



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Tuesday 20190122

AIIMS to Provide specialized Healthcare

AIIMS to Provide specialized Healthcare: CM (The Tribune: 20190122)



<https://www.tribuneindia.com/news/himachal/thakur-nadda-perform-bhoomi-pujan-of-aiims/717122.html>

CM Jai Ram Thakur and Union Health Minister JP Nadda look at an AIIMS map at Kothipura in Bilaspur district on Monday. Tribune photo

Shimla, January 21

Chief Minister Jai Ram Thakur and Union Health Minister Jagat Prakash Nadda today performed Bhoomi Pujan of AIIMS at Kothipura in Bilaspur district.

Speaking on the occasion, Jai Ram Thakur said that the AIIMS would prove a boon for the people of the state, as they would have access to the specialised healthcare facilities at their doorsteps.

He said that Rs 1,351-crore AIIMS would be completed within a period of two years and would have bed capacity of 750. Out of these, 300 beds would be for super specialty. He said there would be 100 MBBS seats and 60 nursing seats in the institute.

“Due to unnecessary delay in transferring land for this institution by the previous state government, people of the state were deprived of specialised health services”, he said and added that the present state government had not only ensured transfer of land immediately, but also provided all possible help by way of providing additional land of 48 hectare so that this premier institute could take off at the earliest.

The Union Health Minister said that AIIMS was being constructed under the Pradhan Mantri Swasthya Suraksha Yojna. It would serve the dual purpose of providing super specialty healthcare to the people, besides creating a pool of doctors and other health workers in the state.

He said that the institute would also have Affordable Medicine and Reliable Implants for Treatment (AMRIT) outlets and Jan Aushadhi Kendra where medicine would be provided at highly discounted rates to the poor and needy.

The project would be executed by the NBCC Ltd and would have 15 operation theatres and 20 specialty and super specialty departments. In addition, it would also have an AYUSH Department with 30 beds for providing treatment facilities in traditional system of medicine, he added.

Nadda said that 14 AIIMS were sanctioned for different states by the Union Government and Himachal Pradesh was fortunate to get one premier institution. Both the leaders also planted saplings in the premises of the proposed site on the occasion.

State Health and Family Welfare Minister Vipin Singh Parmar said the state had achieved new heights in development since the present state government led by Chief Minister Jai Ram Thakur took over the reins of the state. He said that 300 doctors had been appointed in the state during the last one year to ensure that people of the state does not suffer.

Member of Parliament Anurag Thakur said that although this project was sanctioned way back in 2014, it could take off only in 2019 as the previous state government did not even provide adequate land for this institution. He said that apart from providing better healthcare facilities to the people of the state, the institute would also provide ample opportunities of employment and self employment to the youth of the region.

To have 750 beds

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Ailing rural healthcare

Ailing rural healthcare (The Tribune: 20190122)

<https://www.tribuneindia.com/news/editorials/ailing-rural-healthcare/717280.html>

The Punjab Government's move (and subsequent clarification) to consider offers from private doctors and NGOs to run health centres in rural areas is in tune with the reality that its efforts alone are inadequate in meeting the needs of the rural populace. In cities, too, this admission of inadequacy has led the Centre to issue guidelines for co-locating private players for providing treatment in government institutions. Rural healthcare has been on the sickbed for long; the government's efforts have always fallen short. This has forced villagers to flock to cities for treatment, adding to the burden on premier institutions such as Chandigarh's PGI. What's worse, health-related expenditure is a major cause of rural indebtedness. Government intervention to bring basic medical facilities to the hinterland has been half-hearted at best.

The state government advertisement seeking participation in urban and rural health centres in the PPP mode is a desperate measure, but it is well worth a try, provided the profit motive can be minimised. The government could first experiment with three pending proposals from NGOs. Fleecing of patients needs to be ruled out by notifying the charges, followed by strict implementation. This will provide an alternative to corporates as partners, which has its own complications.

Punjab was among the last states to sign up for the Ayushman Bharat-PM Jan Arogya Yojana for extending health insurance cover to 42 lakh families. Despite objections within, the cash-strapped government decided to implement the scheme at an estimated cost of over Rs 300 crore. At a time when the NITI Aayog has asked the Central Government to accord industry status to institutional health facility, Punjab's move to experiment with volunteerism can be a game-changer — if executed in public interest. The government has largely come a cropper as a service provider, but it can make amends by playing the role of an efficient facilitator.

Two-child policy

China's two-child policy (The Tribune: 20190122)

<https://www.tribuneindia.com/news/world/china-s-birth-rate-falls-for-2nd-year/717523.html>

China's birth rate falls for 2nd year

2-child norm fails to enthruse couples

Strong 6.1-magnitude quake hits off Indonesia

PM May refuses to rule out no-deal Brexit in fresh offer

China's two-child policy implemented in 2016 has failed to make an impact on the country's low birth rate as the number of new-borns dropped by two million last year in the world's most populous nation, according to official figures released Monday.

The figures released by the National Bureau of Statistics (NBS) said the low birth rates coupled with the slowdown of the Chinese economy raised concerns as the country faced demographic crisis with the population of above 60 years making 249 million, accounting for almost 18 per cent of the total population.

After China implemented the comprehensive two-child policy that allows all couples to have two children, abandoning its decades-long one-child policy, in 2016, the country's health authority predicted that the fertility rate in 2017 and 2018 would be 1.97 and 2.09. They predicted that the number of new-borns in 2018 would be 7.90 lakh more than 2017.

The steady increase in old age population raised concerns over mounting costs of health care for the elderly and the shortage of labour in the world's second largest economy which is also facing a slowdown.

A total of 15.23 million babies were born last year in China, a drop by about two million from that of 2017, the data said. The birth rate also dropped from 1,243 to 1,094 per 100,000 population from 2017 to 2018, state-run China Daily reported, quoting the NBS data.

Before the population data was released, Chinese experts forecast that the number of birth for last year would continue to fall due to causes such as rapid decline in the number of women at childbearing age and people's lack of willingness to have more babies.

China adopted the universal second-child policy at the beginning of 2016, allowing all couples to have two children, to counter problems such as ageing and dwindling workforce.

