

North China province pledges to cut PM 2.5 by 40 pct

Shanxi has joined other regions in northern China by taking measures to mitigate air pollution in the autumn and winter seasons.

The coal-rich province vowed to cut the levels of PM 2.5 and sulfur dioxide by 40 percent from October to March, said the provincial environmental protection bureau Wednesday.

Local governments in northern China are taking harsher measures to fight air pollution with more residents increasingly worried about the health impacts.

Airborne particles smaller than 2.5 microns in diameter pose a greater health threat as they can get deeper into the lungs than larger particles. The high levels of sulfur dioxide in some cities in Shanxi during the past winter heating seasons have also worried many.

The local government plans to cap the average hourly levels of sulfur dioxide in 11 cities at 800 micrograms per cubic meter.

To achieve this goal, authorities ordered the closure of small highly polluting firms and cut production in heavy industry. The burning of low-quality coal has been banned in the whole province and coal has been banned completely in parts of six major cities.

In addition, one million households will have been switched to electric or gas heating systems, as opposed to traditional coal fired heating, by the end of the month.

Other provinces and cities in northern China have also rolled out pollution reduction measures.

In Shandong, the provincial government has offered 600 million yuan (90.2 million U.S. dollars) in subsidies for people switching from traditional coal-fired heating sources to gas and electric in six cities that affect the Beijing-Tianjin-Hebei region.

Authorities in Hebei and Tianjin have taken similar measures, including ordering heavily polluting industries, including steel, casting and coking, to restrict production and cut their pollutant emissions.

China has set a target to reduce the level of PM 2.5 pollution by at least 15 percent in the cities around the Beijing-Tianjin-Hebei region between October 2017 and March 2018.

Use of AI to grow in nation's medical sector

China will promote the application of artificial intelligence technologies in the healthcare sector to improve services for patients, especially at the grassroots level, according to the nation's top health authority.



The first AI healthcare robot is introduced at a hospital in Hangzhou, Zhejiang province. [Photo by Long Wei/For China Daily]

“Further improving the quality and efficiency of medical care is an important task for health authorities,” said a statement released by the National Health and Family Planning Commission.

“Practices at home and abroad have proved that intensified application of AI in assisted medical care can effectively increase the efficiency of services and provide patients with convenient access. In particular, the application of AI can be an effective means of improving the capabilities of grassroots medical care providers and promote equality in the services offered,” the statement said.

In China, AI technologies are being used in a number of areas, including remote care services, assisting diagnosis and treatment, and improving health management through wearable devices, according to the commission.

Globally, AI is being used widely in healthcare, including disease prevention, health management, assisted diagnosis and the management of chronic diseases. It is also growing rapidly in areas such as the research

and development of drugs, dietetics and the management of emergency centers and hospitals, the statement added.

The commission has published a range of guidelines and rulings to promote and regulate the development of AI so the technology will contribute to the establishment of a tiered healthcare system and help improve services.

According to a guideline on the development of AI released in July by the State Council, China's Cabinet, the government will encourage the innovative application of the technology in healthcare and elderly care to provide customized, diverse and high-quality services.

A report published by Yiou Intelligence, a technology think tank in Beijing, shows that by the end of July, 131 companies were engaged in developing and researching AI for healthcare, and 76 percent of them were in Beijing, Shanghai and Shenzhen, Guangdong province.

Evidence-based work

Zhang Xiaochun, an oncologist at the Affiliated Hospital of Qingdao University in Shandong province, is placing greater emphasis on the use of a platform called Watson for Oncology, developed at the Memorial Sloan Kettering Cancer Center in New York.

Zhang, who is also vice-president of the university's medical group, uses the cognitive computing platform to provide oncologists with evidence-based treatment options.

Since the platform was introduced in April, it has become an effective aid for the treatment of Zhang's patients. Treatment options for lung cancer patients recommended by the platform are more than 96 percent consistent with those offered by the hospital's experts.

Watson for Oncology entered the Chinese mainland in March, when its maker, the US technology company IBM, signed a partnership agreement with Baheal Pharm, an e-health company in Beijing, to introduce it to the nation's medical institutions.

The platform can identify personalized treatment options, has access to oncological expertise and draws knowledge from more than 300 medical journals, 250 textbooks and nearly 15 million pages of text, IBM said.

It also ranks evidence-based treatment options by linking to peer-reviewed studies and clinical guidelines.

The platform, which has the ability to learn, has been designed to assist clinicians in developing treatment plans for breast, lung, colorectal, cervical, ovarian, gastric and prostate cancers, according to IBM.

