



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
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India facing shortage of 6 lakh doctors, 20 lakh nurses

India facing shortage of 6 lakh doctors, 20 lakh nurses, claims study (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/india-facing-shortage-of-6-lakh-doctors-20-lakh-nurses-claims-study/758315.html>

India has shortage of an estimated 600,000 doctors and 2 million nurses, say scientists who found that lack of staff who are properly trained in administering antibiotics is preventing patients from accessing life-saving drugs.

Even when antibiotics are available, patients are often unable to afford them. High out-of-pocket medical costs to the patient are compounded by limited government spending for health services, according to the report by the Center for Disease Dynamics, Economics & Policy (CDDEP) in the US.

In India, 65 per cent of health expenditure is out-of-pocket, and such expenditures push some 57 million people into poverty each year.

The majority of the world's annual 5.7 million antibiotic-treatable deaths occur in low- and middle-income countries where the mortality burden from treatable bacterial infections far exceeds the estimated annual 700,000 deaths from antibiotic-resistant infections.

Researchers at CDDEP in the US conducted stakeholder interviews in Uganda, India, and Germany, and literature reviews to identify key access barriers to antibiotics in low-, middle- and high-income countries.

Health facilities in many low- and middle-income countries are substandard and lack staff who are properly trained in administering antibiotics.

In India, there is one government doctor for every 10,189 people (the World Health Organization recommends a ratio of 1:1,000), or a deficit of 600,000 doctors, and the nurse:patient ratio is 1:483, implying a shortage of two million (20 lakh) nurses.

“Lack of access to antibiotics kills more people currently than does antibiotic resistance, but we have not had a good handle on why these barriers are created,” said Ramanan Laxminarayan, director at CDDEP.

The findings of the report show that even after the discovery of a new antibiotic, regulatory hurdles and substandard health facilities delay or altogether prevent widespread market entry and drug availability,” Laxminarayan said in a statement.

“Our research shows that of 21 new antibiotics entering markets between 1999 and 2014, less than five were registered in most countries in sub-Saharan Africa. Just the mere existence of an effective antibiotic does not mean that they are available in countries where they are most needed,” said Laxminarayan.

Worldwide, the irrational use of antibiotics and poor antimicrobial stewardship lead to treatment failure and propagate the spread of drug resistance which, in turn, further narrows the available array of effective antibiotics.

Research and development for new antimicrobials, vaccines, and diagnostic tests has slowed since the 1960s as profitable investment in this area is limited by low sales volumes, short duration of treatment, competition with established products and less expensive generics, and the possibility that resistance will rapidly emerge. — PTI

Stem cell protein

Stem cell protein may help find blood cancer cure (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/stem-cell-protein-may-help-find-blood-cancer-cure/757899.html>

Researchers have identified a stem cell protein that may play an important role in finding cure for blood cancer.

The study, done on mice, suggests a stem cell protein called Asrij is a novel regulator of wild type tumour suppressor p53 stability in hematopoietic stem cells (HSCs).

It could help design targeted therapies for myeloproliferative disease, a group of slow-growing blood cancers, according to researchers, including Maneesha S. Inamdar from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) in Bengaluru.

"We provide a new mouse model resembling myeloproliferative disease and identify a post-translational regulator of wild type p53 essential for maintaining HSC quiescence that could be a potential target for pharmacological intervention," the team said.

According to the study, published in the journal *Blood*, inactivation of the tumour suppressor p53 is essential for unrestrained growth of cancers. But only 11 per cent of hematological malignancies have mutant p53.

Mechanisms that cause wild type p53 dysfunction and promote leukemia are inadequately deciphered, suggests the study.

The stem cell protein Asrij is misexpressed in several human hematological malignancies and implicated in the p53 pathway and DNA damage response, the team said.

For the study, the team generated the first Asrij null (knockout, KO) in mice and showed they are viable and fertile with no gross abnormalities. However, by six months, they exhibited increased peripheral blood cell counts, splenomegaly and an expansion of bone marrow HSCs with higher myeloid output. IANS

Quit smoking

Partnering up key to quit smoking: Study (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/partnering-up-key-to-quit-smoking-study/757864.html>

Is addiction not letting you quit smoking? Relax. A new study suggests that kicking the habit works best in pairs.

The study, presented at EuroPrevent 2019, showed that couples who attempted to stop smoking together had a six-fold chance of success compared to patients who attempted it alone.

"Quitting smoking can be a lonely endeavour. People feel left out when they skip the smoke breaks at work or avoid social occasions. On top of that, there are nicotine withdrawal symptoms. Partners can distract each other from the cravings by going for a walk or to the cinema and encouraging replacement activities like eating healthy food or meditating when alone. Active support works best, rather than nagging," said Magda Lampridou, Researcher from the Imperial College London in Britain.

For the study, the researchers evaluated the supporting role married or cohabiting partners might have in smoking cessation and enrolled 222 current smokers who were at high risk of cardiovascular disease or had suffered a heart attack.

The couples attended preventive cardiology programmes and during the 16-week programme, they were offered nicotine replacement therapy with patches and gum. In one programme, participants could choose the prescription drug, varenicline instead.

At the end of the programme, the findings revealed that 64 per cent of patients and 75 per cent of partners had quit smoking compared to none and 55 per cent in the beginning.

European Society of Cardiology (ESC) cardiovascular prevention guidelines advise against tobacco in any form and people who stop smoking generally halve their risk of cardiovascular diseases.