After the number of birth reached 17.86 million that year, the highest since 2000, the number of birth fell to 17.23 million in 2017. — PTI

China's birth rate

China's birth rate hits record low (Hindustan Times: 20190122)

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

TROUBLES AHEAD Figures for 2018 add to worries about slowing economy

From page 01 BEIJING: Births in China dropped to the lowest level in nearly 60 years in 2018, official data showed on Monday, indicating the scrapping of the one-child policy three years ago has had little impact on the ageing demography

Children at a school in Zhejiang province in China wave the national flag n during an event.
AFP FILE

A total of 15.23 million babies were born on the mainland in 2018, a drop of nearly 2 mn from 2017, China's National Bureau of Statistics (NBS) said. "The population growth rate dropped

from 532 to 381 per 100,000 population from 2017 to 2018, NBS figures show. The rate is the lowest since 1961,” state media reported.

The falling birthrate will add to worries about a slowing economy, a shrinking pool of workforce and the costs of maintaining an ageing population. The total population on the Chinese mainland reached 1.395 billion, up by 5.3 mn year-on-year.

“The number of workforce, or those between 16 and 59 years old, stood at around 897 mn, accounting for 64.3% of the total population. The number of people at 60 years old or above exceeded 249 mn, accounting for nearly 18% of the total population,” the NBS data said.

Experts had predicted that the number of births would fall as the majority of couples decide against going for a second child because of rising living costs, especially that of education.

“With 630,000 fewer babies born in 2017 than the year before, China, the world’s most populous country, is facing a gloomy demographic situation, with many experts doubting the efficacy of the country’s two-child policy,” People’s Daily had reported last January.

The falling rate also raises the question of whether China’s one-child policy, strictly implemented since the late 1970s, was withdrawn too late.

“Although the national data for the birth of newborns have not been publicised yet, data revealed by local health departments showed that the number of newborns in 2018 decreased by at least 15% from the previous year,” He Yafu, a demographer, told the tabloid Global Times this month.

Chronic kidney disease

Risk factors for chronic kidney disease: an update (NCIB-NIH: 20190122)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4089662/>

Chronic kidney disease has become a serious public health issue. There are currently over 1.4 million patients receiving renal replacement therapy worldwide. One way to reduce the economic burden of chronic kidney disease would be early intervention. In order to achieve this, we should be able to identify individuals with increased risk of renal disease. An individual's genetic and phenotypic make-up puts him/her at risk for kidney disease. Factors such as race, gender, age, and family history are highly important. For instance, being of African-American descent, older age, low birth weight and family history of kidney disease are considered to be strong risk factors for chronic kidney disease. Moreover, smoking, obesity, hypertension, and diabetes mellitus can also lead to kidney disease. An uncontrolled diabetic and/or hypertensive patient can easily and quickly progress to an end-stage kidney disease patient. Exposure to heavy metals, excessive alcohol consumption, smoking, and the use of analgesic medications also constitute risks. Experiencing acute kidney injury, a history of cardiovascular disease, hyperlipidemia, metabolic syndrome, hepatitis C virus, HIV infection, and malignancy are further risk factors. Determination of serum creatinine levels and urinalysis in patients with chronic kidney disease risk will usually be sufficient for initial screening.

Keywords: age, chronic kidney disease, diabetes mellitus, gender, hypertension

Chronic kidney disease (CKD) is a health problem, which could lead to end-stage renal disease (ESRD) and increased cardiovascular morbidity and mortality. According to the registries of different countries including the United States, CKD affects 10–16% of adults around the world.¹ Within the Turkish population the prevalence of CKD is 15.7%.² Identification of factors predisposing an individual to CKD is essential in terms of personal and community health, as some risk factors can be modified and can prevent or slow down progression to ESRD. This paper aims to review the risk factors, such as age, gender, race and ethnicity, family history, drug use, smoking, and socioeconomic status; and concurrent diseases, such as hypertension and diabetes which are traditionally or nontraditionally associated with CKD.³

Go to:

GENETIC COMPONENT

As CKD has a heritable component, Köttgen et al.⁴ have conducted genome-wide association studies to identify susceptibility loci for glomerular filtration rate (GFR), estimated by serum creatinine (eGFR_{crea}), cystatin C (eGFR_{cys}), and CKD (eGFR_{crea} <60 ml/min per 1.73 m²) in European ancestry participants of four population-based cohorts (2388 CKD cases). They tested for replication in 21,466 participants (1932 CKD cases). Uromodulin (which encodes Tamm–Horsfall protein in the urine) mutations were associated with differences in renal function.⁴

Another identified mutation is related to APOL1.⁵ An autosomal recessive pattern of inheritance is demonstrated and associated with a substantially higher risk of ESRD (10-fold higher risk of ESRD due to focal glomerulosclerosis and 7-fold higher risk of ESRD due to hypertension). APOL1 mutations are found exclusively among individuals of African descent and make them more prone to CKD.⁵

The involvement of renin–angiotensin system genes seems to be particularly relevant to CKD. In a study by Su et al.,⁶ 135 CKD patients and 270 healthy controls among Han Chinese in Taiwan were genotyped for angiotensinogen (AGT-M235T, T174M, A-20C), angiotensin-I-converting enzyme (ACE-A2350G), and angiotensin II type 1 receptor (AGTR1-A1166C, C573T, C-521T) polymorphisms by polymerase chain reaction-restriction fragment length polymorphism analysis. Significant associations were observed in ACE-A2350G and AGTR1-C573T polymorphism in CKD patients (P=0.01 and P=0.03, respectively).⁶

Go to:

FAMILY HISTORY

Family members of CKD patients have a high prevalence of CKD and its risk factors. Song et al.⁷ have screened incident dialysis patients between 1 January 1995 and 31 December 2003

in the United States. The participants were asked to complete a voluntary questionnaire on family history of ESRD. After the exclusion of patients with ESRD due to hereditary disorders and urologic causes, nearly 23% of incident dialysis patients had close relatives with ESRD.⁷ Hence, it is advised to screen the high-risk family members of those with CKD, in an attempt to prevent any kidney disease.

