

MULA KAY

Asanglor...

Mababasa sa isyung ito ng Healthscape ang patuloy na pagpupunyagi ng iba't-ibang sangay ng UP Manila upang maging makabuluhan ang pagkilos laban sa COVID-19.

Nagpapasalamat ako sa dedikasyon na ipinapakita ng mga kawani ng Technology Transfer and Business Development Office. Ang tulong nila sa mga mananaliksik upang mapabilis ang mahabang proseso at maging handa ang mahahalagang teknolohiya upang magamit ng *healthcare workers* at mga pasyente ay kapuripuri.

Isa sa mga haligi sa ating pakikibaka sa COVID-19 ay ang RT PCR *testing* na isinasagawa ng ating National Institutes of Health Institute of Molecular Biology and Biotechnology Central Laboratory. Ang pag-aambag ng UP Manila, PGH, Department of Health, Research Institute for Tropical Medicine, at pati na pribadong kompanyang Novartis ang dahilan kung paano patuloy nitong nagagampanan ang pagtesting na libre sa napakaraming pasyente di lamang ng PGH kundi pati na sa iba pang ospital at *community quarantine centers*.

Ngayong International Year of the Nurse and Midwife ay nararapat lamang na tukuying muli ang kanilang napakahalagang kontribusyon, di lamang sa loob ng ospital kundi sa malawakang komunidad din. Ang Associate Dean for Research naman ng College of Public Health ay nakikipanayam sa iba pang mga eksperto upang mapabuti ang sistemang pangkalusugan sa panahon ng COVID.

Walang humpay ang pagtuklas ng epektibong panggagamot lalo na sa malubhang sakit, kaya pag-aaralan ang *convalescent plasma* para sa COVID-19. Ang hindi rin tumitigil ay ang pagdating ng mga ayuda galing sa mga taong naaantig sa nakikita nilang sakripisyo ng buong komunidad natin.

Napakaraming pagkilos, iisa ang mithiin; ang talunin ang COVID-19. Ngunit sa gitna ng mga ito, isa lang ang tinitingalang gabay; ang makapangyarihang Panginoon.

TECHNOLOGY TRANSFER
AND
BUSINESS DEVELOPMENT OFFICE



TTBDO: Catalyst for COVID-19 Technologies

With COVID-19 sweeping across the country, scientists and innovators are roused to devise ways to contain the virus. However, research became challenging during the quarantine; hence, the UP Manila Technology Transfer and Business Development Office (TTBDO) took on a new mission together with other UP constituent units and has committed to help expedite research initiatives and technology transfer to address this public health crisis.

Since the beginning of the quarantine, the entire staff had been working tirelessly and remotely to provide full circle assistance to the technologies that needed to be protected and for these to be made available for use by health workers and patients with COVID-19. Going beyond their job descriptions and working past required hours, employees vowed to make it easier and faster for inventors to do research and transfer technology.

Before COVID-19, technologies usually took years to be developed. The drug and biomedical device development and process had several steps. This arduous process also included getting Food and Drug Administration (FDA) approval for drugs and intellectual property (IP) protection which took months to years to accomplish; but is important to guarantee that the university retains the rights to the technology.

Technology transfer requires a proactive approach that combines engaging researchers, promoting the technology, and encouraging potential industrial partners to use the technology. Given the urgency of the present situation, the TTBDO stepped up to assist researchers to ensure fast and maximum public benefit from their technologies.

Technology transfer officers volunteered to co-create with inventors even during the research phase, understanding the nuts and bolts of the technology. From several months, the office had proudly reduced the turn around time of IP protection to just a few weeks—and quickly proceeded to engage with potential licensees and release of inventions to the market. Business development officers have also doubled their efforts in getting funding or securing collaborative research agreements with interested industry partners.

To facilitate ideation and direct research teams towards the 'new normal', the TTBDO staff learned the art of Design Control Process. And since all COVID-19 technologies are health-related, the staff had an orientation on the Research Ethics Board protocols which are fundamental to every health technology. Lastly, to fast track commercialization efforts, the staff also became more accustomed to securing FDA approvals. **TURN TO PAGE 4**

It took a “village” to set up the NIH COVID-19 Testing Lab

The UP Manila National Institutes of Health (NIH) was one of the first responders to the country's call for an expanded COVID-19 testing capacity. Initially, we thought that setting up a SARS CoV2 testing laboratory would be a breeze because the NIH Institute of Molecular Biology and Biotechnology Central Laboratory has been doing tests for highly infectious agents such as HIV and Hepatitis for many years; but, we were wrong.

