What ails India’s public healthcare?

The current state of India’s healthcare is like a scene from Shakespeare’s *Hamlet* where Marcellus famously says, “something is rotten in the State of Denmark”, to which Horacio’s replies “then we should let God take care of it”. Both the rotten state and the apathetic and unimaginative response are symptomatic of the disease that ails India’s healthcare system.

All at once India’s healthcare suffers from quality, quantity, footprint, access and affordability issues. Any one or two of these alone would bewitch most countries—suffering all of them simultaneously is proving to be near fatal.

First, the quantity problem. The World Health Organization estimates that India spent about $267 per capita on health care in PPP adjusted terms in 2014—China spent three times that amount, Brazil five times, European nations 10 times and the US 20 times. In aggregate, India spends only about 1.5% of gross domestic product (GDP) on public healthcare. Most countries spend two or more times that number. This allocation is a fundamental problem that impacts infrastructure, supply of critical equipment and consumables (including syringes, oxygen, etc.), the number of hospitals and the retained staff of doctors, specialists, nurses and assistants.

Second, the quality issue. India suffers from an acute shortage of secondary and tertiary hospitals, a significant shortfall in specialists and specialized equipment, and a rigid regulatory framework combined with corrupt enforcement. All of this leads to appalling quality for the medical system in the country. Add to this a hopelessly inadequate feeder system from preventive health to primary care to secondary and tertiary referral and you have the makings of system that is so completely broken that it may not be fixable without a zero-base approach.

The NITI Aayog has taken the bold step of proposing a complete “repeal and replace” of the Medical Council of India (MCI) which is currently in charge of medical education and medical professionals in the country. It has come to this pass because according to a recent Brookings report the MCI has been a bribe-taking organization for accreditation of medical colleges. It has also used its authority to require that doctors without specialized degrees cannot perform the most routine of procedures like caesarean section or ultrasounds.

Combine this with an acute shortage of post-graduate seats for medical education and you have an absurd situation where MBBS doctors are not allowed to legally treat many of the leading causes of death in India.

Access and affordability issues add to a rather poor prognosis for the health system. Primary health centres (PHC) in villages are supposed to feed medical cases that require treatment to specialist hospitals in districts and further on to state-level specialist hospitals. PHCs are not present in many villages (about 1 for every 20 villages), and where present so severely undermanned that the “access” system is broken at the first mile. This lack of footprint impacts not only the filtering of patients but also deeply impacts prevention and early detection. A prevention and early detection system is a must if costs of the whole system for the country are to be contained.

The government has been taking some steps—such as increasing the number of drugs under price control. With an increasing footprint for equipment and drugs under price control it is only a matter of time before procedures and protocols also fall under this umbrella. While price control appears to be a solution in the short-term it is rarely a good solution in the long-term because it keeps professional profit motivated players out and encourages participants to cheat and creates incentives for the well-to-do to use illegal methods to get around it. While framework adjustments

like requiring the prescription of generics (India is the generics capital of the world after all) make sense, outright price control of the type now mandated for stents is poor policy.

The three biggest problems to address are 1) the acute shortage of medical professionals, 2) the hopelessly inadequate medical filtering and referral system and 3) who will pay and how they will pay for medical access.

The National Eligibility cum Entrance Test (NEET) combined with a new medical commission is meant to address the first issue but the proposal from NITI Aayog does not go far enough in viewing the medical system in a holistic sense and addressing the entire chain from education and prevention to secondary and tertiary medical care.

There are four basic models of payment for healthcare: the Beveridge model that is modelled on the general tax payer payment system of the British National Health Service, the Bismarck Model of socially funded insurance schemes, a nationally funded health insurance system and an out of pocket model. While there are elements of three of the four systems present in India (except national health insurance), the coverage is extremely limited.

Much work needs to be done to figure out a combination of these methods to address the needs of a heterogeneous India that caters to the urban and rural populations, rich and poor and formal and informal workers.

The diagnosis is clear—the system is broken. The policy doctors seem to be as apathetic and unimaginative as the real ones. The prognosis is not good.

P.S. “Health is the real wealth of a nation”, said Mahatma Gandhi.

Narayan Ramachandran is chairman, InKlude Labs. Read Narayan’s Mint *columns at* **www.livemint.com/avisiblehand**. *Comments are welcome at narayan@livemint.com.*

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A rapid test to diagnose Zika and dengue

An international team, including researchers from India, has developed a low-cost, rapid diagnostic test for diagnosing Zika and dengue viruses and differentiating the four serotypes of dengue virus. None of the rapid tests available is capable of differentiating the four dengue virus serotypes.

While many diagnostic tests cannot strictly distinguish between Zika and dengue infections, the test has nearly 100% ability to distinguish between the two virus infections. *Science Translational Medicine published the results.*

The diagnostic test has nearly 76-100% sensitivity and specificity in the case of dengue, while the sensitivity is 81% and specificity 86% in the case of Zika. “Since the antigens specific to dengue and Zika viruses are identified, there will be no cross-reactivity leading to wrong diagnosis,” says Dr. Guruprasad Medigeshi from the Translational Health Science and Technology Institute in Faridabad and one of the authors of the paper.

The researchers injected specific flavivirus nonstructural 1 (NS1) proteins produced by Zika and dengue viruses into mice to generate monoclonal antibodies. They identified pairs of antibodies that can specifically detect and distinguish each of the four dengue serotype NS1 proteins as well as the Zika NS1 protein. They took the antibody pairs and coated each antibody on a strip of chromatography paper at two different spots. One of these antibodies was attached to gold nanoparticles.

“When a serum sample from a patient is added on the chromatography paper where the antibody is spotted, the antigen present in the serum binds to the first antibody. Since it is paper, the antigen bound to the antibody diffuses and comes in contact with the second antibody. The second antibody too binds to the antigen leading to the formation of colloidal aggregates, which then forms a pink spot,” says Dr. Medigeshi. A pink spot appears on the strip within 20-30 minutes after the second antibody binds to the captured antigen.

The appearance of the pink spot indicates positivity to either Zika virus or dengue virus. And in the case of a serotype test, it indicates the respective dengue virus serotype.

“Since each pair recognises a particular serotype, we need four strips for dengue serotyping and one strip for Zika for testing each sample,” he says.

The team has also developed a pan-dengue strip which indicates positivity to dengue virus without cross-reacting with Zika NS1 unlike the current kits. The strip cannot differentiate between the four serotypes.

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President’s plan

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One million children saved, says a new study published in the Lancet

Significant reductions in mortality from pneumonia, diarrhoea, neonatal infections and birth asphyxia

India has avoided about 1 million (10 lakh) deaths of children under age five since 2005, owing to the significant reductions in mortality from pneumonia, diarrhoea, neonatal infections and birth asphyxia/trauma, measles and tetanus, according to study published in the latest issue of The Lancet.The 'India's Million Death Study', implemented by the Registrar General of India,is the first study to directly quantify changes in cause-specific child deaths in India, nationally and sub-nationally, from 2000-15 among randomly selected homes.

The study further illustrates that the conditions prioritized under the National Health Mission had the greatest declines. Pneumonia and diarrhea mortality fell by over 60% (most of the decline due to effective treatment), mortality from birth-related breathing and trauma during delivery fell by 66% (most of the decline due to more births occurring in hospital), and measles and tetanus mortality fell by 90% (mostly due to special immunization campaigns against each). The study states that mortality rate (per 1000 live births) fell in neonates from 45 in 2000 to 27 in 2015 (3.3% annual decline) and 1-59 month mortality rate fell from 45.2 in 2000 to 19.6 in 2015 (5.4% annual decline). Further, amongst 1-59 months, pneumonia fell by 63%, diarrhoea fell by 66% and measles fell by more than 90%. These declines were greater in girls, indicating that India has, remarkably, equal numbers of girls and boys dying, a significant improvement from just a few years ago.Pneumonia and diarrhoea mortality rates for 1-59 months declined substantially between 2010 and 2015 at an average of 8-10 % annual decline nationally and more so in the rural areas and poorer states.

The Million Death Study builds on the SRS by directly monitoring the causes of death in over 1.3 million (13 lakh) homes. Since 2001, about 900 staff interviewed about 100,000 (1 lakh) living members in all homes who had a child die (about 53,000 deaths in the first month of life and 42,000 at 1-59 months)every six months and completed a simple two-page form with a local language half-page narrative describing the deceased's symptoms and treatments. The records have been digitized and each one uniformly coded for cause of death independently by two of about 400 trained physicians, using World Health Organization approved procedures. This is a direct study based on face-to-face interviews with families, and is not based on modeling or projections from small samples.

The results signify that the strategic approach of the Health Ministry has started yielding dividends and the efforts of focusing on low performing States is paying off.

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Untrained teachers can now access training material

Fifteen lakh untrained school teachers have enrolled for a training course with the National Institute of Open Schooling (NIOS), an autonomous institution under the Ministry of Human Resource Development, to get themselves trained by 2019 to be able to retain their jobs.

This has happened just after Parliament passed an amendment to the Right to Education Act to offer them a last window to acquire proper training, something seen as essential to the provision of quality education in government and private schools.

The highest number of applications has been received from Bihar — over 2.8 lakh — followed by Uttar Pradesh (1.95 lakh), Madhya Pradesh (1.91 lakh), West Bengal (1.69 lakh) and Assam (1.51 lakh).

The NIOS has designed online courses to enable them to acquire a Diploma in Elementary Education (D.El.Ed).

Students' right

"Quality education is the right of students... NIOS has developed the course for upgrading the professional competence and information and communication based capacity building for teachers," HRD Minister Prakash Javadekar said at the launch of the course.

"The course will be offered through 'Swayam', a platform for online education, imparting knowledge through Dish TV. This is for the first time in the world that such high number of applications have been received for an online course."

Of the 14.97 lakh applicants, 12.29-lakh have already made the payment. The payment window is open till October 5.

"Among the over 12-lakh untrained teachers who have enrolled for the course, 9.25-lakh are from private schools and 3.53-lakh are employed in government schools," NIOS Chairman CB Sharma was quoted by PTI as saying.

Mobile application

While only those can acquire this diploma who scored at least 50% in Class-12, Prof. Sharma said at the launch that those who could not could appear again with the NIOS to try and get the requisite marks.

A mobile application has also been developed to help teachers seek any clarifications and solutions.

Beginning on Tuesday, the course will spread over four semesters and have 1,080 lectures accessible in 10 languages.

With PTI inputs

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The cold facts: on tracking influenza outbreak

Ever since the influenza virus known as H1N1 landed on Indian shores during the 2009 pandemic, outbreaks have been an annual occurrence. The worst was in 2015, when 2,990 people succumbed to it. This year the virus has been particularly active; mortality, at 1,873 by the last week of September, is quickly catching up with the 2015 toll. In comparison, official figures show 2016 to be a relatively benign year, with an H1N1 death toll of 265. The problem with these official figures, however, is that they only capture H1N1 numbers, a practice that has been adopted in response to the severity of the 2009 pandemic. But influenza was present in India even before 2009 in the form of H3N2 and Influenza B virus types. Out of these, H3N2 is capable of causing outbreaks as big as H1N1, and yet India does not track H3N2 cases as extensively as it does H1N1. This means that seemingly benign years such as 2016 may probably not be benign at all. Data from outside government surveillance systems are making this fact apparent. For example, a surveillance project for acute febrile illnesses, anchored at the Manipal Centre for Virus Research in Karnataka, has found that influenza accounts for nearly 20% of fevers across rural areas in 10 Indian States — fevers that are often undiagnosed and classified as “mystery fevers”. During the years when the H1N1 burden is low in these regions, H3N2 and Influenza B circulation tends to spike.

All this indicates that India’s surveillance systems are still poor and underestimate the influenza burden substantially. If numbers are unsatisfactorily tracked, so are changes in the viral genome. As a 2015 commentary by a pair of researchers from the Massachusetts Institute of Technology pointed out, India submits a woefully small number of H1N1 genetic sequences to global open-access databases for a country of its size and population. Sequencing is important because it can detect mutations in genetic material that help the virus evade human immune systems, making it more deadly. Because India does not sequence a large enough sample of viral genomes, it would be missing mutations that could explain changes in the lethality of the virus. Put together, the numbers data and sequence data will enable sensible vaccination decisions. Vaccination is the best weapon that India has against this menace, because Oseltamivir, the antiviral commonly deployed against flu, is of doubtful efficacy unless administered early enough. Yet, India has thus far stayed away from vaccinating even high-risk groups such as pregnant women and diabetics, because influenza is thought to be a more manageable public health challenge compared to mammoths such as tuberculosis. Better surveillance of influenza will possibly change this perception by revealing the true scale of this public health issue.

Rajasthan’s ordinance shields the corrupt, threatens the media and whistle-blowers

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The indifference of families to the education of girls is widening the gender gap in all spheres

A recent HT report found that government schools in Delhi have an enrolment ratio that is 52% female and 48% male. The same for citywide private schools is 40% female and 60% male. The report discusses case studies of families in which in spite of financial constraints, sons are sent to private schools, while daughters are sent to government schools. It is a disturbing commentary not just on society that considers the education of girls as secondary to the education of boys; but also on the condition of government schools in which the quality of education is so bad that even those who cannot afford private schools, try their utmost to not have to send their children to government ones.

The indifference to the education of girls in India is a reflection of the broader attitude that girls will grow up to be homemakers and boys will have to earn a living. Better education (which necessarily translates to education in private schools) will help boys get better (that is, better paying) jobs later on in life. Girls, it is assumed, need only be literate as opposed to educated, since they won't have careers or earning a living to worry about. This attitude deprives not just women from having successful careers but also the country from having talented professionals in every field. The government push on 'Beti bachao, beti padhao' can only be fulfilled if it translates to more than tokenism in society.

It is past time to effect change by educating parents, boys, and including gender sensitisation in the curriculum of schools. So that boys who have the advantage of such discrimination don't perpetuate it in their turn. If government schools were also as good as private ones, and had the same facilities, our girls who fail to live up to their potential would have better opportunities and be able to fill the terrible gender gap in almost every profession.

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A learning crisis in the developing world

For some time now, we have known that an unacceptably large number of Indian children are attending school but not learning enough. Now, research shows that this is not just an Indian problem but a global epidemic that threatens several low- and middle-income countries across the globe. New estimates from the Unesco Institute for Statistics (UIS) indicate that about 617 million children or six out of every 10
children are not achieving minimum proficiency levels in reading and mathematics.

The numbers are the worst for sub-Saharan Africa where, according to UIS data, about 88% of children are not able to read properly or do simple math by the time they finish middle school. South and central Asia comes a close second, with 81% of children in the region not learning the basic minimum.

In rural India, the latest edition of the “Annual State of Education Report” (Aser) shows that only 47.8% of class V students can read a class II-level text and only 43% of class VIII students can do class V-level arithmetic. In its annual “World Development Report”, released late last month, the World Bank describes this as not just a “learning crisis” but a “moral crisis”—amplifying inequalities between and within nations.