Go to:

GENDER

Many registries including the Japanese Society for Dialysis Therapy have demonstrated that ESRD is more frequent among men.^{8, 9} In one study, a total of 107,192 subjects over 18 years of age (51,122 men and 56,070 women) from Okinawa, Japan participated in a 10-year follow-up where odds ratio for ESRD was 1.41 among male participants.⁸ In contrast, the CREDIT study demonstrated that CKD is higher in women than in men (18.4 vs. 12.8%) in Turkey.²

Go to:

ETHNICITY

Several studies performed in the United States have confirmed an increased risk for the development of ESRD in African Americans compared with Caucasians.¹⁰ Moreover, the risk of hypertensive ESRD is approximately fivefold higher in African Americans.¹¹ In a recent study, it was found that the lifetime risk of ESRD was 7.8% for 20 year old black women, 7.3% for black men, 1.8% for white women, and 2.5% for white men.³

Go to:

AGE

Renal function decreases with age in both men and women.⁸ Among the elderly population, more than one-half of the subjects screened had CKD stages 3–5 (GFR < 60 ml/min per 1.73 m²) according to the National Kidney Foundation Kidney Disease Outcomes Quality Initiative (K/DOQI) guidelines.⁸ Thus, the elderly population is more prone to develop CKD after various renal insults.¹² In the CREDIT study the odds ratios of CKD ranged from 1.45 to 2.18 for every 10-year increase in age among subjects older than 30 years of age in Turkey.²

Go to:

LOW BIRTH WEIGHT

In the 1980s, Brenner and colleagues hypothesized that intrauterine growth restriction might cause a low nephron number, which could predispose to hypertension and renal disease (also known as the Barker hypothesis).¹³ In support of this hypothesis, it has been shown that there is an increase in nephron numbers by 257,426 glomeruli per kg increase in birth weight.¹⁴ Low nephron number leads to intraglomerular hypertension and hyperfiltration in the available nephrons and lower over-all GFR and higher urine albumin-to-creatinine ratio.¹⁵ In a recent

cohort study with a maximum follow-up of 38 years, low birth weight and intrauterine growth restriction were significantly associated with increased risk for ESRD among Norwegians.¹⁵

Go to:

OBESITY

One of the strongest yet modifiable risk factors for ESRD in the twenty-first century is obesity.¹⁶ Glomerular hypertrophy and hyperfiltration may accelerate kidney injury by increasing capillary wall tension of the glomeruli and decreasing podocyte density.¹⁶

A large-scale epidemiologic study from Sweden demonstrated the role of obesity in CKD.¹⁷ In this study, native Swedes between the ages of 18 and 74 with CKD whose serum creatinine exceeded 3.4 mg/dl (men) or 2.8 mg/dl (women) during the study period were analyzed.¹⁷ Overweight (body mass index (BMI) ≥ 25 kg/m²) at age 20 was associated with a significant threefold excess risk for CKD, in comparison with BMI < 25 kg/m². Obesity (BMI ≥ 30 kg/m²) among men and morbid obesity (BMI ≥ 35 kg/m²) among women anytime during lifetime was linked to three- to fourfold increases in CKD risk.¹⁷

Obesity may contribute to the pathogenesis of kidney damage through inflammation, oxidative stress, endothelial dysfunction, prothrombotic state, hypervolemia, and adipokine derangements.¹⁸

Besides high BMI, carrying excess weight around the abdomen is linked to an increased risk of CKD. Kwakernaak et al.¹⁹ found that in multivariate analyses, higher waist-to-hip ratio was associated with lower GFR, lower effective renal plasma flow, and higher filtration fraction, even after adjustment for sex, age, mean arterial pressure, and BMI.

Go to:

SOCIOECONOMIC STATUS

Socioeconomic status may be determined by income, occupation, education, wealth, and housing situation.²⁰ Krop et al.²¹ reported that income $< \$16,000$ compared with income $> \$35,000$ was associated with 2.4-fold increase in CKD. A case-control study demonstrated that those with CKD were more likely to come from families of unskilled workers.²¹ Moreover, NHANES results show that unemployed non-Hispanic blacks and Mexican Americans in the United States had twice more CKD prevalence than their employed counterparts.²¹ In the ARIC study those with less than high school education had 1.7 times CKD risk in comparison with those with college education.^{20, 21}

Go to:

SMOKING

Smoking can increase the CKD risk through proinflammatory state, oxidative stress, prothrombotic shift, endothelial dysfunction, glomerulosclerosis and tubular atrophy.¹⁸ In a study where 7476 nondiabetic participants were enrolled, smoking > 20 cigarettes per day increased the risk of CKD.²² In another study, each additional five smoked cigarettes per day was associated with an increase in serum creatinine > 0.3 mg/dl by 31%.²³

Go to:

NEPHROTOXINS

Alcohol and recreational drugs have been linked to CKD progression as well as excessive use of analgesic drugs and exposure to heavy metals.¹² When persons who had taken fewer than 1000 pills containing acetaminophen in their lifetime were used for reference, the odds ratio for ESRD was found to be 2.0 for those who had taken 1000–4999 pills and 2.4 for those who had taken 5000 or more pills.²⁴

Go to:

ACUTE KIDNEY INJURY

Researchers have recognized the importance of acute kidney injury (AKI) episodes in the development of CKD.²⁵ According to 2009 USRDS data, adults with a history of AKI during hospitalization had a 10-fold greater risk of developing ESRD in the next 12 months than those without AKI episode.²⁵ Even after a single episode of experimental AKI, histologic repair can be impaired and focal tubulointerstitial fibrosis may develop.²⁵

Go to:

DIABETES MELLITUS

Diabetes mellitus (DM) is the leading cause of CKD and ESRD in both developed and developing countries.³ According to the registry of Turkish Society of Nephrology, diabetic patients constitute 37.3% of the hemodialysis population in Turkey.²⁶ According to the USRDS data, half of the new ESRD patients in the United States have diabetic nephropathy.²⁷

Mechanisms that lead to kidney disease in diabetes include hyperfiltration injury, advanced glycosylation end products, and reactive oxygen species.²⁷ At the molecular level, numerous cytokines, growth factors and hormones such as transforming growth factor-beta and angiotensin II cause pathologic changes associated with diabetic nephropathy.²⁷

Eight percent of new patients with type 2 DM already have proteinuria at diagnosis.²⁷ Among those who are initially free of proteinuria, the 20-year risk of diabetic nephropathy is 41%.³ After the onset of proteinuria, the subsequent 10-year risk of progressive CKD is 11%.³ Thus, about half of those with type 2 DM will develop nephropathy and 10% of these individuals will experience progressive loss of renal function.²⁷

Go to:

