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

Imus multi-purpose field to be converted into sports hub

IMUS, CITY, Cavite—Officials plan to convert the sprawling grandstand and multi-purpose field in Barangay Malagasang into a sports hub following the successful staging of a Southeast Asian (SEA) Games football match in the area.

"It was a dream come true and we are happy that a SEA Games event was played in our barangay (village). We thank the organizers for choosing the area for the event," said Cavite 3rd district Representative Alex L. Advincula, the proponent of the year-old Imus Grandstand and Multi-Purpose Oval and Sports Field.

"Our intention now is to improve further and build up areas where other sports can be played for local, provincial, national, and international competitions," Advincula added.

In a speech at a regional softball game opening ceremony at the site last summer, Advincula offered the Field to organizers for sports events and expressed a wish for the area to be a venue for national and international competitions.

Advincula has a


ADVINCULA

penchant for sports. His humble beginning as a garbage collector, then a firm janitor, and gravel and sand truck driver made him strive for education that molded him to be a successful businessman, public servant, and sportsman.

"I and my family love to watch sports games. It was my wish even then to see the national and international games played in Imus," said Advincula, a softball player in his schooldays.

The modern 3.7 hectare Grandstand and Multi-Purpose Sports Field has a track and field oval and a place for softball, baseball, and football games with grassand and tower lights, amenities, and greenery.

Advincula, Mayor Emmanuel L. Maliksi, and other city officials led the construction of the sports area and the nearby Ospital ng Imus.

The P200-million grandstand and oval sports area and the nearby P300,000 city government hospital was inaugurated on Oct. 12, 2019.

The grandstand, oval, and field are being used by city residents, particularly the youth, for sports activities, gatherings, and as a promenade and leisure area.

The Field was used as the venue of the lone official SEA Games football match between Indonesia and Laos on

Turn to page 2

P400,000 worth of illegal firecrackers destroyed in Cavite

Illegal firecrackers amounting to almost half a million pesos were destroyed in Cavite last Jan. 2.

The contraband items worth P451,847, seized earlier last week, were brought to Camp General Pantaleon Garcia in Imus city to be destroyed.

Also seized by the PNP's firearms and explosives division were firecrackers being sold by vendors without permit.

Cavite police officer-in-charge Col. Marlon Santos said authorities are closely monitoring commercial areas to ensure that illegal firecrackers won't be sold to the public.

Sixty-one firecracker-related injuries have been recorded in Cavite.

Nationwide, there were 288 cases of firecracker-related injuries since Dec. 21, according to the Department of Health, a number lower compared to what was tallied in the same period last year.

Based on data collected by the ABS-CBN Investigative and Research Group, the number of fireworks injuries and fireworks ingestion has gone down since 2013.

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Half the amount of chemo prevents testicular cancer from coming back, new trial shows

Testicular cancer can be prevented from coming back using half the amount of chemotherapy that is currently used, a new clinical trial has shown.

In many men who have had surgery for an aggressive form of testicular cancer, the disease can come back elsewhere in their bodies and need intensive treatment, often within two years after initial diagnosis.

The new trial showed that giving men one cycle of chemotherapy was as effective at preventing men's testicular cancer from coming back as the two cycles used as standard.

Crucially, lowering the overall exposure to chemotherapy reduced the debilitating side effects which can have a lifelong impact on patients health.

The 111 trial has already begun to change clinical practice, reducing the number of hospital admissions, and lowering the costs of treatment.

The trial, led by The Institute of Cancer Research, London, and University Hospitals Birmingham NHS Foundation Trust, involved nearly 250 men with early-stage testicular cancer at high risk of their cancer returning after surgery.

The research was published in the journal European Urology January 5, 2020 (Thursday), and was funded by Cancer Research UK and the Queen Elizabeth Hospital Birmingham Charity.

Testicular cancer is the most common cancer affecting young men, with many patients being diagnosed in their twenties or thirties.

After surgery, patients are currently offered two cycles of chemotherapy to destroy any cancer cells that may have already spread, or a watch-and-wait approach — where they receive no treatment unless their cancer comes back, at which point they are given three cycles of chemo.

Survival rates are very high, but as men are diagnosed young, if they choose to have chemotherapy they may have to live with long-term side effects for many decades.

