The Lord is like a strong tower, where the righteous can go and be safe.
Proverbs 18:10

DIYARYO
KABITENYO
Nagmamalasakit sa lalawigan

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Be alert, stand firm in the faith, be brave, be strong.
1 Corinthians 16:13

Police seize 750 kilos of ammonium nitrate in Cavite; two arrested

What originally was thought to be an ordinary buy-bust operation for the alleged sale of improvised explosive devices (IED) turned out to be a major police haul after two suspects yielded some 750 kilos of bomb-making chemical ammonium nitrate in Cavite last Oct. 14.

No less than Philippine National Police chief Gen. Guillermo Eleazar, during a press briefing last Oct. 15 in Imus City, Cavite, gave merit to the significance of such

Turn to page 2

PNP chief Gen. Guillermo Eleazar (center) inspects the sacks of ammonium nitrate and blasting caps seized in a joint police and military operation in General Trias City, Cavite last Oct. 14.

P27M worth of shabu seized from Nigerian in Bacoor drug bust

Combined elements of the Philippine Drug Enforcement Agency and the local police arrested a Nigerian who yielded more than P27 million worth of shabu in a buy-bust in Bacoor City, Cavite last Oct. 12.

In a report to PDEA Director General Wilkins M. Villanueva, PDEA-4A Regional Director Melvin Estogue identified the suspect as Anthony Juba-Okafor, 30, who is considered to be one of the major suppliers of shabu in Southern Tagalog, Metro Manila and Central Luzon.

Okafor' yielded two brown paper bags containing four pieces of large resealable transparent plastic bag with more or less 4,000 grams of shabu.

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Scientists discover a highly potent antibody against SARS-CoV-2

Scientists at Lausanne University Hospital (CHUV) and EPFL have discovered a highly potent monoclonal antibody that targets the SARS-CoV-2 spike protein and is effective at neutralizing all variants of concern identified to date, including the delta variant. Their findings are published in the journal Cell Reports.

The newly identified antibody was isolated using lymphocytes from COVID-19 patients enrolled in the ImmunoCoV study being carried out by CHUV's Service of Immunology and Allergy. This antibody is one of the most powerful identified so far against SARS-CoV-2. Structural characterization of the antibody indicates that it binds to an area that is not subjected to mutations of the spike protein. Through this tight interaction, the antibody blocks the spike protein from binding to cells expressing the ACE2 receptor, which is the receptor the virus uses to enter and infect lung cells. That means the antibody halts the viral replication process, enabling a patient's immune system to eliminate SARS-CoV-2 from the body. This protective mechanism was proven through in vivo tests on hamsters; specimens that were administered the antibody were protected against infection even after receiving a highly infectious dose.

In addition to its antiviral properties, the new antibody is designed to have a lasting effect in humans. A typical unaltered antibody provides protection for up to 3-4 weeks. But this new one can protect patients for 4-6 months. That makes it an interesting preventive-treatment option for unvaccinated at-risk individuals or for vaccinated individuals who are unable to produce an immune response. Immunocompromised patients, organ transplant recipients and those suffering from certain kinds of cancer could be protected against SARS-CoV-2 by receiving antibody injections two or three times a year.

CHUV and EPFL now plan to build on these promising results in association with a start-up company which will perform clinical development and production of the antibody-containing drug, through cooperation and intellectual property agreements.

(POLICE... from page 1)

merit to the significance of such a discovery, especially in light of the recently concluded filing of certificate of candidacy of candidates for the 2022 national and local elections.

Arrested during the operations were suspects as Charlito Tenorio, 52, and Jay-ar Suson, 34.

"Right after suspect Tenorio was arrested, he divulged to the operating team the alleged mastermind's Jay-Ar Suson, and his whereabouts," said Eleazar.

Initial investigations showed that Tenorio was first arrested in Barangay Bacao 2, General Trias City at 12:30 PM last Oct. 14, wherein authorities came upon loads of ammonium nitrate, a key ingredient in making explosives.

Afterwards, Tenorio pointed to Suson as the alleged mastermind, which prompted authorities to conduct a follow-up operation for the latter's arrest in Taysbon, Quezon at about 5:30 PM of the same day.

The chemicals were contained in 30 25-kilogram sacks, while authorities also seized 1,000 pieces of improvised blasting caps, all loaded in a commuter van.

According to police, the suspects allegedly sell the explosives for P200,000.