HYPERTENSION

Hypertension has long been a defined risk factor for both CKD and ESRD, and accounts for 27% of all ESRD patients in the United States and 28% of hemodialysis patients in Turkey.^{26, 27}

Systemic hypertension is transmitted to intraglomerular capillary pressure leading to glomerulosclerosis and loss of kidney function; thus variable risk of impaired renal function has been reported among hypertensive subjects.²⁷ At study entry, 5.9% of the Hypertension

Detection and Follow-up Program trial participants had a serum creatinine of 1.5 mg/dl or greater. Among the 8683 participants, 2.3% of those with serial serum creatinine measurements above 1.5 mg/dl experienced clinically significant loss of renal function over 5 years.²⁸

Essential hypertension is generally diagnosed between 25 and 45 years of age but overt kidney dysfunction does not develop unless the patient sustains at least 10 years of uncontrolled hypertension.²⁷ According to the MRFIT study, adjusted relative risk of reaching ESRD was 1.9 for high-normal blood pressure, 3.1 for stage I, 6.0 for stage II, 11.2 for stage III, and 22.1 for stage IV hypertension.²⁹ A history of cardiovascular disease, hyperlipidemia, metabolic syndrome, hepatitis C virus, human immunodeficiency virus infection, and malignancy are further risk factors for CKD.

Go to:

NEWLY DEFINED RISK FACTORS

Obstructive sleep apnea is a disease associated with complete and partial breathing disturbances during sleep for at least five events per hour.¹⁸ In one study, 30.1% of obstructive sleep apnea patients had CKD.¹⁸ Besides sharing the same risk factors, obstructive sleep apnea has an independent effect on CKD risk and progression.¹⁸

Heart rate has also been suggested as a risk factor for CKD. A total of 6759 Japanese subjects (20–84 years of age) were split into quartiles according to the baseline heart rate and were followed up for a mean of 47 ± 16 months.³⁰ Seven hundred thirty-four subjects developed CKD over the 5-year follow-up period. Subjects with higher heart rates had greater magnitude of decreasing estimated GFR and higher odds ratio of developing proteinuria. Each heart rate category increment led to approximately 1.1 times increased risk of developing CKD and 1.2 times increased risk of developing proteinuria in middle-aged or older subjects.³⁰

Periodontal diseases, which are initiated by gram-negative tooth-associated microbial biofilms have also been defined as a risk factor CKD.³¹ The inflammatory response in those patients has been associated with CKD.³¹

Data from 21,475 healthy volunteers of the Vienna Health Screening Project who were followed prospectively for a median of 7 years were analyzed to examine the association between uric acid level and CKD.³² A slightly elevated uric acid level (7.0–8.9 mg/dl) was associated with doubled risk for CKD and an elevated uric acid (≥ 9.0 mg/dl) was associated with a tripled risk.³²

Go to:

CONCLUSION

CKD is a major health issue in many societies. Understanding the risk factors and implementing screening of at risk populations will increase early detection, initiate treatment of modifiable risk factors for ESRD, along with appropriate treatment for CKD. In addition, the economic burden caused by the cost of renal replacement therapy might be mitigated by early detection of CKD risk factors.

Swine flu: screening centres

Swine flu: screening centres set up in Kurnool district (The Hindu: 20190122)

<https://www.thehindu.com/news/national/andhra-pradesh/swine-flu-screening-centres-set-up-at-transit-points-in-kurnool-district/article25291335.ece>

In a bid to tackle the swine flu epidemic more effectively, the district medical and health officials have set up round-the-clock screening centres, at the major transit points across Kurnool district.

With the region witnessing a considerable increase in population, owing to the holiday season and regional festivals from October 17-20, the officials are being extra cautious to ensure that all the disease-related symptoms are identified and treated at an early stage.

Speaking to The Hindu, District Medical and Health Officer J.V.V.R.K. Prasad said that the district, in the past few days, had witnessed unprecedented crowds and added that the screening centres would enable them to identify the prevalence and take appropriate measures. “We have set up the centres at the transit points – railway and bus stations, in Kurnool, Nandyal and Adoni, besides places of religious importance such as Mantralayam and Srisailam. The swine flu is very much prevalent in the district and we suspect it to be more virulent and fast spreading strain, as evident from the symptoms. However, we are well equipped to deal with the diseases and urge people to avoid crowded areas and seek medical help over persistent flu-like symptoms,” he added.

‘Well equipped’

With respect to the preparedness of the government hospitals, Dr. Prasad said that all facilities across the district have been stocked up with adequate medicines/anti-viral drugs, masks etc., with dedicated isolation wards to treat the patients suspected or affected with swine flu. The officials, reportedly, had a tough time in taking stock of the situation, owing to the massive influx of people from neighbouring States during the festive season, especially the ‘Banni Utsavam’ at Devaragattu of Holagunda mandal.

“The diseases manifests itself from flu-like symptoms — fever, running nose, cold, cough etc. If the symptoms do not come down, even after couple of days, and is further accompanied by shortness of breath, the particular individual should seek medical help and all government hospitals are ready to treat them, carrying out necessary screening and administration of drugs to patients and also to their relatives,” Dr. Prasad said.

Till date, 19 cases, including two to three cases from neighbouring States, have been tested positive for H1N1 virus and among them six deaths have been registered. Besides positive cases, suspected cases are also currently being treated at the isolation ward in Government General Hospital – Kurnool.

Rapid response team

Meanwhile, the management of Government General Hospital– Kurnool conducted a review meet with all Heads of Departments (HoDs) concerned, and have decided to set up a rapid response team (based on the guidelines of World Health Organisation) to deal with the aspects of identification, isolation, treatment and management.

Speaking to The Hindu, Kurnool GGH Superintendent P. Chandrasekar said that they initiated the extension of the isolation ward and also set up a separate OP ward for dealing with swine flu cases.

Air quality

Air quality improves after rain lashes Capital (The Hindu: 20190122)

<https://www.thehindu.com/news/cities/Delhi/air-quality-improves-after-rain-lashes-capital/article26055375.ece>

Western disturbance brings temperature down; AQI recorded at ‘very poor’ category, to improve further

Rain lashed the Capital on Monday under the influence of a western disturbance bringing down the maximum temperature, the Meteorological Department said.

The city recorded a maximum of 22.6 degrees Celsius, which is a dip from the 28.7 degrees Celsius recorded on Sunday.

