

Health

Opioid guidelines

IAEA warns on 'impact' of delayed cancer care

VIENNA, Oct 27, (Agencies): Director-General of the International Atomic Energy Agency (IAEA) Rafael Mariano Grossi warned that the global Covid-19 pandemic is disrupting key health services to diagnose and treat chronic conditions such as cancer and heart disease.

The pandemic is potentially putting many lives at risk, particularly in unprepared and under-equipped low-income countries, he said at a panel discussion at the World Health Summit in Berlin on Monday.

An IAEA survey on the impact of the pandemic on nuclear medicine services showed worrisome trends, Grossi said, adding, "Diagnostic procedures fell on average by more than half in the 72 countries surveyed."

The IAEA helps countries in the use of nuclear and radiation medicine to detect and treat cancers, and to manage cardiovascular diseases as well as neurological and kidney disorders, among others.

While tackling Covid-19 remains a global priority, non-communicable diseases like cancer continue to afflict millions, and their incidence continues to grow.

"Services to catch and treat such diseases early should not stop. We will continue our work so that the situation does not get any worse," Grossi pointed out.

The IAEA survey, carried out in April-May and published last month in the Journal of Nuclear Medicine, showed that nuclear medicine services in both high- and low income countries were affected by the pandemic, with an average decline of 54 percent in diagnostic procedures in 434 responding medical centres across the world.

The survey noted that pandemic-related reductions in staff and reluctance of patients to visit clinics out of concern of risk of COVID-19 exposure may have contributed to the decline of procedures globally.

The use of PET/CT scans to determine the location and spread of tumours decreased on average by 36 percent, according to the survey.

Survival

Procedures to detect cancer in lymph nodes — often the first place to show the spread of the disease — fell by 45 percent. Imaging procedures for conditions such as thyroid disease plunged by two thirds, while lung and bone scans also more than halved.

Particularly striking was a decline in cardiac studies by 66 percent, suggesting that patients could be delaying timely medical care that could impact survival chances.

"The findings of the IAEA survey have worrying implications for patient care, as late detection and intervention can turn treatable diseases into terminal ones," said Grossi.

The availability of key medical isotopes was also disrupted, the survey showed, mostly due to lockdowns in countries and global transport restrictions. Insufficient supplies of 99mTc/99Mo generators — devices used to extract the most used isotopes in nuclear medicine procedures — affected Latin American countries severely, followed by Asia and Africa.

The IAEA plans a second survey to assess the situation one year after the first SARS-CoV-2 cases were reported in December 2019.

"We unfortunately expect to see continued disruptions in diagnostic services, and possibly increasing regional differences, as the pandemic persists," said Diana Paez, one of the survey's lead authors and head of the IAEA Nuclear Medicine and Diagnostic Imaging Section.

"These surveys can guide us in offering strategic assistance to countries during this challenging time," Paez noted.

During the pandemic, the IAEA produced technical guidance for nuclear medicine departments to continue services also during Covid-19.

"The document offers information for practitioners to minimize the risk of COVID-19 infections among patients, staff and the public," said Paez.

The IAEA also provided health professionals worldwide with a wide range of resources, including webinars attended by over 2,400 participants from more than 110 Member States.

Even before the pandemic spread across the world, access to nuclear and radiation medicine were limited in many low- and middle-income countries.

"One country in four does not have access to radiotherapy services, while 26 countries in Africa do not have a single radiotherapy machine.

This is a scandal," said Grossi at the virtual World Health Summit panel that included Fernando Ruiz Gomez, Minister of Health of Colombia, as well as prominent stakeholders from the private sector and leading clinical experts.

**Pregnancy:** Opioid use in pregnancy has prompted new guidance from the American Academy of Pediatrics, aimed at improving care for women and newborns affected by their mothers' drug use.

The number of affected women and infants has increased in recent years but they often don't get effective treatment, and the pandemic may be worsening that problem, said Dr. Stephen Patrick, lead author of the academy report released Monday.

