

Letter to the Editor

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ICMR: Leading The Nation With Low-Cost Innovations**Geetha Mani¹, Raja Danasekaran¹, Kalaivani Annamalai¹**¹ Assistant Professor, Community Medicine, Shri Sathya Sai Medical College and Research Institute, Kancheepuram District, Tamil Nadu, India*Corresponding Author:*

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Dear Editor,

The Indian Council of Medical Research (ICMR) has been a pioneer in advancing medical and scientific research in India for decades. The past few years have seen the launch of many notable innovations and guidelines projecting India's image in the global scientific landscape. This is a short summary of the recent low-cost innovations developed by ICMR.

Indigenous Japanese Encephalitis vaccine (JENVAC):¹ This Vero-cell derived, purified, inactivated vaccine was jointly developed by National Institute of Virology (NIV), ICMR and Bharat Biotech Limited and is the first vaccine to be manufactured in public-private partnership mode. Apart from being an indigenous vaccine, it is also based on Indian strain isolated from Kolar, Karnataka in 1980s.

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Hence it is expected to improve efficacy along with availability and affordability.¹

Reverse Dot Blot (RDB) Hybridization

Thalassemia Diagnostic kit:² This affordable and sensitive kit developed by National Institute of Immunohaematology and ICMR will meet the need for diagnosis of affected children and prenatal diagnosis as early as first trimester. The kit can identify 7 common beta-thalassemia mutations and 2 common abnormal haemoglobins (HbS and HbE) which will cover most of the mutations in haemoglobinopathies in India. This kit has been planned to be released at Rs. 400 in public health facilities as compared to the present kits which cost close to Rs. 15000.²

Cervical cancer diagnostic kit- AV

Magnivisualiser:³ An indigenous user-friendly device, this was developed by Institute of Cytology and Preventive Oncology (ICPO), Noida under ICMR, to detect early cervical cancer. This costs Rs. 10000 against the present devices which cost around Rs. 8 to 10 lakhs. This device

uses a white, light source and can be operated on a 12-volt battery and thus expected to cater to screening and diagnosis in rural and remote areas with irregular electric supply. On randomised, controlled trials, it has been found to pick up high-grade, pre-cancerous lesions 1.5 times more than the ordinary tungsten light.³

Indigenous glucometers and testing

strips:⁴ Developed by Indian Institute of Technology, Mumbai and Birla Institute of Technology, Hyderabad, with funding from ICMR. These glucometers will cost between Rs. 500 to 1000 and the testing strips will cost between Rs. 2 to 4, thus making mass screening feasible and affordable.⁴

Food/water-borne pathogen detection

kit:^{5,6} This is a PCR-based, food and water-borne pathogen detection kit, which can play a potential role in investigation of food poisoning and common food and water-borne infections. This kit developed by National Institute of Nutrition (NIN), can detect five pathogens- Salmonella,

Staphylococcus aureus, Listeria, Vibrio cholera and Vibrio parahaemolyticus and would cost only 1/3rd of the imported kits.^{5,6}

ELISA-based kit for Serum Ferritin estimation:^{5,6} An indigenous ELISA kit for estimation of Serum Ferritin or Iron content in blood for individual and mass level screening of Iron-deficiency anaemia. This would aid in early detection of Iron-deficiency anaemia, accurate calculation of Iron requirement and help avoid unnecessary Iron supplementation.^{5,6}

Vitamin A deficiency detection kit:^{5,6} This kit uses dried blood spot specimen which can be stored at room temperature for

seven days and in refrigeration for several days. This field-friendly method can be used for mass screening for sub-clinical Vitamin A deficiency in remote areas. This is a convenient, cost-effective alternative to the conventional venipuncture method of blood collection which requires special precautions in collection, storage and transport.^{5,6}

These innovations when made available in all public health facilities could revolutionize health care and boost India's efforts in providing affordable health care for all.

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