In the new study, patients were given one three-week cycle of a chemotherapy known as BEP — a combination of the drugs bleomycin, etoposide and the platinum agent cisplatin.

The researchers looked at the percentage of men whose testicular cancer returned within two years of being treated with one cycle of chemotherapy, and compared these relapse rates with established data from previous studies in patients who were given two cycles.

(IMUS... from page 1)

Dec. 5 and the practice game area of some participating football teams.

Advincula, his son City Councilor Adrian Jay Advincula, City Councilor Her[illegible] V. Monzon, and some other officials were among those who watched the game that Indonesia won, 4-0.

The competing foreign football players and the organizers appraised the venue and were happy with the preparations made for the game and the sight of the beautiful sunset and the sky in the area.

Monzon, the chairman of the City Council ways and means committee, said that plans have been deliberated to convert the Malagasang oval and field into a sports hub.

Monzon, also a sportsman, said that the plans include the putting up of an area for extreme sports games and the construction of a one-hectare indoor gymnasium for basketball, volleyball, and other sports.

Advincula and the city administration are helping each other on the village sports hub conversion plan.

"Yes, we will do it. When we say sports hub, all sports are in one area, it is indeed our plan to make it one," he said.

Prime tourist destination Tagaytay City and Imus were co-hosts of the fifth biennial regional meet. Tagaytay hosted the skateboarding and BMX cycling events at the new sites near the City Hall, while the underwater hockey games were held at the Ayala Vermosa Sports Hub in Daanghari, Pasong Buaya, also in Imus.

Republic of the Philippines
Fourth Judicial Region
REGIONAL TRIAL COURT
OFFICE OF THE CLERK OF COURT
City of Bacoor

NATIONAL HOME MORTGAGE FINANCE CORP.,
Mortgagee,

-versus- **Foreclosure No. 2019-228**
For: Extra-judicial Foreclosure of Real Estate Mortgage

MA. LUISA FERRER married to ARTURO FERRER,
Mortgagors.
x-----x

NOTICE OF EXTRA-JUDICIAL FORECLOSURE

Upon Extra-judicial file Sale under Act 3135 as Amended by Act 4118, filed by the mortgagee-assignee, **NATIONAL HOME MORTGAGE FINANCE CORPORATION** of 104 Araneta St., Legaspi Village, Makati City, and against the mortgagors, **MA. LUISA FERRER married to ARTURO FERRER** of 136-C Dolores St., Pasay City, to satisfy the mortgage indebtedness which as of September 2019, amounts to **TWO MILLION THIRTY NINE THOUSAND SEVEN HUNDRED FIFTY NINE PESOS & 20/100 (P2,039,759.20)** Philippine Currency, exclusive of penalty charges, the undersigned or his duly authorized representative will sell at public auction on **January 24, 2020 at 10:00 o'clock** in the morning or soon thereafter, at the main entrance of the Hall of Justice of Bacoor City, Cavite, to the highest bidder for CASH and in Philippine Currency, the following described property with all the improvements thereon, to wit:

TRANSFER CERTIFICATE OF TITLE NO. T-501319

"A parcel of Land (Lot 130 Blk. 6 of the consolidated plan, Psu-042101-000177, being a portion of Lot 7360-D, Pub-20147, Lots 8147-C, 8147-D (LRC) Pcd-267739, L.R.C. Rec. No. 8943, situated in the Brgy. Molino, Mun. of Bacoor Prov. of Cavite, X x x, containing an area of **EIGHTY FIVE (85) SQUARE METERS.**"

"All sealed bid must be submitted to the undersigned on the above stated time and date."

"In the event the public auction should not take place on the said date, it shall be held on **January 31, 2020**, without further notice."

Prospective buyers or bidders are hereby enjoined to investigate for themselves the title to the said property and encumbrances, if any there be.

City of Bacoor, Cavite, December 16, 2019.

