COVID-19

PHILIPPINE GENOME CENTER

COVID-19 Lab

Clinical Genomics Laboratory

MBBDFI DONATION DRIVE

PROGRESS REPORT

UNIVERSITY OF THE PHILIPPINES
PHILIPPINE GENOME CENTER

Published by the COVID-19 Task Force
Philippine Genome Center

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MBBDFI Donation Drive

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The following report enumerates the allocation and utilization of the **Molecular Biology and Biotechnology Diliman Foundation, Inc. (MBBDFI)** monetary donations to the **Philippine Genome Center (PGC) COVID-19 Task Force**. On March 27, 2020, the MBBDFI created the fund-raising drive and released the official announcement to support the testing efforts of PGC, the National Institute of Molecular Biology and Biotechnology (NIMBB), and the UP Health Service.

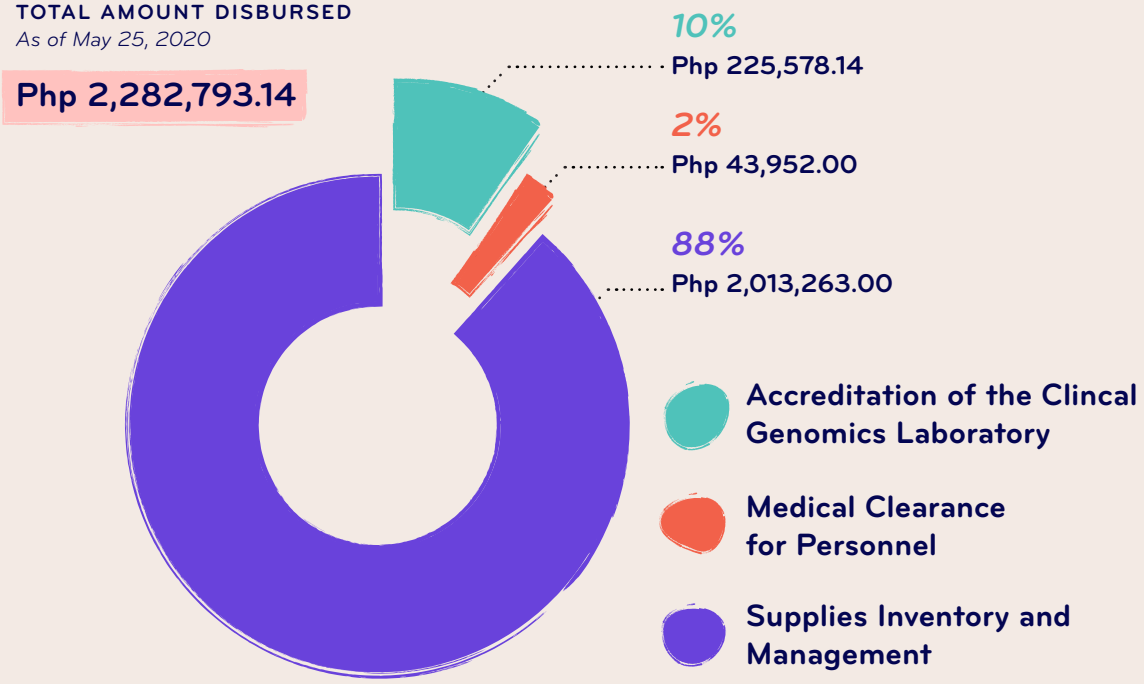
As of April 24, 2020, **PGC's Clinical Genomics Laboratory (CGL)** was accredited by the Department of Health (DOH) as the 18th freestanding laboratory to conduct testing for SARS-CoV-2 (COVID-19) by Real-Time PCR. The reconfiguration of the PGC labs and its completion of the five (5) stages of lab capacities accreditation was heavily backed by donations coursed through the Molecular Biology and Biotechnology Diliman Foundation. MBBDFI has granted monetary support totalling to **Php 2,380,010.14 of which Php 2,282,793.14 has been utilized**. The remaining balance of **Php 76,577.00** from the approved grant amounting to **Php 252,640.00** will be used to procure biohazard bags and screw caps for two-weeks use (Php 74,830.00- PGC PO-011) .

The grant was allocated in support of the following:

- Following recommendations by the World Health Organization (WHO) and Department of Health (DOH) - Research Institute for Tropical Medicine (RITM) Technical Working Group (TWG) for the accreditation of the Clinical Genomics Laboratory (*See Annex A - Lab Certification, Annex B - License to Operate*)
- Reconfiguration of PGC COVID-19 lab following RITM recommendations
- Administration of vaccines as part of the Medical Clearance for Personnel (Laboratory Staff) stipulated in the COVID-19 SOP
- Procurement and management of laboratory supplies essential in COVID-19 testing