The minimum temperature was 11.5 degrees Celsius, four degrees warmer than normal for the season.

The city recorded 1.2mm of rainfall between 8.30 a.m. and 5.30 p.m. Rainfall was heaviest at Palam, which recorded 2.8 mm of rain.

Air Quality Index

The wet, windy weather brought the air quality index (AQI) in Delhi, which had been hovering between “very poor” and “severe”, down to “poor” and “very poor”.

The Central Pollution Control Board data stated that the overall AQI in the city was 345, which falls in the “very poor” category.

“The AQI is likely to improve on Tuesday and may reach “poor” to “moderate” category under the influence of higher wind speeds and ventilation coefficient. The air quality is likely to improve further on Wednesday and may reach the “moderate” category,” read an air quality bulletin from the Indian Institute of Tropical Meteorology.

“Widespread light to moderate rainfall with gusty winds up to 25-30 kmph could also affect the plains especially Punjab, Haryana, Chandigarh, Delhi, north Rajasthan and Uttar Pradesh during on Tuesday,” said the Met Department. The weatherman added that in view of cloud cover and easterly/south-easterly winds, night temperatures are expected to fall by 2 to 4 degrees Celsius on Tuesday and the maximum temperature would be in the range of 20 to 22 degrees Celsius.

Another western disturbance would affect northwest India from Thursday, the Met Department added.

New stem cell

New stem cell approach may help treat diabetes: Study (The Hindu: 20190122)

<https://timesofindia.indiatimes.com/home/science/new-stem-cell-approach-may-help-treat-diabetes-study/articleshow/67622076.cms>

Scientists have tweaked the technique for turning human stem cells into insulin-secreting beta cells and shown that the resulting cells are more responsive to fluctuating glucose levels in the blood.

Stem cells can be transformed into cells that produce insulin, the hormone that controls blood sugar, according to the study published in the journal Stem Cell Reports.

However, there is a major challenge: the amount of insulin produced by these cells is difficult to control.

The researchers at the Washington University in the US transplanted the beta cells into mice that could not make insulin.

They found that the new cells began secreting insulin within a few days, and continued to control blood sugar in the animals for months.

"We have been able to overcome a major weakness in the way these cells previously had been developed. The new insulin-producing cells react more quickly and appropriately when they encounter glucose," said Jeffrey R Millman, an assistant professor at the Washington University.

"The cells behave much more like beta cells in people who do not have diabetes," Millman said.

The researchers now believe it may be time to evaluate whether the same stem-cell approach could produce insulin and effectively control blood sugar in people.

"Previously, the beta cells we manufactured could secrete insulin in response to glucose, but they were more like fire hydrants, either making a lot of insulin or none at all," Millman said.

"The new cells are more sensitive and secrete insulin that better corresponds to the glucose levels," he said.

Millman's laboratory grew beta cells from human stem cells, but they made numerous changes to the "recipe" for producing insulin-producing beta cells.

The researchers treated the cells with different factors at different times as they grew and developed to help the cells mature and function more effectively.

After that process was complete, the researchers transplanted the beta cells into diabetic mice with suppressed immune systems so that they would not reject the human cells.

Those transplanted cells produced insulin at levels that effectively controlled blood sugar in the mice, functionally curing their diabetes for several months, which, for most of the mice in the study, was about the length of their lives.

Millman said he can not predict exactly when such cells may be ready for human trials but believes there are at least two ways that stem cell-derived beta cells could be tested in human patients.

"The first would be to encapsulate the cells in something like a gel -- with pores small enough to prevent immune cells from getting in but large enough to allow insulin to get out," he said.

"Another idea would be to use gene-editing tools to alter the genes of beta cells in ways that would allow them to 'hide' from the immune system after implantation," Millman said.

He said if stem cell-derived beta cells are proven safe and effective for people with diabetes, the method of manufacturing the cells quickly could be ramped up to an industrial scale.

Harmful Plastic (The Asian Age: 20190122)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12305737>

Most people not aware of harmful plastic in tampons

Washington, Jan. 21: In order to cope up with the issue of environmental degradation, more efforts need to be made to raise awareness regarding the amount of plastic content in commonly-used menstrual products, a recent study has suggested.

As part of the study, the researchers examined levels of awareness and people's attitudes towards the environmental impact of these products.

The study, which used face-to-face focus groups and an online survey of 300 people, found that many participants were shocked at the amount of plastic in commonly-used disposable menstrual products.

Almost a third of those surveyed were not aware that tampons contained plastic and 20 per cent of the people believed that it



is okay to flush tampons. The findings were published in the *Journal of Sustainability*.

Tampons are the most commonly used menstrual product in Western Europe and the US, with women using an average of 11,000 during their lifetime. Many disposable products are flushed after use, which can lead to plastics contaminating ocean ecosystems.

Plastic tampon applicators are commonly found on beaches and even

inside the stomachs of dead seabirds. They can also play a part in another set of problems. Slowly, with the presence of light, they can break down into smaller fragments. Microplastics, small pieces of plastic less than 5mm in size, are now found in even the most remote marine environments.

The study also found that people who expressed greater awareness of plastic pollution were far more likely to use organic pads and tampons, menstrual cups and reusable cloth pads.

"Whilst there has been a strong focus on plastic bags and other single-use items, I felt the hidden plastic in disposable menstrual products was going under the radar," said Elizabeth Peberdy, lead author. — *Agencies*

Bacterial Membrane (The Asian Age: 20190122)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=12305743>

Filter tech uses bacterial membrane to clean water

Washington, Jan. 21: Scientists have designed a novel filtration technology which they say purifies water using bacterial membranes and graphene oxide.

More than one in 10 people in the world lack basic drinking water access, and by 2025, half of the world's population will be living in water-stressed areas, said researchers at the Washington

University in the US.

The new ultrafiltration membrane purifies water while preventing biofouling or buildup of bacteria and other harmful microorganisms that reduce the flow of water, they said.

If the technique is scaled up to a large size, it could benefit many developing countries where clean water is scarce, according to the study

published in the journal *Environmental Science & Technology*.

Biofouling accounts for nearly half of all membrane fouling and is highly challenging to eradicate completely.

The researchers previously developed other membranes using gold nanostars, but wanted to design one that used less expensive materials.