(Sgd.) **LIZA D. VICTA**
Clerk of Court VI

Copy Furnished:

ATTY. DANTE Q. RIZADA
5th Floor Filoteemo Bldg.,
104 Araneta St., Legaspi Village, Makati City

MR. & MRS. MA. LUISA FERRER and ARTURO FERRER
136-C Dolores St., Pasay City
/Camella Homes Santiago Ida Carmona
Lot 133 Blk. 98, Bo. Molino, Bacoor, Cavite

WARNING: It is absolutely prohibited to remove, deface or destroy this notice of Extra judicial Sale on or before the date of sale.

Publication : DIYARYO KABITENYO
Dates : December 23 , 30, 2019 and January 6, 2020

DEED OF EXTRAJUDICIAL SETTLEMENT OF ESTATE WITH ABSOLUTE SALE

NOTICE is hereby given that the estate of the deceased **WILLIAM MENDOZA EQUIZA**, who died intestate on December 12, 2012 in AFPMC V, Lanu Road, Quezon City, consisting of his rights and interest over a certain parcel of land with all improvement erected thereon containing an area of THIRTY FIVE (35) SQUARE METERS situated in the Municipality of Tanza, Province of Cavite, covered by Transfer Certificate of Title No. T-611817 of the Register of Deeds for the Province of Cavite has been adjudicated and extrajudicially settled by and among his heirs; further, they do ABSOLUTELY SELL, CONVEY AND TRANSFER all their rights, interests, and participation over their respective shares in favor of MICHAELA A. LLADO married to RHEA P. LLADO, his heirs and assigns, in consideration of the sum of ONE HUNDRED FIFTY THOUSAND PESOS ONLY (Php150,000.00) on September 9, 2019 in Tanza, Cavite, Philippines before Notary Public Atty. Sherelyn V. Pingon-Arca and entered in her Notarial Register as Doc. No. 466; Page No. 94; Book No. XXX; Series of 2019.

(Sgd.) **Heirs /Vendors and Vendee**

Publication : DIYARYO KABITENYO
Dates : December 23, 30, 2019 and January 6, 2020

EXTRAJUDICIAL SETTLEMENT OF ESTATE OF FULGENCIO C. BALACANO

NOTICE is hereby given that the estate of the deceased **FULGENCIO C. BALACANO** who died without debts on September 02, 2019, who during his lifetime was one of the registered owners of the following estate property, more specifically described as follows:

1. A parcel of land located in Bayang Pulo, Municipality of San Jose Del Monte, Bulacan, embraced in and covered by Transfer of Certificate of Title No. T-910449(M) of the Register of Deeds for Meycauayan, Province of Bulacan, consisting of TWO HUNDRED FOUR Square Meters (204), more or less.

2. Three-Storey residential building covered by Tax Declaration No. 14-010-00527 with ground area of 49.116 sqm., and building area of 140.53 sqm.

has been adjudicated and extrajudicially settled by and among his heirs with waiver of rights and interest in the above-described property, in favor of ROSE CANTUBA BALACANO - the parcel of land covered by TCT No. T-1116190(M) and the building covered by Tax Declaration No. 06-043-00129-19-B on December 10, 2019 at Sitio, Cavite before Notary Public Atty. Neil Noe C. Reyes and entered in his Notarial Register as Doc. No. 231; Page No. 44; Book No. V; Series of 2019.

(Sgd.) **Heirs with marital consent of spouses**

Publication : DIYARYO KABITENYO
Dates : December 23, 30, 2019 and January 6, 2020

Snake-like proteins can wrangle DNA

It turns out the coiled snakes often used to symbolize medical knowledge are more than apt. They also mimic a key to life itself.

Members of Rice's Center for Theoretical Biological Physics (CTBP) are taking a deep dive into the dynamics of essential proteins that help DNA fold into its compact, functional form in chromosomes. They found a key protein's "coiled coils" also braid around each other and writhe like snakes as they form bigger loops in the DNA.

The loops, in turn, bring together sites on DNA that regulate the transcription of genetic messages. While the loops and their functions are becoming better understood, until now nobody has been able to take a close look at the condensin and cohesin proteins that wrangle the DNA into shape.

The Rice team led by physicists José Onuchic and Peter Wolynes and postdoctoral fellow Dana Krepel report in the Proceedings of the National Academy of Sciences that structural maintenance of chromosomes (SMC) proteins may actively manage DNA through a novel mechanism.