Lampridou noted that research is needed to confirm the findings in smokers who are otherwise

Best medicine

Rest best medicine to treat some pains (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/rest-best-medicine-to-treat-some-pains/757407.html>

Getting rest may be as effective as taking medication to treat common musculoskeletal disorders such as carpal tunnel syndrome and low back pain, which caused by repeated moderate-strain activity. In a study conducted in rats, researchers showed that a four-week period of rest was nearly as effective as an experimental drug at reducing discomfort and regaining function. Rest appears to be a good first treatment choice. Other treatments following rest should include exercises to improve tissues, and pain reducers, if needed. If symptoms do not subside and strength does not return following this approach, then medicines may be needed to aid recovery. Researchers trained rats to repeatedly pull a lever in order to model the types of repetitive-strain injuries humans experience. After 12 weeks, the rats showed a weaker grip strength, discomfort and increased collagen production in the forearm — evidence of strain-induced tissue damage. They then allowed the rats four weeks' rest. During this rest period one group of rats received an experimental drug that blocks a neurotransmitter, Substance P, associated with the sensation of pain, while the other group did not. They found that the four-week rest reduced collagen production, improved strength and decreased discomfort. The drug also had similar effects, and was somewhat better at improving grip strength, but at the same time made the animals less sensitive to very hot temperatures.

Chronic stress may promote breast cancer growth

Researchers have revealed the mechanism of how chronic stress promotes breast cancer development, shedding light on future treatment for cancer. Cancer patients often suffer from anxiety, despair and fear, which are risk factors facilitating tumour growth as well as promoting

cancer progression. However, the specific mechanism of how chronic stress affects cancer development remains unknown yet. Researchers found that chronic stress might increase epinephrine levels, which enhances lactate dehydrogenase A (LDHA) and promotes breast cancer stem-like cells. Using a drug screen that targeted LDHA, they found that vitamin C reversed the chronic stress-induced cancer stem-like phenotype. The study, published in the Journal of Clinical Investigation, demonstrates the critical importance of psychological factors in promoting stem-like properties in breast cancer cells and provides a promising therapeutic approach for breast cancer. It noted that patients with breast, ovarian and stomach cancer often have negative emotions, which in turn accelerates the development of their own tumours. Hence, it is vital to monitor their chronic stress by taking psychological assessments as well as conducting blood tests which include epinephrine levels. — Agencies

Parkinson's disease (PD)

Shake it off (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/shake-it-off/757403.html>

Parkinson's no longer affects the geriatric population only. People in their forties and fifties can also get afflicted with it

The diagnosis of an early onset of Parkinson's disease for a dear one can be upsetting for the whole family. Parkinson's disease (PD) disturbs the mental and the physical harmony of a person. PD's early onset, especially when an affected person is between 21 and 50 years, is quiet disturbing. According to recent global trends, Parkinson's is no more a disease that affects the geriatric population: About 10 to 20 per cent of people diagnosed with Parkinson's in the USA are under 50. Nearly half of the patients are diagnosed before they reach 40 years.

The disease often goes unnoticed, hence remains undiagnosed and untreated for a long period of time. Though the disease is predominantly diagnosed in people in their sixties, its progress varies depending on a person's health, regardless of his/her age.

According to the Centres for Disease Control and Prevention (CDC), Parkinson's is the 14th top reason of mortality in the world. It affects the dopamine-releasing neurons of the human brain and restricts the balanced functioning of the nervous system. The depletion of neurons in the brain impairs the ability of a person to concentrate, balance and work and satisfactorily and normally.

People, who suffer from Parkinson's disease, experience tremors in legs, jaw, face, hands and arms, faulty gait due to motor deficits, limb rigidity and problems in balancing their bodies.

Causes behind early onset

The reasons remain a mystery though many believe genetic and environmental factors to be the triggers that affect dopamine production. Dopamine acts as a neurotransmitter and sends the signals to the brain for controlling the body movements. However, researchers are still struggling to figure out the correlation between genetics and exposure to external environment in causing the disease. According to the National Parkinson's Foundation, 32 per cent those between 20 and 30 years are affected because of genetic mutations. Environmental reasons such as exposure to insecticides, fungicides and chemical herbicides could raise the risk of Parkinson's.

In rare conditions, the disease is detected in the teenagers and children, which is termed as Juvenile Parkinsonism.

Delaying measures

Researchers are still trying to solve the mystery to prevent the Parkinson's completely. There are no definitive prevention measures yet. However, some of these measures may help delay the onset.

Intake of caffeine: Consuming caffeine-induced products like coffee, tea and cola may protect one from the early onset of the disease, according to a study published by Journal of Alzheimer's Disease.

Vitamin D: Increased proportion and consumption of vitamin D in the body is believed to control and reduce the risk of developing Parkinson's.

Exercise: Following a regular workout regime and keeping your muscles active can reduce the muscle stiffness and strengthens the body's ability to reduce the risk factors irrespective of the gender and age.

Common indicators

Depending on the severity of the disease, symptoms differ and can vary with age, gender and health conditions. Some of the common symptoms are:

Tremors: People who develop Parkinson's suffer from tremors in leg, jaw, face, hands and arms, even when your body is at rest.

Stiffness and rigidity: Stiffness in muscles hinders the proper body movement, which is quite painful when you try to make movements in any direction.

Inability to perform movements: Walking, smiling, blinking and other minor muscles spasms become a challenge for someone affected by Parkinson's disease.

Speech problems: With the level of severity, one can go from speaking softly to blurry, and sometime one also hesitates before speaking anything.

Risk factors

Parkinson's has been associated with several conditions that may increase the chances of its early onset.

Environment: Exposure to chemicals such as manganese, lead and trichloroethylene (TCE) may promote early onset of Parkinson's. TCEs are used primarily to make refrigerants and other hydrofluorocarbons. It is also used in some household products, such as cleaning wipes, aerosol cleaning products, tool cleaners, paint removers, spray adhesives and carpet cleaners and spot removers.