Based on the estimation of Criminal Investigation and Detection Group (CIDG) Director Police Major General Albert Ignatius Ferro, the confiscated stash of explosives could have a "blast radius" of some 1.5 kilometers.

"With this successful operation, we may have prevented the possibility of these materials being used for criminal activities," Eleazar said.

EXTRA JUDICIAL SETTLEMENT OF ESTATE WITH WAIVER OF RIGHTS

NOTICE is hereby given that the estate of the late **ROWENA SANTOS MANALILI** who died intestate on March 24, 2019 at Pasong Buaya, Imus City, Cavite, consisting of a personal property with franchise number 2731 of City of Imus, Cavite particularly described as follows:

MAKE	Honda TMX155i
DENOMINATION	Tricycle
PLATE NO.	WX9704
ENGINE NO.	KB5098D042189
CHASSIS NO.	KB5098042163
MV FILE NO.	0412-00001147284

has been adjudicated and extra-judicially settled by and between her heirs; that KATRINA BEA S. MANALILI hereby WAIVES, RENOUNCES and QUITCLAIMS forever, whatever SHARE, RIGHT, INTEREST, OWNERSHIP, and PARTICIPATION she has in the above described personal property in favor of ROBERTO C. MANALILI, JR. on October 26, 2020 in the City of Imus, Cavite, Philippines before Notary Public Atty. Ramil S. Saav and entered in his Notarial Register as Doc. No. 222; Book No. 46; Page No. VIII; Series of 2020.

(Sgd.) **ROBERTO C. MANALILI, JR. and KATRINA BEA S. MANALILI assisted by her father**

Publication : DIYARYO KABITENYO
Dates : October 4, 11 & 18, 2021

Republic of the Philippines
Province of Cavite
Municipality of Alfonso

OFFICE OF THE MUNICIPAL CIVIL REGISTRAR

NOTICE FOR PUBLICATION

In compliance with Section 5 of R.A. No. 9048, a notice is hereby served the public that **ARNEL S. DACULLA** has filed with this office a petition for change of first name from **FELIX** to **ARNEL** in the birth certificate of **FELIX SANGALANG DACULLA** who was born on **February 21, 1974 at Upli, Alfonso, Cavite**, and whose parents are **Clemente Silvan Daculla and Lourdes A. Sangalang.**

Any person adversely affected by said petition may file his written opposition with this Office not later than **October 25, 2021.**

(Sgd.) **TERESITA A. GALANG**
Civil Registrar

DIYARYO KABITENYO - October 11 & 18, 2021

Republic of the Philippines
OFFICE OF THE CITY CIVIL REGISTRAR
City of General Trias, Cavite
(046) 509-5014

NOTICE OF PUBLICATION

In compliance with Section 5 of R.A. 9048, notice is hereby served to the public that **NELSON H. ALEJAGA JR.** has filed with this Office a petition for Change of First Name from **JAIME** to **RONALDO** in the birth certificate of **JAIME CONCERO BALERIO** who was born on **07 October 1959 at General Trias, Cavite** and whose parents are *Leonardo C. Valerio* and *Rosaline M. Cenizare*.

Any person adversely affected by said petition may file his/her written opposition to this Office not later than **October 25, 2021**.

(Sgd.) **ARLENE E. BUGTONG**
City Civil Registrar

DIYARYO KABITENYO - October 11 & 18, 2021

REPUBLIC OF THE PHILIPPINES
LOCAL CIVIL REGISTRY OFFICE
PROVINCE OF CAVITE
MUNICIPALITY OF NAIC

NOTICE OF PUBLICATION

In compliance with Sec. 5 of R.A. 9048, a notice is hereby served to the public that (Petitioner) has filed with this Office a petition for Change of First Name from **MERLE** to **LIRA** in the birth certificate of **MERLE VERGARA CALANTOG**, born on **AUGUST 27, 1961** at **NAIC, CAVITE**, child of spouses **MACARIO NAZARENO CALANTOG** and **RUFINA LUNTOK VERGARA**.

Any person adversely affected by said petition, may file his written opposition to this Office not later than **October 25, 2021**.