They found these proteins have ring-shaped lumps that consist of two 35-nanometer long protein coiled coils. These terminate on one end in a pair of "head unit" motors that bind to DNA coils, and on the other in "hinges" thought to open and close to entrap the strands.

The lab's simulations showed these coiled coils are anything but limp lariats.

"We already knew the coiled coils have some sort of structural importance, but what we saw is that these long coils are quite active," Krepel said. "We're still investigating to what extent, but as we ran the simulations, we saw that the coils want to come together, kind of like headphones that get all twisted when you put them in your bag. We saw the twist right away."

"Braiding is the word we use," Wolynes added. "People thought the coiled coils were simply hanging out, but they didn't think they'd coil again on top of each other in an organized fashion.

EXTRA-JUDICIAL SETTLEMENT OF ESTATE OF THE DECEASED ROSALINO T. SISMAET, JR.

NOTICE is hereby given that the estate of the deceased **ROSALINO T. SISMAET, JR.** who died intestate on October 4, 2013, at Manila City, consisting of his one-half (1/2) conjugal share over five undivided portions, equivalent to one-fifth (1/5) of the aggregate area of the property covered by Transfer Certificate of Title no. T-1221, containing an area of TEN THOUSAND NINE HUNDRED ONE (10,901) SQUARE METERS, more or less, has been adjudicated and extrajudicially settled by and among his heirs in pro indiviso or in equal shares on December 11, 2019 at Tagaytay City, Philippines before Notary Public Atty. Valentin C. Gonzaga [illegible] and entered in his Notarial Register as Doc. No. 404; Page No. 81; Book No. CLXV; Series of 2019.

(Sgd.) **All Heirs**

Publication: DIYARYO KABITENYO
Dates: December 23, 30, 2019 and January 6, 2020

DEED OF EXTRA-JUDICIAL PARTITION OF ESTATE WITH ABSOLUTE SALE

NOTICE is hereby given that the estate of the late **ROBERTO LLAGAS LOYOLA** who died intestate on June 14, 2011 in Cavite City, Philippines consisting of his one half (1/2) conjugal share in that parcel of land situated at the Brgy. of Malusera [illegible], of Tanza, Prov. of Cavite, covered by TCT No. T-1015199 containing an area of ONE HUNDRED SEVENTY (170) SQ. METERS has been adjudicated and extra-judicially settled by and among his heirs, that for and in consideration of the sum of FOUR HUNDRED EIGHTY THOUSAND PESOS (Php480,000.00), Philippine Currency, they are hereby SELL, TRANSFER AND CONVEY all their shares, interest and participation in the one half (1/2) conjugal share of the decedent and also including the one half conjugal share of GAUDENCIA E. LOYOLA in favor of HERNANDO C. ARAÑAS JR. married to BABY R. ARAÑAS, their heirs and assigns on December 18, 2019 in the City of Cavite, Philippines before Notary Public Atty. Antonio B. Cubazo and entered in his Notarial Register as Doc. No. 169; Page No. 34; Book No. LIV; Series of 2018.

(Sgd.) **Heirs and Vendees**

Publication: DIYARYO KABITENYO
Dates: December 23, 30, 2019 and January 6, 2020

Scientists link La Niña climate cycle to increased diarrhea

A study in Botswana by Columbia University Mailman School of Public Health scientists finds that spikes in cases of life-threatening diarrhea in young children are associated with La Niña climate conditions. The findings published in the journal Nature Communications could provide the basis for an early warning system that would allow public health officials to prepare for periods of increased diarrhea cases as long as seven months ahead of time.

In low- and middle-income countries, diarrhea is the second leading cause of death in children younger than five years of age, with 72 per cent of deaths occurring in the first two years of life. Rates of under-5 diarrhea in Africa are particularly high, with an estimated incidence of 3.3 episodes of diarrhea per child each year and one-quarter of all child deaths caused by diarrhea.

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

NOTICE OF PUBLICATION

In compliance with Section 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 **REMEGIO** to **ROMEO** in the birth certificate of **REMEGIO IGNACO**, born on **April 17, 1959** at **UNISAN, QUEZON**, child of spouses **VICENTE IGNACO** and **BELEN FELIPE**.