Understandably, a laboratory that will be testing a novel, highly transmissible virus needs to comply with stringent requirements for it to be safe. There should be adequate space in the building, a working air handling system with negative pressure, certification of biosafety level 2 cabinets, and calibration of SARS CoV2 polymerase chain reaction (PCR) machines as well as other instruments. UP Manila, through Chancellor Carmencita Padilla and Vice Chancellor Arlene Samaniego, provided the seed money for the laboratory to function.

The staff who would be performing the testing also needed influenza vaccinations; and our beloved, the late Dr. Sally Gatchalian promptly assisted

us with the procurement of the vaccines. It took almost 2 weeks to have the NIH Molecular Laboratory for COVID-19 to be biosafety level 2 accredited; and immediately after passing the proficiency testing, we hit the road and started the COVID-19 testing.

During its first 8 weeks of operation, the NIH COVID-19 Testing Laboratory was run by about 30 volunteer staff who were NIH research faculty and university researchers, faculty of UP Manila, and research assistants of Department of Science and Technology (DOST)-funded molecular biology research projects. Because of the enhanced community quarantine, everyone had to be provided meals and accommodations. UP Manila administration responded speedily by giving space in the 6th floor of the UP Manila dormitory. PGH Director Gap Legaspi made sure that the Dietary Department delivered meals to our volunteers everyday.

By the 9th week, all the volunteers had to go back to their DOST-funded research projects. Fortunately, through the Department of Health (DOH) Human Resource for Health Augmentation program, the NIH was able to hire new staff – a



pathologist, medical technologists, molecular biologists, and encoders who are now the new NIH COVID-19 Testing Team.

The NIH COVID-19 Testing Lab is part of the DOH network of laboratories all over the country which met regularly to discuss technical matters and supply chain problems. Not being a DOH subnational laboratory however, the NIH did not receive any funding to perform the COVID-19 testing. And yet to date, for the 13,740 tests that we have done so far, we have not charged a single centavo. We were able to serve the PGH patients as well as 29 other hospitals and community quarantine centers within the catchment area of PGH.

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Health policy and systems research (HPSR) in COVID-19 response

Dr. Katherine Ann Reyes, Assistant Professor in the Department of Health Policy and Administration and Associate Dean for Research of UP Manila College of Public Health shared the Philippine's experiences during the webinar entitled “COVID-19: HPSR is Crucial for an Evidence-Based Response” held last 25 June 2020 and hosted by the Institute for Health Systems Research (IHSR), Malaysia.

The webinar aimed to discuss how HPSR can have a role in an effective

COVID-19 response. According to Dr. Zulkarnain Abdul Karim, senior researcher and head of the IHSR Center for Health Services Research, HPSR delved into how health systems are organized, financed, and governed to attain health outcomes; and who drives these processes including how these are being done. HPSR facilitates understanding of the dynamics and complexity for improving and strengthening health systems.

Dr. Reyes stated that the Philippines' prior experiences with disease outbreaks have somehow helped the country improve its surveillance system as well as come up with preparedness plans. The Philippines also capitalized on having a mechanism to mobilize an inter-agency governance structure

that was designed to coordinate a national level response. In the early phase of COVID-19, this was confined to internal technical groups within the government. There was also no formal multi-disciplinary research plan agenda issued. She acknowledged that there is still a lot to be done in terms of applying HPSR to the COVID-19 response.

According to Dr. Reyes, the health systems approach was already in place during the Universal Health Care (UHC) implementation but was interrupted when COVID-19 hit the Philippines in January 2020. On the role of research in supporting health system reform, there is a section in the UHC law that mentioned this. Dr. Reyes attributed this

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In celebration of the International Year of the Nurse and Midwife, the UP College of Nursing (UPCN) conducted four webinars to highlight current issues on COVID-19 and the roles of nurses and other health workers. The webinars brought together nurses, public health practitioners, and local government personnel to share their ideas, insights, and experiences.