(Sgd.) **GLORIA P. BAGO**
Municipal Civil Registrar

DIYARYO KABITENYO - October 11 & 18, 2021

Republic of the Philippines
Province of Cavite
OFFICE OF THE CITY CIVIL REGISTRAR
Trece Martires City

R.A. Form No. 10.1 (LCRO)

NOTICE FOR PUBLICATION

In compliance with Section 5 of Republic Act No. 9048, a notice is hereby served to the public that **ROWENA S. BIMBO** has filed with this office a **PETITION FOR CHANGE OF FIRST NAME** from **"ROSILA"** to **"ROWENA"** in the Certificate of Live Birth of **ROSILA SAMUYA BIMBO** who was born on **JUNE 28, 1987** at **SIAYAN, ZAMBOANGA DEL NORTE** and whose parents are **ROMEO D. BIMBO and ROSALINDA B. SAMUYA.**

Any person adversely affected by said petition may file his/her written opposition with this office not later than **October 25, 2021.**

(Sgd.) **MAXIMO JR. L. LONTOC**
City Civil Registrar

DIYARYO KABITENYO - October 11 & 18, 2021

EXTRAJUDICIAL SETTLEMENT OF ESTATE OF THE DECEASED DANILO TAPAWAN REYES

NOTICE is hereby given that the estate of the deceased **DANILO TAPAWAN REYES** who died intestate on August 24, 2021 at Imus City, Cavite, consisting of bank account with the **PHILIPPINE NATIONAL BANK (PNB-Imus Branch)** under **Savings Account No. 243310145340 with a balance of P291,589.70 as of June 30, 2021** has been adjudicated and extrajudicially settled by and among his heirs with waiver rights and interests in favor of CLARITA L. REYES solely and exclusively; and for and in consideration of the said withdrawal release/transfer of said fund, they, the heirs above-mentioned, hereby expressly and absolutely remise, release and forever and discharge the PNB, its administrators and assigns and/or any of its officers or employees from any and all claims, suits, actions or causes of action which their successors or assigns now have, or in the future may have against the said Bank in connection with said deposit and they hereby further obligate themselves jointly and severally, to indemnify the said Bank, its administrator and assigns and/or its officers or employees for any loss or damaged which they may sustain arising out of any claim, suit or proceedings initiated by any third person or entity whether private or governmental including, but not limited, to claims by excluded heirs or tax claims by the government on September 22, 2021 at Imus City, Cavite before Notary Public Atty. Carlos Emmanuel C. Montoya and entered in his Notarial Register as Doc. No. 71; Page No. 15; Book No. XIV; Series of 2021.

(Sgd.) **All Heirs**

Publication : DIYARYO KABITENYO
Dates : October 11, 18 & 25, 2021

EXTRAJUDICIAL SETTLEMENT OF ESTATE OF THE DECEASED ROBERTO DE SABAGUN GONZALES

NOTICE is hereby given that the estate of the deceased **ROBERTO DE SABAGUN GONZALES** who died intestate on June 28, 2012 at Bacoor, Cavite, consisting of real property with improvements situated in the Barangay of Salinas, Municipality of Bacoor, Province of Cavite, Island of Luzon, containing an area of TWENTY FOUR (24) SQUARE METERS, with TECHNICAL DESCRIPTION (Lot 17, Block 9, Psd-04-197704 SALINASVILLE II HOMEOWNERS ASSO) has been adjudicated and extrajudicially settled by and among his heirs on October 4, 2021 at the City of Imus, Cavite before Notary Public Atty. Carlos Emmanuel C. Montoya and entered in his Notarial Register as Doc. No. 269; Page No. 54; Book No. XIV; Series of 2021.

(Sgd.) **All Heirs**

Publication : DIYARYO KABITENYO
Dates : October 11, 18 & 25, 2021

Catching malaria evolution in the act

Understanding how malaria parasites evolve after a human is bitten by an infected mosquito is very difficult. There can be billions of individual parasites in a patient's bloodstream and traditional genetic sequencing techniques can't identify the raw material for evolution: new mutations.

"If you want to understand if the parasites are related to each other, if they are all from one mosquito or multiple mosquitoes bites, and what novel mutations are emerging in an infection, then you have to bring it down to the individual genome level," says Assistant Professor Ian Cheeseman, Ph.D., and Co-lead of the Host-Pathogen Interactions Program at Texas Biomedical Research Institute.