Any person adversely affected by said petition, may file his written opposition to this Office not later than **January 2, 2020**.

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

DIYARYO KABITENYO - December 16 & 23, 2019

Republic of the Philippines
OFFICE OF THE CITY CIVIL REGISTRAR
City of General Trias, Cavite
(046) 509-1014

NOTICE OF PUBLICATION

In compliance with Section 5 of R.A. 9048, notice is hereby served to the public that **NERISSA DELA CRUZ GRAVADOR** has filed with this Office a petition for Change of First Name from **IRENEA** to **NERISSA** in the birth certificate of **IRENEA DELA CRUZ GLAVADOR** who was born on **28 October 1967** at **General Trias, Cavite** and whose parents are *Marcelito Gravador* and *Maria Dela Cruz*.

Any person adversely affected by said petition may file his/her written opposition to this Office not later than **January 13, 2020**.

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

DIYARYO KABITENYO - December 30, 2019 and January 6, 2020

Republic of the Philippines
OFFICE OF THE CITY CIVIL REGISTRAR
City of General Trias, Cavite
(046) 509-1014

NOTICE OF PUBLICATION

In compliance with Section 5 of R.A. 9048, notice is hereby served to the public that **ELENA LUIG SALINAS** has filed with this Office a petition for Change of First Name from **NOIMIE** to **ELENA** in the birth certificate of **NOIMIE BLANCA LUIG** who was born on **04 August 1962** at **General Trias, Cavite** and whose parents are *Emeterio Luig* and *Rafaelita Blanca*.

Any person adversely affected by said petition may file his/her written opposition to this Office not later than **January 13, 2020**.

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

DIYARYO KABITENYO - December 30, 2019 and January 6, 2020

DEED OF EXTRAJUDICIAL SETTLEMENT OF ESTATE OF THE LATE APOLINAR NAQUILA WITH SPECIAL POWER OF ATTORNEY

NOTICE is hereby given that the estate of the late **APOLINAR NAQUILA** who died intestate on December 28, 1988, consisting of the following property acquired from Pablo Bulala on July 7, 1973:

> "A portion of a parcel of land containing 20 (?) [illegible] duly designated which form part of that parcel of land described and bounded as follows:
>
> "Situated at San Miguel, Dagohoy, Bohol, under Tax Dec. No. D-833, bounded on the North, by Paulino Soriano; East, by Arturo and Antonio Bulala; South, by Sergio Orlanghasa and West, by Felix Olaron."

now covered by Original Certificate of Title No. 42402, Free Patent No. (VII-7) 070492 issued on May 4, 1981 registered in the name of Pablo Bulala

has been adjudicated and extrajudicially settled by and among his heirs equally; the parties likewise agreed to name, appoint and constitute their mother MARIA BERNARDITA N. ELICOT, as their attorney-in-fact to do and perform the following acts and things:

1. To facilitate the processing of the annotation of the Adverse Claim at the back of OCT No. 42402, Free Patent No. (VII-2) 070492 with the Register of Deeds for the Province of Bohol.

2. To pay the required fees and taxes with the proper government entities, receive and such [illegible] and other documents issued in accordance therewith.

3. To execute and sign documents relative of the foregoing and to render an accounting of the amount received by her and the expenses incurred.

on November 13, 2019 at Imus City, Cavite before Notary Public Atty. Earl G. Gavilola and entered in his Notarial Register as Doc. No. 111; Page No. 25; Book No. [illegible]; Series of 2019.

(Sgd.) **Heirs**

Publication: DIYARYO KABITENYO
Dates: December 30, 2019, January 6 & 13, 2020

Republic of the Philippines
Local Civil Registry Office
Province: Cavite
City/Municipality: Rosario

NOTICE FOR PUBLICATION

In compliance with Section 5 of Republic Act No. 9048, a notice is hereby served to the public that **MENANDRO B. VIVO** has filed with this Office a petition for change of first name from **JOSE MENANDRO** to **MENANDRO** in the birth certificate of **JOSE MENANDRO BENERAN VIVO** who was born on **20 MAY 1969** at **ROSARIO, CAVITE** and whose parents are **OSCAR D. VIVO** and **JULITA B. BENERAN**.