Zhang said when she used the platform to change a drug prescription for a lung cancer patient in Beijing, the patient's tumor reduced.

"The system can provide patients with standardized, precise treatment

options," she added.

However, she noted that the system is not yet fully mature and is unsuitable for patients with related serious problems, such as those who have developed a resistance to certain drugs.

"I think it may be more useful in grassroots hospitals in rural areas to guide doctors in the treatment of cancer," she said.

Zhang added that the platform can also be used to provide general training for younger, less-experienced physicians.

According to Baheal Pharm, Watson for Oncology has been used in 24 hospitals in 18 cities, including Qingdao, Shijiazhuang in Hebei province, and Nanjing in Jiangsu province.

Fu Gang, Baheal Pharm's chairman, hopes the platform will be promoted in more grassroots hospitals to aid treatment.

"Although doctors at large hospitals in cities such as Beijing and Shanghai can provide quality medical care for cancer patients, many establishments in smaller cities and counties are unable to provide standardized treatments," he said.

Online diagnosis

A key task in the nation's ongoing healthcare reform is the improvement of the distribution of medical resources to establish a tiered system.

Large hospitals in cities usually have better facilities and higher-level medical talent, so they are usually crowded, which has prompted widespread dissatisfaction among patients.

Currently, hospitals and companies are developing a range of decision-making systems that use artificial intelligence to assist with diagnosis and treatment.

For example, the Second Xiangya Hospital at the Central South University in Changsha, Hunan province, has joined with Danale, a technology company in Shenzhen, to develop an online service that diagnoses skin conditions.

The service uses an app that works via WeChat, whereby patients upload a photo of the affected area of skin, which is scanned and evaluated via AI. The app then combs through its data banks and provides a list of possible diagnoses.

According to the hospital, initial tests suggest that the app is capable of diagnosing lupus, a rare skin disease, with 85 percent accuracy.

"The technology will be used to assist with the diagnosis of common skin complaints, especially at grassroots clinics, and will provide guidance for patients," said Lu Qianjin, director of the hospital's dermatology department.

Moreover, in October last year, the internet company Baidu launched an online medical advisory platform to aid diagnoses at grassroots medical institutions.

When patients input a question, the platform, which stores large amounts of medical data, can provide a range of possible diagnoses.

In August, six robots were introduced in the clinical hall of the Harbin First Hospital, Heilongjiang province, to answer simple questions, such as telling patients the way to certain departments. The robots can also provide soothing music to help patients relax as they wait for consultations, the hospital said.

New challenges

Jiang Zefei, a breast cancer specialist at Beijing No 307 Hospital, said the use of AI will provide more precise and effective diagnoses and treatment, relieving the burden on physicians and benefitting patients.

“However, I don’t think AI will ever fully replace doctors because humans have emotions and need real communication. Only doctors can provide those things,” he said.

The National Health and Family Planning Commission said the growing use of AI is benefiting patients and doctors, but in-depth use of the technology poses new challenges to ensure the effectiveness of medical care and control patient risks.

The commission said it is committed to overseeing amendments to the relevant laws and regulations that will encourage medical institutions and companies working in the sector to use information technology to improve the services on offer while reducing risks and ensuring that patient privacy is fully respected.

[PLA’s new light tank is unveiled](#)

China has confirmed the deployment of a new light tank, which observers say will suit combat operations on plateaus.

A photo of the tank on snowy ground is on display at an exposition in the Beijing Exhibition Center, as part of a display showing achievements made by China over the past five years. The caption accompanying the picture says it is a new type of light tank, without giving details.

This is the first time the Chinese military has officially published a picture of the tank.

Almost all of the military equipment on display at the exhibition is in

active service with the People's Liberation Army. A number of pictures taken by military enthusiasts and circulated on Chinese defense websites show a row of the new tanks being transported by rail. Those tanks had been painted with a tactical code on the turret – an indication of delivery to the PLA Ground Force.

At a Defense Ministry news briefing in late June, Senior Colonel Wu Qian, ministry spokesman, confirmed that the light tank was being tested at that time on plateaus in the Tibet autonomous region.

Developed by China North Industries Group Corp, the country's biggest maker of land armaments, the light tank is equipped with a hydropneumatic suspension system that ensures good maneuverability and survivability in mountainous regions.

Its main weapon is a 105-mm gun that is able to fire both shells and guided missiles, according to weapons observers, who said the tank's main task is to fight on plateaus even at very low temperatures and that its weight ranges from 25 to 35 metric tons. By comparison, a main battle tank, such as the United States' M1 Abrams and China's Type 99A, weighs up to 65 tons.