On June 8, UPCN welcomed 320 participants from different parts of the country and the world to the first webinar that tackled the critical action areas for nurses in the COVID-19 public health response. Speakers who are experts from different disciplines articulated on the nurses' essential role in this pandemic. Special Adviser to the COVID-19 National Task Force Dr. Anthony Leachon spoke about public health approaches to flatten the curve and provided directions for actions at the country level. He was joined by other key persons: Dr. Mona Bahouth, Johns Hopkins University; Ms. Nini Jurado, Philippine Nurses Association of America; Dr. Fely Marilyn Lorenzo, Commission on Higher Education Technical Committee on Nursing Education; Dr. Rosie de Leon, Philippine



UPCN webinars tackle roles of nurses in COVID-19 response

Nurses Association; Dr. Mary Grace Lacanaria, Association of Deans of the Philippine Colleges of Nursing; Dr. Glenda Arquiza, Professional Regulation Commission Board of Nursing; Dr. Erlinda Palaganas, PNA Cordillera Autonomous Region; Ms. Cecilia G. Peña, PGH Deputy Director for Nursing; and Asst. Prof. Maria Angela Mabale, UPCN Mental Health Nursing faculty.

During this webinar, the panelists concurred that nurses are vital in managing health crises. And in the COVID-19 outbreak, nurses in the frontlines constantly demonstrate their commitment, competence, and compassion as they continue to fight for their patients' lives while risking their own.

The second webinar held on June 16 was the 40th JVS Lecture Series on Nursing and Related Disciplines, jointly organized with the UP College of Nursing Alumni Association, Inc. It was a tribute to

UPCN Founding Dean Julita Villaruel Sotejo on her 112th birthday anniversary and was attended by 215 participants from the Philippines, Europe, Middle East, and US. The speaker, Dr. Fely

Marilyn E. Lorenzo, a UPCN alumna, discussed the state of Philippine nursing.

She was joined by PRC Board of Nursing Chair Dr. Glenda Arquiza, Undersecretary for Health Dr. Roger Tong-an, OIC Assistant Secretary of the Department of Labor and Employment Dr. Ma. Teresita S. Cucueco, and Director Gerald Janda of the Department of Budget and Management. The webinar was an opportunity for nurses to participate in a high level discourse on the key issues facing the profession amidst the COVID-19 pandemic and the significant role of nurses in implementing the universal health coverage and primary health care.

The third webinar held on June 19 focused on the COVID-19 interventions in the university setting and was joined by 172 participants from different parts of the country and the US. The resource person was Brigette Lao, a former UPCN faculty now based at the University of California Irvine. She emphasized the

NIH COVID-19 TESTING LAB...

The DOH and Research Institute for Tropical Medicine understood our predicament and provided support in the form of swabs and viral transport media, viral ribonucleic acid (RNA) extraction kits, and PCR kits. The PGH through Director Gap Legaspi and Dr. Dennis Serrano, Head of Logistics of the PGH COVID Crisis Team, also extended aid when supplies were running low.

Setting up and running a laboratory in a crisis situation taught us many lessons. We have learned to be resourceful and resilient during the time of lockdown. We

were able to strengthen our resolve to respond to the testing needs of our country despite seemingly insurmountable obstacles. We also witnessed firsthand, how organizations from different sectors of our society and even individuals helped answer the country's need to test, trace, and treat this menace. The outpouring of support and solidarity kindled by this shared challenge was phenomenal. It warmed our hearts knowing that there were so many selfless and generous people who chose to prioritize helping others during this extraordinarily trying time of our lives.

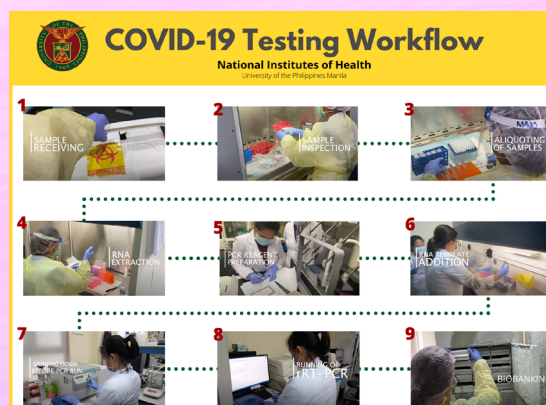
Dr. Eva Maria Cutiongco-Dela Paz



The RT PCR TEST for COVID-19 in a Nutshell

RT PCR is considered the “gold standard” for testing the presence of the novel SARS CoV2 virus in a swab specimen taken from a patient suspected to have COVID-19. Testing involves the following steps in the workflow: (1) Sample reception, encoding and inspection; (2) Inactivation and Ribonucleic acid (RNA) Extraction; (3) Reverse Transcription - Polymerase Chain Reaction (RT PCR); (4) Results Generation, Interpretation, and Validation.