Any person adversely affected by said petition may file his written opposition with this Office not later than **20 JANUARY 2020**.

(Sgd.) **MARIA ROSARIO C. SORIANO**
Municipal Civil Registrar

DIYARYO KABITENYO - January 6 & 13, 2020

A new breakthrough in developing effective antimalarial drugs

Parasites in the genus Plasmodium, which cause malaria, are transmitted to humans through bites from infected mosquitoes. The parasites manage to acclimatize to these two completely different hosts because the plasticity of their genome enables them to adapt as necessary. Scientists at the Institut Pasteur and the CNRS decided to investigate the epigenetic mechanisms behind this plasticity, in particular DNA methylation. They identified molecules capable of inhibiting DNA methylation and effectively killing even the most resistant Plasmodium falciparum parasites. The results of their research were published on November 27, 2019 in the journal ACS Central Science.

Malaria affects more than 200 million people worldwide every year, and resistance to antimalarial treatments is constantly increasing. This infectious disease is caused by Plasmodium parasites that are capable of adapting to varied environments. During the parasite's life cycle, it lives in the salivary glands of the mosquito vector before infecting the liver and then the blood of the human host. "At each stage in the cycle, epigenetic mechanisms such as histone or DNA modifications regulate the expression of the parasite's genes, enabling the specific expression of some genes in the cell at a given time so that the parasite can adapt to its environment," explains Flore Nardella, a contract researcher in the Biology of Host-Parasite Interactions laboratory (Institut Pasteur/CNRS/Inserm).

In 2019, her laboratory, led by CNRS scientist Artur Scherf, demonstrated the importance of epigenetic DNA modifications for the parasite's life cycle. The Institut Pasteur's Epigenetic Chemical Biology laboratory has unparalleled expertise in the field of DNA methyltransferase inhibitors. So it was logical for the two teams to work together to identify molecules capable of inhibiting DNA methylation and killing parasites. "Artur's team had a thorough knowledge of the epigenetic mechanisms in malaria, and we had an original chemical library with inhibitors that had already been optimized for these modifications," explains Paola B. Arimondo, a chemist, CNRS Director of Research and Head of the Epigenetic Chemical Biology Unit (Institut Pasteur/CNRS).

So the scientists decided to work on the Plasmodium falciparum parasite, especially strains of artemisinin resistant parasites provided by the Institut Pasteur du Cambodge. In a first series of in vitro experiments, the Plasmodium falciparum parasites were allowed to interact with human red blood cells so that they could infect and develop in them. More than 70 methylation-inhibiting molecules were then tested to assess their efficacy and their specificity in relation with the parasites. "As soon as we tested the first molecules, we saw significant activity, comparable with drugs such as chloroquine," recalls Flore Nardella. "That's very rare when testing a new library of molecules." The inhibitor molecules were very effective, and some of them killed the Plasmodium falciparum parasites in the blood in just 6 hours," adds Paola B. Arimondo.

The scientists then continued their research. In a second series of experiments, the most effective molecules were tested on resistant isolates and, once again, the results were conclusive: the molecules effectively killed the blood parasites. "This study shows, for the first time, that parasites in the blood, including artemisinin-resistant strains, can be killed rapidly by targeting DNA methylation," concludes Paola B. Arimondo. "Given the treatment failure observed in South-East Asia in particular, it is important to find new therapeutic targets. Methylation could pave the way for new drugs that, combined with artemisinin, could eliminate resistant parasites," adds Flore Nardella.

For the third stage of their work, the scientific team tested the inhibitors in vivo in mice infected with the parasite Plasmodium berghei.

Alzheimer 'tau' protein far surpasses amyloid in predicting toll on brain tissue

Brain imaging of pathological tau protein "tangles" reliably predicts the location of future brain atrophy in Alzheimer's patients a year or more in advance, according to a new study by scientists at the UC San Francisco Memory and Aging Center. In contrast, the location of amyloid "plaques," which have been the focus of Alzheimer's research and drug development for decades, was found to be of little utility in predicting how damage would unfold as the disease progressed.