Du Wenlong, an equipment researcher at the PLA Academy of Military Science, said the vehicle was designed to operate in China's southern regions and on plateaus.

"The shortage of oxygen on plateaus means its engine must be very powerful and can work well with a limited amount of oxygen," he said. "Similarly, its power, fire control and ammunition systems must have been specially designed for high altitudes."

Ge Lide, a defense technology researcher at PLA National Defense University, said that while the tank falls into the light-duty category, its combat capability is strong, considering its firepower, mobility, defensive features and information capacity.

He noted that the tank would be capable of moving through many kinds of tough terrain and should be able to outperform all other PLA tanks and armored vehicles off-road.

In addition to the domestic version, China has also developed a light tank for export. The VT-5, which China North Industries Group Corp calls the most advanced light tank available in the international market, has a maximum weight of 36 tons, and is armed with a 105-mm rifled tank gun, according to the company.

China developed the Type 62 light tank in the 1960s and had used it in its armored forces in southern regions for more than 50 years until retiring them in 2013.

Odd pairs gain mutual benefits in sharing home

Elderly widower Yao Jianshun and postgraduate student Feng Luchen were both initially wary when they first met to discuss the prospect of sharing a home over the summer.

Feng, 24, needed a place to stay for four months during an internship near Yao's neighborhood, while the 64-year-old pensioner, partially paralyzed after a stroke 15 years ago, needed companionship after becoming isolated in his small attic apartment since the death of his wife.

Their first meeting in March to break the ice started frostily, but things quickly warmed up when Yao found out they were from the same hometown. In May, Feng was given the OK to move in.

"Feng is very kind to me," Yao said after a few months. "Seeing I had a shabby old mobile phone, he bought me a used smartphone from one of his friends and taught me patiently how to use it. Now, I've learned how to order takeout online."

The pair were brought together as part of a pilot program – launched this year in three neighborhoods of Wuhan, Hubei province – that aims to solve two problems: The loneliness experienced by many seniors, and the rent burden on college students.

About 25 percent of elderly people in Wuhan are classed as "empty-nesters" who are either childless or living far from their children. Around 40 percent of them are in poor health, according to the Hubei Committee on Aging.

Yanhuang Social Services Center, which organized the pilot, visited 1,300 households in the city's Jiangnan district starting in March and identified 144 candidates for the program. Most were elderly empty-nesters, with the rest being families in need of an extra pair of hands.

Meanwhile, an appeal for students willing to provide care and help around the house in exchange for free accommodations received 64 replies.

The number of volunteers was whittled down based on attitude, area of study and previous volunteer experience, while inventories were drawn up of the seniors' homes to protect them against theft or damage, according to Jiang Jingjing, who led the program.

In the end, 35 pairs signed agreements for the summer.

"We invited housekeepers and teachers to give lectures to the young volunteers," said Wei Fei, director of the Yanhuang center. "For volunteers paired with elderly people who require a lot of care, such as those with Alzheimer's disease, we invited nurses to explain the condition in detail."

Zhong Shuai, a junior at Hubei Youth Vocational College, moved in with 68-year-old Yu Manzhen, who cares for her paralyzed husband, 69, and their mentally ill son, 40.

“When I was young, my parents moved away for work and left me behind in a village with my grandmother. I’m often reminded of my dear grandma when I see Yu,” said the 21-year-old Zhong, who stayed with the family during his summer internship. “They offered me free shelter, which was a gift because my salary as an intern was low.”

He added: “Yu’s husband is funny and he seems know everything. He knows the world political landscape pretty well and usually explains it to me. He also knows many brainteasers. I think the help was entirely mutual.”

Feng, who returned to his studies at Central China Normal University in September, said spending time with Yao was a “different experience”.

“It made me learn more about the demands of the elderly, and I think that knowledge will come in handy when my parents get older,” he said. “I’ll continue to visit Yao and keep him company whenever I have time.”

[CPC Central Committee plenum opens](#)

The Seventh Plenary Session of the 18th Central Committee of the Communist Party of China (CPC) opened in Beijing on Wednesday morning, making final preparation for the upcoming 19th CPC national congress.

The session will discuss a draft report to be submitted to the congress by the 18th CPC Central Committee, a draft amendment to the CPC Constitution and a draft work report of the CPC Central Commission for Discipline Inspection (CCDI) to be submitted to the congress.