During sample reception, the samples that arrive from different hospitals and community quarantine centers are encoded into the laboratory database and they are given a unique specimen identification number. The samples are cross-checked with the patient's name and specimen ID and are then inspected for sample leakage under a biosafety level 2 cabinet with the staff in full personal protective equipment (PPE) since the samples contain live viruses. If there is leakage, these are discarded as biohazard waste; and are then reported back to hospital of source.



The next step is inactivation of the virus either by heat or chemical means; this process renders the virus non-infective. Heat inactivation involves incubation at 65 degrees Centigrade using a heat block for about 10 minutes, immediately followed by RNA extraction. Chemical inactivation, on the other hand, uses chemicals that breakdown the viral components such as a lysis buffer included in RNA extraction kits.

During the extraction step, RNA is isolated and purified, a vital step to be able to perform a good PCR. RNA being a single-stranded molecule is highly unstable, it needs to be converted (or reverse

transcribed) to a more stable form called complementary deoxyribonucleic acid or cDNA. In this more stable form, the DNA can be made into multiple copies using the PCR machine.

There are different PCR kits available for use, each of these kits detect different parts of the SARS CoV 2 gene that carry directions for making proteins that are needed for the virus to replicate inside the human cell. The primary objective of the COVID-19 test is to identify parts of the viral genome present in the sample. Using a real-time PCR and fluorescent probes, amplification can be monitored in real time and the DNA copies can be quantified. Results, whether the SARS CoV2 was detected or not, are then generated, interpreted, and validated.

The usual turn around time is 48 hours from the time the sample reaches the laboratory. These results are given back to the hospital source and reported to the Regional Epidemiological and Surveillance Unit of the Department of Health.

Dr. Eva Maria Cutiongco-Dela Paz

TTBDO: CATALYST FOR COVID TECHNOLOGIES...

From germicidal masks, to sanitation tents, to telepresence robots, and mechanical ventilators; the TTBDO has successfully joined forces with the brains of the university to offer anti-COVID 19 technologies within the reach of our fellow Filipinos.

Aside from COVID-19 technologies, TTBDO simultaneously facilitated the protection of many other technologies. Recent successes of TTBDO are the filing of several patent applications before the end of 2019 up to the first quarter of this year.

TTBDO as part of UP Manila remains true to its mandate to bring forward service tantamount to the value of life. With its continuous pursuit of new solutions through research and technology transfer, it will help the country rise up stronger from this health calamity.

Kevin U. Facun, ECE, MEEE and
Lourdes Marie Tejero, PhD

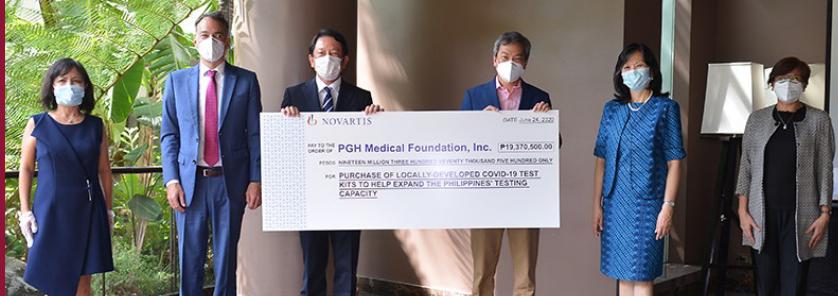
Nourishing bodies and hearts: Let's hear it from the food donors (Part 3)

“When the pandemic started, a lot of hospitals became overburdened with the number of COVID-19 cases. It was clear that a lot of people would be going to PGH as it was the hospital most accessible to the majority of Filipinos. A lot of our volunteers felt helpless and frustrated for not being able to do something to contribute to the fight; which our front liners were doing every day. So when we had a meeting with Cloudeats and the Belo Group to help them coordinate the delivery of food to PGH, it was an easy decision for us.

More than the donation, we think it was the overall process of seeing people unite together for a single cause of providing help to those at the frontlines that really inspired us to believe and hope again. It was inspiring to see people giving what they can in order to help in a cause that, hopefully, helped save lives.”