Besides exposure to these, head injuries and working in the atmosphere where you are exposed to harmful solvents increase the chances of being affected with Parkinson's disease prematurely.

Age: With increasing age, the probability of developing Parkinson's increases, generally starting from the middle age till the age of 60 and more.

Gender: In comparison to women, men are more prone to developing this disease.

—The writer is head, neurology department, Indian Spinal Injuries Centre, New Delhi

Physical Health

Walking, cycling may help you live longer (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/walking-cycling-may-help-you-live-longer/757360.html>

Walking, cycling may help you live longer

Cardiorespiratory fitness was measured using a submaximal cycle test and expressed as maximal oxygen uptake (VO₂ max). iStock

Taking the stairs, cycling or walking to work may help you live longer, regardless of age, sex and starting fitness level, a large-scale study unveiled on Friday claims.

“People think they have to start going to the gym and exercising hard to get fitter,” said Elin Ekblom-Bak, from the Swedish School of Sport and Health Sciences in Stockholm.

“But it doesn't have to be that complicated. For most people, just being more active in daily life—taking the stairs, exiting the metro a station early, cycling to work—is enough to benefit health since levels are so low to start with. The more you do, the better,” Ekblom-Bak said in a statement.

The study included 316,137 adults aged 18-74 years who had their first occupational health screening between 1995 and 2015 in Sweden.

Cardiorespiratory fitness was measured using a submaximal cycle test and expressed as maximal oxygen uptake (VO₂ max).

This is the maximum amount of oxygen the heart and lungs can provide the muscles during exercise, according to the study presented at EuroPrevent 2019, the annual congress of the European Association of Preventive Cardiology (EAPC) in Portugal.

Swedish national registries were used to obtain data on all-cause mortality and first-time cardiovascular events (fatal and non-fatal myocardial infarction, angina pectoris, or ischaemic stroke) during 1995-2015.

The risk of all-cause mortality and cardiovascular events fell by 2.8 per cent and 3.2 per cent, respectively, with each millilitre increase in VO₂ max.

Benefits of fitness were seen in men and women, in all age groups, and at all fitness levels, researchers said.

Previous studies have been too small to ascertain whether all of these subgroups profit from improving their cardiorespiratory fitness.

There was no plateau of benefit in the total population, with some variation between sex- and age-subgroups, researchers said.

“It is particularly important to note that an increase in fitness was beneficial regardless of the starting point,” said Ekblom-Bak.

“This suggests that people with lower levels cardiorespiratory fitness have the most to gain from boosting their fitness,” Ekblom-Bak said.

Increasing fitness should be a public health priority and clinicians should assess fitness during health screening, said Ekblom-Bak. PTI

Car pollution

Car pollution caused asthma in 350,000 Indian kids (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/car-pollution-caused-asthma-in-350-000-indian-kids/756856.html>

India facing shortage of 6 lakh doctors, 20 lakh nurses, claims study

Stem cell protein may help find blood cancer cure

Car pollution caused asthma in 350,000 Indian kids

India had the next largest number of cases (350,000) due to its large population of children, said researchers from the George Washington University in the US. — iStock

Traffic pollution caused asthma among 350,000 children in India, the second largest after China, in 2015, finds a Lancet study that analysed 194 countries.

The study, published in the Lancet Planetary Health, found that the largest number of cases (760,000) of traffic pollution-related asthma was in China.

It could be because China has the second largest population of children and the third highest concentration of nitrogen dioxide (NO₂), which is an indicator of traffic pollution.

India had the next largest number of cases (350,000) due to its large population of children, said researchers from the George Washington University in the US. The US (240,000), Indonesia (160,000) and Brazil (140,000) had the next largest burdens.

"Our findings suggest millions of new cases of paediatric asthma could be prevented in cities around the world by reducing air pollution," said Susan C. Anenberg, Associate Professor at the George Washington University in the US.

Globally, the study suggests there are 170 new cases of traffic pollution-related asthma per 100,000 children every year, and 13 per cent of childhood asthma cases diagnosed each year are linked to traffic pollution.

South Korea (31 per cent) had the highest proportion of traffic pollution-attributable childhood asthma incidence. The UK ranked 24th of the 194 countries, the US 25th, China 19th, and India 58th.

India ranks below other countries for this metric because although levels of other pollutants (particularly PM_{2.5}) in the country are among the highest in the world, NO₂ levels (between 2010 and 2012) in Indian cities appear to be lower than or comparable with European and US cities, the researchers said.

"Improving access to cleaner forms of transportation, like electric public transport and active commuting by cycling and walking, would not only lower NO₂ levels but would also reduce asthma, enhance physical fitness and cut greenhouse gas emissions," Anenberg said. — IANS

Rest may be best medicine

Rest may be best medicine to treat some pains: Study (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/rest-may-be-best-medicine-to-treat-some-pains-study/756353.html>

Rest may be best medicine to treat some pains: Study

There appears, however, to be a tipping point at which rest is not sufficient and medications are needed, researchers said.

Getting rest may be as effective as taking medication to treat common musculoskeletal disorders such as carpal tunnel syndrome and low back pain, which caused by repeated moderate-strain activity, scientists have found.

In a study conducted in rats, researchers showed that a four-week period of rest was nearly as effective as an experimental drug at reducing discomfort and regaining function.

"Rest appears to be a good first treatment choice," said Amanda White, a postdoctoral fellow at Temple University in the US.

"Other treatments following rest should include exercises to improve tissues, and pain reducers if needed. If symptoms do not subside and strength does not return following this approach, then pharmacological treatments may be needed to aid recovery," White said in a statement.