International assessments of literacy and numeracy have consistently shown that students from low-income countries perform worse than those from high-income countries. And this is not just about pitting the extremes. Even top performers from strong middle-income countries are ranked below their rich country peers, and are struggling to catch up. The World Bank report points to Indonesia, which has significantly improved its performance in the Programme for International Student Assessment (PISA) over the last 10-15 years—and yet, at its 2003-15 rate, will still take another five decades to reach the developed world’s average score for mathematics and another seven decades for reading.

Notably, this learning crisis comes at a time when enrolment levels have increased across the board. India has achieved near-universal enrolment and, globally, the gap between children attending school in developed and developing countries is closing. So, access to education has improved but the quality of education hasn’t. It is tempting to blame this on lack of resources but let’s not forget the success story of post-war South Korea, or of Vietnam and Peru, Malaysia and Tanzania—which have only recently improved learning outcomes.

So why do some systems succeed while others fail? Essentially, because the latter aren’t able to effectively integrate their key elements. The World Bank lists four such elements—students, teachers, school administration and school infrastructure. If any one malfunctions, the entire system is threatened. Fixing the ecosystem means tackling each element individually and collectively.

Let’s start with the students. If children come to school sick or hungry, or if parents aren’t able to care for them, not just after birth but also in the womb, then their learning levels will be adversely affected. Here, early interventions targeting pregnant women, new mothers and their infants can be particularly effective. India’s integrated child development services scheme and the mid-day meal scheme are good examples.

Moving on to teachers, the importance of teachers’ skills and capabilities should require no elaboration. Yet, they receive little attention. Most developing countries struggle to attract the best and the brightest to their schools even when pay is competitive. Teachers, once hired, are given almost no training or professional development support, leaving them ill-equipped in the

classroom. Education systems also rarely offer incentives to improve pedagogical skills, and instead add non-teaching responsibilities. In Ethiopia and Guatemala, only one-third of the total instructional time was used for teaching. In India, teachers from government schools double up as census workers and election officers.

School principals and school managements also suffer from similar problems. A 2015 study by Stanford University's Nicholas Bloom and others on management practices across 1,800 high schools in eight countries, including India, showed that better management produced better educational outcomes, and schools with greater autonomy did especially well (explaining at least in part the success of the UK academies and the US charter schools). Yet, in the developing world, school managements are rarely empowered or incentivized to improve learning outcomes.

In terms of school infrastructure, the relationship between learning levels and learning aids and tools such as laptops and laboratories is often overemphasized. Several studies have shown that similar investments can produce vastly different outcomes, depending on how the investment is utilized. For example, one assessment of Brazil's One Laptop Per Child scheme showed that more than 40% of teachers rarely used the devices in classrooms.

A disproportionate focus on such inputs, and, by extension, inadequate attention towards outcomes, is one of the most important reasons why India's right to education legislation has performed below potential. For there to be a shift in policy and practice, one has to start with assessing outcomes. This is the World Bank's top recommendation for making education systems more effective. The Aser survey has set the ball rolling in India but there's a long way to go. India still rarely participates in any of the international assessments—and when it does, it finds itself at the bottom of the pile.

Assessing, measuring and benchmarking performance is the first step. Ultimately, breaking out of the low learning trap will require concerted action and evidence-based policymaking.

How do you think the Indian education system can improve its learning outcomes? Tell us at views@livemint.com

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‘Hypertension high in Kerala, low in Bihar’

Non-communicable diseases (NCDs) have become a growing threat to global health. A recent study done to assess the diet and nutritional status of urban population has pointed out that the increase in incidence of NCDs can be attributed to change in food habits, sedentary behaviour and unhealthy lifestyles, among other risk factors.

The study, titled ‘Diet and Nutritional Status of Urban Population in India and Prevalence of Obesity, Hypertension, Diabetes and Hyperlipidaemia in Urban Men and Women’, has brought to light the prevalence rates for non-communicable diseases as well as stunting, under-nutrition and obesity in children under 5 years in the 16 States surveyed.

Revealing that Kerala has the highest prevalence of hypertension as well as high cholesterol in urban men and women, the study pointed out that Puducherry tops the list of States with the highest prevalence of diabetes. The survey was carried out by National Nutrition Monitoring Bureau during 2015-16 by researchers from the National Institute of Nutrition.

Avula Laxmaiah, lead investigator of the study, told *The Hindu* that the highest prevalence of hypertension was found to be in Kerala (31.4% women and 38.6% men) and lowest in Bihar (22.2% men and 15.7% women).

Puducherry had the highest number of diabetic men and women (42%), followed by Delhi (36%), Karnataka and Kerala (33% each). Diabetics were the highest in the age group of 60-70 and lowest in the age group of 18-30.

The Southern States were among the 10 with the highest prevalence of obesity among urban adults. Puducherry topped with almost 60% women and 42% men being overweight.

Tamil Nadu was close behind with 54% men and 38% women recorded as obese. Kerala, Karnataka and Andhra Pradesh recorded high levels of obesity among its urban men and women, he said.

Tamil Nadu, Karnataka, Andhra Pradesh and Kerala were among the top six States which had the most tobacco smokers among urban men.

Dr. Laxmaiah said the researchers interviewed 5,642 mothers, who have children aged less than 36 months, for information on antenatal care and infant and young child feeding practices. While U.P. had the highest (43.6%) proportion of underweight children followed by Madhya Pradesh (32.3%), Puducherry had the lowest (14.2%).

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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Many Indians skip nutritious food

A nation-wide study carried out by the National Nutrition Monitoring Bureau (NNMB) to assess urban nutrition shows not only a great diversity in food consumption in 16 States in the country, but also that Indians consume far less than the recommended quantum of several micro-nutrients and vital vitamins. Andaman and Nicobar Islands reported the highest intake of flesh foods, including meat and fish, Odisha has the highest consumption of green leafy vegetables (GLV). On an average, while the recommended dietary intake of GLV is 40g/CU/day, the consumption in the country is 24g/CU/day.

Madhya Pradesh has the lowest intake of flesh foods and Kerala consumes the least green leafy vegetables.

If Madhya Pradesh has a sweet tooth with the highest intake of sugar and jaggery, Odisha and Assam have the highest intake of salt. Rajasthan is high on the intake of fats and oils as well and milk and milk products.

The study, led by Avula Laxmaiah, Scientist (Director Grade) from National Institute of Nutrition (NIN), the country's premier nutrition research institute, was released recently. The researchers used the method of a 24-hour dietary recall to collect food and nutrient information from 1.72 lakh people in 16 States.

While the average intake of cereals and millets was found to be 320g/CU/day, which is lower than the recommended dietary intake (RDI), the intake of pulses and legumes was about 42g/CU/day. This is on par with the suggested level of the Indian Council of Medical Research (ICMR), said Dr. Laxmaiah.

States and Union Territories covered in the survey held in 2015-16: Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Orissa, West Bengal, Uttar Pradesh, Andaman and Nicobar Islands, Assam, Bihar, New Delhi, Puducherry and Rajasthan.

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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US FDA approves first test to screen Zika virus in donated blood

The U.S. Food and Drug Administration (FDA) has approved for the first time a test for detecting the Zika virus in donated blood.

The Zika virus is transmitted primarily by mosquitos (Aedes aegypti), but it can also spread through blood transfusion and sexual contact.

The cobas Zika test, manufactured by Roche Molecular Systems Inc., is intended for use by blood collection establishments to detect Zika virus in blood donations, not for the individual diagnosis of Zika virus infection, the FDA said on Thursday.

“Screening blood donations for the Zika virus is critical to preventing infected donations from entering the U.S. blood supply,” Peter Marks, Director of the FDA’s Centre for Biologics Evaluation and Research said.

It is a qualitative nucleic acid test for the detection of Zika virus RNA in individual plasma specimens obtained from volunteer donors of whole blood and blood components, and from living organ donors.

The test’s clinical specificity was evaluated by testing individual samples from blood donations at five external laboratory sites, resulting in clinical specificity of more than 99 per cent.

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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Prime Minister launches Intensified Mission Indradhanush (IMI)

Let no child suffer from any vaccine-preventable disease: Prime Minister

Improving the health status of children of our country is amongst the top priorities of the Government: Sh J P Nadda

"Let no child suffer from any vaccine-preventable disease". This was stated by Prime Minister Shri Narendra Modi as he launched the Intensified Mission Indradhanush (IMI) at Vadnagar in Gujarat, today. Through this programme, Government of India aims to reach each and every child under two years of age and all those pregnant women who have been left uncovered under the routine immunisation programme. The special drive will focus on improving immunization coverage in select districts and cities to ensure full immunization to more than 90% by December 2018. The achievement of full immunisation under Mission Indradhanush to at least 90% coverage was to be achieved by 2020 earlier. With the launch of IMI, achievement of the target has now been advanced.

Shri Vijaybhai Rupani, Chief Minister of Gujarat, Shri J P Nadda, Union Minister of Health and Family Welfare, Smt. Anandiben Patel, Ex-Chief Minister of Gujarat, Nitin Bhai Patel, Dy Chief Minister of Gujarat and Shankarbhai Chaudhary, Minister of State, Gujarat Health and Family Welfare and Medical Education, Environment and Urban Development were also present at the launch function along with other dignitaries.

Speaking on the occasion to a packed audience, Shri Narendra Modi stated that the Government has made immunization a people's and a social movement. The Prime Minister made a strong appeal to all those present in the audience and the country men and women to own the programme in order to make all efforts to reduce maternal and child mortality.

The Prime Minister also highlighted other achievements of the Government including the new National Health Policy 2017 which has been unveiled after fifteen years, and is people-centered. “Regulating of the prices of stents has immensely helped a large section of the country by reducing the cost of healthcare on the middle income group and poor families”, Shri Narendra Modi added. The Prime Minister expressed satisfaction at the success of the Pradhan Mantri Matritva Suraksha Abhiyaan where private doctors have volunteered to provide free ANC services to pregnant women on the 9th of every month along with government doctors.

Speaking at the function, Shri J P Nadda, Union Minister of Health and Family Welfare, said that the unwavering support of the Prime Minister has always been a source of great inspiration. He added that improving the health status of the children of the country is amongst the top priorities of the Government. Shri Nadda informed that the four phases of Mission Indradhanush have reached to more than 2.53 crore children and 68 lakh pregnant women with life-saving vaccines including 5.21 lakh children & 1.27 lakh

pregnant women in Gujarat. Through this mission, we have accelerated our progress towards our target of 90% full immunization coverage, he stated. Earlier the increase in full immunization coverage was 1% per year which has increased to 6.7% per year through the first two phases of ‘Mission Indradhanush’.

With a sharpened focus on high priority districts and urban areas, under IMI, four consecutive immunization rounds will be conducted for 7 days in 173 districts -- 121 districts and 17 cities in 16 states and 52 districts in 8 north eastern states -- every month between October 2017 and January 2018. Intensified Mission Indradhanush will cover low performing areas in the selected districts and urban areas. These areas have been selected through triangulation of data available under national surveys, Health Management Information System data and World Health Organization concurrent monitoring data. Special attention will be given to unserved/low coverage pockets in sub-centre and urban slums with migratory population. The focus is also on the urban settlements and cities identified under National Urban Health Mission (NUHM).

Intensified Mission Indradhanush will have inter-ministerial and inter-departmental coordination, action-based review mechanism and intensified monitoring and accountability framework for effective implementation of targeted rapid interventions to improve the routine immunization coverage. IMI is supported by 11 other ministries and departments, such as Ministry of Women and Child Development, Panchayati Raj, Ministry of Urban Development, Ministry of Youth Affairs among others. The convergence of ground level workers of various departments like ASHA, ANMs, Anganwadi workers, Zila preraks under National Urban Livelihood Mission (NULM), self-help groups will be ensured for better coordination and effective implementation of the programme.

Intensified Mission Indradhanush would be closely monitored at the district, state and central level at regular intervals. Further, it would be reviewed by the Cabinet Secretary at the National level and will continue to be monitored at the highest level under a special initiative ‘Proactive Governance and Timely Implementation (PRAGATI)’.

This Intensified Mission is driven based on the information received from gap assessment, supervision through government, concurrent monitoring by partners, and end-line surveys. Under IMI, special strategies are devised for rigorous monitoring of the programme. States and districts have developed coverage improvement plans based on gap self-assessment. These plans are reviewed from state to central level with an aim to reach 90% coverage by December 2018.

An appreciation and awards mechanism is also conceived to recognize the districts reaching more than 90% coverage. The criteria includes best practices and media management during crisis. To acknowledge the contribution of the partners/Civil Society Organization (CSOs) and others, Certificate of Appreciation will be given.

At the function, the Prime Minister also dedicated the GMERS Medical College, Vadnagar to the nation and launched the Innovative Mobile Phone Technology for Community Health Operation (ImTeCHO) for improving coverage of community based

maternal, neonatal and infant health services to reduce neonatal and infant mortality in Gujarat by empowering health staff through use of innovative mobile phone application. GMERS Medical College serves nearly 400-500 outdoor patients and 80-100 indoor patients daily.

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First ever Conference of Partner NGOs of WCD Ministry held in New Delhi today

An online facility to be created by WCD Ministry for receiving complaints/suggestions from NGOs in the field of women and children: Smt Maneka Sanjay Gandhi

The first ever conference of Partner NGOs of WCD Ministry was held in New Delhi today. The Minister of Women and Child Development, Smt Maneka Sanjay Gandhi inaugurated the conference titled “Implementation of Policies, Schemes and Programmes for Women and Children: Challenges and Way Forward”. More than 130 participants from various NGOs across the country attended today’s conference aimed at sensitizing them about the various schemes of WCD Ministry and to give them an opportunity to share their experiences and insights.

Addressing the participants, Smt Maneka Sanjay Gandhi said that NGOs play a very vital role since a large numbers of schemes, programmes and policies of the government, which are being implemented at the ground level with the help of NGOs. The Ministry of Women and Child Development has taken up several new initiatives like One Stop Centres, Beti Bachao Beti Padhao, Women Helpline, National Policy for Women, Bill against Trafficking, National Alliance against Child Abuse amongst many such others, the Minister explained. She urged the NGOs to play an active role in the implementation of these initiatives as well as to give their suggestions for better delivery.

Smt Maneka Sanjay Gandhi said that the flagship scheme launched by the Prime Minister, Beti Bachao Beti Padhao has shown a tremendous success since 104 out of 161 BBBP districts have shown an increasing trend in Sex Ratio at Birth. This implies a clear cut change in attitude and urged the NGOs to come forward to ensure further success of the scheme.

The WCD Minister held half an hour interaction with the participants in which they highlighted the various issues and problem being faced by them at the grass root level. Smt Maneka Gandhi said that Ministry is already training sarpanches and anganwadi workers and as suggested by the participants, it can also organize training programs for NGOs working in the field of women and children. The Minister also assured that an online facility will soon be created for the NGOs in the field of women and children to enable them to lodge their complaints or highlight their issues.