DEED OF EXTRA JUDICIAL SETTLEMENT OF ESTATE OF THE LATE GUILLERMO LEE

NOTICE is hereby given that the estate of the late **GUILLERMO LEE** who died intestate on April 28, 2020 at Gen. Trias City, Cavite, consisting of interest, title and participation over TWENTY ONE (21%) PERCENT share over each and every parcels of land situated in Cavite City, some with improvements erected thereon, and more particularly described as follows:

(1) Transfer Certificate of Title No. T-19733
A parcel of land situated in the Dist. of Caridad, City of Cavite, containing an area of ONE HUNDRED EIGHTY (180) SQUARE METERS, more or less.

(2) Transfer Certificate of Title No. T-19734
A parcel of land situated in the Dist. of Caridad, Cavite City, containing an area of ONE HUNDRED EIGHTY (180) SQUARE METERS, more or less.

(3) Transfer Certificate of Title No. T-19735
A parcel of land situated in the Dist. of Caridad, Cavite City, containing an area of ONE HUNDRED NINETY SEVEN (197) SQUARE METERS, more or less.

(4) Transfer Certificate of Title No. T-19736
A parcel of land situated in the Dist. of Caridad, Cavite City, containing an area of TWO HUNDRED (200) SQUARE METERS, more or less.

(5) Transfer Certificate of Title No. T-19737
A parcel of land situated in the Dist. of Caridad, Cavite City, containing an area of ONE HUNDRED FIFTY (150) SQUARE METERS, more or less.

(6) Transfer Certificate of Title No. T-19738
A parcel of land situated in the Dist. of Caridad, Cavite City, containing an area of ONE HUNDRED FIFTY (150) SQUARE METERS, more or less.

(7) Tax Declaration No. 02-0037-00299

A two-storey building	
Location:	Calhoun St.,
Barangay:	Brgy. 37 (Cadena de Amor), Caridad, Cavite City

(8) Tax Declaration No. 02-0037-00291

A two-storey building	
Location:	Calhoun St.,
Barangay:	Brgy. 37 (Cadena de Amor), Caridad, Cavite City

and in Las Piñas City, the following properties:

(1) Transfer Certificate of Title No. T-62992

A parcel of land situated in the Bo. of Talon, Mun. of Las Piñas, Prov. of Rizal (Metro Manila) Island of Luzon, containing an area of FOUR HUNDRED SIX (406) SQUARE METERS, more or less.

(2) Transfer Certificate of Title No. T-62993
A parcel of land situated in the Bo. of Talon, Mun. of Las Piñas, Prov. of Rizal (Metro Manila) Island of Luzon, containing an area of ONE THOUSAND FIVE HUNDRED SIXTY EIGHT (1,568) SQUARE METERS, more of less.

(3) Tax Declaration No. F-016-0459

A two-storey commercial building	
Location of Property:	Alabang-Zapote Road
Barangay:	Talon Cuatro, Las Piñas City
Lot No.	1-E-1-A

(4) Tax Declaration No. F-016-00564

A ground floor store	
Location of Property:	Alabang-Zapote Road
Barangay:	Talon Cuatro, Las Piñas City
Lot No.	1-E-1-B

(5) Tax Declaration No. F-016-00564

A two-storey warehouse	
Location of Property:	Alabang-Zapote Road
Barangay:	Talon, Cuatro, Las Piñas City
Lot No.	1-E-1-B

That likewise, the above named deceased, GUILLERMO LEE, as widower, left several parcels of land, some with improvement erected thereon, located at Cavite City and more particularly described as follows:

(1) Transfer Certificate of Title No. T-19739
A parcel of land situated in the Dist. Of Caridad, Cavite City, containing an area of THREE HUNDRED TWENTY ONE (321) SQUARE METERS, more or less.

(2) Transfer Certificate of Title No. T-19740
A parcel of land situated in the Dist. of Sta. Cruz, Cavite City, Island of Luzon, containing an area of SIXTY EIGHT (68) SQUARE METERS, more or less.

(3) Transfer Certificate of Title No. T-19743
A parcel of land situated in the City of Cavite, containing an area of ONE HUNDRED NINETY THREE (193) SQUARE METERS, more or less;

A parcel of land situated in the City of Cavite, containing an area of SIXTY ONE (61) more or less.