The researchers trained rats to repeatedly pull a lever in order to model the types of repetitive-strain injuries humans experience.

After 12 weeks, the rats showed a weaker grip strength, discomfort and increased collagen production in the forearm—evidence of strain-induced tissue damage.

The researchers then allowed the rats to rest for four weeks. During this rest period one group of rats received an experimental drug that blocks a neurotransmitter, Substance P, which is associated with the sensation of pain, while the other group did not.

"We found that the four-week rest treatment reduced collagen production, improved strength and decreased discomfort," said White.

"The drug blocking Substance P signaling also had similar effects, and was somewhat better at improving grip strength, but at the same time made the animals less sensitive to very hot temperatures, which is concerning. This led us to conclude that rest may be the better treatment," she said.

There appears, however, to be a tipping point at which rest is not sufficient and medications are needed, researchers said.

While the study showed rest was sufficient for recovering from repeated moderate-strain activity, previous studies indicated it was not sufficient when the lever was harder to pull, causing more strain.

In investigating the Substance P-blocking agent and other drugs, the researchers are focused on developing ways to help the tissue actually recover from overuse-induced injury, not just relieve pain.

In previous experiments the researchers tried giving the rats ibuprofen and other pain relievers while they were performing the lever-pulling task; however, this seemed to only mask the pain while allowing the rats to continue to pull hard, worsening the tissue damage. — PTI

Excessive calcium supplements

Excessive calcium supplements may up cancer risk: Study (The Tribune: 20190415)

<https://www.tribuneindia.com/news/health/excessive-calcium-supplements-may-up-cancer-risk-study/755758.html>

Excessive calcium supplements may up cancer risk: Study

In addition, the researchers found that dietary supplements had no effect on the risk of death in individuals with low nutrient intake.

Taking excessive calcium tablets may increase the risk of cancer, according to scientists who say that getting adequate nutrients from food sources is more beneficial than consuming supplements.

The study, published in the journal *Annals of Internal Medicine*, also showed that adequate intake of certain nutrients reduces risk of death from any cause, when nutrient source is foods, but not supplements.

Researchers found that supplemental doses of calcium exceeding 1,000 milligrammes per day is linked to an increased risk of cancer death, "As potential benefits and harms of supplement use continue to be studied, some studies have found associations between excess nutrient intake and adverse outcomes, including increased risk of certain cancers," said Fang Fang Zhang, associate professor at Tufts University in the US.

"It is important to understand the role that the nutrient and its source might play in health outcomes, particularly if the effect might not be beneficial," Zhang said.

The study used data from more than 27,000 US adults ages 20 and older to evaluate the association between dietary supplement use and death from all causes, cardiovascular disease (CVD), and cancer.

The researchers assessed whether adequate or excess nutrient intake was associated with death and whether intake from food versus supplement sources had any effect on the associations.

The researchers found that adequate intakes of vitamin K and magnesium were associated with a lower risk of death, while adequate intakes of vitamin A, vitamin K, and zinc were associated with a lower risk of death from CVD.

Excess intake of calcium was associated with higher risk of death from cancer, they said.

When sources of nutrient intake were evaluated, the researchers found that lower risk of death associated with adequate nutrient intakes was limited to nutrients from foods, not from supplements.

In addition, the researchers found that dietary supplements had no effect on the risk of death in individuals with low nutrient intake.

Instead, the team found indications that use of vitamin D supplements by individuals with no sign of vitamin D deficiency may be associated with an increased risk of death from all causes including cancer. Further research on this potential connection is needed.

"Our results support the idea that, while supplement use contributes to an increased level of total nutrient intake, there are beneficial associations with nutrients from foods that aren't seen with supplements," said Zhang. — PTI

Indian girls have higher school enrolment rate than boys

Telling numbers: Indian girls have higher school enrolment rate than boys, says report (The Indian Express: 20190415)

<https://indianexpress.com/article/explained/telling-numbers-indian-girls-have-higher-school-enrolment-rate-than-boys-says-report-5675561/>

In India, 98% of primary school-age girls were actually enrolled, as opposed to 97% boys, according to figures adjusted for 2009-18.

Explained: The effects of toxic air on people in cities around the world

Explained: Wen Jammu & Kashmir had its own Prime Minister and Sadr-e-Riyasat

In twins, clues to how spaceflight affects body

bseh, haryana board, india result

At secondary school level, India's female and male enrolment rates are lower than the worldwide 66% for both genders. (Express photo by Jaipal Singh/Representational)

The enrolment rate of girls is higher than that of boys in Indian schools at both primary and secondary levels. Worldwide, the rate of enrolment of girls is lower than that of boys at primary school, and equal at secondary level. This emerges out of the newly released State of World Population 2019 report of the United Nations Population Fund (UNFPA), other findings of which were published last week.

In India, 98% of primary school-age girls were actually enrolled, as opposed to 97% boys, according to figures adjusted for 2009-18. Worldwide, this compares with 90% female enrolment and 92% male enrolment, so that India's gender parity index is 1.01 to the world's 0.98.

Data from State of World Population 2019 report of the UNFPA.

At secondary school level, India's female and male enrolment rates are lower than the worldwide 66% for both genders.

However, India's female enrolment (62%) is once again higher than male enrolment (61%), giving it a gender parity index (1.01) that is higher than the worldwide index of 1.0.

Among India's neighbours, Bangladesh and Sri Lanka score high in enrolment at both levels of school education.