MoS WCD, Dr. Virendra Kumar lauded the role played by the NGOs in different areas. He said that the NGOs have been playing an important role in rehabilitation of trafficked women. Dr. Virendra Kumar said that issues related to security of women and children have become a matter of concern and the NGOs must come forward to work with the government in this area. Secretary WCD, Shri Rakesh Srivastava, while commending the important role of NGOs, hoped that the partnership between the government and the NGOs will grow and help in implementing the schemes and programmes successfully.

The today’s conference was based on the following broad themes:

i) Violence Against Women: *Prevention and Facilitating Access to Justice*
ii) National Policy for Women: *Policy Interventions for Gender Parity*
iii) Trafficking of Women and Children: *Role of State Institutions*
iv) Cyber Crime and Children: *Prevention and Harm Reduction*
v) Implementation of JJ Act: *Structural Challenges and Mainstreaming of Children*

The expected outcome of the Conference is to ascertain the existing problems and drawbacks in the present set up of delivery system at the grassroots level; to develop ways for constructive policy formulation and programme implementation by assessing the lessons discussed during the conference; to increase engagement of these organizations for advocacy on women empowerment and child safety and security.

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East, NE States score high in curbing infant mortality

States from the east and northeastern part of the country have registered a significant drop in Infant Mortality Rate (IMR), reveals data released by the Sample Registration Survey (SRS) bulletin last month.

According to the SRS bulletin, Bihar, which has the highest density of population in the country, has recorded a drop of four points in IMR from 42 in 2015 to 38 in 2016. Infant Mortality Rate is counted as the number of deaths per 1,000 live births.

In Assam, the IMR has dropped from 47 to 43 and in Jharkhand, it has dropped from 32 to 29, the SRS bulletin, published by the office of Registrar General of India, states. In Odisha, the IMR have dropped from 46 to 44.

All-India IMR

West Bengal, which has been showing a steady decline over the past few years, has recorded a drop of one point from 26 in 2015 to 25 in 2016.

The all-India IMR has also decreased from 37 in 2015 to 34 in 2016. Among the five big States in eastern India, only West Bengal and Jharkhand have recorded IMR above the national average of 34. One of the targets of the Millennium Development Goals was reduction of child mortality by two-thirds between 1990 and 2015. In terms of IMR, this translated to 29 deaths per 1,000 live births to be achieved by 2015, which India fell short of achieving. Bidisha Pillai, policy director, India, Save the Children, said the Centre has plans to bring down neo-natal mortality, which accounts for two-thirds of IMR, to a single digit by 2030.

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Fixing healthcare

Can two knowledgeable and well-meaning people appear adversarial? That depends on where they are coming from. If you are coming from the side of efficiency within the limits of a system, there will be one recipe. If there is an urge to visualise a system as serving much more than efficiency, to include affordability and equity as well, the response will be different. This is why Sujatha Rao and Amitabh Kant differ in their articles, 'A strange hybrid' (IE, August 11) and 'A healthy partnership' (IE, August 19). Each calls the other's stand ideological. Is more of the same better for a broken system or is a complete overhaul worthwhile?

No one will deny that India's health system requires fixing. Increasing the budget to 3 per cent of GDP will be a welcome step but may not be the only one that is required. More money within the current clientist system will be akin to flushing it down the drain. How we revamp the existing ecosystem to deliver better service is the issue. Some feel with just an increase in outlay, many problems will sort themselves out. The other view is that the ecosystem can't be changed, so why not have a private system coexist within the government system? Maybe the competition will improve the service delivery in the public system or maybe the more efficient system will gobble up the defunct one.

Is the broken system that we see to be accepted and should we work only modestly towards small, incremental improvements? Is a 35 per cent shortfall of doctors an insurmountable problem? Anyone entering a government medical college can be made to sign a contract to serve the government sector for 15 years with attendant provisions for study leave, research leave, annual training and short-term courses. Otherwise, they may be mandated to pay the market value of the course to the government - to the tune of Rs 50 lakh for a five-year programme. After appointment, is it impossible to control absenteeism? It is, provided the government forsakes its ambivalence. Technology will be of great help here.

Health services in government hospitals are quasi-public goods or merit goods. But a poor person will not get medicine if the budget is low or if large numbers of the well-heeled are given free medicine or diagnostic tests. A diminishing budget hits the poor first. Private hospitals facilitate profit-maximisation with impunity. In government hospitals, failure takes place because of a lack of accountability, absenteeism, trade unionism and underfunding. While public goods have the chronic free rider-problem, private health service routinely excludes a large poor population, overcharges and reduces many to penury. Private healthcare is often without regulation and even tenuous attempts at implementing the Clinical Establishment Act have not been made.

Amitabh Kant makes a succinct point with regard to abandoning patients to negotiate the maze of the government hospital where the bargaining powers of the patient vis-à-vis the provider are at their lowest. But in government institutions, politics trumps merit. The more politically clued in one is, the more one is likely to survive and prosper. Adhering to one's calling as a doctor will likely lead to hitting a wall. How do we make the ecosystem change? The political ethos which prevails today can be reversed by fencing it with local management control, with a scorecard for each department and employee. NITI Aayog will do well to work out this architecture and model contracts as they are best placed to design the nuts and bolts of this transformative work.

It was Alan Greenspan who said the absence of evidence is not evidence of absence. Merely because an evaluation of the efficiency of private care has not been done, it does not mean its efficacy for a large section of the poor is not questionable. It is unregulated and non-transparent in a different manner from the public system. There is a different maze to be negotiated here. The poor or not-so-rich handle it by selling property. Coming from the National Human Rights Commission, I can vouch that there are complaints galore of private sector hospitals denying

health rights, prescribing unnecessary tests and medicines and keeping patients in ICU longer to charge more.

What is our track record in handling PPPs with the private sector? The devil lies in the small print. Our government system finds it difficult to draft an agreement without a consultant. This consultant carries the typical dilemma of a third-party negotiator - whether to protect the client, to join the second party or to advance her own agenda. When there is a difference in interpretation, the case inevitably lands up in the court of law where delay is the norm and private sector is most likely to win. Collaboration between a predatory private sector and an inept government sector ends up with an asymmetrical alliance which works against the poor.

More than 60 per cent of the population cannot afford private healthcare. When the elite moved away from the government health system, its decline was exacerbated. Efficiency is a must for public health systems but co-existing with private players in the same premises is not the best solution. Private players will be tempted to shift the expenditure to the budget book of the state, shooting from the shoulder of the poor. In a twin-system of healthcare from the same premises, the real pricing, both formal and informal, will go up because of the misbehaviour of market forces and functionaries. The inexorable march to profit-making will eclipse other systemic issues. Whenever you start with design flaws you get both egregious intended and unintended consequences where the poor suffer. The Niti Aayog will do well to design a public health system around a new architecture with attendant rules and contracts for transforming the ecosystem rather than trying to pluck the low hanging fruits.

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WHO releases new guidelines to assess, manage obesity in children

Staying fit: Physical activity for children is important to keep excess weight at bay. File | Photo Credit: S. Siva Saravanan

With increasing evidence that childhood obesity is a “global epidemic”, affecting even the poorer nations, the World Health Organization (WHO) has released new guidelines on how trained professionals can better identify youngsters in need of help.

India has the second highest number of obese children in the world after China, according to a study published in *The New England Journal of Medicine* in June last.

Doctors say the identification of obesity in children is the main issue, as often parents think a chubby child is a healthy child.

The WHO guidelines, titled “Assessing and managing children at primary healthcare facilities to prevent overweight and obesity in the context of the double burden of malnutrition”, provides updates for the Integrated Management of Childhood Illness (IMCI). The guidelines include counselling, dieting and assessment of eating habits along with the usual weight and height measurements.

H.P. Sachdev, former national president of the Indian Academy of Paediatrics, who is part of the guideline development group, told *The Hindu*, “In 2016, one half of all children overweight or obese lived in Asia and one quarter lived in Africa. Paradoxically, overweight and obesity is found in populations where under-nutrition remains common — the term ‘double-burden of malnutrition’ is sometimes used to describe these settings.”

Dr. Sachdev said that routinely providing supplementary foods to stunted and moderately wasted infants and children in primary healthcare facilities was not recommended. “Early prevention is the need of the hour to avoid an entire generation from falling prey to heart ailments, hypertension and diabetic complications,” he said.

Sharing the message

The Indian Medical Association (IMA) is disseminating the guidelines to all its members. IMA national president K.K. Aggarwal said the prevalence of obesity in children reflected changing patterns towards unhealthy diets and physical inactivity.

A study published in *Paediatric Obesity* says India will have over 17 million children with excess weight by 2025. Quoting the WHO document, Dr. Aggarwal said that urbanisation, increased income, availability of fast foods, educational demands, television viewing and gaming have led to a rise in the consumption of foods high in fats, sugar and salt and low physical activity.

“While there have been major public health interventions to promote improved diet and patterns of physical activity in adults, the contribution of ante-natal and young-child interventions to reducing the risk of obesity in later life have not been significantly reviewed. We are writing to all our doctors explaining the guidelines,” he said.

Anjana Hulse, paediatric endocrinologist in Apollo Hospitals, Bengaluru, said ithe dentification of obesity in children was a major challenge. “Parents feel the necessity to see a doctor only when their children develop complications. Most obese children develop early puberty, joint pain and find it difficult to exercise. This in turn results in metabolic syndrome and they end up with Type 2

diabetes," she said.

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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Cabinet approves MoC between India and Japan on the "Technical Intern Training Program (TITP)"

Cabinet approves MoC between India and Japan on the "Technical Intern Training Program (TITP)"

The Union Cabinet chaired by Prime Minister Shri Narendra Modi has approved the signing of "Memorandum of Cooperation (MoC)" between India and Japan on the "Technical Intern Training Program (TITP)".

This MoC is expected to be signed during the forthcoming visit of Hon'ble Minister for Skill Development & Entrepreneurship during October, 16-18, 2017 at Tokyo. The Technical Intern Training Program (TITP) is an ambitious program to send Indian technical interns to Japan for on the job training for a period of three to five years. It is expected that the MoC will pave the way for bilateral cooperation between the two countries in the area of skill development.

AKT/VBA/SH

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Cabinet approves MoU between India and Belarus for Cooperation in the field of Vocational Education and Training

The Union Cabinet chaired by the Prime Minister Narendra Modi has given its ex-post facto approval for a Memorandum of Understanding between India and Belarus for cooperation in the field of Vocational Education and Training (VET). The MoU was signed on 12th September, 2017 during the State visit of H.E. Mr. Alexander Lukashenko, President of Belarus to India.

This is for the first time MoU for cooperation in area of vocational education, training and skill development has been signed with Eurasian country.

Belarus has a large concentration of industries, mainly into manufacturing and heavy industries, which draw their strength from available skilled manpower and a highly developed skill training system. The transfer of knowledge of their skilling methodology will immensely help in our initiatives like "Make in India" and "Skill India". This MoU would pave the way for systematic transfer of their expertise and knowhow in skilling the manpower specially in manufacturing sector.

Cooperation between two countries in identified areas would be implemented through establishing institutional partnerships between Republican Institute for Vocational Education" (RIPO) , an apex institution for development of Belarusian vocational education system and Directorate General of Training for transfer of technology in VET delivery & its sustainability. Cooperation with Sectoral VET/ Centres of Excellence of Belarus is proposed for Research and Development in the skilling ecosystem.

The areas of cooperation are as under:

1. The Belarusian side shall provide comprehensive transfer of know-how of emerging technologies, training and evaluation methodologies, content development for regular / distance learning / e-learning/training of master trainers, competency building of the assessors in area of their competency and network building & industry linkage;
2. Vocational education services for Indian citizens for skill development in the field of

construction, electric-power production and distribution, manufacturing industry, trade, auto service and household goods repair and maintenance, transport, communication, hotels and restaurants as well as other fields being in high demand in India;

3. Retraining, up-skilling, internship for Vocational Education and Training managers, teachers and trainers of India by the Belarusian Side;
4. Advisory services in order to enhance planning, management and delivery of Vocational Education and Training and Skill Development.

Major impact:

- The MoU would bring in Belarus experience and expertise for overall improvement in skill eco system of the country.
- Implementation of proposal includes innovation and improvement in the existing vocational education and skill development through Research and Development in the field.

The financial arrangement for the co-operative activities undertaken within the framework of this MoU shall be mutually agreed upon by the Parties on a case-by-case basis, subject to the availability of funds.

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Cabinet approves SANKALP & STRIVE Schemes to boost Skill India Mission

The Cabinet Committee on Economic Affairs chaired by the Prime Minister Shri Narendra Modi, has approved two new World Bank supported schemes of Rs. 6,655 crore - Skills Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) and Skill Strengthening for Industrial Value Enhancement (STRIVE). SANKALP is Rs 4,455 crore Centrally sponsored scheme including Rs. 3,300 crore loan support from World Bank whereas STRIVE is a Rs. 2,200 crore - central sector scheme, with half of the scheme outlay as World bank loan assistance. SANKALP and STRIVE are outcome focused schemes marking shift in government's implementation strategy in vocational education and training from inputs to results.

There has been a long felt need for a national architecture for promoting convergence, ensuring effective governance and regulation of skill training and catalysing industry efforts in vocational training space. The two schemes shall address this need by setting up national bodies for accreditation & certification which shall regulate accreditation and certification in both long and short term Vocational Education and Training (VET). The architecture shall help, for the first time in the history of vocational education in India, to converge the efforts of various central, state and private sector institutions thereby avoiding duplication of activities and bringing about uniformity in vocational training thus, creating better impact.

Both the schemes are aimed at institutional reforms and improving quality & market relevance of skill development training programs in long and short term VET. In past many government schemes such as Vocational Training Improvement Project (VTIP) have focussed on strengthening ITIs and over 1600 ITIs have already been modernized under the schemes. STRIVE scheme shall incentivize ITIs to improve overall performance including apprenticeship by involving SMEs, business association and industry clusters. The schemes aim to develop a robust mechanism for delivering quality skill development training by strengthening institutions such as State Skill Development Missions (SSDMs), National Skill Development Corporation (NSDC), Sector Skill Councils (SSCs), ITIs and National Skill Development Agency (NSDA) etc. The schemes shall support universalization of National Skills Qualification Framework (NSQF) including National Quality Assurance Framework (NQAF) across the skill development schemes of central and state governments thus ensuring standardization in skill delivery, content and training output.

The schemes shall provide the required impetus to the National Skill Development Mission, 2015 and its various sub missions. The schemes are aligned to flagship Government of India programs such as Make in India and Swachhta Abhiyan and aim at developing globally competitive workforce for domestic and overseas requirements. To this end, over 700 industry led institutions are being set up for providing job oriented skill training to lakhs of aspirants. An innovative challenge fund model has been employed to select and support proposals to set up such institutions in identified sectors and geographies. 66+ India International stalling institutions are being promoted to focus upon

skill training as per global standards for overseas placements. Over 30,000 aspirants shall be trained in IISCs and get certificates from International Awarding Bodies (IABs). Upgrading 500 ITIs, as model ITIs across India and improving their industry connect, is also envisaged by ushering in reforms such as on-line examination, centralised admission, improving efficiency and transparency in the system.