(4) Transfer Certificate of Title No. T-19744
A parcel of land situated in the City of Cavite, containing an area of ONE HUNDRED EIGHTY SIX (186) SQUARE METERS, more or less;

(5) Tax Declaration No. 01-2009-00240

A two-storey building	
Location of Property	Bonifacio St.,
Barangay	Brgy. 9 (Kanawayan) / Sta. Cruz,/Dalahican Cavite City

(6) Tax Declaration No. 01-2009-00240

A one-storey building	
Location of Property:	524 F. Dela Cruz St.,
Barangay	Brgy. 20 (Jasmin) Caridad Cavite City

That, moreover, the above named deceased, GUILLERMO LEE, married to Eufracina Glino Lee (the said wife having died on February 22, 1997, at Manila, and which estate of said deceased, Eufrecina Glino Lee, has already been extra-judicially settled in 1997 by all the heirs), left several parcels of land, without improvement, located at Cavite City and San Mateo, Rizal, and more particularly described as follows, to wit:

(1) Transfer Certificate of Title No. T-13923
A parcel of land situated in the Barrio of Sta. Cruz, Cavite City, Island of Luzon, containing an area of ONE HUNDRED SEVENTY (170) SQUARE METERS, more or less;

(2) Transfer Certificate of Title No. N-453185
A parcel of land situated in the Barrio of Ampid, Municipality of San Mateo, Province of Rizal, containing an area of FOUR HUNDRED FIFTY (450) SQUARE METERS, more or less;

has been adjudicated and extra-judicially settled by and among his heirs in equal shares on March 26, 2021 at Tagaytay City before Notary Public Atty. Valentin C. Guanio and entered in his Notarial Register as Doc. No. 87; Page No. 21; Book No. CLXXX, Series of 2021.

(Sgd.) **Ali Heirs**

Publication: DIYARYO KABITENYO
Dates: October 11, 18 & 25, 2021

Fluorescent spray lights up tumors for easy detection during surgery

The prognosis for a cancer patient who undergoes surgery is better if the surgeon removes all of the tumor, but it can be hard to tell where a tumor ends and healthy tissue begins. Now, scientists report in ACS Sensors that they have developed a fluorescent spray that specifically lights up cancerous tissue so it can be identified readily and removed during surgery.

Surgeons often use sight and touch to identify cancerous tissue, but this approach can miss small tumors, as well as diseased cells at the margins between a tumor and healthy tissue. Fluorescence-guided surgery is an emerging technology that could enhance this difference. The method relies on fluorescent probes that target cancerous tissue and heighten its visibility. But some of these compounds must be administered many hours or days before surgery — sometimes necessitating a long hospital stay — and they might not reveal tiny tumors.

Republic of the Philippines
OFFICE OF THE MUNICIPAL CIVIL REGISTRAR
Indang, Cavite

In the matter of Change of First Name in the Certificate of Live Birth (SECPA) of

EDGAR V. CONSTANTE

CFN-0004-2021

EDGARDO V. CONSTANTE
Petitioner

NOTICE OF PUBLICATION

There is a petition filed for the change of first name in Civil Registry Form No. 1A **(SECPA) of EDGAR V. CONSTANTE** from **"EDGAR"** to **"EDGARDO"**

NOTICE IS HEREBY GIVEN that any interested person is cited to notify this office and show cause why the same should not be granted.

Let this NOTICE be published at least once a week for two (2) consecutive weeks in a newspaper of general circulation as required under Section 5 of Republic Act No. 9048.

(Sgd.) **MERCI A. CHAVEZ**
Municipal Civil Registrar

DIYARYO KABITENYO - October 18 & 25, 2021

Republic of the Philippines
Province of Cavite
Municipality of Maragondon
-oOo-
Office of the Municipal Civil Registrar

NOTICE TO THE PUBLIC

CFN-003-2021 Date: February 3, 2021

In Compliance with the publication requirement and pursuant to OCRG Memorandum Circular No. 2013-1, Guidelines in the Implementation of the Administrative Order No. 1, Series of 2012 (IRR on R.A 10172), Notice is hereby served to the public that the Name of Document Owner has filed with this Office, a petition for CHANGE OF FIRST NAME from **"CORNELIA"** to **"NELLIA"**, in the certificate of live birth of **CORNELIA ESEQUE PESCASIO** who was born on **September 14, 1957** at **Maragondon, Cavite** and whose parents are BERNARDO OGOT PESCASIO and LAPAZ GALLARDO ESEQUE.