Country	Primary enrolment		Secondary enrolment	
	Female	Male	Female	Male
Bangladesh	99%	99%	95%	87%
Bhutan	83%	81%	71%	61%
Myanmar	89%	90%	62%	57%
Nepal	93%	96%	57%	53%
Pakistan	71%	62%	40%	49%
Sri Lanka	96%	98%	90%	87%

Poverty

Necessary steps to ending poverty (The Hindu: 20190415)

<https://www.thehindu.com/opinion/lead/necessary-steps-to-ending-poverty/article26836894.ece>

The provision of health, education and public services matters more than income support schemes

It is by now close to 50 years since Indira Gandhi brought the idea of eradicating poverty into the electoral arena in India. 'Garibi Hatao' had been her slogan. She actually took the country some distance in the promised direction. Though it had not come close to being eradicated in her time, it was under her leadership that the reduction in poverty commenced, in the late 1960s. And it was under her leadership again that the reduction accelerated, in the early 1980s. This is not surprising for she was a pragmatic politician and took pride in being Indian. While the last attribute motivated her to improve the condition of her people, the first left her aware of the centrality of income generation in poverty eradication.

The role that income generation actually played in lowering poverty in India may be gauged from the facts that economic growth had surged in the 1980s, and the late 1960s was when agricultural production quickened as the Green Revolution progressed.

Words matter

So, if there had been a focus on poverty even 50 years ago, why have we not seen it end? This is because the approach of public policy to the problem has been to initiate schemes which could serve as no more than a palliative, as suggested by the very term 'poverty alleviation' commonly used in the discourse of this time. These schemes failed to go to the root of poverty, which is capability deprivation that leaves an individual unable to earn sufficient income through work or entrepreneurship. Income poverty is a manifestation of the deprivation, and focussing exclusively on the income shortfall can address only the symptom.

Parties and schemes

In the run-up to the elections now, schemes guaranteeing income to the poor through budgetary transfers have been announced by both the Bharatiya Janata Party (BJP) and the Congress. Actually, the BJP's Pradhan Mantri Kisan Samman Nidhi (PM-Kisan), paying farm households below a threshold ₹6,000 a year, is already in place. An income-support scheme for any one section of the population is grossly inequitable. We can think of agricultural labourers and urban pavement dwellers as equally deserving of support as poor farmers. While it is the case that at present agricultural subsidies go to farmers alone, these are intended as production subsidies and so channelled due to the criticality of food production to all.

On the other hand, a welfare programme cannot, ethically speaking, exclude those equally placed. The BJP's hurried introduction of its scheme also came with an overshooting of the fiscal deficit target, suggesting that it involves borrowing to consume, a fiscally imprudent practice. The PM-Kisan has, however, been dwarfed by the promise of the Nyuntam Aay Yojana (NYAY) of the Congress, which envisages an annual transfer 12 times greater to the poorest 20% households. While this scheme is not discriminatory, it is severely challenged by the issue of beneficiary identification in real time.

Both the schemes on display, but NYAY in particular, have been criticised as running into the absence of fiscal space. This is really neither the case nor of the essence, the latter being the role of income transfers in eradicating as opposed to alleviating poverty in India.

Consider NYAY. It is estimated to cost ₹3.6 lakh crore per annum at current prices. This comes to approximately 13% of the central budgetary outlay for 2019-20. This expenditure can be incurred without any consequence for the fiscal deficit if all Centrally Sponsored Schemes are taken off and subsidies trimmed just a bit. But the point is that at 13% of outlay, NYAY would amount to more than twice the combined expenditure on health and education and more than capital expenditure in the same budget, they being the items of public expenditure that most impact poverty in the long run. There is an opportunity cost to be acknowledged of an income-support scheme of this magnitude being implemented while there exists a severe deficit of social and physical infrastructure in the country.

We have already spoken of poverty as capability deprivation. Health, education and physical infrastructure are central to the capabilities of individuals, and the extent of their presence in a society determine whether the poor will remain so or exit poverty permanently. The scale at which these inputs would be required to endow all Indians with the requisite capabilities makes it more than likely that we would have to rely on public provision.

What is needed

In light of a pitch that has been made for the implementation in India of a publicly-funded universal basic income (UBI) scheme, we can say that from the perspective of eliminating poverty, universal basic services (UBS) from public sources are needed, though not necessarily financed through the budget. The original case for a UBI came from European economists. This is not entirely surprising. Europe is perhaps saturated with publicly provided UBS. Also the state in some of its countries is immensely wealthy. So if a part of the public revenues is paid out as basic income, the project of providing public services there will not be affected. This is not the case in India, where the task of creating the wherewithal for providing public services has not even been seriously initiated.

There is indirect evidence that the provision of health, education and public services matters more for poverty than the Central government's poverty alleviation schemes in place for almost half a century. Per capita income levels and poverty vary across India's States. A discernible pattern is that the southern and western regions of India have lower poverty than the northern,

central and eastern ones. This, very likely, is related to higher human development attainment in the former. This indicator is based on the health and education status of a population apart from per capita income, bringing us back to the relevance of income generation to poverty. As the Central government is common across regions, differences in the human development index must arise from policies implemented at the State level. This further implies that a nationwide income support scheme that channels funds from a common pool to households in the poorer States would be tantamount to rewarding lower effort by their governments.

There is a crucial role for services, of both producer and consumer variety, in eliminating the capability deprivation that is poverty. As these services cannot always be purchased in the market, income support alone cannot be sufficient to eliminate poverty. It is in recognition of the role of services in enabling people to lead a productive and dignified life that the idea of multi-dimensionality has taken hold in the thinking on poverty globally. At a minimum these services would involve the supply of water, sanitation and housing apart from health and education. It has been estimated that if the absence of such services is accounted for, poverty in India would be found to be far higher than recorded at present. The budgetary implication of the scale at which public services would have to be provided if we are to eliminate multi-dimensional poverty may now be imagined. This allows us to appraise the challenge of ending effective poverty and to assess the potential of the income-support schemes proposed by the main political parties. There are no short cuts to ending poverty, but ending it soon is not insurmountable either.