National Policy of Skill Development and Entrepreneurship 2015 highlighted the need of quality assurance measures such as building a pool quality trainers and assessors. SANKALP envisages setting up of Trainers and Assessors academies with self-sustainable models. Over 50 such academies are to be set up in priority sectors. DOT, MSDE has already made significant progress in this direction by setting up a number of Institutes for Training of Trainers (IToT) in public and private sector, offering training in over 35 trades. The schemes shall leverage such institutions for training the trainers in both long & short term VET thereby bringing about convergence. Additional trainer academies shall be set up on the basis of identified sectoral and geographical gaps.

Greater decentralization in skill planning will be ensured by institutional strengthening at the State level which includes setting up of State Skill Development Missions (SSDMs) and allowing states to come up with District and State level Skill Development Plans (DSDP/SSDP) and design skill training interventions to suit the local needs. SANKALP aims at enhancement of inclusion of marginalized communities including women. Scheduled Castes (SCs), Schedule Tribes (STs) and Persons with Disabilities (PWD) to provide skill training opportunities to the underprivileged and marginalised section of the society.

The schemes will develop a skilling ecosystem that will support the country's rise in the Ease of Doing Business index by steady supply of skilled workforce to the industry. The schemes will also work towards increasing the aspirational value of skill development programs by increasing the marketability of skills, through better industry connect and quality assurance.

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India Announces Several Capacity Building Scholarships For Neighbouring Countries

S&T Ministers Conclave at IISF 2017, Chennai

Science Diplomacy

India throws open its Science & Technology (S&T) Institutions to its friendly neighbouring countries and announces a slew of R&D programs for capacity building in these countries.

The Scientific Ministries and Departments of the Government of India have active international collaboration in science and technology both at the bilateral and regional level. Today India is engaged in active R&D cooperation with more than 44 countries across the globe including advanced, emerging and developing nations.

As a part of India's foreign policy initiatives of the present government like "Neighbours First", "Act East", and "India-Africa Partnership", India has now embarked upon a visible path of developmental diplomacy using science, technology and innovation that will not only help towards capacity building in R&D but also address the needs of the people through the application of science technology and innovation. To this end, for the first time, a Science and Technology Ministers Conclave was organised as a part of the 2017- India International Science Festival (IISF) being held in Chennai from 13-16 Oct. Invites were extended to S&T Ministers from Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal and Sri Lanka.

Inaugurating the Conclave, Dr. Harsh Vardhan, informed that the purpose of the S&T Ministers Conclave was to build and strengthen partnership between the countries by identifying the priorities, needs and mechanisms that will enable a fruitful cooperation through sharing and complementing each other's strength and resources. Afghanistan Minister of Higher Education, Abdul Latif Roshan, Bangladesh Minister of Science and Technology, Yeafesh Osman and Minister of State for Science and Technology and Earth Sciences, Shri Y. S. Chowdary, outlined the priorities, challenges and opportunities in science and technology in their respective countries.

The common denominators for the scientific cooperation which emerged from the Conclave included the need to address societal challenges through application of science and technology in emerging areas such as Affordable Health care, Water security, Climate change adaptation, Agricultural science, Renewable energy, Information & Communication Technology and Natural disaster prediction and management. Dr. Harsh Vardhan informed that this would be achieved by sharing best practices access to scientific opportunities in India to individuals from across our neighbourhood nations who desire and deserve it, promote connectivity and capacity building by fostering research and education linkages with scientific and academic institutions of India and facilitate transfer of such knowledge and technologies from India which are affordable and accessible for larger public and societal good in our neighbourhood countries.

In order to enable active collaboration, the Minister also announced that the Ministry of Science and Technology would offer concrete programs supported by India for desiring and deserving neighbouring countries including Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal and Sri Lanka.

The bouquet of schemes announced by Dr. Harsh Vardhan includes:

(1) For human capacity building in S&T, the 2018-India Science and Research Fellowship (ISRF)

scheme will provide a fully paid fellowship to researchers, scientists and academicians from Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal and Sri Lanka to undertake research and development work of their choice at any premier research and academic institution in India upto a period from 3 to 6 months.

(2) In order to address the need to support PhD students, a new element has been added in the 2018-India Science and Research Fellowship. The scheme for the first time will also include doctoral students in science, engineering and medical fields to undertake project related research work in any premier research and academic institution in India upto a period of 6 months. This will help to connect the next generation of the scientific community with India. The Department of Science and Technology will support this Fellowship scheme.

(3) Towards Training of Researchers the science agencies in India including CSIR, DBT, MOES, IMD, DST and SERB organizes tailor made hands-on training programs and advanced schools for Indian researchers. India would like to throw open these specialized training programs to participants from our desiring and deserving neighbouring countries to participate in these. 200 travel slots every year was announced for the researchers from these countries to be supported by the Department of Science and Technology to enable them to make the best use of these advanced training programs offered by India. This would help in capacity building and will also foster research networks with Indian scientific institutions.

(4) For institutional capacity building and technical assistance in Science and Technology a twinning program between Indian institution and a R&D or Academic institution in the neighbouring country was also committed by India. It was informed that a successfully model between the Institute of Biotechnology in Bangladesh with ICGEB, Delhi where scientists from Bangladesh undertake regular research and training immersions and Indian scientists travel to Bangladesh to assist in setting up the technical infrastructure of the new laboratory in making is being implemented. On a similar fashion, thiswill be replicated in other desiring countries in atleast one such institution in each of the mentioned neighbouring countries.

(5) One of the key aspects agreed was a mechanism for knowledge transfer and adoption for societal development. India offered a Technology Transfer Program, the objectives of which will be to match the socio-economic needs of our neighbouring countries by linking the public and private enterprises with leading edge Indian technologies and innovations. India will share a basket of demonstrated and validated Indian technologies and innovations developed by our scientific institutions. A need based select list of such technologies can be transferred using a Business to Business or Business to Government model of joint venture through a process of adaption and adoption. It will replicate the model which we are already implementing in African countries like Ethiopia, Rwanda and South Africa. The joint ventures created will deliver sustainable social enterprises that will stimulate economic impact development including the components of skilling, training, mentoring along with capacity building and business planning in our neighbouring countries.

It is expected that these schemes will help to develop a close and robust partnership in science, technology and innovation with our friendly neighbouring countries based on the principles of mutual trust, friendship and goodwill. The visiting Ministers were also exposed to the Science Park in IIT-Madras where technology start-ups are being incubated, at CLRI where clean technologies for leather industry are being developed and were showcased the advanced marine technologies at NIOT, Chennai.

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The first ever All India Institute of Ayurveda to be dedicated to the Nation by the Prime Minister on Ayurveda Day at New Delhi

The first ever All India Institute of Ayurveda to be dedicated to the Nation by the Prime Minister on Ayurveda Day at New Delhi

AIIA is the first medical institute under Ministry of AYUSH to hold the coveted status of NABH accreditation

The First ever All India Institute of Ayurveda (AIIA), set up along the lines of AIIMS, will be dedicated to the Nation by the Prime Minister, Shri Narendra Modi on Ayurveda Day on 17th October, 2017 at New Delhi. Set up as an apex institute under the Ministry of AYUSH, the AIIA will bring synergy between the traditional wisdom of Ayurveda and modern diagnostic tools and technology. This was disclosed by the Minister of State for AYUSH, Shr Shripad Yesso Naik at a press conferences in New Delhi today. Within the short duration of its establishment, AIIA has gained a wide national and International recognition. It has started working to facilitate quality patient care, research and bridging the gaps in the scientific information about quality, safety and efficacy of Ayurveda products and developing benchmarks of Ayurvedic education, research and healthcare, the AYUSH Minister explained.

Shri Shripad Naik said that in the first phase, the AIIA has been set up within a total campus area of 10.015 acres with a budget of Rs.157 Crores. It has an NABH Accredited Hospital and an Academic Block. Out Patient Services are being provided in the hospital block of AIIA and medicines are given free of cost. Currently, the clinical specialties running in the hospital block are Neurological & Degenerative Disease Care Unit, Rheumatology & Musculoskeletal Care Unit, Diabetes & Metabolic/Allergic Disorders Care Unit, Yoga, Panchakarma Clinic, Kriya Kalpa, Diabetic Retinopathy Clinic, Kshara Evum Anushastra Karma and Infertility Clinic. It also has pathology, biochemistry, microbiology and Radiology laboratories/Diagonosis facilities. The indoor patient department has provision for 200 beds.

Giving more details, the AYUSH Minister said that the Post Graduate programme (MD/MS) in Ayurveda at AIIA started from the academic session 2016-17 and the Ph.D courses started from the session 2017-18. The AIIA has been awarded with NABH Accreditation, therefore becoming the first medical institute under the Ministry of AYUSH to hold the coveted status provided for its clinical services. The AIIA has already signed MoU with NICPR- Noida (ICMR), AIIMS New Delhi, MDNIY and EAA (Germany). It has developed standard treatment guidelines for diabetes and SOP for various procedures.

To mark the 2nd Ayurveda Day, several events have been organized by the Ministry of AYUSH.

The main function will be held at the All India Institute of Ayurveda (AIIA), Sarita Vihar, New Delhi. The Prime Minister of India will be the chief Guest of the function and will dedicate the AIIA to the Nation. The "Ayurvedic Standard Treatment Guidelines" developed by the Ministry shall also be released on this occasion. Nearly 1500 participants from across the country are expected to participate in the program.

A national seminar on the theme "Ayurveda for Pain management" will be held on 16th October, 2017 at New Delhi. An AYUSH CII industry conclave shall also be held at New Delhi on the theme "Vision 2022: Widening horizons of Ayurveda for three-fold growth of market size".

"National Dhanwantari Ayurveda Award" comprising of Citation, Trophy (Dhanwantari Statue) and Cash reward of Rupees five lakh will be conferred on this day to 3 to 4 eminent Vaidyas and Ayurveda experts. On this occasion, the Prime Minister will also give away the Yoga Award to the Ramamani Iyengar Memorial Yoga Institute, Pune, which was announced earlier this year on the occasion of International Day of Yoga.

The Ministry of AYUSH has requested All the State Governments, State AYUSH Directorates, all Ayurveda colleges/ teaching institutions, AYUSH/Health Universities, Associations of Ayurveda Practitioners, Ayurveda Drug Industries and all supporters/ well-wishers and stakeholders of Ayurveda in India and abroad to observe the Ayurveda Day on **17th October, 2017** for this year and undertake various activities like organizing Public lectures / Seminars / Exhibition / Radio Talks etc. as a part of Ayurveda Day celebrations.

The first Ayurveda Day was celebrated last year.

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Mother language should be made mandatory for school education: Vice President

Inaugurates International Conference on 'The Journey of Indian Languages: Perspectives on Culture and Society'

The Vice President of India, Shri M. Venkaiah Naidu has said that the mother language should be made mandatory for school education in all States. He was addressing the inaugural session of a 2-day International Conference on 'The Journey of Indian Languages: Perspectives on Culture and Society' jointly organized by Dr. B.R. Ambedkar Open University (BAOU) and Indira Gandhi National Open University (IGNOU), in Ahmedabad today. The Education Minister of Gujarat, Shri Bhupendrasinh Chudasmaji, the Principal Secretary, Higher & Technical Education, Government of Gujarat, Smt. Anju Sharma, the Vice Chancellor of BAOU, Dr. Pankaj Vani, the Vice Chancellor of IGNOU, Dr. Ravindra Kumar and other dignitaries were present on the occasion.

The Vice President said that the language is the soul of a society, the binding thread of human existence and it has been a vehicle, from time immemorial, for communication of thoughts, feelings and ideas. He further said that our societies have been built on the recognition of the fact that language is the lifeblood of a culture and building block of civilization. The richness of a culture is evident from the vocabulary, the syntax, he added.

The Vice President said that not enough attention is being paid to ensure that children master at least one language well during their schooling stage and this weakens the foundations for further learning. We need good researches that would aim to cement and enhance our tradition of excellent critical, historical, theoretical and creative scholarship across a full range of periods, genres and linguistic research areas, he added.

The Vice President said that the Open Universities are making higher education opportunities available to a much larger number of students because they offer flexible schedules enabling learners like women and working population to study anywhere, anytime. He further said that the universities constantly innovate and see how best they can further serve the learners across the state and outside in a language they wish to study. He congratulated BAOU and IGNOU for their commendable service in offering higher education and fulfilling the educational aspirations of millions of people across the country.

Following is the text of Vice President's address:

"Dear Shri Bhupendrasinh Chudasmaji, Education Minister, Gujarat State, Vice Chancellor, Dr.

Babasaheb Ambedkar Open University, Vice Chancellor, IGNOU, Registrar, Principal Secretary, Higher Education, invited Keynote Speakers, Academicians, Members of the University authorities, teachers, staff, Delegates, invited Guests and dear students.

It is my great pleasure to be with you all, especially the academicians and students at the inaugural session of the two days' International Conference jointly organized by two of India's prominent Open Universities. First of all, I would like to congratulate the organisers for selecting such a theme of this conference which is very close to my heart. I am glad that more than one thousand delegates have registered for this International Conference.

The aim of this conference is to highlight the long journey of the Indian Languages and their usage for communication, documentation and creative expression.

Language, in my view, is the soul of a society, the binding thread of human existence. It has been a vehicle, from time immemorial, for communication of thoughts, feelings and ideas. Words have determined humanity's world view. We cannot separate the words from the meaning, the idea we wish to communicate to others. That's why famous Indian poet Kalidasa begins his epic poem "Raghuvamsham" with a request to the divine parents Lord Shiva and Mother Parvathi to teach him speech and its meaning.

"Vaagarthaviva Sampruktau, Vaagartha Prathipathaye,

Jagathah Pitharau Vande, Paarvathi Parameswarau"

Here, the poet refers to "Vaak" (speech) and "Artha" (meaning) as an inseparable combination. Indeed, the Indian tradition refers to speech or "vaak" with great reverence symbolized by the goddess Vaagdevi or Saraswati. One of the thousand names of Goddess Lalitha is "Bhasha Rupa". Clearly, our societies have been built on the recognition of the fact that language is the lifeblood of a culture and building block of civilization. The richness of a culture is evident from the vocabulary, the syntax and the way words are strung together to not only convey information but also the whole range of human thoughts and emotions. Languages get enriched as more and more words are added to the vocabulary. This becomes necessary when speakers have to convey new experiences. Language therefore is intertwined with life and its journey is as fascinating as the humankind's history. It reflects our journey through life as we try to define, categorize and describe things, places, people, emotions, events in our daily life. It helps us to make sense of what is happening around us and communicate that sense to others around us. New experiences create new expressions. As our world view changes, language tries to convey those changes. Who would have thought that we will have words like "start up", "entrepreneurship", "surfing the internet" or "twitter" a few decades ago? Language therefore reflects the reality of lives around us, the cultural context. This is why some words in certain languages are so unique to that language that it is hard to translate them accurately into other languages. For instance, it is hard to capture the depth and range of meanings that some Sanskrit words have. Like "dharma", for instance. Language, therefore, is the window to the collective consciousness and culture of a people.