Any person adversely affected by said petition may file his written opposition with this Office not later than **November 1, 2021**

(Sgd.) **LEONORA V. LOYOLA**
Municipal Civil Registrar

DIYARYO KABITENYO - October 18 & 25, 2021

DEED OF EXTRAJUDICIAL SETTLEMENT OF ESTATE OF LATE PEDRO YABUT WITH SPECIAL POWER OF ATTORNEY

NOTICE is hereby given that the estate of the late **PEDRO YABUT** consisting of parcels of land located at BRGY. KAYBAGAL, TAGAYTAY CITY, containing an aggregate area of 298,674 square meters, covered by Transfer Certificate of Title Nos. 076-2019883651 and 076-2019883652 of the Registry of Deeds of Tagaytay City has been adjudicated and extrajudicially settled by and between his heirs; that the parties likewise agreed to name, appoint and constitute ATTY. BRIDE O. CASTRONUEVO as their attorney-in-fact, in their names, place and stead to do and perform the following acts and things:

1. To negotiate and facilitate the sale of the aforesaid properties under the terms and conditions of the MEMORANDUM OF AGREEMENT;

2. To execute and sign the documents necessary thereto including the Deed of Absolute Sale after full payment;

3. To do and perform all other acts and things necessary to carry into effect the foregoing.

on October 2021 at Imus, Cavite before Notary Public Atty. Oliver P. Aguinis and entered in his Notarial Register as Doc. No. 66; Page No. 15; Book No. 11; Series of 2021.

Thumbmarked and signed by Heirs and Attorney-in-Fact

Publication: DIYARYO KABITENYO
Dates: October 18, 25 and November 1, 2021

Stress on mothers can influence biology of future generations

A mother's response to stress can even influence her grandchildren.

Biologists at the University of Iowa found that roundworm mothers subjected to heat stress passed, under certain conditions and through modifications to their genes, the legacy of that stress exposure not only to their offspring but even to their offspring's children.

The researchers, led by Veena Prahlad, associate professor in the Department of Biology and the Aging Mind and Brain Initiative, looked at how a mother roundworm reacts when she senses danger, such as a change in temperature, which can be harmful or even fatal to the animal. In a study published last year, the biologists discovered the mother roundworm releases serotonin when she senses danger. The serotonin travels from her central nervous system to warn her unfertilized eggs, where the warning is stored, so to speak, and then passed to offspring after conception.

Examples of such genetic cascades abound, even in humans. Studies have shown that pregnant women affected by famine in the Netherlands from 1944 to 1945, known as the Dutch Hunger Winter, gave birth to children who were influenced by that episode as adults – with higher rates than average of obesity, diabetes, and schizophrenia.

In this study, the biologists wanted to find out how the memory of stress exposure was stored in the egg cell.

"Genes have 'memories' of past environmental conditions that, in turn, affect their expression even after these conditions have changed," Prahlad explains. "How this 'memory' is established and how it persists past fertilization, embryogenesis, and after the embryo develops into adults is not clear.

"This is because during embryogenesis, most organisms typically reset any changes that have been made to genes because of the genes' past activity."

Prahlad and her teams turned to the roundworm, a creature regularly studied by scientists, for clues. They exposed mother roundworms to unexpected stresses and found the stress memory was ingrained in the mother's eggs through the actions of a protein called the heat shock transcription factor, or HSF1. The HSF1 protein is present in all plants and animals and is activated by changes in temperature, salinity, and other stressors.

The team found that HSF1 recruits another protein, an enzyme called a histone 3 lysine 9 (H3K9) methyltransferase. The latter normally acts during embryogenesis to silence genes and erase the memory of their prior activity.

How many people get 'long COVID'? More than half, researchers find

More than half of the 236 million people who have been diagnosed with COVID-19 worldwide since December 2019 will experience post-COVID symptoms -- more commonly known as "long COVID" -- up to six months after recovering, according to Penn State College of Medicine researchers. The research team said that governments, health care organizations and public health professionals should prepare for the large number of COVID-19 survivors who will need care for a variety of psychological and physical symptoms.

During their illnesses, many patients with COVID-19 experience symptoms, such as tiredness, difficulty breathing, chest pain, sore joints and loss of taste or smell.

Until recently, few studies have evaluated patients' health after recovering from the coronavirus. To better understand the short- and long-term health effects of the virus, the researchers examined worldwide studies involving unvaccinated patients who recovered from COVID-19. According to the findings, adults, as well as children, can experience several adverse health issues for six months or longer after recovering from COVID-19.