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Brain (The Asian Age: 20190415)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12814271>

Brains may connect to Cloud directly in future

■ Transferring neural data is likely to be the ultimate bottleneck

Los Angeles, April 14: Our brains may someday be able to directly connect to vast cloud-computing networks in real time, allowing us to gain a Matrix-style instant access to the world's knowledge by simply by thinking about a specific topic, scientists claim.

According to a research published in the journal *Frontiers in Neuroscience*, exponential progress in nanotechnology, nanomedicine, artificial intelligence (AI), and computation will lead this century to the development of a "Human Brain/Cloud Interface" (B/CI).

The B/CI concept was initially proposed by futurist-author-inventor Ray Kurzweil, who suggested that neural nanobots could be used to connect the neocortex of the human brain to a "synthetic neocortex" in the cloud.

Our wrinkled neocortex is the smartest, 'conscious' part of the brain, according to the researchers from University of California, Berkeley and Institute for Molecular Manufacturing in the US.

Robert Freitas, senior author of the research, proposed neural nanoro-

■ This cortex in the cloud would allow "Matrix"-style downloading of information to the brain, the group claims.



■ B/CI technology might also allow us to create a future "global superbrain" that would connect networks of individual human brains and AIs to enable collective thought.

bots would provide direct, real-time monitoring and control of signals to and from brain cells.

"These devices would navigate the human vasculature, cross the blood-brain barrier, and precisely autoposition themselves among, or even within brain cells," Freitas said.

"They would then wirelessly transmit encoded information to and from a cloud-based supercomputer network for real-time brain-state monitoring and data extraction," he said.

This cortex in the cloud would allow "Matrix"-style downloading of information to the brain,

the group claims.

"A human B/CI system mediated by neuralnanorobotics could empower individuals with instantaneous access to all cumulative human knowledge available in the cloud, while significantly improving human learning capacities and intelligence," said Nuno Martins, lead author of the research.

B/CI technology might also allow us to create a future "global super-brain" that would connect networks of individual human brains and AIs to enable collective thought.

"While not yet particularly sophisticated, an experimental human

'BrainNet' system has already been tested, enabling thought-driven information exchange via the cloud between individual brains," said Martins.

"It used electrical signals recorded through the skull of 'senders' and magnetic stimulation through the skull of 'receivers,' allowing for performing cooperative tasks," he said.

"With the advance of neuralnanorobotics, we envisage the future creation of 'superbrains' that can harness the thoughts and thinking power of any number of humans and machines in real time," he added.

This shared cognition could revolutionise democracy, enhance empathy, and ultimately unite culturally diverse groups into a truly global society, researchers said.

According to the group's estimates, even existing supercomputers have processing speeds capable of handling the necessary volumes of neural data for B/CI.

Rather, transferring neural data to and from supercomputers in the cloud is likely to be the ultimate bottleneck in B/CI development.

— PTI

Oral health survey for national policy

AIIMS to carry out oral health survey for national policy (Hindustan Times: 20190415)

<http://paper.hindustantimes.com/epaper/viewer.aspx>

The Union health ministry has commissioned the All India Institute of Medical Sciences (AIIMS) to conduct a national survey to determine India's oral diseases burden, including mouth cancers, according to people aware of the development.

The survey will be supervised by a committee set up last month with representatives from AIIMS, Post Graduate Institute of Medical Education and Research, Chandigarh, and Maulana Azad Institute of Dental Sciences, New Delhi. The survey is a part of the health ministry's oral and dental health policy to identify gaps in dental education, human resources and treatment.

“The dental policy is on the lines of National Health Policy for Oral Health, and the draft has been circulated within the ministry for views. Once it gets approved by the relevant departments, it will put out for public consultation in a month or so,” said a health ministry official, requesting anonymity. “There are no India specific policies on oral and dental health. There was a need to bring everything related to oral and dental health under a single umbrella, which is what introducing this policy will achieve,” said the official.

A two-day workshop with all stakeholders was conducted at AIIMS in Delhi last month. “We have had three workshops to finalise the draft with experts from multiple disciplines. It is an all-encompassing policy related to oral health,” said Dr OP Kharbanda, chief, Centre for Dental Education and Research, AIIMS.

The health ministry has identified the CDER as the National Centre for Excellence for oral and dental health. “The policy will also track market trends and determine which oral health products are really needed. Promoting preventive oral health will be the backbone of the policy,” said Dr Kharbanda.

Once the policy is notified, the ministry will work on a national strategic implementation framework with detailed implementation points. “The draft policy will be out for public consultation in about a month or so,” said the ministry official.

“Having a policy helps in putting the focus on the problem. We need more adequately trained experts to deal with the disease burden,” said Dr Manish Vishen, a Delhi-based dentist.

New procedure to cure cancer

New procedure to cure cancer-related erectile dysfunction (New Kerala: 20190415)

<https://www.newkerala.com/news/read/127731/new-procedure-to-cure-cancer-related-erectile-dysfunction.html>

Researchers have found a procedure to cure erectile dysfunction in prostate cancer patients.

The research published in European Urology claimed that the procedure had a 71 per cent success rate, with two participants achieving their first erection in 12 years.

The study is a first to report this procedure, which can restore the ability to have satisfactory sexual intercourse and improve sexual quality of life in men with erectile dysfunction following a nerve-sparing or non-nerve-sparing radical prostatectomy.