"While we have been talking about the opioid crisis for years, pregnant women and their newborns seldom make it to the top of the heap. Infants are receiving variable care and not getting connected to services," said Patrick, a Vanderbilt University pediatrician.

The academy's report says pregnant women should have access to opioid medication to treat opioid misuse. Two opioids, buprenorphine and methadone, are effective treatments but pregnant women often face stigma in using them and doctors who prescribe them are scarce.

Protocols

The academy says hospitals should have written protocols for assessing and treating opioid-affected newborns. Many don't and practices vary widely.

Breastfeeding and other practices that promote bonding should be encouraged, and parent education and referral to services for affected newborns should be provided, the academy says. Its recommendations echo guidance from other medical groups and the US government.

"This is a substantial public health problem that is still lacking solutions," Patrick said.

According to the federal Centers for Disease Control and Prevention, 7% of US women reported in 2019 that they had used prescription opioids during pregnancy. One in 5 of those women reported misusing the drugs while pregnant.

Other opioids include heroin and fentanyl. Data suggest that use of these drugs among pregnant women increased in recent years, too.

Also:

**NEW YORK:** The US Food and Drug Administration has approved the first drug to treat COVID-19: remdesivir, an antiviral medicine given through an IV for patients needing hospitalization.

The drug, which California-based Gilead Sciences Inc. is calling Veklury, cut the time to recovery by five days — from 15 days to 10 on average — in a large study led by the US National Institutes of Health.

It had been authorized for use on an emergency basis since spring, and now has become the first drug to win full US approval for treating COVID-19.

Gilead says Veklury is approved for people at least 12 years old and weighing at least 88 pounds (40 kilograms) who need hospitalization for their coronavirus infection. It works by inhibiting a substance the virus uses to make copies of itself.



In this May 2020 file photo provided by Eli Lilly, a researcher tests possible COVID-19 antibodies in a laboratory in Indianapolis. On Oct 26, US government officials announced they are putting an early end to a study testing an Eli Lilly antibody drug for people hospitalized with COVID-19 because it doesn't seem to help. (AP)

Lilly antibody drug fails in a COVID-19 study; others go on

US government officials are putting an early end to a study testing an Eli Lilly antibody drug for people hospitalized with COVID-19 because it doesn't seem to be helping them.

Independent monitors had paused enrollment in the study two weeks ago because of a possible safety issue. But on Monday, the National Institute of Allergy and Infectious Diseases, which sponsors the study, said a closer look found no safety problem but a low chance that the drug would prove

helpful for hospitalized patients.

It is a setback for one of the most promising treatment approaches for COVID-19. President Donald Trump received a similar experimental antibody drug from Regeneron Pharmaceuticals Inc. on an emergency basis when he was sickened with the coronavirus earlier this month.

In a statement Lilly notes that the government is continuing a separate study testing the antibody drug in mild to moderately ill patients, to try to pre-

vent hospitalization and severe illness. The company also is continuing its own studies testing the drug, which is being developed with the Canadian company AbCellera.

Antibodies are proteins the body makes when an infection occurs; they attach to a virus and help it be eliminated. The experimental drugs are concentrated versions of one or two specific antibodies that worked best against the coronavirus in lab and animal tests. (AP)

Space

NASA aims to send astronauts to lunar south pole

Moon holds more water than thought

CAPE CANAVERAL, Fla., Oct 27, (AP): The moon's shadowed, frigid nooks and crannies may hold frozen water in more places and in larger quantities than previously suspected. And for the first time, the presence of water on the moon's sunlit surface has been confirmed, scientists reported Monday.

That's good news for astronauts at future lunar bases who could tap into these resources for drinking and making rocket fuel.

While previous observations have indicated millions of tons of ice in the permanently shadowed craters of the moon's poles, a pair of studies in the journal Nature Astronomy take the availability of lunar surface water to a new level.

