over the past 30 years after their initial discovery in the free-living, transparent nematode *C. elegans*. These microRNAs play a role in almost all biological processes and are found in all types of body fluids, leading to the importance of determining specific microRNA expression profiles to support disease recognition, diagnosis, treatment, and monitoring of response to therapy.

The 34th Annual Ig Nobel Prize ceremony 2024 was a protracted affair, with a press release and then an in-person ceremony held in Room 250, Building 10 at Massachusetts Institute of Technology (which was also webcast in English with Japanese captions) on 12 and 14 September 2024, with plans for a second face-to-face event to follow on 17 November 2024, in Tokyo. Attendees for the in-person ceremony brought paper and paper planes with them, which they aimed around the hall and at the winners. Guests taught less-aware colleagues the nuances of folding the paper to achieve the maximum glide potential of the handmade aviation models.

The Ig Nobel Prize in Medicine for 2024 was shared by Lieven A. Schenk, Tahmine Fadai, and Christian Büchel of Switzerland, Germany, and Belgium, respectively, for proving that sham medicines that produced painful side-effects were likely to be perceived as more effective than fake medicines which didn't (Schenk LA, Fadai T, Büchel C. How side effects can improve treatment efficacy: A randomized trial. *Brain* 2024; **147:**2643–51). The event was attended by Lieven Schenk.

The Anatomy Ig Nobel Prize 2024 was won by a collaboration between French and Chilean researchers Marjolaine Willems, Roman Hussein Khonsari, and their respective teams for a comparative analysis of the direction in which hair on human heads would swirl and whorl (clockwise versus anti-clockwise), based on whether the person being studied was situated in the Northern or Southern hemisphere on earth. (Willems M, Hennocq Q, de Lara ST, Kogane N, Fleury V, Rayssiguier R, *et al*. Genetic determinism and hemispheric influence in hair whorl formation. *J Stomatol Oral Maxillofac Surg* 2024;**125:**101664).

Other honourable mentions include Americans Fordyce Ely and William E. Petersen, the 2024 Ig Nobel Biology Prize winners, for their paper published in the *J Dairy Sci* in 1941. It demonstrated that perching a cat on a lactating cow's back and then frazzling said cat by exploding a paper bag near its side led to a drop in lactation by the carrier cow. Ely's daughter, Jane Ely Wells, and his grandson, Matt Wells, collected the award.

MAHARRA HUSSAIN, *United Arab Emirates*
ORCID ID: 0000-0001-7632-0631

Four-fifths of hospitalization costs in India are out-of-pocket expenses

The Comprehensive Annual Modular (CAM) survey that was released on 9 October 2024, conducted by the National Sample Survey Office of the Ministry of Statistics and Programme, highlighted that the average out-of-pocket expenses (OOPE) were ₹4129 for rural households and ₹5290 for urban households for the period July 2022 to June 2023.

When the OOPE was calculated as a percentage of the total hospitalization cost, it was as much as 77% for urban and 92% for rural households. This implies that Indian households spend an average of 85% of their in-patient care costs out of their pockets. OOPE is a crucial indicator of financial protection in healthcare payments; it refers to the expenses borne by households when they receive medical care.

The CAM Survey covered over 300 000 households and was part of the 79th round of the National Sample Survey (NSS). The survey aimed to obtain information on education, healthcare expenditure, asset possession, digital use, and financial inclusion across the country. The survey did not cover a few remote villages in the Andaman and Nicobar Islands. Healthcare-related parameters were not surveyed during the 78th round of the NSS conducted in 2020–21.

The CAM survey also pointed out that rural and urban households spent an average of ₹539 and ₹606, respectively, on non-hospitalization medical services in a 30-day period. According to officials of the Government of India (GOI), a

comparison of the OOPE data between 2017–18 and 2022–23 suggested that various flagship health schemes of the GOI, including the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) and increased availability of private health insurance policies, have reduced OOPE in India.

However, according to various public health specialists, OOPE data can be deceptive. Other parameters, such as catastrophic financial protection and the percentage of people falling into poverty due to increasing healthcare costs, are more likely to show the true picture.

P.M. NISCHAL, *Mysuru, Karnataka*
ORCID ID: 0000-0003-3491-5500