— PTI

Cancer (The Asian Age: 20190122)

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=12305741>

CANCER SURVIVORS FACE HARDSHIPS RELATED TO BILLS

Washington, Jan. 21: A new study now finds that cancer survivors carry a higher burden related to medical debt payments and bills compared with individuals without a cancer history. The greatest hardships are found in younger survivors.

The research, published in *Cancer*, a peer-reviewed journal of the American Cancer Society, the study also found that among privately insured sur-

vivors, those who enrolled in high deductible health plans and did not have health savings accounts were particularly vulnerable to medical financial hardship.

Medical financial hardship can encompass three domains: material (such as problems paying medical bills); psychological (for example, worrying about paying medical bills); and behavioral (which might include

forgoing or delaying care because of cost).

Zhiyuan Zheng, PhD, of the American Cancer Society, and his colleagues analysed information from the 2013 to 2016 National Health Interview Survey. The study included nationally representative samples of 10,354 cancer survivors and 124,436 individuals without a history. Cancer survivors were more likely to report material hardship. — Agencies

Exercise ((The Asian Age: 20190122))

<http://onlinepaper.asianage.com/article/detailpage.aspx?id=12305740>

SIT-UPS, ONE EXERCISE YOU SHOULD NEVER DO

London, Jan. 21: January brings with it New Year fitness resolutions, and millions throw themselves into demanding workout routines — often after months, if not years, of doing little or no activity.

Known as crash exercise, the sit-up has long been a get-fit favourite but can have a devastating impact on the spine. Unsurprisingly, a third of people who do it end up injured, according to a recent study.

Some injuries are so



severe, sufferers become incapacitated.

The problem with sit-ups is they push the curved spine against the floor and employ the psoas, or hip flexor, muscles running from the front of thighs to the lumbar spine in the lower back. When these

muscles are too tight they can pull the lumbar spine forward and the pelvis into a backward rotation, giving you a twisted pelvis. Many people think doing loads of sit-ups burns stomach fat but the body just doesn't work like that.

Sit-ups only activate the rectus abdominis, the most superficial 'six-pack' core muscles. But if these muscles get too strong, they can cause the tummy to bulge outward, leading to a pot belly. So try the plank instead. — Agencies

Rain helps bring down day temp, boosts air quality

Rain helps bring down day temp, boosts air quality (Hindustan Times: 20190122)

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

From page 01 NEW DELHI: The morning drizzle and gusty winds that swept through the national capital on Monday helped bring down air pollution levels and the day temperature to 22.6°C, which on Sunday was recorded at 28.7°C.

Till 5.30pm on Monday, Safdarjung received around 1.2mm rain and Palam received 2.8mm rain. Other areas such as Lodhi Road, Ridge and Aya Nagar received less than 1mm rain.

The India Meteorological Department (IMD) said similar weather conditions were likely to persist in the national capital region (NCR) on Tuesday, too.

According to the central pollution watchdog officials, air quality could improve in NCR to “moderate” in the coming days as a strong wind blowing at nearly 20km/hour is expected to

sweep Delhi till Wednesday. The city needs a minimum of 10km/ hour of wind speed to disperse pollutants.

The drizzle, however, was far removed from the IMD forecast of moderate rain (more than 15mm).

Till 5.30pm Monday, Safdarjung, considered to be representative of Delhi's weather, received around 1.2mm rain, Palam received 2.8mm rain. Other areas such as Lodhi Road, Ridge and Aya Nagar received less than 1mm rain.

“Several places across Jammu and Kashmir and Himachal Pradesh received heavy snowfall because of a western disturbance. There was rain across the plains of northwest India, including Delhi-NCR. We are expecting the conditions to remain the same on Tuesday,” said BP Yadav, deputy director general, IMD.

The maximum temperature was recorded at 22.6°C, a degree above normal. The maximum temperature had shot up to 28.7 degrees Celsius on Sunday, the hottest January day since 2007. The minimum temperature was 11.5 degrees Celsius, four degrees above normal.

“We are expecting yet another western disturbance towards the end of this week. There is a possibility of very light rain on January 25,” said a senior IMD official.

The weather conditions also helped bring down the city's pollution levels. The Air Quality Index (AQI), which shot up to the “severe” level on Sunday, improved and came down to ‘very poor’ zone on Monday. While the AQI was 404 on Sunday it was 346 on Monday.

“According to the air quality early warning system, the air quality is likely to improve further over the next two days and come down to moderate levels,” said a senior official of the Central Pollution Control Board.

Delhi encountered at least seven days of severe air pollution this January so far. This is the maximum number of severely polluted days, the city has encountered in the month of January ever since Air Quality Index is being recorded. The AQI came into being in May 2015. In 2016, there were six such days in January.

MR vaccine

Govt told to advertise pros and cons of MR vaccine (Hindustan Times: 20190122)

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

NEW DELHI: The Delhi high court on Monday told the Delhi government that it should come out with advertisements in newspapers listing the pros and cons of the MR (measles and rubella) vaccine, a state government campaign that was deferred after it was challenged by a few parents in the court.

n An MR vaccine programme in Gurugram.

Justice Vibhu Bakhru said the advertisements should be quarter page in size and should be published in English, Hindi, Urdu and Punjabi. It asked the department concerned in All India Institute of Medical Sciences (AIIMS) to analyse the effects of the MR vaccine.

“A person must know that in these particular cases, vaccination is harmful,” Justice Bakhru said, adding there is more consent when a person has taken an informed decision.

The court’s order and observation came while it was hearing the pleas of a few parents, who said the MR campaign was a violation of the fundamental rights of the students as consent had not been taken from their wards.

The measles-rubella vaccination campaign in Delhi, which was to begin on January 16 and was deferred for a week, has been pushed further as the matter on whether consent was needed for the drive to be carried out in schools is still pending.

The court asked both parties to come with a consensual order, which is likely to be finalised on Tuesday. The draft order would include suggestions from both the Delhi government and the petitioner’s counsel.

No formal order was passed in Monday’s hearing.

A Delhi government official said, “For now, the court has directed us to publish an advertisement. The matter about the consent is yet to be decided. If we have to seek written consent from parents of all the children, it may extend the campaign. We are looking at the best way to reach every child between the ages of 9 months and 15 years.

The matter would be now heard on Tuesday.