You have chosen to deliberate on this fascinating theme over the next two days.

I would like to say that modern Indian languages have had a rich journey starting primarily from its roots in classical languages. According to one study, India, with 780 languages, has the world's second highest number of languages, after Papua New Guinea where people use 839 languages. We have a rich cultural heritage where all languages have been used by poets, novelists, musicians and other creative artists with great ingenuity and finesse. We have also been absorbing many words from different languages making our languages so much richer. We must continuously strive to promote the use of all languages and encourage literary figures to produce new works.

However, the current scenario in the country is a little disturbing. Not enough attention is being paid to ensure that children master at least one language well during their schooling stage. The recent surveys showed that children were completing the cycle of education but have very poor, unsustainable literacy skills. This weakens the foundations for further learning. We must remedy this situation. Many children are dropping out, especially in tribal areas, because they are taught in a different language from what they speak at home. Language can be a barrier as well. We should have a pragmatic policy to encourage mother tongue at the early stages of schooling and gradually move on to other languages.

It will be much more challenging to build a knowledge based economy with such poor foundational literacy skills. The open Universities like yours may have to seriously consider a special focus on developing courses for imparting good literacy and language skills at all levels of education.

Today the world has become a small village and thus, language, literature and translations along with the cultural studies as disciplines have become indispensable in the exchange of thoughts, ideas and interaction. We need good researches that would aim to cement and enhance our tradition of excellent critical, historical, theoretical and creative scholarship across a full range of periods, genres and linguistic research areas. We have to acquire an understanding of the fundamental concepts and basic research methodologies involved in language and literature. At the same time we have to learn to establish connections between research and the social challenges associated with language teaching and learning.

Dr. Ambedkar ji firmly believed that we can mould the destiny of our nation by giving them good quality education. I am quite happy to note the rapid strides taken by Gujarat to spread education and particularly the key role being played by the Open Universities like BAOU and IGNOU. Everyone is not in a position to study in higher education institutions. Today, the Open Universities are making higher education opportunities available to a much larger number of students because they offer flexible schedules enabling learners like women and working population to study anywhere, anytime. You, in the open universities, are using technology to make this education mission possible. You must however try to constantly innovate and see how best you can further serve the learners across the state and outside in a language they wish to study.

I have been informed that this University has reached to very remote places of Gujarat today; more than six lakhs of students have studies in this university since its inception.

I am glad that Dr. Babasaheb Ambedkar Open University offers many courses particularly useful for women. Probably for this reason, the government of Gujarat has very rightly allotted grant for the Anganvadi workers and Supervisors under ICDS scheme to join CFN (Certificate Course for Food and Nutrition) and CCCD (Certificate course for Child Care and Development) courses of BAOU.

I am very glad that the university has taken certain digital Initiatives. Admission process from this session has been made online. The payment process has been made cash less by introducing online payment of all kinds of fees through payment gateway and BHIM app. Study material is sent to students' homes immediately after admission is confirmed and also self-learning material e-content is made available through website. University broadcasts live/ recorded content on Government of Gujarat's educational channel number 16 VANDE (Video Audio Network for Development and Education) Gujarat. BAOU produces high quality audio-visual content at state of the art full HD 'Chaitanya' Studio with facilities for post-production storage of content and archival of content.

It is a matter of great pleasure that at the national level IGNOU serves the educational aspirations of over three million students in India and other countries through 21 schools of studies and network of 67 regional centres. Presently Ahmedabad Regional centre caters to the educational needs of Gujarat state including two union territories- Daman and Nagar with around forty learner

support centres.

At this juncture, I would like to thank Shri Vijay Rupaniji, Honorable Chief Minister of Gujarat State and Education Minister Shri Bhupendrasinh Chudasamaji for inviting me to this conference.

It's a matter of great pride for us that in this International Conference, scholars have contributed their articles in Sanskrit Language- the Mother of most Indian Languages- as well as in Hindi, Gujarati and English. I am very happy to learn that separate two days deliberations will take place on Vedik Mathematics. I congratulate Vice Chancellor, Dr. Pankaj Jani and Prof. Ravindra Kumarji for jointly organizing this International Conference.

I wish you all the very best in spreading the light of knowledge. I hope each of you will light up the homes of every family in this state and elsewhere with words that open up the minds to a new world .

Jai Hind!"

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KSD/BK

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The case for a public health cadre

The idea of having dedicated personnel for public health management goes back to 1959 when advocated by the Mudaliar Committee, which observed that “personnel dealing with problems of health and welfare should have a comprehensive and wide outlook and rich experience of administration at the state level”.

It was echoed too, in 1973, by the Kartar Singh Committee, which said that “doctors with no formal training in infectious disease control, surveillance systems, data management, community health related problems, and lacking in leadership and communication skills, with no exposure to rural environments and their social dynamics, nor having been trained to manage a facility or draw up budget estimates, were ill-equipped and misfits to work in public facilities”.

It was also felt that “the medical education that [a doctor] receives has hardly any relevance to the conditions in which he would be required to work, either in the state-run health programme or even in private practice… since medical education is based almost entirely on the western model, and where he is more suitable for the conditions that prevail in western countries than in his own.”

The 12th Five Year Plan and the National Health Policy, 2017 have also strongly advocated establishing a public health management cadre to improve the quality of health services by having dedicated, trained and exclusive personnel to run public health facilities.

Tamil Nadu took the lead in this and there has been a discernible difference in the way health delivery is done there *vis-à-vis* Uttar Pradesh. For example, in U.P., even in a tertiary hospital, according to media reports, simple record keeping of oxygen cylinders is not followed.

Recently, Odisha, with the support of the Public Health Foundation of India, has notified the establishment of a public health cadre in the hope of ensuring vast improvement in the delivery of health care. Despite the creation of a public health cadre finding mention in various reports and Plan documents, such a service at the all-India level has still to translate itself into reality any time soon due to a series of complex factors.

Why have such a cadre? The idea is on the lines of the civil service — of having dedicated, professionally trained personnel to address the specific and complex needs of the Indian health-care delivery system which is grappling with issues such as a lack of standardisation, financial management, appropriate health functionaries and competencies including technical expertise, logistics management, and social determinants of health and leadership. Doctors with clinical qualifications and even with vast experience are unable to address all these challenges, thereby hampering the quality of our public health-care system. Now, doctors recruited by the States and the Ministry of Health and Family Welfare (through the Union Public Service Commission) are to implement multiple, complex and large public health programmes besides applying fundamental management techniques. In most places, this is neither structured nor of any quality. In the absence of a public health cadre in most States, even an anaesthetist or an ophthalmologist with hardly any public health knowledge and its principles is required to implement reproductive and child health or a malaria control programme. Further, at the Ministry level, the highest post may be held by a person with no formal training in the principles of public health to guide and advise the country on public health issues.

With a public health cadre in place, we will have personnel who can apply the principles of public health management to avoid mistakes such as one that led to the tragedy in Uttar Pradesh as well as deliver quality services. This will definitely improve the efficiency and effectiveness of the Indian health system. With quality and a scientific implementation of public health programmes, the poor

will also stand to benefit as this will reduce their out-of-pocket expenditure and dependence on prohibitively expensive private health care. In the process, we will also be saving the precious resources of specialists from other branches by deploying them in areas where they are definitely needed.

Such an exclusive department of public health at both the levels of the Ministry and the States will help in developing the recruitment, training, implementation and monitoring of public health management cadre. Doctors recruited under this cadre may be trained in public health management on the lines of the civil service with compulsory posting for two-three years at public health facilities. Filling the post of director general in the Health Ministry from this cadre with similar arrangements at the State level including the posts of mission directors will go a long way in improving planning and providing much-needed public health leadership. Financial support for establishing the cadre is also to be provisioned by the Central government under the Health Ministry's budget.

Lastly, another benefit will be the freeing up of bureaucrats and their utilisation in other much needed places.

Dharmesh Kumar Lal is a Senior Public Health Specialist at the Public Health Foundation of India, New Delhi. The views expressed are personal

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

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PM dedicates All India Institute of Ayurveda to the nation

The Prime Minister, Shri Narendra Modi, today dedicated the All India Institute of Ayurveda, in New Delhi, to the nation.

Speaking on this occasion, the Prime Minister congratulated the gathering on the celebration of Dhanvantari Jayanti as Ayurveda Divas. He complimented the Ministry of AYUSH for the establishment of the All India Institute of Ayurveda.

The Prime Minister asserted that nations cannot progress unless they value and cherish their history and heritage. Those nations who leave their heritage behind, are destined to lose their identity, he added.

The Prime Minister said that when India was not independent, its knowledge, and its traditions such as Yoga and Ayurveda were belittled. Attempts were even made to reduce the faith that Indians had on them, he added. He said that in the last three years, this situation has changed to quite an extent; and the faith of the people is being restored in the best of our heritage. The pride in our heritage is reflected in the way people gather for Ayurveda Day or Yoga Day, he added.

The Prime Minister said that Ayurveda is not just a medical practice, but encompasses public health and environment health as well. That is why the Government has laid stress on integrating Ayurveda, Yoga and other AYUSH systems into the public healthcare system.

The Prime Minister said that the Government is working towards establishing an Ayurveda hospital in every district of the country. He said that more than 65 AYUSH hospitals have been developed in the last three years.

The Prime Minister said that herbal and medicinal plants can be a significant source of income, globally, and India should leverage its capabilities in this regard. He said the Union Government has approved 100 percent FDI in healthcare systems.

The Prime Minister said that the Government is focused on providing affordable healthcare for the poor. He said the stress has been on preventive healthcare, and improving affordability and access to treatment. He said Swachhata – or cleanliness – is a simple mechanism of preventive healthcare. He said the Union Government has got 5 crore toilets built in three years.

The Prime Minister said that new AIIMS are being established to help the people get better access to healthcare. He mentioned measures such as capping prices of stents and knee implants; and establishment of Jan Aushadhi Kendras for providing medicines

at affordable prices.

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Of faith and fever: On T.N.’s dengue epidemic

Faced with one of the worst dengue epidemics it has seen, this year the Tamil Nadu government responded by freely distributing a herbal concoction, *nilavembu kudineer*, recommended for fevers under the ancient Siddha system of medicine. Even though there is no evidence of their efficacy, alternative remedies such as papaya-leaf juice for dengue find many takers during epidemics. While it is hard for government bodies to curb such practices, what they must never do is to endorse them. Yet, there are growing instances of exactly this happening. For example, last year the Council of Scientific and Industrial Research launched an anti-diabetic herbal pill called BGR-34 on the strength of what appeared to be very poor evidence. One of the several ingredients of *nilavembu kudineer* comes from a plant called *Andrographis paniculata*, which appears in herbal medicine systems across South Asia. As is often the case with such herbs, some evidence exists for its potency against a range of illnesses. For example, *A. paniculata* is known to inhibit the dengue virus in animal cells in a laboratory, and to reduce symptoms of respiratory tract infections in small human trials. But innumerable other herbal remedies also show such early promise. Sadly, only a tiny handful of these remedies go on to prove their efficacy in large-scale, placebo-controlled human trials, the gold standard of modern medicine. This is because the science of developing drugs from medicinal plants is complicated. Poly-herbal remedies like *nilavembu* are a mix of several compounds, while most of modern medicine relies on single-compounds. Plus, the amount of the active ingredient — the compound in a herb that acts against an illness — varies across plants. So drugmakers have to find a way to identify this ingredient and test it in large-scale trials. This exercise requires not only massive financial investment but also intellectual honesty.

Unfortunately, too many attempts in India by the government to validate traditional medicine are driven less by honesty and more by blind faith. This has led to the promotion of herbal remedies with scant evidentiary basis. Against this background, the endorsement of *nilavembu* — even if it is not pushed as an alternative to allopathic medicine — has its consequences in the face of a deadly epidemic. It is possible that people will misconstrue a supplement for a cure. The risk of patients who need medical attention, such as those with dengue haemorrhagic fever, opting for this drug instead of rushing to a hospital should not be underestimated. So far dengue has made over 87,000 people sick across the country, while killing over 150. Both numbers are underestimations, given the government’s poor surveillance systems. At a time when modern medicine is advancing towards greater transparency and replicability in clinical evidence, the government’s claims on *nilavembu* aren’t fooling anyone in the scientific community. But these are misleading laypeople in ways that can hurt them. This is a matter of shame.

Rajasthan’s ordinance shields the corrupt, threatens the media and whistle-blowers

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Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship visits Tokyo, Japan for participation in LNG Producer-Consumer Conference 2017

Minister of Petroleum and Natural Gas & Skill Development and Entrepreneurship visits Tokyo, Japan for participation in LNG Producer-Consumer Conference 2017

Union Minister of Petroleum and Natural Gas and Skill Development and Entrepreneurship, Shri Dharmendra Pradhan, led a delegation to Tokyo, Japan from 17-18 October 2017 to participate in LNG Producer- Consumer Conference. /

The conference organized by the Ministry of Economy, Trade and Industry of Japan (METI) and the Asia Pacific Energy Research Centre (APERC) is a global annual dialogue which provides participants a forum for sharing the latest trends in the global LNG market and discussing opportunities and challenges with a view to developing global LNG market. /

Delivering the key note address shri Pradhan stated that the global LNG market is undergoing a major transformation driven by new supplies which has created a situation of oversupply. He urged the global LNG markets, in which producers and consumers of LNG have equal stakes, to join hands to design flexible terms such as pricing review, flexible take or pay, abolition of destination restriction clause in the LNG contracts. Shri Pradhan stressed that these reforms are essential for developing a transparent, efficient, truly global and balanced LNG market. /

Shri Pradhan held a bilateral meeting with Minister of Economy, Trade, and Industry of Japan Mr Hiroshige Seko. The two sides discussed ongoing cooperation in the hydrocarbon sector between our companies in India and abroad and explored ways to further enhance the engagement. They also explored joint cooperation in the areas of LNG sourcing, swapping and optimization of LNG sources and commercial exploitation of Methane Hydrates. Minister Pradhan invited Minister Seko to attend the 16th International Energy Forum (IEF) Ministerial meeting to be held in New Delhi during April next year. /

Both Ministers signed a Memorandum of Cooperation (MoC) on establishing a liquid, flexible and global LNG Market. The MoC provides a framework to cooperate in facilitating flexibility in LNG contracts, abolition of Destination Restriction Clause and also explore possibilities of cooperation in establishing reliable LNG spot price indices reflecting true LNG demand and supply. This would help in promoting bilateral

relationship between India and Japan in the LNG sector. /

Shri Pradhan also met Minister of Health, Labour and Welfare of Japan Mr. Katsunobu Kato and discussed issues of bilateral importance on promoting cooperation in the skill sector. Both also signed a MoC on the "Technical Intern Training Program (TITP). The TITP is an ambitious program to send Indian technical interns to Japan for on the job training for a period of three to five years. The MoC is expected to pave the way for bilateral cooperation between the two countries in the area of skill development. /

India and Japan are major consumers of energy in the world. In the LNG sector, Japan is the world's largest importer and India is the 4th largest importer. Under the Japan-India Energy Partnership Initiative signed in January 2016, the two sides had agreed to work together in promoting well-functioning energy markets and affirmed to promote a transparent and diversified Liquefied Natural Gas (LNG) market through the relaxation of Destination Restriction Clause. /

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U.S. approves second gene therapy for blood cancer

In this May 2016 file photo provided by Kite Pharma, cell therapy specialists at the company's manufacturing facility in El Segundo, California, prepare blood cells from a patient to be engineered in the lab to fight cancer. File | Photo Credit: AP

U.S. regulators on Wednesday approved a second gene therapy for a blood cancer, a one-time, custom-made treatment for aggressive lymphoma in adults.