Carlo
Hirayang Kabataan
(Bukas Bayani & Sangguniang
Kabataan Academy Initiative)





Ms. Christine Fajardo, Country Corporate Affairs Head, Novartis; His Excellency Alain Gaschen, Swiss Ambassador to the Philippines; Mr. Jugo Tsumura, Country President, Novartis; PGH Director Legaspi, UPM Chancellor Padilla, and NIH Executive Director Cutiongco-de la Paz, during the Novartis turnover of donations.

Novartis donates P19.3M for COVID-19 testing kits

Novartis donated PHP19.3M to the Philippine General Hospital Medical Foundation, Inc. (PGHMFI) last June 24, 2020 for the purchase of locally-produced COVID-19 testing kits. "Our main thrust is to protect our frontline health workers (HCWs) and support the expansion of the country's treatment and testing capacity," said Ju-go Tsumura, Novartis Healthcare Philippines Country President & Managing Director.

UP Manila Chancellor Carmencita Padilla thanked the Novartis leadership team and

highlighted the importance of this donation in the war against COVID-19. For her part, UP Manila National Institutes of Health (NIH) Executive Director Dr. Eva Maria Cutiongco-Dela Paz stated that this donation allowed the NIH and PGH to significantly step up their testing capacity. "To date, we have conducted 13,297 tests which were made possible by the collective efforts of UP Manila, PGH, NIH, and donors like Novartis who prioritize helping others during these extraordinarily trying times."

PGH Director and PGHMFI Board of Trustees member Gerardo Legaspi mentioned how valuable this support from Novartis was to PGH, the biggest COVID-19 referral

hospital in the country which has served more than 600 COVID patients and over 3,000 more with COVID-related conditions.

Gracing the occasion was His Excellency Alain Gaschen, Ambassador of Switzerland to the Philippines, who shared how Swiss companies like Novartis not only cater to the demand for drugs but also share knowledge and foster partnerships to support manifold public health programs.

Novartis, through its generics division Sandoz also donated hydroxychloroquine to the DOH as potential treatment for about 1,000 hospitalized patients. Other donations of Novartis were PPEs and food packs for HCWs.

The initiatives of Novartis in the Philippines are part of its global response to the pandemic, including the creation of a global US \$20 million fund to support COVID-19 impacted communities around the world.

PGH conducts research on convalescent plasma for COVID-19

With no vaccines developed yet and global trials for drugs as possible cures for COVID-19 still underway, efforts are ongoing to develop adjunct therapies. Adjunctive therapy is used to support the main or primary treatment of diseases.

The UP Philippine General Hospital (UP-PGH) with support from the Department of Science and Technology - Philippine Council for Health Research and Development (DOST-PCHRD) is conducting the project: "Convalescent Plasma as Adjunctive Therapy for Hospitalized Patients with COVID-19."

The project aims to evaluate the efficacy and safety of convalescent plasma transfusion as adjunctive therapy to prevent disease progression among hospitalized COVID-19 patients. Convalescent plasma is taken from the blood



PHOTO: St. Luke's Medical Center BGC

of patients who recovered from infection and contains neutralizing antibodies against it.

According to Dr. Michael Ryan, Executive Director of the Health Emergencies Program of the World Health Organization (WHO), the use of convalescent plasma transfusion is a valid approach in treating infectious diseases as demonstrated in previous pandemics such as the H1N1 influenza, 2003 SARS-CoV-1, and the 2012 MERS-CoV outbreaks. In a press conference in Geneva last February, he explained that through

the transfusion, "you're giving (the patients) a boost of antibodies to hopefully get them through the very difficult phase."

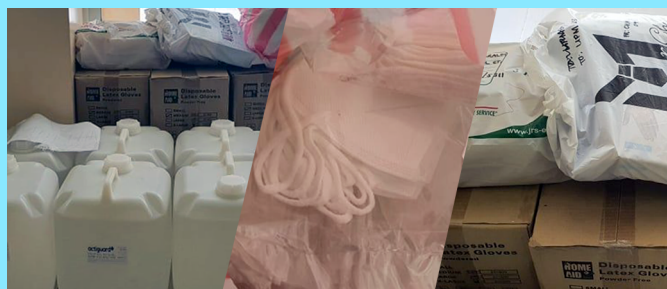
"For the past months, we have been mobilizing our resources and maximizing our capacities to help combat COVID-19. Through this project, we are hoping to provide supportive treatment to COVID-19 patients to avoid worst-case scenarios," DOST-PCHRD Executive Director Jaime C. Montoya said.