The researchers conducted a systematic review of 57 reports that included data from 250,351 unvaccinated adults and children who were diagnosed with COVID-19 from December 2019 through March 2021. Among those studied, 79% were hospitalized, and most patients (79%) lived in high-income countries. Patients' median age was 54, and the majority of individuals (56%) were male.

The researchers analyzed patients' health post-COVID during three intervals at one month (short-term), two to five months (intermediate-term) and six or more months (long-term).

According to the findings, survivors experienced an array of residual health issues associated with COVID-19. Generally, these complications affected a patient's general well-being, their mobility or organ systems. Overall, one in two survivors experienced long-term COVID manifestations. The rates remained largely constant from one month through six or more months after their initial illness.

The investigators noted several trends among survivors, such as:

General well-being: More than half of all patients reported weight loss, fatigue, fever or pain.

Mobility: Roughly one in five survivors experienced a decrease in mobility.

Neurologic concerns: Nearly one in four survivors experienced difficulty concentrating.

Mental health disorders: Nearly one in three patients were diagnosed with generalized anxiety disorders.

Lung abnormalities: Six in ten survivors had chest imaging abnormality and more than a quarter of patients had difficulty breathing.

Cardiovascular issues: Chest pain and palpitations were among the commonly reported conditions.

Skin conditions: Nearly one in five patients experienced hair loss or rashes.

Digestive issues: Stomach pain, lack of appetite, diarrhea and vomiting were among the commonly reported conditions.

"These findings confirm what many health care workers and COVID-19 survivors have been claiming, namely, that adverse health effects from COVID-19 can linger," said co-lead investigator Vernon Chinchilli, chair of the Department of Public Health Sciences. "Although previous studies have examined the prevalence of long COVID symptoms among patients, this study examined a larger population, including people in high-, middle- and low-income countries, and examined many more symptoms. Therefore, we believe our findings are quite robust given the available data."

"The burden of poor health in COVID-19 survivors is overwhelming," said co-lead investigator Dr. Paddy Ssentongo, assistant professor at the Penn State Center for Neural Engineering. "Among these are the mental health disorders. One's battle with COVID doesn't end with recovery from the acute infection. Vaccination is our best ally to prevent getting sick from COVID-19 and to reduce the chance of long-COVID even in the presence of a breakthrough infection."

Increases in extreme humid-heat isproportionately affect populated regions

The world is not only getting hotter but also more humid and new research by Washington State University scientists shows people living in areas where humid-heat extremes are already a significant hazard are bearing the brunt of the impact.

Their study, published earlier this month in the journal Geophysical Research Letters, presents the timing, frequency, and severity of extreme humid-heat and dry-heat events and recent trends using hourly data at a spatial resolution of ~ 25 km or 15.5 mi.

"We identify a greater increase in population exposure to humid-heat as compared to dry-heat, emphasizing the importance of understanding humidity changes in a warming world," said study lead author Cassandra Rogers, a postdoctoral research associate in the WSU Vancouver School of the Environment.

Most of Europe, northern South America, Africa, the Arabian Peninsula and the island chains between the Indian and Pacific Oceans, as well as the Northern Hemisphere oceans, have experienced statistically significant increases in both dry and humid-heat extremes, according to the researchers' analysis.

However, a few regions of the planet showed trends that are particularly worrisome.

"For example, increases in the occurrence of humid-heat were strongest over highly populous regions in South and Southeast Asia and southeastern U.S. where changes in dry-heat frequency, as measured by temperature alone, are small or non-significant," said study coauthor Deepti Singh, an assistant professor in the WSU Vancouver School of the Environment.

Rogers and Singh's work suggests that increasing irrigation intensity could be increasing humidity and consequently extreme humid-heat, since a large fraction of land-area in these regions is croplands and the timing of high irrigation rates over places like India coincide with the warmest temperatures.

The consequences could be severe unless efforts are taken to reduce the impact on vulnerable workers.

"With many areas in these regions already approaching the survivability limit of heat and humidity, manual, labor-intensive outdoor work such as agricultural activities, construction and pulled- or cycle-powered rickshaw transport could effectively become infeasible during the hot parts of the day for much of the year," Rogers said.

Given the higher population exposure to humid-heat and its projected increases, particularly in vulnerable areas, the researchers' findings emphasize the need to better understand their societal impacts.

This could be done by considering the timing of how such extremes intersect with the timing of location-specific human activities, demographics, and socio-economic factors that enhance vulnerability to heat stress.