The results, published January 1, 2020 in Science Translational Medicine, support researchers' growing recognition that tau drives brain degeneration in Alzheimer's disease more directly than amyloid protein, and at the same time demonstrates the potential of recently developed tau-based PET (positron emission tomography) brain imaging technology to accelerate Alzheimer's clinical trials and improve individualized patient care.

"The match between the spread of tau and what happened to the brain in the following year was really striking," said neurologist Gil Rabinovici, MD, the Edward Fein and Pearl Landreth Distinguished Professor in Memory and Aging and leader of the PET imaging program at the UCSF Memory and Aging Center. "Tau PET imaging predicted not only how much atrophy we would see, but also where it would happen. These predictions were much more powerful than anything we've been able to do with other imaging tools, and add to evidence that tau is a major driver of the disease."

Alzheimer's researchers have long debated the relative importance of amyloid plaques and tau tangles – two kinds of misfolded protein clusters seen in postmortem studies of patients' brains, both first identified by Alois Alzheimer in the early 20th century. For decades, the "amyloid camp" has dominated, leading to multiple high-profile efforts to slow Alzheimer's with amyloid-targeting drugs, all with disappointing or mixed results.

Many researchers are now taking a second look at tau protein, once dismissed as simply a "tombstone" marking dying cells, and investigating whether tau may in fact be an important biological driver of the disease. In contrast to amyloid, which accumulates widely across the brain, sometimes even in people with no symptoms, autopsies of Alzheimer's patients have revealed that tau is concentrated precisely where brain atrophy is most severe, and in locations that help explain differences in patients' symptoms (in language-related areas vs. memory-related regions, for example).

"No one doubts that amyloid plays a role in Alzheimer's disease, but more and more tau findings are beginning to shift how people think about what is actually driving the disease," explained Renaud La Joie, PhD, a postdoctoral researcher in Rabinovici's In Vivo Molecular Neuroimaging Lab, and lead author of the new study. "Still, just looking at postmortem brain tissue, it has been hard to prove that tau tangles cause brain degeneration and not the other way around. One of our group's key goals has been to develop non-invasive brain imaging tools that would let us see whether the location of tau buildup early in the disease predicts later brain degeneration."

Despite early misgivings that tau might be impossible to measure in the living brain, scientists recently developed an injectable molecule called flortaucipir — currently under review by the FDA — which binds to misfolded tau in the brain and emits a mild radioactive signal that can be picked up by PET scans.

Rabinovici and collaborator William Jagust, MD, of UC Berkeley and Lawrence Berkeley National Laboratory, have been among the first to adopt tau PET imaging to study the distribution of tau tangles in the normally aging brain and in a smaller cross-sectional study of Alzheimer's patients. Their new study represents the first attempt to test whether tau levels in Alzheimer's patients can predict future brain degeneration.

Trial suggests babies in intensive care can be better protected from parental bacteria

For sick or prematurely born babies spending their first days of life in a hospital's neonatal intensive care unit (NICU), the soothing voice and gentle touch of a loving parent can have a tremendous impact toward a positive outcome – that is, unless mom or dad's visit leaves the infant with something extra: a dangerous bacterial infection.

Now, a Johns Hopkins Medicine research team reports it has developed and tested a relatively simple strategy for reducing the chance of parents exposing their babies in the NICU to one of the most commonly diagnosed and potentially deadly microbial scourges in a hospital: Staphylococcus aureus. The researchers detailed the positive findings from their preliminary clinical trial in the Dec. 30, 2019, online posting by the Journal of the American Medical Association (JAMA).

"Traditional procedures for preventing hospital-acquired Staph infections in the NICU have primarily focused on keeping staff and facilities as sterile as possible," says Aaron Milstone, M.D., M.H.S., associate hospital epidemiologist at the Johns Hopkins Hospital, professor of pediatrics at the Johns Hopkins University School of Medicine and lead author of the JAMA paper. "Our study is among the first to focus on parents as a source of the bacteria and then test the effectiveness of an intervention to combat the problem."

According to the U.S. Centers for Disease Control and Prevention, an estimated 30% of the adult population are long-term carriers of Staphylococcus aureus bacteria. Most of the time, these people are healthy and the microorganisms they harbor cause no harm. However, in healthcare settings where patients may have weakened immune systems, the bacteria can become a serious, even deadly, threat. An unchecked spread of the bacteria – both the antibiotic-susceptible and antibiotic-resistant (such as methicillin-resistant Staphylococcus aureus, or MRSA) strains – can lead to severe complications, including bacteremia or sepsis (blood infections), pneumonia, endocarditis (heart valve infection) and osteomyelitis (bone infection).