Of the 8500 Australian men with prostate cancer who have a radical prostatectomy each year, at least 70 per cent experience erectile dysfunction. Many are unaware of the risk or suffer in silence.

Treatment usually involves injections or a prosthesis, which can have side effects. The improved technique, pioneered in Brazil, uses a nerve removed from the patient's leg to restore erectile function.

The new procedure has been developed by Microsurgeon and University of Melbourne Department of Surgery Professor, Christopher Coombs, and Monash Medical Centre urologist, David Dangerfield.

Professor Coombs, who is also the paper's senior author, said these early results were promising. Those who could achieve erections again were extremely grateful - as were their partners.

"We looked at the sexual quality of life before and after. Regaining erectile function had a significant impact on quality of life and the way the men felt about themselves," Professor Coombs said.

"When they walk back in after 12 months you know if it's worked - they're smiling and so are their partners. They think it's great."

Radical prostatectomy can injure the penis' nerves to the spongy tissue, the corpora cavernosa, which are responsible for initiating an erection.

The review followed 17 patients aged under 70 with severe or moderate post-prostatectomy erectile dysfunction, who had a sexual partner and undetectable PSA (Prostate Specific Antigen) levels.

Between March 2015 and October 2017, the men, whose median age was 64, underwent 'end-to-side' surgery to remove the sural nerve from the leg and graft it to the side of the larger femoral nerve in the thigh. New nerve fibres then grew along the sural nerve graft into the corpora cavernosa of the penis.

All patients tolerated the 2.5-4-hour procedure and were discharged after an overnight hospital stay. Erectile function was restored in three men within six months and nine within 12 months, a total of 71 per cent.

After a year, all 12 with restored erectile function had clinically relevant improvements in their sexual function, and 83 per cent were less bothered by their symptoms. Of the 12, seven did not require drugs to achieve erectile function 'sufficient for satisfactory sexual penetration'.

There were no side effects besides two minor wound infections and three patients with temporary quadriceps weakness which lasted one week.

End-to-side nerve grafting was first described in a medical journal in 1903 but is not known to have been used again until 1992, when Brazilian surgeon Fausto Viterbo began using it generally.

In 2017, Professor Viterbo reported on his use of nerve grafting to restore erectile function in men after prostatectomy. Professor Coombs and Dangerfield simplified and potentially improved his technique.

Lead author and NHMRC research fellow Jeanette Reece, independently evaluated patient outcomes.

"All the patients had improved quality of life," Dr Reece said. "Two achieved erections after being unable to for 12 years. This procedure is also much less invasive than the traditional alternative of the penile prosthesis."

The latest 'end-to-side' technique to restore erectile function sees two sural nerves removed from the legs, where they are not required for full leg function.

One end of the nerve graft is attached to the thigh's femoral nerve, the other into the corpus cavernosa, which is the spongy part of the penis.

The sural nerve then acts as a scaffolding (conduit), similar to an extension cord, to deliver regenerating nerve fibres from the femoral nerve to the corpus cavernosa. After around 12 months, new nerve endings in the corpus cavernosa release neurotransmitter (acetylcholine) which help initiate an erection.

Brazilian Professor Fausto Viterbo reported on end-to-side nerve grafting to restore erectile function in 2017. The Melbourne surgeons' innovation is to remove sensory nerves grafts to induce minor injury to the femoral nerve to stimulate regeneration.

The new procedure aims to provide more axons (threadlike part of a nerve cell along which impulses are conducted) to the penis due to that partial injury (neurotomy) to the femoral nerve.

Abnormal proteins

Abnormal proteins associated with aggressive behaviour among dementia patients (New Kerala: 20190415)

<https://www.newkerala.com/news/read/127731/new-procedure-to-cure-cancer-related-erectile-dysfunction.html>

In a recent study, scientists have observed an association between certain proteins and dementia sufferers' tendency, to commit criminal acts.

The research published in the journal JAMA Network Open studied deceased patients who were diagnosed with Alzheimer's disease or frontotemporal dementia.

"This study is unique in that we studied deceased patients, something that means we are 100 per cent sure of the dementia diagnosis, which is not always established while the patients are alive," said Madeleine Liljegren, a researcher.

"In addition, we observed that the likelihood of committing criminal acts was nine times higher among patients with frontotemporal dementia who had accumulations in the brain of certain abnormal proteins, above all TDP-43, compared with those who had accumulations of tau protein. The TDP-43 proteins seem therefore to be particularly associated with developing criminal behaviour among people with frontotemporal dementia," she added.

When a person who previously has been perceived by those around them as well-behaved starts committing criminal acts such as theft, shoplifting, sexual harassment or other aggressive behaviours, there may be a dementia disease behind these unexpected actions.

Researchers in the Neuropathology team studied 220 deceased patients with Alzheimer's disease or frontotemporal dementia (FTD), who had been monitored at the Memory Clinic between 1967 and 2017.

Of these, 30 per cent had committed a criminal offence - 15 per cent of the total number of patients who had Alzheimer's and 42 per cent among those who had FTD. The latter group committed repeated criminal offences to a greater extent than the Alzheimer's group.

When examining the behaviour such as excessively loud laughing or unexpected shouting, the frontotemporal dementia group is also over-represented (75 per cent), compared with the Alzheimer's group (56 per cent).

"It confirms what we have seen in previous studies. With these patients, the damage is in the frontal part of the brain, where our personality, including impulse control and empathy, resides", said Liljegren, emphasising that dementia diseases do not exclusively affect the elderly.

"Frontotemporal dementia can also occur in younger people and it can often take a long while before there is a correct diagnosis. That is why it's important that relatives, healthcare services, the police and the entire legal system respond to altered social and criminal behaviour and provide assistance to enable these people to get medical care", she concluded.