Under the campaign, 55.5 lakh children in Delhi are to be vaccinated. This is a national campaign targeted at eliminating measles and controlling rubella. 22 crore children from 30 states and union territories have already received the vaccine.

Swachh Bharat Mission

Swachh Bharat Mission gains have come at a cost (Hindustan Times: 20190122)

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

Coercive and threatening tactics were used in all of the states to compel people to build and use latrines

Last August, I visited Rajasthan to understand what the Swachh Bharat Mission (SBM) has done. In the villages I visited, many households had constructed latrines. Some households faced threats to build toilets, and some lost their rations, pensions, or NREGA work for several months. In some villages, households that had constructed latrines had “niralo ghar” (extraordinary house) stamped into their ration books. The ration dealer was not supposed to

give rations to households that did not have this stamp. But still, many readily admitted that they defecate in the open.

UMESH SINGH/HT

n An open defecation free village near Gwalior. Sustainably reducing open defecation in rural India would reduce the number of babies who die

This visit was part of a larger study that my colleagues and I at Research Institute for Compassionate Economics have done in partnership with Accountability Initiative of the Centre for Policy Research. This survey sheds light on what the SBM did and on changes in open defecation from 2014 to 2018. We revisited households that we originally visited in 2014 and asked where over 9,800 people defecate in rural Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh. What we found is that many latrines have been constructed over the past four years, which has led to a faster reduction in open defecation than in the past. Nevertheless, 44% of people over the age of two still defecate in the open in the region. Moreover, coercive and threatening tactics, like those that I saw evidence of in Rajasthan, were used in all of the states to compel people to build and use latrines.

In our survey, we asked whether people were prevented from defecating in the open or harassed while doing so, whether people were fined or threatened with fines if they did not comply with the SBM, and whether people lost or were threatened with the loss of public benefits if they did not comply with the SBM. Of course, these forms of coercion vary in how ethical or unethical they are, and whether or not they can be lawfully used. I believe they are nevertheless important to consider when evaluating what the SBM has done. What we found is that one in every two households told us that they were aware of some form of coercion for not building or using a latrine, and one in four households were aware of government benefits being withdrawn. Dalits and Adivasis were more likely than other groups to report their own household experienced coercion to build or use a latrine. These statistics show that these tactics were commonly used tools in the implementation of the SBM across the states we visited. Sustainably reducing open defecation in rural India would reduce the number of babies who die and would improve the physical and cognitive development of surviving children. Subsidising latrine construction also benefits people who would like to use a latrine but don't have the means to construct one themselves — like the elderly and disabled. But, these gains have clearly come at a cost to certain fundamental rights through the widespread use of coercion. There are other costs of the SBM which also deserve attention. In some places, the SBM has created another avenue for reinforcing caste divisions. Moreover, many households still believe that emptying decomposed sludge from a pit is impure work. So when the pits of these new latrines fill up, what will be the implications for Dalits who have been forced to do this kind of work in the past? Open defecation is not close to being eliminated in rural India. Come October 2, India will still need a sanitation policy that promotes the use of latrines. What should the next sanitation policy look like? A start to answering that question requires evaluating what the SBM has done.

It is true that the reduction in open defecation has accelerated under the SBM. Based on this fact, some may argue that the SBM has been a success. The tactics employed by the SBM present important trade-offs that require public debate. Evaluating these trade-offs will at the

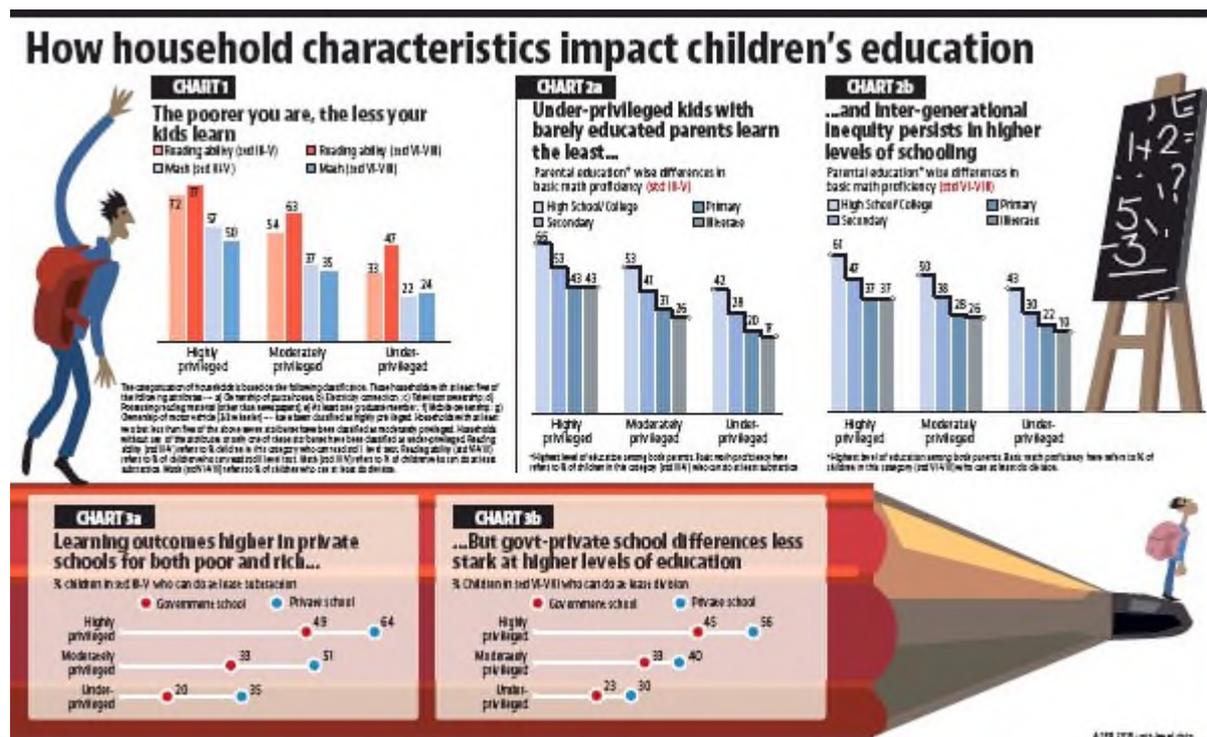
very least require understanding how many people have been hurt because of the SBM, and how much it has accelerated the decline in open defecation. Reducing open defecation in rural India is an important human development goal, but at what cost?