Aside from developing locally-produced convalescent plasma, the project also aims to strengthen the capacities of healthcare professionals in its clinical use, not only for COVID-19, but also for other future emerging infections. The team has started the call for blood donations from COVID-19 survivors last April 2020. The project will run for 12 months. (With reports from [PCHRD](#))

AISEC in UP Manila: Spearheading donation drive for PGH

As a youth-run organization that empowers the youth to be of service to society, challenging times like this notorious COVID-19 pandemic cannot put youth leadership to a halt. We believe that leadership can be developed in anyone, even through small acts of caring.

The *Association Internationale des Etudiants En Sciences Economiques et Commerciales* (French acronym for International



Association of Students in Economics and Commercial Sciences or AISEC) members decided to use our platform to help frontliners and vulnerable sectors during the COVID-19 pandemic. Embodying one of the Sustainable

Development Goals, SDG 3 (Good Health and Well-being), AIESEC in UP Manila spearheaded a donation drive in partnership with Tulong Kabataan-UPM last April 6, 2020.

The project aims to provide surgical face masks and other medical supplies to the patients, frontline health workers, and interns of PGH. The proceeds were donated to the UP-PGH *Bayanihan Na!* Operations Center. **Jophie Agoncillo**

HPSR IN COVID-19 RESPONSE...

to years of efforts to strengthen the country's research infrastructure, first for biomedical research, the clinical research, and lately on HPSR.

With COVID-19, putting everything into the context of a health system is still a challenge. She recounted for instance, that it was only in April that a wider discussion on health system function - testing capacity, bed availability, quarantine facilities, PPEs, and other vital information became mainstream. She acknowledged that getting data was not as fast as should be. Timely and quality information is required for more accurate projections on how to strengthen the health system response to COVID-19.

"We had health scientists, epidemiologists, public health data scientists, statisticians, and mathematicians but there was limited participation of the social scientists. Our experience with the UHC urges us to respond to COVID-19 in a way that would be guided by science; but we also need to examine which science is able to participate and which ones have a link to policymaking and can speak to the decision-makers," Dr Reyes pointed out.

The health policy expert said the Philippines has yet to establish a mechanism of linking evidence to policies, as found in other countries like the rapid evidence synthesis capacity that is well recognized and accepted within governments. We

currently have a limited and generally ad-hoc capacity, particularly as demonstrated during the COVID-19 pandemic. She stressed the need to consider how different sectors view evidence and how different disciplines can help in ensuring that we frame our policy problems in a way that will be helpful for the country to identify and address the most important policy issues.

The other webinar panelists were Professor of European Public Health at London School of Hygiene and Tropical Medicine (LSHTM) Martin McKee who spoke for the United Kingdom, Dr. Awatef Amer Nordin of IHSR for Malaysia, and Dr. Dina Balabanova also of LSHTM who presented the HPSR competencies developed from over three years of consultation with key world leaders. This webinar is part of a multi-country project on HPSR strengthening where UP Manila is also a collaborator.

Charmaine Lingdas and Cynthia Villamor

UPCN WEBINARS...

need for partnerships among dormitory personnel, university employees, and health services department to protect the health and well-being of the university population.

For the last webinar, the COVID-19 prevention and control initiatives with local government units was organized with the UP Resilience Institute and joined by 244 participants and officials from various provinces in the Philippines who shared their successful implementation of public health response to COVID-19.

Baguio City Mayor Benjamin

Magalong described the testing, contact tracing, isolation, and managing of cases in the city; Libmanan, Camarines Sur Mayor Bernard Briosio discussed their efforts in food security and economic recovery; Assistant Provincial Health Officer Dr. Liland Estacion shared the experiences of the Integrated Provincial Health Office in Negros Oriental; UPCN Asst Prof Peter James Abad showed the LGU-Academe-DOH Partnership in conducting Contact Tracing training; and Director of Research Dr. Kristoffer B. Berse delved on the experience of the UP Resilience Institute which showcased cooperation and governance in the COVID-19 response.

Alexandra Belle Bernal

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