The Food and Drug Administration allowed sales of the treatment from Kite Pharma. It uses the same technology, called CAR-T, as the first gene therapy approved in the U.S. in August, a treatment for childhood leukemia from Novartis Pharmaceuticals.

“In just several decades, gene therapy has gone from being a promising concept to a practical solution to deadly and largely untreatable forms of cancer,” FDA Commissioner Dr. Scott Gottlieb said in a statement.

The treatment, called Yescarta, will cost $373,000 per patient, according to drugmaker Gilead Sciences. Kite became a subsidiary of Foster City, California-based Gilead this month.

CAR-T treatment uses gene therapy techniques not to fix disease-causing genes but to turbocharge T cells, immune system soldiers that cancer can often evade. The T cells are filtered from a patient’s blood, reprogrammed to target and kill cancer cells, and then hundreds of millions of copies are grown.

Returned to the patient, all the revved-up cells can continue multiplying to fight disease for months or years. That’s why these immunotherapy treatments are called “living drugs.”

“Today’s approval of Yescarta is a very significant advance for lymphoma patients and for the cancer community as a whole,” Louis J. DeGennaro, president of the Leukemia & Lymphoma Society, said in a statement. “Immunotherapy is dramatically changing the way we approach blood cancer treatment.”

Kite’s therapy is for patients with three types of aggressive, or fast-growing, large B-cell lymphoma. The most common one accounts for about a third of the estimated 72,000 new cases of non-Hodgkin lymphoma diagnosed each year.

Yescarta, also known as axicabtagene ciloleucel, was approved for patients who have already been treated with at least two cancer drugs that either didn’t work for them or eventually stopped working.

At that point, patients are generally out of options and only have about a 10% chance of even temporary remission of their cancer, said Dr. Frederick Locke, director of research for the Immune Cell Therapy Program at Moffitt Cancer Centre in Tampa, Florida. Dr. Locke helped run patient tests of Yescarta.

“This is really an exciting advance for patients without hope,” Dr. Locke said.

Yescarta is not a benign treatment, though — three people died after getting the treatment, which can cause serious side effects. The FDA is requiring Kite to do a long-term safety study and train hospitals to quickly spot and handle those reactions.

In the key test, Yescarta was given to 101 patients. About 72% saw their cancer shrink and about half showed no sign of disease eight months later.

While it is billed as a one-time treatment, because the patients' cancer is so far advanced, it returns in some. The therapy is still working in most study participants, so the average duration of its effects isn't known yet.

A different type of gene therapy is waiting in the wings at the FDA. Spark Therapeutics' treatment for a rare form of blindness could be approved within months. It aims to improve vision by replacing a defective gene needed to process light.

Other gene therapies for blood cancers are being tested and scientists think they may work for solid tumours within several years.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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Determination of Ceiling Prices of Drugs – Regarding

Press Note

1. The Government has been examining the Drugs (Prices Control) Order, 2013 (DPCO) with a view to enhancing the accessibility and affordability of essential medicines at reasonable prices to the poor and needy while providing sufficient opportunity for innovation and competition to support the growth of the Pharmaceutical Industry. The Government has been actively interacting with the Industry and other stakeholders on these issues. **Any impression regarding tightening of price control is both misleading and misplaced.**

2. Under the provisions of DPCO, **the prices of only those medicines are fixed which are in the National List of Essential Medicines (NLEM),** numbering about 850 against more than 6,000 medicines available in the market of various strengths and dosages. This constitutes **approximately 17% of the total pharmaceuticals market, in value terms.** There is an Expert Committee which continuously evaluates the list of Essential Medicines.

3. **Important issues under consideration of the Department** are i) treating the drugs which have become non-scheduled as non-scheduled drugs without any freezing of their prices for a further year; ii) revision of the list of scheduled medicines on the basis of revision of NLEM by incorporating only additions and deletions to the list so that the prices of only ‘’new medicines” which are added to the NLEM will be fixed by NPPA; iii) limiting the determination of overcharged amount of a medicine found to be sold at higher than the ceiling price to the stock available with the defaulter; iv) In case of negative WPI, mandating the NPPA to change the ceiling price of scheduled drugs and not require the individual drugs to also reduce their MRPs if they are already lower than such revised ceiling price; etc. Other issues include new provisions for using Institutional price data for fixation of prices of those scheduled medicines which are being supplied directly to the Healthcare Institutions.

4. **Any changes in the methodology of calculating ceiling prices of scheduled medicines are presently not under consideration.**

5. As regards **“new drugs”** as defined in DPCO 2013, the Government is considering a change in the method of approving their prices. The Government is in consultation with the Industry to explore doing away with the present practice of deciding a new price for each applicant of “new drug”, which is causing considerable time delay in launch of the new drugs in the market by the manufacturers.

6. The Department has constantly interacted with stakeholders and would further consult all concerned before finalising these proposals.

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Department of Pharmaceuticals

New Delhi, 20th October, 2017

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Women survivors who won over TB

Some years ago, Nandita Venkatesan took a power nap only to wake up deaf. She could “see” the music playing on a mobile phone and her brother talking but her world had turned silent.

Nandita, who was then getting treated for tuberculosis, later learnt that she had lost her hearing due to the side-effects of the drugs. She is now part of a sisterhood of TB patients, revolutionising TB support in India. If you think TB is only a poor man’s disease, or that it makes all women patients infertile, or that there is only one kind of TB you can contract, you are Nandita’s target audience.

She along with a small band of female TB survivors have come together to start the “Bolo Didi” campaign to support female patients, who invariably have little support navigating India’s labyrinthine, capricious, health-care system.

India shoulders the highest TB burden in the world, with over two million of the 10 million cases reported here. It also accounts for the maximum drug-resistant (DR) patients — nearly 130,000 people do not respond to first-line drugs.

At the 48th Union World Conference on Lung Health in Guadalajara, Mexico, Dr. Saurabh Rane, a TB survivor, spoke about the struggles unique to Indian TB patients. “In a country with the world’s most TB patients, it is tragic that each of us feels so alone,” he said highlighting the complete lack of support for patients in a health system struggling to diagnose and treat patients.

In such a system, there is no redress for social stigma, misinformation and the abuse that patients have to often cope with. This is a reason why patients are starting to form informal networks using social media. With hospitals overwhelmed and doctors short of time, patients are finding peer support to deal with issues that the medical system does not fully address such as stigma, marital issues, sexual health and depression.

“It is impressive that female TB survivors in India have stepped up to fight stigma. It is clear from research that too many patients are falling through the cracks in the Indian health system (both public and private), and patients, particularly women, are seeking support from their peers to make up for inadequacies in the health system,” said Prof. Madhukar Pai, Associate Director, McGill International TB Centre., Canada.

“I would like to see these informal networks become more organised, with adequate training for survivors on technical issues, and clear protocols to link patients to the medical system for complex or life threatening issues (for example, suicidal thoughts),” he added.

The “Bolo Didi” campaign came about when film-maker and TB survivor Rhea Lobo decided to set up what she calls a ‘pay-it-forward’ programme for women TB patients. Her two minute film, on the stories of fellow survivors, was screened at the Union conference. “Women find my film on YouTube and start contacting me via Facebook or WhatsApp. The conversations invariable start with, “Didi, can you please help me?” Some cries are more desperate. There was a woman who once messaged me in panic asking for help as her husband and family did not (and could) know she had TB. She wanted contacts of doctors and counsellors — basic information that should, ideally, not be this hard to access.”

Rhea soon realised other survivors like Nandita were also getting similar messages, asking “Didis” for any and all help. “The stigma associated with it doesn’t allow patients to openly talk about their struggles. As a woman and TB survivor, I feel it is a social responsibility towards these women...

like a pay-it-forward concept. This is a treatable, bacterial infection and women should not be made to feel guilty about contracting an infectious disease and be forced to hide it from their families. We respond to each of them and reassure them that TB is completely curable and guide them through the process of navigating India's health system," Rhea added.

While patients are banding together, the government is digging in its heels further. Dr. Sunil Khaparde, head of the Ministry of Health's TB division, said that the "government was an enabler but not solely responsible for [the] care of patients." At international conferences, the Indian government has faced serve criticism for the glacial pace at which access to newer TB drugs has been scaled up. The government has maintained that it is doing the best it can. Given the lack of support for patients, Dr. Khaparde added that it was "good that patients are coming together". "Our government plan is talking about community participation. We will try to involve them in policy implementation," he said.

Meanwhile, patients like Rhea and Nandita are not waiting. "We are trying to organise patient groups and start a virtual institution for women. This could be a game changer in India's TB response. I came up with the name 'Bolo Didi' over coffee with a couple of friends because that is how every message to me ends: "Didi, please reply". We will be applying for grants in the coming months to fund the "Bolo Didi" campaign. No one," said Rhea, "should feel alone when battling TB."

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Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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Price control on drugs is lazy thinking

There’s no denying that the cost of health care is rapidly rising. Photo: Special Arrangement

The government is increasingly relying on imposition of price controls on medicines and devices to check rising health-care costs. However, it will discourage investment, innovation and job-creation that it is equally committed to promote.

Last month, the National Pharmaceutical Pricing Authority capped the prices of 37 more medicines (raising their number to 821). It has already capped the prices of coronary stents and orthopaedic implants. More medicines and devices are likely to come under price control. Roughly, 20% of medicines by volume are subject to price controls. This is about Schedule 1 medicines. Section 5.18 (j)(i) of the proposed pharma policy says: “All strengths and dosage forms of price-capped medicines shall be liable for price cap.” This means that even a combination drug which uses price-controlled ingredients will be subject to a price cap.

The policy also seeks to raise import duties on active pharmaceutical ingredients (API) to encourage the indigenous industry. This will increase the input cost for formulation manufacturers. Restrictions on loan licensing will further raise manufacturing costs and bring down the margins of pharma companies. This will impact their ability and willingness to fund research and development of innovative medicines, ultimately hurting the interests of patients. R&D spends by Indian pharma companies are already low, at 8-10% of their sales revenue, when compared to a figure of 20% for multinationals.

It looks as if India doesn’t want to learn from the past. Subjecting 74 notified bulk drugs to price control via the Drugs (Price Control) Order 1995 led many pharma companies to opt out of their production. This forced manufacturers of formulations to import bulk drugs and APIs from China which now supplies two-thirds of India’s requirements.

It is well established that investors prefer predictable policy. Therefore, frequent imposition of price ceilings creates uncertainties, caps expected profit and deters investors. Moreover, there’s a trade-off between price and quality. Yet, price control may make sense if medicines are expensive or pharma companies are making super-normal profits. India is one of the world’s cheapest places for medicines. While the efforts being taken to make health care affordable are praiseworthy, imposing price controls in a market economy is lazy policy making.

The key to bring down medicine (or device) prices lies in increasing competition among pharma (or device) companies. Unlike oligopolistic airline or telecom industries which may require price regulation, there are 15,000 pharma companies in India competing with each other for market share. That makes collusion and price rigging difficult.

There’s no denying that the cost of health care is rapidly rising. However, the reason for that is not the super-normal profit being made by pharma companies but profiteering by private hospitals and low per capita availability of medical practitioners. Doctors’ consultation fees, cost of operation procedures, diagnostic tests and hospital bed rentals are the factors responsible for rising health-care costs. Increasing the supply of cheaper medical seats in government medical colleges will make doctors less vulnerable to unethical profiteering by private hospitals.

Increase health spending

The market for health services is characterised by imperfect knowledge as the seller knows more than the buyer who can’t shop around for the best deals, especially during an emergency. The

lack of competition from under-staffed and over-crowded government hospitals adds to the problem. Improving facilities at government hospitals will provide a real alternative to hapless patients, rich or poor, who are often forced to go to expensive private hospitals. That would require an increase in government spending on health care which is low at 1.4% of India's GDP when compared to 3% in China and 4.3% in Brazil.

The government should also instruct all health-care providers to display all charges and fees on their websites so that buyers of their services can compare and decide where to go and which facilities to use. This will reduce information asymmetry and improve transparency — a key requirement for any market to function smoothly. Besides, the government can directly procure medicines from manufacturers and distribute them through 1,700 Jan Aushadhi outlets to further reduce medicine prices without the need for market distorting price controls.

Ritesh Kumar Singh is a corporate economist and policy advocacy specialist based in Mumbai

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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IISc: new tool to diagnose malaria

Changes can be seen in the blood even when the parasite count is very low due to the bystander effect. | Photo Credit: HANDOUT

By studying the properties of normal red blood cells (RBCs) and parasite-infected RBCs, scientists at the Indian Institute of Science, Bengaluru, (IISc) have developed a new diagnostic tool for early detection of malaria.

Currently, visual microscopic identification of the malarial parasite *Plasmodium* inside red blood cells (RBCs) is used, but the new tool can detect the disease even in RBCs that do not themselves host the parasite but lie near the infected ones. RBCs that lie close to the infected ones appear rigid much like the affected ones and this helps in easy diagnosis. The results were recently published in *Biomedical Journal.*

Optical-tweezers

Blood samples with malaria infections caused by *P. falciparum* and *P. vivax* were collected from the Bangalore Medical College and Research Institute and studied. RBCs were separated out from the blood, and a single RBC was trapped in an optical tweezer trap. In this technique, laser beams are focused at the micron-sized RBC (like tweezers holding the RBC) under a microscope and imaged with a video camera.

The Brownian motion (random movement of particles) of the normal RBC was found to be different from the infected ones.

A photodetector was used to measure this motion of the trapped particle. The researchers quantified the fluctuations using the ‘corner frequency’ measurement. The corner frequency of normal cells was 25 hertz whereas it was 29 hertz for infected cells. The change in frequency was due to the difference in the rigidity of the cells; the infected cells were more rigid compared to the normal ones.

When trapped, the RBC gets folded as it is biconcave in shape and the time taken for folding inside the trap was measured. As the infected cells were more rigid they took about 1.33 seconds to fold whereas normal cells took only 0.8 seconds. A measure of folding time can also be used to determine whether a cell is infected.