Sangita Vyas is a research fellow at Research Institute for Compassionate Economics, and a PhD student at University of Texas, Austin

Children Education - Learning outcomes in school

Privilege dictates learning outcomes in school (Hindustan Times: 20190122)

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



Children from rural households with access to resources do better at school than those not from such homes, data shows

IT IS THE INEQUALITY OF OPPORTUNITY AND EDUCATION THAT ULTIMATELY DRIVES INEQUALITY IN BOTH WEALTH AND INCOMES IN THE COUNTRY

From page 01 NEW DELHI: Children from rural households with amenities such as an electricity connection and with access to resources such as reading material tend to do better at school than those who are not from such households.

That is one of the key messages from an annual survey published in January every year that is usually a reminder of how India's education system is failing the children of the country.

In January, almost every year, the non-governmental organization, Pratham, brings out the Annual State of Education Report (ASER), which has shown, year after year, how little is being taught in schools across rural India.

This year too, the much-awaited ASER report has shown high levels of learning deficit across the country, despite marginal improvements in learning outcomes compared to the last edition of the report in 2016.

While the learning deficit in schools, especially government ones, has been recognized as a problem in the country, the role of privilege in driving differences in learning outcomes often does not get the attention it deserves.

An analysis of unit-level data sourced from the ASER Centre in Delhi shows that household characteristics shape learning outcomes of children much more than the type of school (whether government or private) children attend.

Among children in standard III-V, an overwhelming majority from highly privileged families could read a standard I text while an overwhelming majority from underprivileged families could not.

The difference is similar at higher levels of schooling (standard VI-VIII). Even when it comes to basic numeracy, there is a significant, though less stark, difference between children from underprivileged families versus those from privileged ones. [See chart 1]

The analysis is based on the ASER 2016 survey, the last survey on learning outcomes for which final results are available (only the provisional results of the 2018 survey have been published so far, and the 2017 survey covered an older cohort and asked different questions).

The categorization of households into the three buckets of affluence or privilege is based on their access to basic household amenities (such as electricity connection, pucca house etc.) and to resources which could potentially influence learning outcomes (presence of an educated member in the household, reading material etc.).

Overall, roughly 30% of over half a million students surveyed in 2016 fall in the highly privileged category, 16% in the underprivileged category, and the rest in the moderately privileged category.

Differences in privilege get accentuated by differences in educational attainments of parents, the analysis shows, with underprivileged children born to illiterate parents learning the least in schools. [See charts 2A and 2B]

This also means that children from underprivileged families can rise above the station of their birth if they are lucky to be born to well-educated parents.

Underprivileged children born to parents with a high school or college degree tend to do as well as highly privileged children born to parents with secondary schooling.

But the share of under privileged children who are lucky to be born to well-educated parents is quite small given that the well educated also tend to be more affluent in the country.

While 65% of the highly privileged families had at least one parent with a high school or college degree, only 5% of the underprivileged families had at least one such parent.

The analysis also shows that there is indeed a difference between government and private schools in learning outcomes for both privileged and underprivileged children. (See charts 3A and 3B)

However, it is worth noting that the learning outcomes of underprivileged children attending private schools are considerably worse than the learning outcomes of highly privileged children attending government schools. This suggests that household status rather than school type is the key driver of differences in learning outcomes.

The analysis suggests that the accident of birth has an overwhelming influence in determining school learning outcomes in the country, and helps perpetuate the cycle of inequality across generations.

While such inequities are prevalent in most parts of the world, the intergenerational persistence of such inequities is exceptionally high in India, research by a team of World Bank economists showed last year.

While the 2018 survey numbers are still being analysed, initial analysis of the spread of the distribution of learning outcomes suggests increasing inequality, said Wilima Wadhwa, director of the ASER centre, over email.

It is the inequality of opportunity and education that ultimately drives both the inequality in wealth and incomes in the country. And it is inequality that is perhaps driving the cycle of competitive populism in India's polity today.

Swine Flu (Hindustan: 20190122)

http://epaper.livehindustan.com/imageview_59733_99100954_4_1_22-01-2019_i_5.pagezoomsinwindows.php

स्वाइन फ्लू का प्रकोप इस महीने ज्यादा

नई दिल्ली | कार्यालय संवाददाता

पिछले साल के मुकाबले इस वर्ष दिल्ली में स्वाइन फ्लू तेजी से पैर पसार रहा है। 1 से लेकर 13 जनवरी तक के बीच में राजधानी के अस्पतालों में 168 स्वाइन फ्लू के मामलों की पुष्टि हो चुकी है।

स्वाइन फ्लू के बढ़ते कहर को देखते हुए दिल्ली सरकार के स्वास्थ्य सेवा महानिदेशालय भी दिशा-निर्देश जारी कर चुका है। पिछले वर्ष सालभर में दिल्ली में स्वाइन फ्लू के 205 मामले

सामने आए थे, जिसमें दो की मौत हुई थी। इस वर्ष जनवरी में ही दो मौत हो गई है। अस्पतालों में स्वाइन फ्लू के मामलों की संख्या में इजाफा देखने को मिल रहा है। राम मनोहर लोहिया अस्पताल से मिली जानकारी के अनुसार, स्वाइन फ्लू के 20 जनवरी तक करीब 27 संदिग्ध मामले सामने आए हैं। एम्स में जनवरी में स्वाइन फ्लू के सात मामले आए हैं। इसमें चार को उपचार के बाद छुट्टी मिल गई है, जबकि तीन लोगों का इलाज जारी है। सफदरजंग अस्पताल में इस वर्ष

अभी तक स्वाइन फ्लू का कोई मामला सामने नहीं आया है। लोक नायक अस्पताल में 1 जनवरी से लेकर 2 जनवरी के बीच स्वाइन फ्लू के लगभग 15 संदिग्ध मामले आए हैं, जिसमें एक को स्वाइन फ्लू होने की पुष्टि हुई।

एम्स के एक डॉक्टर के अनुसार किसी को बुखार, खांसी, सर्दी, शरीर में दर्द के साथ थकान महसूस होती है, तब वह इसे हल्के में न ले। सांस लेने में दिक्कत, छाती में दर्द और ब्लड प्रेशर कम होने पर डॉक्टर से संपर्क करें।