More than 15,400 square miles (40,000 square kilometers) of lunar terrain have the capability to trap water in the form of ice, according to a team led by the University of Colorado's Paul Hayne. That's 20% more area than previous estimates, he said.

The presence of water in sunlit surfaces had been previously suggested, but not confirmed. The molecules are so far apart that they are in neither liquid nor solid form, said lead researcher Casey Honniball, a postdoctoral fellow at NASA's Goddard Space Flight Center in Maryland.

"To be clear, this is not puddles of water," she stressed at a news conference.

NASA's astrophysics director Paul Hertz said it's too soon to know whether this water — found in and around the southern hemisphere's sunlit Clavius Crater — would be accessible. The surface could be harder there, ruining wheels and drills.

These latest findings, nonetheless, expand the possible landing spots for robots and astronauts alike — "opening up real estate previously considered 'off limits' for being bone dry," Hayne said in an email to The Associated Press.

For now, NASA said it still aims to send astronauts to the lunar south pole, especially rich in frozen water. The

White House deadline is 2024.

As for the shadowed areas believed to be brimming with frozen water near the moon's north and south poles, temperatures are so low that they could hold onto the water for millions or even billions of years. These so-called cold traps get down to minus 261 degrees Fahrenheit (minus 163 degrees Celsius).

Using data from NASA's Lunar Reconnaissance Orbiter, the researchers identified cold traps as small as a few yards (meters) across and as wide as 18 miles (30 kilometers) and more, and used computer models to get all the way down to micrometers in size.

Identify

"Since the little ones are too small to see from orbit, despite being vastly more numerous, we can't yet identify ice inside them," Hayne said. "Once we're on the surface, we will do that experiment."

For the second study, scientists used NASA's airborne infrared observatory Sofia to conclusively identify water molecules on sunlit portions of the moon just outside the polar regions. Most of these molecules are likely stored in the voids between moon dust and other particles or entombed in the glassy residue of micrometeorite impacts. In this way, the molecules can withstand the moon's harsh environment, scientists said.

By flying 45,000 feet (18 kilometers) above Earth, the Sofia plane is above the water vapors that can interfere with infrared observations.

For now, Sofia can analyze only the moon's outermost surface, but these water molecules could be buried yards (meters) deep, Honniball noted. As a comparison, the Sahara desert has 100 times the amount of water than what Sofia detected in the lunar soil.

Scientists believe all this water on the moon came from comets, asteroids, interplanetary dust, the solar wind or even lunar volcanic eruptions. They'll have a better idea of the sources "if we

can get down on the surface and analyze samples of the ice," Hayne said.

Jason Bleacher, chief scientist for NASA's human exploration and operations office, said at some point decisions will need to be made regarding lunar technology. Will it be easier to survive the extremely cold polar environments and tap into deep shadowed craters for water, he asked, or to dig into the moon at the milder middle latitudes in search of water.

"I can certainly envision ways that robots might be beneficial in all of those," Bleacher said.

NASA plans to launch a water-seeking rover named Viper to the moon's south pole by the end of 2022. Astronauts would follow in a series of missions intended to set up long-term bases. The space agency wants its new Artemis moon-landing program to be sustainable, unlike the Apollo program a half-century ago.

Also:

**BECKLEY, W.Va:** A festival that celebrates West Virginia's Rocket Boys will be held online this year due to the coronavirus pandemic.

The Rocket Boys Festival will be livestreamed Tuesday through Thursday. According to the festival's Facebook page, author and former NASA engineer Homer Hickam is scheduled to attend.

Festival director Scott Hill said the virtual event will give fans worldwide a chance to learn more about Hickam and his story.

The festival celebrates the three years from 1957 to 1960 when Hickam and his friends launched rockets while in high school. They eventually won a national science fair.

Hickam's novel, "Rocket Boys," is about those experiences and growing up in the McDowell County community of Coalwood. The book was adapted into the 1999 movie "October Sky."