In the NICU, S. aureus infections not only threaten a sick or premature infant's survival but their neurological development as well. In a 2019 study, Milstone and others estimated that there are more than 5,000 cases of invasive S. aureus infections each year in NICUs across the nation and that 10% of the children will likely die before hospital discharge.

To reduce the spread of S. aureus, the Johns Hopkins Medicine researchers turned to a simple regimen for mothers and fathers to follow while their child is in intensive care. The preventive measure includes the application of an antibiotic (mupirocin) ointment into the nose and skin cleansing with a wipe containing 2% chlorhexidine gluconate, an antiseptic widely used on patients to remove surface bacteria around a surgical site before an operation.

The Treating Parents to Reduce NICU Transmission of S. aureus (TREAT Parents) clinical trial was conducted to test the proposed strategy's effectiveness. The researchers selected for study 190 newborn babies admitted to two NICUs at Johns Hopkins-affiliated hospitals in Baltimore, Maryland, between November 2014 and December 2018. Each of the infants had at least one parent who tested positive for S. aureus when screened at the time of their child's entry into the NICU. Baseline S. aureus counts were done for the infants at the same time.

The parents of 89 babies self-administered the antibiotic nasal ointment twice a day for five days and cleaned designated skin areas (hands, arms, legs, chest, neck, back and the skin between the buttocks and groin) with antiseptic wipes for the same time period. The control group, consisting of the remaining 101 parental couples, used identically packaged placebo treatments of petroleum jelly and non-antiseptic wipes.

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Many younger patients with stomach cancer have a distinct disease

Many people under 60 who develop stomach cancer have a "genetically and clinically distinct" disease, new Mayo Clinic research has discovered. Compared to stomach cancer in older adults, this new, early onset form often grows and spreads more quickly, has a worse prognosis, and is more resistant to traditional chemotherapy treatments, the study finds. The research was published recently in the journal Surgery.

While rates of stomach cancer in older patients have been declining for decades, this early onset cancer is increasing and now makes up more than 30% of stomach cancer diagnoses.

"I think this is an alarming trend, as stomach cancer is a devastating disease," says senior author Travis Grotz, M.D., a Mayo Clinic surgical oncologist. "There is little awareness in the U.S. of the signs and symptoms of stomach cancer, and many younger patients may be diagnosed late – when treatment is less effective."

The research team studied 75,225 cases using several cancer databases to review stomach cancer statistics from 1973 to 2015. Today, the average age of someone diagnosed with stomach cancer is 68, but people in their 30s, 40s and 50s are more at risk than they used to be.

Although there's no clear cutoff age for the definition of early onset and late-onset stomach cancer, the researchers found the distinctions held true whether they used an age cutoff of 60, 50 or 40 years. The researchers found that the incidence of late-onset stomach cancer decreased by 1.8% annually during the study period.

How cells learn to 'count'

One of the wonders of cell biology is its symmetry. Mammalian cells have one nucleus and one cell membrane, and most humans have 23 pairs of chromosomes. Trillions of mammalian cells achieve this uniformity – but some constantly break this mold to fulfill unique functions. Now, a team of Johns Hopkins Medicine researchers have found how these outliers take shape.

In experiments with genetically engineered mice, a research team has ruled out a mechanism that scientists have long believed controls the number of hairlike structures, called cilia, protruding on the outside of each mammalian cell. They concluded that control of the cilia count might rely instead on a process more commonly seen in non-mammalian species.

The experiments, described Dec. 2 in Nature Cell Biology and led by Andrew Holland, Ph.D., associate professor of molecular biology and genetics at the Johns Hopkins University School of Medicine, may eventually help scientists learn more about human diseases related to cilia function, such as respiratory infections, infertility and hydrocephaly.

Cilia are ancient structures that first appeared on single-celled organisms as small hairlike "fingers" that act as motors to move the cell or antennae to sense the environment.