In the future, developing a greater understanding of the human health effects of humid-heat stress will be of particular importance to communities with vulnerable workers that are directly exposed to extreme heat, such as farm and urban outdoor laborers as well as people with limited access to air conditioning, electricity, community cooling centers and health and emergency medical services.

"Addressing the socio-economic factors and infrastructure issues through policy, adaptation measures or financial aid can help reduce the severe health impacts of committed climate change," Singh said.

In addition to Rogers and Singh, the research team for the study included scientists from Syracuse and Columbia Universities in New York and NASA's Jet Propulsion Laboratory in California.

Their work for the project includes data from weather stations on every continent as well as another climate dataset -- ERA5 reanalysis -- that provides hourly weather conditions across the entire world for the past 42 years. The ERA5 data have not previously been used to study humid-heat extremes.

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Immune system keeps the intestinal flora in balance

The bacteria living in the intestine consist of some 500 to 1000 different species. They make up what is known as the intestinal flora, which plays a key role in digestion and prevents infections. Unlike pathogens that invade from the outside, they are harmless and tolerated by the immune system. The way in which the human immune system manages to maintain this delicate balance in the intestine largely remains unknown. It is known that type A immunoglobulins, referred to as IgA antibodies, play an important role. These natural defense substances are part of the immune system, and recognize an exogenous pathogen very specifically according to the lock-and-key principle.

A group of researchers led by Dr. Tim Rollenske and Prof. Andrew Macpherson from the Department of BioMedical Research (DBMR) at the University of Bern and the University Hospital for Visceral Surgery and Medicine at the Insel-spital have recently been able to show in a mouse model that IgA antibodies specifically limit the fitness of benign bacteria at several levels. This enables the immune system to fine-tune the microbial balance in the intestine. "We have succeeded in demonstrating that the immune system recognizes and restricts these bacteria very specifically," explains Tim Rollenske, PhD, lead author of the study. The results have been published in the journal Nature.

IgA antibodies are the most common antibodies in the human immune system, and are secreted by specialist cells in the mucous membranes. They account for two-thirds of human immunoglobulins. Surprisingly, most IgA antibodies produced by the body are directed against benign bacteria in the intestinal flora.

Solving mystery of rare cancers directly caused by HIV

For nearly a decade, scientists have known that HIV integrates itself into genes in cells that have the potential to cause cancer. And when this happens in animals with other retroviruses, those animals often develop cancer. But, perplexingly and fortunately, that isn't regularly happening in people living with HIV.

A team led by University of Pittsburgh School of Medicine and National Cancer Institute (NCI) scientists announced October 13, 2021 in Science Advances that they've discovered why doctors aren't seeing high rates of T cell lymphomas — or cancers of the immune system — in patients living with HIV.

"We seem to have explained some of the mystery of why HIV is rarely the direct cause of cancer," said co-lead author John Mellors, M.D., who holds the Endowed Chair for Global Elimination of HIV and AIDS at Pitt. "Our investigation showed that it requires a very unusual series of events involving changes in both HIV and additional mutations in human genes for someone with HIV to develop lymphoma. Clinicians should always screen their patients for cancer as part of routine health care, but people with HIV do not need to fear that they will inevitably develop lymphomas."

When HIV enters the body, it seeks out T cells and inserts its genetic sequence — called the "provirus" — into the cell's DNA. This effectively hijacks the T cells, which normally patrol the body in search of foreign pathogens, instead instructing them to produce more HIV.

Previous research by the NCI and Pitt teams discovered that the provirus can insert itself into the T cells' genetic code in a place that prompts these infected cells to grow into large, noncancerous clones of themselves and, in some instances, these clones can carry complete, infectious proviruses. Such clones are called "replicloness" because they carry a replication-competent provirus. It isn't necessarily the goal of the virus to induce the growth of replicloness; it's just the result of where the provirus happened to insert itself in the T cell's genetic code.

These prior discoveries gave rise to a paradox: If HIV can integrate into T cell oncogenes (genes involved in normal cell division that, when mutated, result in cancerous cell growth), then shouldn't it also cause lymphoma?

To answer this question, the team obtained samples from 13 HIV patients with lymphoma and picked out three that had high levels of HIV proviruses, indicating that the virus might be implicated in the cancer formation.

They then examined those samples to learn where the provirus had inserted into the T cell DNA.