The festival originated in Coalwood in 1999, then moved to Beckley in 2012.

**222-year-old coin found:** A man with a metal detector has found a long-hidden, 222-year-old coin under a few inches of soil outside a church in Maine.

Shane Houston, of Charlotte, North Carolina, was on a metal-detecting trip with a friend from New Hampshire when he found the coin earlier this month, the Bangor Daily News reported.

The copper penny, dated 1798, comes from the first decade of American-minted money in North America.

He said it was found on the grounds of a church in Embden where he had permission to use his metal detector.

The penny is not in pristine condition. Houston said it might fetch \$200 but he has no intentions of selling it.

On the same trip, he also found an 1818 penny, a full wagon wheel and a musket ball. The ammunition was measured at 0.75 caliber, making it British in origin. (AP)

Boy helps lemur recapture:

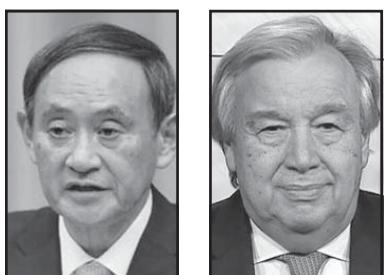
Police said they arrested a man suspected of stealing a ring-tailed lemur from the San Francisco Zoo, where officials rewarded a 5-year-old boy who helped recapture the endangered primate with a lifetime membership.

The theft of Maki, an arthritic 21-year-old lemur, made the news in San Francisco and beyond when zoo officials reported the animal missing and found evidence of forced entry at his enclosure.

Five-year-old James Trinh was unaware of the headlines when leaving his preschool in Daly City, about 5 miles from the zoo, and exclaimed, "There's a lemur! There's a lemur!" Cynthia Huang, director of the Hope Lutheran Day School, told the San Francisco Chronicle. (AP)



In this Sept 30, 2020, file photo, a nearly full moon rises, with an office building in the foreground, in downtown Kansas City, Mo. The moon's shadowed, frigid nooks and crannies may hold frozen water in more places and in larger quantities than previously suspected, good news for astronauts at future lunar bases who could tap into these resources for drinking and making rocket fuel, scientists reported, Oct 26. (AP)



Suga Guterres

Discovery

**UN chief hails Japan PM:** UN Secretary General Antonio Guterres on Tuesday hailed Japanese Prime Minister Yoshihide Suga's pledge to cut greenhouse gas emissions in Japan to zero by 2050, the Foreign Ministry said.

At the outset of their 10-minute telephone conversation, Suga told Guterres that he declared the goal of realizing a decarbonized society by reducing greenhouse gas emissions to zero by 2050 in his Policy Speech to parliament the previous day, the ministry said in a press release.

Suga also informed the UN chief that Japan will participate in the Climate Ambition Alliance, which is promoted by Guterres.

In return, Guterres stated that he sincerely welcomes, highly appreciates, and fully supports the courageous decision presented in the speech, according to the press release.

The premier also said that toward the 26th session of the Conference of the Parties (COP26), Japan intends to accelerate the "virtuous cycle of environment and growth" through innovation, and to continue to lead the international community in order to realize the decarbonized society in line with the Paris Agreement. (AP)

**White rhino born at 'park':** It's a boy - a big boy. A 150-pound (68-kilogram) white rhinoceros was born at Disney's Animal Kingdom theme park at Walt Disney World in Florida over the weekend.

The as-yet-named rhino was born to Kendi, who was the first white rhinoceros born at the animal theme park back in 1999.

Both mom and son are doing well under the care of their human keepers, Disney said in a news release.

In the upcoming weeks, the newborn rhino will be introduced to his crash - or group of rhinos - on the theme park's savanna. (AP)



In this image provided by Walt Disney World, white rhinoceros Kendi, (left), shows off a baby male rhino she gave birth to Oct 25, at Disney's Animal Kingdom at Walt Disney World Resort in Lake Buena Vista, Fla. (AP)