

HOW NIGERIA BECAME EBOLA-FREE

On 20th October, the World Health Organization declared Nigeria, Ebola-free. How did this African country performed better than even the United States of America? What it achieved is being called “a piece of world-class epidemiological detective work.” When Patrick Sawyer landed in Lagos Airport and collapsed, he was rushed to the hospital. Three days later, a diagnosis of Ebola was made, and an Ebola emergency was declared. An Incident Management Center was created, using an existing mapping program for polio. A list of 898 contacts was formed by a panel of infectious disease experts. A staff of 1800 was mobilized and trained to track and check each contact twice a day. Contacts with symptoms were isolated and monitored till diagnosis was made or refuted. A total of 17 cases with 9 deaths were reported from Nigeria, and on October 20 – after 42 days (2 incubation periods of Ebola) – Nigeria was declared Ebola-free. Nigeria did not impose travel bans but had stringent checking at all airports. The key elements of Nigeria’s success were coordination, tracking and monitoring – all par excellence. (*Scientific American 18 October, The Hindu 21 October 2014*)

THE NEW AIR QUALITY INDEX

Indian cities have been reported to have some of the poorest air qualities in the world. This year a study by the WHO found New Delhi to have the worst air quality in the world. So the Central Pollution Control Board asked IIT Kanpur to develop our own Air Quality Index (AQI). This will consider 8 pollutants – particulate matter 10, particulate matter 2.5, nitrogen di-oxide, sulphur di-oxide, carbon di-oxide, ozone, lead and ammonia. Initially AQI monitoring will start in 46 cities and 20 state capitals. There are 6 categories of AQI – good, satisfactory, moderately polluted, poor, very poor and severe. The focus is on pollutants which impact health seriously. Color coded data will be available to the public and is an attempt to raise public awareness, so that they demand for higher quality standards and laws.

In Beijing, where air quality is tracked, on high pollution days, schools and factories are closed and government vehicles are kept off the streets. But in India there is no warning system. The AQI was long overdue and a welcome tool to monitor and hence modify air quality. (*The Hindu 19 October 2014, <http://home.iitk.ac.in/~mukesh/air-quality/BASIS.html>*)

MALARIA - LABORATORY ON A CHIP

Scientists from the Indian Institute of Science, Bangalore

have developed a low cost technology to detect malaria at a cost of around Rs 10. It will need a drop of blood on a cartridge. An optical reader (which can even be a smart phone camera with some add on hardware and an App developed by the team) will scan around one million red blood cells (RBC) in a drop of blood to detect the malaria-infected cell, due to its changed morphology. It could take as little as 30 minutes to make a diagnosis. The device could be modified to make diagnosis of other diseases which change RBC morphology – like sickle cell anemia or leukemia. (*The Hindu 21 October 2014*) .

DELAMANID FOR MDR TUBERCULOSIS

The second new drug against tuberculosis in forty years (after bedaquiline) is delamanid. It was approved by the European Medicines Agency in April 2014 and by the Japanese Regulatory authority in July 2014. It has also been mentioned in the Bulletin of the WHO in October 2014. However the WHO cautions that it has only been through Phase IIb trials, and has issued interim policy guidelines for its use. It suggests that the following five conditions must be in place before delamanid is used. First – Proper patient inclusion; adults over 65, HIV positive patients, patients with diabetes, renal failure, children and pregnant women must avoid the drug. Second, it must be used with four effective second line drugs, including pyrazinamide. The other points are careful monitoring, reporting of side effects and informed consent.

Delamanid is a nitroimidazole which blocks mycolic acid production. Absorption is best when taken with food unlike other antitubercular drugs. Sputum conversion rates after 2 months was 45.4% versus 29.6% with other second line drugs. The only major adverse effect appears to be prolongation of the QT interval. It is not yet approved for use in children.

INDIA IMPROVES ITS RANK IN GLOBAL HUNGER INDEX

India has moved up 8 ranks from 63 to 55 in the 2014 Global Hunger Index report of the International Food Policy Research Institute. The percentage of underweight children below 5 years has gone down from 24.2 in 2005 to 17.8 in 2014. India is no longer in the category of alarming hunger, and has moved to ‘serious’. Reasons for the improvement are said to be the several government programs targeting under nutrition including the expansion in the ICDS, NRHM and the MGNREGA. The next big goal is of zero hunger by 2025. (*The Hindu 20 October 2014, The Hindu 29 October 2014*)

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