Bystander effect

“Only 2-5% of the RBCs host the parasite. But we can see the rigidity in other RBCs in the infected pool also. This is called the bystander effect and it is very helpful in our tweezers study. *P.vivax* infects mainly the immature RBCs (reticulocytes) but due to this effect we could see changes in the mature RBCs not hosting the parasite too. We are yet to understand what exactly is released into the blood stream that causes rigidity even in the non-hosting cells,” says Apurba Paul from the Department of Physics at IISc and first author of the paper.

According to the researchers, the tweezers technique can be used as a general screening tool for all stages of malarial infection. “The technique is very easy and does not require trained personnel as it is fully automated. Very little blood is needed, and it can be drawn at any time of the day. The changes can be seen in the blood even when the parasite count is very low due to the bystander effect,” Paul adds.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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New Education policy by December: MoS HRD Dr. Satya Pal Singh

New Education policy by December: MoS HRD Dr. Satya Pal Singh

Union Minister of State for Human Resource Development Shri Satya Pal Singh has said that the new education policy is in final stages and it would be announced in December. Inaugurating a 'National Academic meet' in Thiruvananthapuram today, Dr. Singh said the policy envisages to 'correct' the course of education system in the country, that has followed a colonial mindset. He pointed out that unfortunately after independence, most of the academicians followed the footsteps of British and Western scholars and deliberately denigrating Indian culture. Stating that the biggest challenge being faced by the education system and the government is 'how to de-colonise the Indian mind' and the government is working on the policy in this regard. The Minister said it will be the first education policy that was discussed layer by layer and threadbare.

Dr. Singh said improving the quality of education from the primary level, making higher education affordable to people and accessing higher education to more are some of the major issues faced by the education system. He said skill development is one of the major areas the government has given thrust upon.

To prevent the exodus of students to foreign countries seeking education, Dr. Singh said the higher education institutions should be developed to the standard of Centres of International Excellence. He said accessibility to higher education in the country is only 25.6 per cent while in USA 86 per cent Germany 80 and in China 60 per cent. The Minister pointed out that the aim of the government is to improve the higher education system in the country to make available to more students. Stating that higher education is very expensive, Dr. Singh said it has to be made more affordable to all sections in the society.

Indicating that changes are necessary in the Right to Education Act, Dr. Singh said the Act lacks teeth. The Act provides right to compulsory primary education. But what is the remedy if parents do not send their children to school. So many things have to be done in improving the primary education in the country', he added.

The meet was organised by Bharatheeya Vichara Kendram as part of the navathi celebration of P Parameswarn, Director of Vichara Kendram.

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Mahatma Macaulay

Once in India, Lord Robert Clive, more often than not, would be in uniform and battle ready. He would sport long moonboots, ride horses. Conjectural of sorts, he would flash a gun in one hand, and a sword in the other. Conjectural because, when both hands are armed, what body part held the bridle?

The fact is, in 1757 at the battle of Plassey, Clive won India for England. Lord Thomas Babington Macaulay walked into India, as if pacing into a palanquin. Clad in suits and gleaming shoes that appeared as though they had just been procured. Academic D. Shyam Babu describes Macaulay as a Mahatma. With Lord Macaulay-like simplicity, he dislodges the Crown's greatest stamp of honour, "Lord".

India thus turns home to three Mahatmas - Mahatma Macaulay, Mahatma Phule and Mahatma Gandhi. Decades before Gandhiji returned to India in 1915, Macaulay began scripting the path Gandhiji would enact. "Freedom"? Who imagined that enterprise for British India? "It would be. far better for us that the people of India were well governed and independent of us, than ill governed and subject to us," argued the would-be-Mahatma in his July 10, 1832 speech in the House of Commons.

His regard for India continues: "Are we to keep the people of India ignorant in order that we may keep them submissive? Or do we think that we can give them knowledge without awakening ambition? Or do we mean to awaken ambition and to provide it with no legitimate vent? It may be that the public mind of India may expand under our system till it has outgrown that system; that by good government we may educate our subjects into a capacity for better government; that, having become instructed in European knowledge, they may, in some future age, demand European institutions. Whether such a day will ever come I know not. But never will I attempt to avert or to retard it. Whenever it comes, it will be the proudest day in English history." Once in India in 1835, seeding ideas of freedom was Macaulay's mission.

When the British parliament asked the East India Company to set aside one lakh rupees for the education of Indians, the officials were divided: One set insisting to continue with the existing Arabic and Sanskrit education, and the other group, led by the Mahatma-in-making, argued for English education that would be seeped in the sciences. In order to convince his fellow officials who were obsessed with the Arabic/Sanskrit system, Macaulay in his Minute on Education makes fun of 15th century England. "To which I refer is the great revival of letters among the Western nations at the close of the fifteenth and the beginning of the sixteenth century. At that time, almost everything that was worth reading was contained in the writings of the ancient Greeks and Romans. Had our ancestors… neglected the language of Thucydides and Plato, and the language of Cicero and Tacitus. Would England ever have been what she now is?"

Macaulay adds, "What the Greek and Latin were to the contemporaries of More and Ascham, our tongue is to the people of India." This Mahatma had won for India not only the English language but the sciences as well. But what about the account that paints Macaulay as a mind-slaver? The slave theorists hate the Lord with the pen more than they hate the Lord with swords.

In his 1832 speech, Macaulay spoke thus: "I fully believe that a mild penal code is better than a severe penal code, the worst of all systems was surely that of having a mild code for the Brahmins… while there was a severe code for the Shudras. India has suffered enough already from the distinction of castes, and from the deeply rooted prejudices which that distinction has engendered." Clive won England an empire but he wouldn't say a word against the "deeply rooted prejudices" that caste breeds. Mahatma Macaulay set the stage for ending not only those

prejudices but the British rule in India itself.

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BIMSTEC Forum provides an ideal platform for fostering of Traditional Medicine

Ministry of AYUSH, Government of India hosted First Meeting of BIMSTEC Task Force on Traditional Medicine on 24-25 October, 2017 at Parvasi Bhartiya Kendra, New Delhi.

The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is an International Organisation involving a group of countries in the South Asia and South East Asia namely, Bangladesh, India, Myanmar, Sri Lanka, Thailand, Bhutan and Nepal. India being a major stake holder in the field of Traditional Medicine plays an important role in influencing the policies and strategies related to the Traditional Medicine in the BIMSTEC Forum

Delegations from the People's Republic of Bangladesh, the Kingdom of Bhutan, the Republic of India, and the Republic of the Union of Myanmar, the Federal Democratic Republic of Nepal, the Democratic Socialist Republic of Sri Lanka and the Kingdom of Thailand along with the BIMSTEC Secretariat participated in the Meeting.

The Meeting was inaugurated on 24 October 2017 by Vaidya Rajesh Kotecha, Secretary, Ministry of AYUSH. While welcoming the delegates from the BIMSTEC Member States, Secretary AYUSH referred to the rich heritage of Traditional systems of Medicine in the BIMSTEC Member States. He emphasised that the BIMSTEC Forum provides an ideal platform for fostering collaborations among the Member States in the area of Traditional Medicine. He highlighted the recent developments in the International Cooperation activities of the Ministry. He hoped that the deliberations during the Meeting would bring fruitful outcomes in strengthening the cooperation amongst the BIMSTEC Member States in areas of Traditional Medicine.

Sh. Pramod Kumar Pathak, Joint Secretary, Ministry of AYUSH and Head of Delegation of India was elected Chairman of the Meeting and Dr. Yi Yi Myint, Head of Delegation of Myanmar was elected Vice-Chair. All the Delegations made Country Presentations on the status and best practices of Traditional Medicine in their respective country. The Meeting discussed the following important agenda :-

(a) Implementation of Strategies of BIMSTEC Task Force on Traditional Medicines (BITFM)

(b) Priority Areas for technical and research collaboration among the Member States on Traditional Medicine

(c) Regional strategy on the protection of Genetic Resource associated with Traditional Medicine Knowledge and Intellectual Property Rights and develop a work plan

(d) Human Resource Development and Capacity Building among the BIMSTEC Member States

(e) New Initiative, proposals and programmes for cooperation on Traditional Medicine among the BIMSTEC Task Force on Traditional Medicine.

The Meeting also acknowledged that in accordance with the ToR of the Task Force, the BTFTM Meetings shall be held on rotational basis among the BIMSTEC Member States..

The Meeting considered and adopted the draft Report of the First Meeting of the Task Force for submission to the Fourth Meeting of the BNNCCTM to be held in Bangladesh. The Meeting conveyed its deep appreciation to the Government of the Republic of India for the warm hospitality extended to the participants and for the excellent arrangement made for the Meeting.

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Going back to the basics: on World Bank's focus on education

On page 115 of the World Development Report 2018, the World Bank's new report which focuses for the first time on education, are two powerful images. They are MRI (magnetic resonance imaging) images taken in Dhaka, Bangladesh, of the brains of two infants aged two-three months. The growth of one infant was stunted while the other was not. The images show the stark difference in brain development between the stunted child and the one who is not stunted. The fibre tracts in the brain of the child who is not stunted are denser, and the connections more elaborate, than those in the brain of the stunted child. This is an example of how intense deprivation can hinder the brain development of young children.

The report, titled "Learning to Realize Education's Promise", focusses on education. It is the first of the Bank's annual reports in four decades to do so. There are six main points to note about the report. First, it is good to see that it makes a moral case for education, with a rights-based approach, and sub-sections titled 'Education as freedom'; 'Education improves individual freedoms'; 'Education benefits all of society'.

Decline in investment in secondary education in India: World Bank

Second, one of the most important sections is not about education but about early childhood development. And rightly so, for the report discusses the far-reaching impact of poverty and chronic malnutrition on the physical and mental development of children.

Poverty undermines a child's learning. "Severe deprivations—whether in terms of nutrition, unhealthy environments, or lack of nurture by caregivers—have long-lasting effects because they impair infants' brain development." The effects of stunting in the early years on physical, cognitive and socio-emotional development prevent children from learning well in later years. "So even in a good school, deprived children learn less."

The report points out that in low-income countries, stunting rates among children under-five are almost three times higher in the poorest quintile than in the richest. The effects of childhood stunting remain into adulthood. If early childhood development programmes are to compensate for poor children's disadvantages, they need to be scaled up and resourced for nutritional inputs, along with a focus on antenatal and postnatal care, sanitation, and counselling of parents for effective early child stimulation. Reduction of child stunting should be one of the major moral imperatives before nations today.

Third, it is good to see that technology is not regarded as a panacea in itself but as something that has the potential to enhance learning — and that the teacher-learner relationship is at the centre of learning. "Technological interventions increase learning — but only if they enhance the teacher-learner relationship."

Written-off in the hinterland

Fourth, the report acknowledges firmly that on the issue of public vs private schools, the results are still mixed: "There is no consistent evidence that private schools deliver better learning outcomes than public schools, or the opposite…In some contexts, private schools may deliver comparable learning levels at lower cost than public systems, often by paying lower teacher salaries. Even so, lower teacher salaries may reduce the supply of qualified teachers over time."

Fifth, while the focus on learning is welcome, a wider and more nuanced exploration of the reasons for the learning crisis would have been useful. While school enrolments have increased

significantly, massive teacher shortages persist. Further, beyond reading and arithmetic, any meaningful assessment of learning should also consider aspects such as comprehension, problem solving, critical thinking, and innovation. Beyond merely increasing assessment ("Just weighing the pig doesn't make it fatter," as the report itself remarks), it is equally important to fund the sector better; improve teacher training; support the continuing professional development of teachers; and help teachers to help the poorest children to learn.

One would have liked to see greater focus on the continuing problems of access and equity, which are still the biggest problems in education. If there is one aspect of education which needs to be quantified and measured in order to make our education systems function better for all children, it is equity. How fair and equitable are education systems? Where are the greatest gaps? Which kids suffer the most from inequitable systems? These questions should be asked as part of an ongoing process of assessment for equity.

As for access, over 260 million children across the world – equal to a third of the population of Europe – are not even enrolled in primary or secondary school. "In 2016, 61 million children of primary school age —10% of all children in low-and lower- middle-income countries—were not in school, along with 202 million children of secondary school age."

And in a world fraught with conflict, schooling suffers. "Children in fragile and conflict-affected countries accounted for just over a third of these, a disproportionate share."

It is unconscionable that in the twenty-first century, so many children are still out of school.

Uma Mahadevan-Dasgupta is in the IAS. The views expressed are personal

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

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Being self-aware

As girls and boys grow, we help them navigate and engage with their world. We teach them self-management, such as how to dress and keep an orderly room. We teach them about avoiding dangers, such as how to use a stove without burning themselves. We teach them skills related to their expanding independence, such as how to buy something from the local grocery store and come back home with the right change. And we teach them how to manage social relationships, such as how to build supportive friendships and respect adults while recognising inappropriate actions.

Case for sex education in schools

Similarly, we need to provide adolescents with information and skills so they can thrive in the new opportunities and challenges they will face as teenagers and adults. As their bodies and minds mature, they need and have a right to information about puberty so that they are prepared for the changes they will experience. As their social networks and the influence of peer groups and the media expand, they need and have a right to develop confidence, competence, and communication skills. And as they move through adolescence, which we know is a period during which inequitable gender norms become further entrenched, they need and have a right to programming about respect, tolerance, and equitable attitudes.

We know that this is not happening; studies from around the world show that children are not getting the information and education they need. First, many adolescents are poorly informed about the changes taking place in their bodies and minds at puberty, and unprepared to deal with them. Second, many adolescents are unaware and unprepared to protect themselves from sexually transmitted infections and unwanted pregnancies, or lack the skills to refuse unwanted sex from peers or adults who use coercive physical or emotional pressure. Third, they are immersed in widespread inequitable gender norms and attitudes, with almost half of adolescents agreeing that wife-beating is justified in some situations. Finally, they do not know where and how to seek help from adults or health and social services when problems occur. As a result, adolescents in our lives are facing health, psychological and social problems because we adults are shying away from sexuality education.

Contrary to common misconceptions, sexuality education is not about how to have sex. Instead, sexuality education aims to improve knowledge and understanding, and to correct misconceptions by providing age appropriate, scientifically accurate, and culturally relevant information. It aspires to promote self-awareness and norms that are equitable and respectful of others, by providing opportunities to discuss and reflect on thoughts and feelings, attitudes and values. At the same time, it works to build social skills needed to make responsible choices and to carry them out, by providing structured opportunities to practise those skills.

Dr. Venkatraman Chandra-Mouli works on Adolescent Sexual and Reproductive Health in the WHO's Department of Reproductive Health and Research. Dr. Sunil Mehra is the Executive Director, MAMTA Health Institute for Mother and Child

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

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The Exemplar Effect

After 15 years, the Government of India has released the draft National Policy for Women. This is at a time when India finds itself below the 25th percentile on the Gender Inequality Index. Over the last 10 years, the ratio of females to males participating in India's workforce has fallen by more than 10 percentage points, despite positive economic growth trends over the same period. The new policy framework, to be tabled in Parliament, is an opportunity to include evidence-informed solutions for empowering women. Building on insights from rigorous impact evaluations, I propose a solution for expanding the number of women in the secondary school workforce to increase school-years of girls, at scale.