Allergy season

Allergy season worsens with changing climate (New Kerala: 20190415)

<https://www.newkerala.com/news/read/127533/allergy-season-worsens-with-changing-climate.html>

You already know that allergy season has arrived when you sneeze your head off frequently. A new study has found that allergy season has worsened because of increased pollen count and changing the climate.

As reported by CNN, low-income households and kids tend to be at higher risk of catching diseases like Asthma, because of exposure to pollen

With rising temperature, the situation is likely to get worst for allergies because plants like ragweed will start migrating.

"Warmer temperatures allow the trees to pollinate earlier and for longer times. We didn't used to see our cars covered in pollen before March, but we do now, and we hear from people all the time who are dealing with allergies for a lot longer than they used to when they were little. That's definitely connected to," CNN quoted Angel Waldron, as saying.

If the temperature continues to increase at its current stride, it is expected that by the end of the century, the growing season will be longer by about a month in most part of the world. Places that did not witness the pollen-producing flora will soon see them in plenty, exposing whole new populations to pollen.

It's not just the warmer temperatures adding to our misery. Plants love some carbon dioxide, and when there is more of it in the atmosphere due to the greenhouse gases causing climate change, they flourish. Studies on ragweed show that the amount of pollen the plant produces actually doubles with higher levels of CO₂. The pollen becomes more potent too, according to the US Department of Agriculture. There are similar patterns for grass pollen and other plants.

The impact of technology on healthcare has made available plentiful of allergy medications at the pharmacy. The consulted doctor should be able to help identify what triggers the allergies, so one can avoid them.

Spend possibly least duration outside between 10 a.m. and 2 p.m., especially on days when the Environmental Protection Agency's AQI says the pollen count is high in your neighbourhood.

Use AQI monitoring mobile applications to track the quality of air around.

To prevent pollen to enter inside, leave your footwear at the door. Change your clothes if you've been outside for a long duration. Tidy the pets who have to go out.

"Hair works a bit like a mop, collecting pollen that's floating in the air," Waldron said. "Since hair is the closest thing to your nasal passages, it can really bother you. If you wash it or brush it out before you go to sleep, or at least cover it, then you won't be sleeping in all that pollen."

Climate Change can also be controlled through simple amendments inside the home like - Turning out the lights while leaving the room, using energy-efficient light bulbs, unplug electronic appliances when not in use, do not use hot water for washing clothes and most important use public transport or carpool to reduce the number of trips you take in the car. All of these can help to control greenhouse gases emission in the environment.

Make sure to carry good quality mask to prevent asthma and allergy.

Vacuum cleaners with HEPA filters are helpful to improve indoor air quality.

Also, make sure it has asthma and allergy friendly certification mark to make sure they will be your best defense against the yellow stuff.

Lack of Health Care Services (Hindustan: 20190415)

देश में छह लाख डॉक्टर, 20 लाख नर्सों की कमी

रिपोर्ट

वाशिंगटन | एजेसी

भारत में अनुमानित तौर पर छह लाख डॉक्टरों और 20 लाख नर्सों की कमी है। वैज्ञानिकों ने पाया है कि भारत में एंटीबायोटिक दवाइयां देने के लिए उचित तरीके से प्रशिक्षित स्टाफ की कमी है, जिससे जीवन बचाने वाली दवाइयां मरीजों को नहीं मिल पाती हैं।

अमेरिका के 'सेंटर फॉर डिजीज डायनामिक्स, इकॉनॉमिक्स एंड पॉलिसी' (सीडीडीपी) की रिपोर्ट के

मुताबिक, एंटीबायोटिक उपलब्ध होने पर भी भारत में लोगों को बीमारी पर 65 फीसदी खर्च खुद उठाना पड़ता है।

यह हर साल 5.7 करोड़ लोगों को गरीबी के गर्त में धकेलता है। रिपोर्ट के मुताबिक, दुनियाभर में हर साल 57 लाख ऐसे लोगों की मौत होती है, जिन्हें एंटीबायोटिक दवाइयों से बचाया जा सकता था। ये मौतें कम और मध्यम आय वाले देशों में होती हैं। ये मौतें एंटीबायोटिक प्रतिरोधी संक्रमणों से हर साल होने वाली अनुमानित सात लाख मौतों की तुलना में अधिक हैं।



एंटीबायोटिक नहीं मिलने से ज्यादा मौतें

सीडीडीडीपी ने यूगांडा, भारत और जर्मनी में हितकारों से बातचीत की और सामग्री का अध्ययन कर कम, मध्य और उच्च आय वाले देशों में उन पहलुओं की पहचान की जिनके चलते मरीज को एंटीबायोटिक दवाएं नहीं मिलती हैं। सीडीडीडीपी में निदेशक रमण लक्ष्मीनारायण ने कहा कि एंटीबायोटिक दवाई के प्रतिरोध से होने वाली मौतों की तुलना में एंटीबायोटिक नहीं मिलने से ज्यादा लोगों की मृत्यु हो रही है।

65%

खर्च खुद उठाना पड़ता है लोगों को बीमारी पर, इससे गरीबी बढ़ रही

10 हजार लोगों पर एक डॉक्टर

रिपोर्ट के अनुसार, भारत में हर 10,189 लोगों पर एक सरकारी डॉक्टर है, जबकि विश्व स्वास्थ्य संगठन ने हर एक हजार लोगों पर एक डॉक्टर की सिफारिश की है। इस तरह छह लाख डॉक्टरों की कमी है। भारत में हर 483 लोगों पर एक नर्स है यानी 20 लाख नर्सों की कमी है।