These insights are from randomised evaluations where the research population is randomly divided into two groups before the policy was implemented. A critical point is that characteristics of both groups were the same on average before implementation, the only difference was that one group received the programme being evaluated and the other did not. Therefore, differences in outcomes between both groups are accredited to the programme.

The public education infrastructure is a widely accessible conduit for girls across India to achieve a number of objectives laid out by the National Policy for Women. Two approaches found to be effective are: An increase in female teachers in government secondary schools for a role model effect to increase girls' participation in secondary schooling and in the workforce; and to show women and their families the value of local job opportunities for an aspiration effect. Solutions that are simple to expand across India are necessary to impact over half of India's 15-18-year-old girls who are not in secondary school education.

A randomised evaluation by Robert Jensen (2012) of a low-intensity recruitment programme targeted at young females in rural India found that families increased investment in girls' education when shown local employment opportunities, including the salary and application criteria details. The study found that girls had more years in school through this aspirations intervention. This same mechanism may increase years of schooling for girls if families are aware and given light-support for females to get jobs as secondary school teachers.

The impact of the role model effect, of increasing females in higher positions, for inspiring young girls was tested by a study in rural West Bengal, of increasing female legislators. Beaman et al. (2012) found that in villages where leadership positions were reserved for women, the gender gap in aspirations narrowed by 25 per cent for parents and 32 per cent in adolescents. Additionally, they found that the gender gap in terms of educational attainment was nearly removed, and girls were less likely to spend time on household chores. They identified the role model effect as the primary causal factor.

The draft National Policy for Women has recognised distance as a barrier to school access. The impact evaluation of the Bihar Cycle Programme using a quadruple difference-in-difference approach presents findings that providing cycles to girls, in Bihar in 2006, did close the gender gap in secondary schools. The evaluation found that the programme increased girls' age-appropriate enrolment in secondary school by 32 per cent and reduced the gender gap by 40 per cent. In terms of learning outcomes, there was an 18 per cent increase in number of girls who appeared for the secondary school certificate examination and a 12 per cent increase in the pass-rate for girls.

A scientific evaluation would show whether there is impact on years of schooling for females through combining better access (cycle programme), role-model effect (more female teachers teaching females) and raising aspirations (by showing females jobs in secondary schools). The

size of this issue demands a solution that can be applied at large scale and that is evaluated as cost-effective. Government-run secondary schools, 1,44,517 of them across 680 districts, are a widely available platform to address gender issues and shape aspirations of young girls. As the government draws up actionable items to implement through the National Policy for Women, an evidence-informed approach can be effective for empowerment of 95 million girls enrolled in India's elementary schools today.

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Healthcare sector and Skill Development in youth crucial for India's progress: Vice President

Inaugurates Medical Camp and two Skill Development programmes

The Vice President of India, Shri M. Venkaiah Naidu has said that the Healthcare sector and Skill Development in youth crucial for India's progress. He was addressing the gathering after inaugurating a Medical Camp in association with Star and Rainbow Hospitals and two Skill Development facilities - CCTV Network Management and Optic Fiber Technician courses in association with L&T Smart World Communications Limited and GATI Drivers Training Institute in association with Gati-KWE Pvt. Ltd., at Swarna Bharat Trust, in Hyderabad today. The Deputy Chief Minister of Telangana, Shri Mohammad Mahmood Ali, the Minister for Irrigation, Marketing & Legislative Affairs, Telangana, Shri T. Harish Rao, the Minister for Health and Medical Education, Andhra Pradesh, Shri Kamineni Srinivas and other dignitaries were present on the occasion.

The Vice President said that the government's expenditure not remaining commensurate with growing demands in the healthcare, the private sector has come to play a dominant role in both urban and rural areas. He further said that in urban areas, only 32 per cent of the patients visit public hospitals with the rest 68 per cent preferring private hospitals. In rural areas, 42 per cent patients visit public hospitals and the rest visit private ones, he added.

The Vice President said that there is a definite need not only to expand the infrastructure in public health sector, but also increase the budget. He further said that the number of physicians available per 10,000 people, their number is grossly inadequate in India when compared to developed countries. While the number of physicians available is 20 per 10,000 people in developed countries, it is only six in India and the country needs 10.5 lakh doctors while we have only 6.5 lakh, he added.

The Vice President said that to reach WHO norm of one doctor per 1,000, (there is one doctor per 1700 population in India) a high-level committee of NITI Aayog has recommended the setting up of 187 more medical colleges by 2022. Similarly, the number of hospital beds per 10,000 is 40 in developed countries while it is nine in India, he added.

The Vice President said that India is the youngest country with 65% of our population below 35 years of age. He further said that India must skill its young population not only for economic benefit but for social reasons too. India's huge human capital has to be made more qualitative with focus on rapid growth of productive enterprises and jobs and growth and inclusion must go together, he added.

The Vice President said that specially designed training in tune with the market needs should become part of the educational system so that students who pass out find immediate employment and are not left out in the lurch. He further said that

manufacturing currently contributes about 13% to the GDP of the country and Make In India seeks to increase it to 25 per cent in the coming years to give a major push to the economy. In China, the manufacturing sector contributes about 36 per cent to the GDP, he added. The share of manufacturing in the GDP at 13% is amongst the lowest as compared to many rapidly developing economies, he said.

The Vice President said that the sector as a whole has been facing shortage of skilled manpower and the efforts of the government in skilling the youth should be supplemented by the corporate sector and the industries so that the target of 25 per cent contribution to the GDP is achieved faster. He further said that this is the time when Skill India, Digital India and Make in India can work in conjunction in one ecosystem and create a new resurgent India. We have to ensure that we scale up our efforts with greater speed and with proper ecosystem, India will become the world's largest exporter of skilled manpower in the future, he added.

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Scientists link new virus to kala-azar

Researchers have stumbled upon tantalizing evidence of an unknown virus that may be responsible for the persistence of kala-azar or visceral leishmaniasis, a parasite infection that has spawned epidemics and sickened thousands of Indians for over a century.

It's still early to pointedly blame the virus but its discovery portends a new kind of treatment regime and may aid attempts to eradicating the disease.

Historically, the parasite Leishmania donovani is believed to be responsible for the dreaded infection. People get infected when bitten by an insect called the sandfly, which harbours the disease-causing parasite.

This month, a group of scientists from West Bengal and Uttar Pradesh said that another parasite may be involved. Another parasite called Leptomonas seymouri may also be present, according to Subhajit Biswas, one of the scientists involved in the study.

The researchers inferred this after they found the L seymouri and a virus called Lepsey NLV1 within it in 20 of 22 biological samples of patients who had a residual L donovani infection. They reported their findings in an online version of the peer-reviewed *Archives of Virology.*

Endemic to subcontinent

Kala-azar is endemic to the Indian subcontinent in 119 districts in four countries (Bangladesh, Bhutan, India and Nepal). India itself accounts for half the global burden of the disease. If untreated, kala-azar can kill within two years of the onset of the ailment, though the availability of a range of drugs has meant that less than one in 1,000 now succumbs to the disease.

However, scientists are still not clear how the parasites cause the infection and how they manage to hide within the body.

"So far researchers weren't looking for parasites other than donovani and hopefully this finding should lead to collaborations with other labs to explore this link," Dr. Biswas told *The Hindu* .

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Novel inhibitor to combat kala-azar identified

“Even at half the concentration, the toxicity of the approved drug miltefosine hydrate is higher than the tested inhibitor,” says Yusuf Akhter.

Combining structure-based drug designing methodology with in vitro studies, scientists have been able to identify a FDA-approved molecule that shows enhanced anti-kala-azar activity.

Three active inhibitor molecules were selected from the PubChem database and one of them showed the highest stability in binding to the active sites of the target enzyme (UDP-galactopyranose mutase or UGM) which helps in the formation of glycoprotein, beta-Galf. After binding to the UGM, the molecule inhibits the enzyme activity thereby reducing the virulence, parasite survival and transmission of disease. The results were published in the *Journal of Cellular Biochemistry.*

Limited treatment

Treatment for kala-azar (disease caused by *Leishmania* infection) is limited due to high toxicity to human cells, low efficacy of the drug, high cost and drug resistance making the development of novel anti-kala-azar drugs a priority.

India has around 3,000 people afflicted with kala-azar, accounting for 50% of the global burden. It is endemic in West Bengal, Bihar, Jharkhand and eastern Uttar Pradesh.

Beta-Galf is a major cell surface component of *Leishmania* parasite and is responsible for the virulence of the pathogens and plays an essential role in parasite survival and transmission of disease. Beta-Galf is also found in *Mycobacterium tuberculosis* that causes TB and *Trypanosoma cruzi* parasite that causes sleeping sickness but is absent in humans. Like beta-Galf, the UGM enzyme is also absent in humans but is critical for the biosynthesis of beta-Galf thereby making the UGM enzyme an attractive drug target. Deletion of the gene encoding for the enzyme in *L. major* resulted in a decrease in virulence.

Since the protein structure of *Leishmania* UGM is not known, Dr. Yusuf Akhter and other scientists used the protein structure of *T. cruzi* UGM as a template and the protein sequence of *Leishmania* was modelled on the template. “There is 60% sequence identity between *Trypanosoma* UGM and *Leishmania* UGM,” says Dr. Akhter from the School of Life Sciences, Central University of Himachal Pradesh, Kangra, Himachal Pradesh and one of the corresponding authors of the paper.

In vitro studies

One of the three chosen inhibitors was evaluated *in vitro* for anti- *Leishmania* activity and found to significantly inhibit the growth of *Leishmania donovani* (which causes damage to visceral organs such as liver and spleen). Different doses of the compound were tested and the minimum inhibitory concentration or IC50 value (the lowest concentration of the compound required to inhibit the visible growth of a pathogen) was found to be 50 microgram per litre. The IC50 value of the approved drug miltefosine hydrate is only 25 microgram per litre.

But the approved drug miltefosine hydrate showed 100% toxicity to human cells when 50 microgram per litre was used whereas the toxicity of the screened molecule was only 50% at the same concentration. The toxicity of miltefosine hydrate was as high as 89% even when 25 microgram per litre (which is the IC50 value of the drug) was used.

“Even at half the concentration, the toxicity of the approved drug miltefosine hydrate is higher than the tested inhibitor,” says Dr. Akhter. The screened molecule appears to have therapeutic efficacy with lower toxicity compared with miltefosine hydrate.

Though the protein sequence of *Leishmania* major was used, the in vitro studies using the screened molecule were carried out on *Leishmania donovani.*

“The UGM of *L. major* and the UGM of *L. donovani* have highly similar sequences. All the active regions are 100% identical. Hence these two can replace each other and a molecule that acts as an inhibitor for one protein will also act as inhibitor for the other. As the parasite strain available in the laboratory was *L. donovani*, the cell-based assays were performed on that,” says Dr. Akhter.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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Experimental vaccine may protect against HIV

Researchers designed a vaccine candidate using an HIV protein fragment. | Photo Credit: Biswaranjan Rout

Scientists have developed a novel vaccine candidate that may prevent HIV infection by stimulating an immune response against sugars that form a protective shield around the virus.

“An obstacle to creating an effective HIV vaccine is the difficulty of getting the immune system to generate antibodies against the sugar shield of multiple HIV strains,” said Lai-Xi Wang, a professor at the University of Maryland in the U.S. “Our method addresses this problem by designing a vaccine component that mimics a protein-sugar part of this shield,” said Mr. Wang.

Researchers designed a vaccine candidate using an HIV protein fragment linked to a sugar group. When injected into rabbits, the vaccine candidate stimulated antibody responses against the sugar shield in four different HIV strains.

The protein fragment of the vaccine candidate comes from gp120, a protein that covers HIV like a protective envelope. A sugar shield covers the gp120 envelope, bolstering HIV’s defences. The rare HIV-infected individuals who can keep the virus at bay without medication typically have antibodies that attack gp120.

Small fragment

Researchers tried to create an HIV vaccine targeting gp120, but had little success as the sugar shield on HIV resembles sugars found in the human body and does not stimulate a strong immune response. Over 60 strains of HIV exist and the virus mutates. As a result, antibodies against gp120 from one HIV strain will not protect against other strains.

small fragment To overcome these challenges, researchers focused on a small fragment of gp120 protein that is common among HIV strains.

Lifestyle-related risk factors are being cited, compounded by an inadequate number of treatment centres in the region

Without policies to stop the worrying spread of antimicrobial resistance, the mortality rate could be disturbing

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Climate change taking a toll on global health: Lancet

Uphill task: A cyclist wears a mask as protection against air pollution in New Delhi. | Photo Credit: Sushil Kumar Verma

New research published by *The Lancet* medical journal states that on an average there has been a 5.3% fall in productivity for rural labour estimated globally since 2000, as a result of rising temperatures around the world. In 2016, this took more than 9,20,000 people globally out of the workforce, with 4,18,000 of them in India alone.

The *Lancet* report talks of the various ways climate change has started affecting the health of people across the planet. Doctors, academics and policy makers have contributed to the analysis and jointly authored the first report of “The Lancet Countdown: Tracking Progress on Health and Climate Change”. Partners behind the research include the World Bank, World Health Organization (WHO), University College London and Tsinghua University.

A statement issued the group said, “The findings show that climate change is affecting the health of all populations, today. These impacts are disproportionately felt by communities least responsible for climate change and those who are the most vulnerable in society.”

China, Bangladesh, India and Indonesia are the countries that have registered the highest number of deaths linked to air pollution.

Anthony Costello, co-chair of the Lancet Countdown and a director at WHO, said, “The outlook is challenging, but we still have an opportunity to turn a looming medical emergency into the most significant advance for public health this century. We need urgent action to cut greenhouse gas emissions. The health and economic benefits on offer are huge. The cost of inaction will be counted in preventable loss of life, on a large scale.”

Anthropogenic effect

The research builds on the work of the 2015 Lancet Commission on Health and Climate Change, which concluded that anthropogenic climate change threatens to undermine the last 50 years of gains in public health.

The report said that over one billion people globally will be faced with a need to migrate within 90 years, due to a rise in sea level caused by ice shelf collapse, unless action is taken.

The research found that 87% of a random sample of global cities are in breach of WHO air pollution guidelines.

The world has seen a 46% global increase in weather related disasters since 2000, the reported pointed out. The total value of economic losses resulting from climate-related extreme weather events was estimated at $129 billion in 2016.

Christiana Figueres, chair of the Lancet Countdown’s high-level advisory board and former executive secretary of the UN Framework Convention on Climate Change, said, “The report lays bare the impact that climate change is having on our health today. It also shows that tackling climate change directly, unequivocally and immediately improves global health. It’s as simple as that.’’

Jaggi Vasudev’s Rally for Rivers claims they will, but this is not based on the most nuanced

science

END