TOTAL AMOUNT DISBURSED
As of May 25, 2020

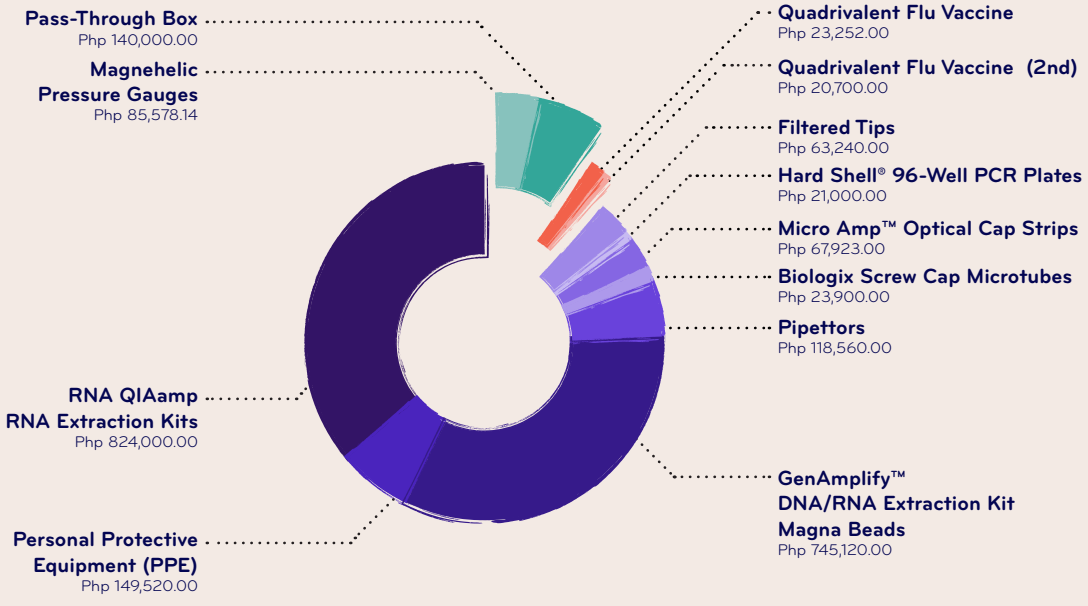
Php 2,282,793.14



Utilization of Monetary Donation

DISBURSED AMOUNT totaling Php 2,282,793.14, as of May 25, 2020, were distributed to the following COVID-19 capacity building activities:

CATEGORY	ITEMS	AMOUNT (IN PHP)	P.R. NO.	DATE APPROVED
Laboratory Accreditation	Procurement & Installation of Magnehelic Pressure Gauges	85,578.14	PGC PO-004	April 9
	Procurement & Installation of Pass-Through Box	140,000.00	PGC PO-003	April 9
Medical Clearance	Procurement of Quadrivalent Flu Vaccine for 14 PGC Staff and 20 MBB Voltunteers (34 vials)	23,252.00	N/A	April 9
	Purchase of Quadrivalent Flu Vaccines - 2nd Batch (30 vials)	20,700.00	N/A	March 31
Supplies Inventory and Management	Procurement of Filtered Tips	63,240.00	PGC PO-007	March 31
	Procurement of Hard Shell® 96-Well PCR Plate	21,000.00	PGC PO-008	March 31
	Procurement of Micro Amp™ Optical 8/cap strips, Fast Optical 96-Well reaction Plate & 10uL Ext. Length, Micropoint Tip	67,923.00	PGC PO-009	March 31
	Procurement of Biologix Screw Cap Microtubes	23,900.00	PGC PO-010	March 31
	Procurement of Pipettors (4 sets)	118,560.00	PGC PO-005	April 9
	Procurement of GenAmplify™ (DNA/RNA Extraction Kit - Magna Beads)	745,120.00	PGC PO-012	May 10
	Procurement of Personal Protective Equipment (89 sets)	149,520.00	PGC PO-006	April 19
	Procurement of RNA QIAamp RNA Extraction Kits	824,000.00	MBBDFI PO	April 17



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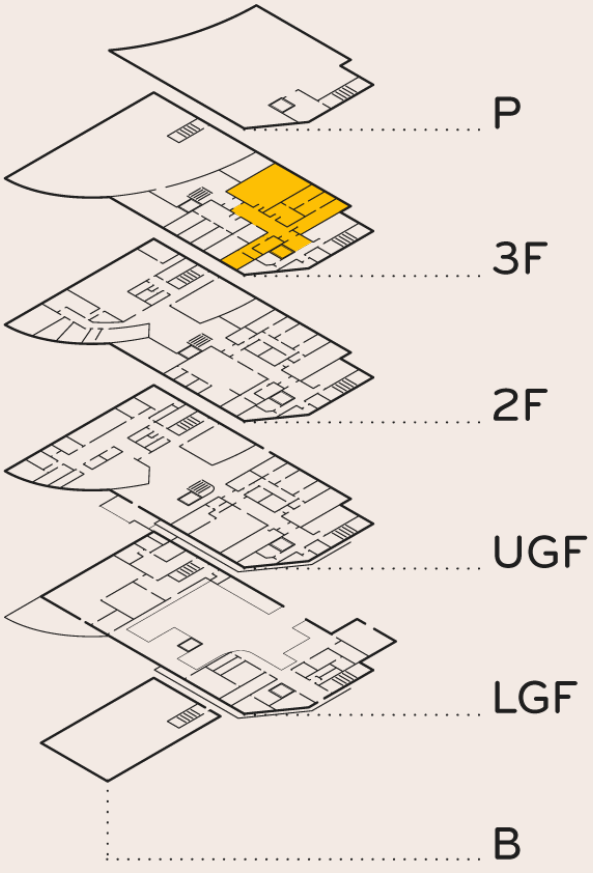
11. Accreditation of the Clinical Genomics Laboratory

Originally, the unused laboratory spaces adjacent to the PPMF on the third floor, as well as a single room of the second floor currently occupied by the then to-be-launched Clinical Genomics Laboratory was chosen to house the COVID-19 testing laboratory in the PGC building 1. However, after review by the technical working group, it was agreed that for the safety of both laboratory staff and the building staff that all processes be isolated on a single level (third floor). As such, the entirety of the third floor of PGC building 1, which houses the Protein Proteomics and Metabolomics Facility, Biobank Facility Offices, the Laboratory Information Management Systems Offices, and a single teaching laboratory, were all converted to house the equipment needed to conduct COVID-19 testing. The said recommendations required renovation/remodeling of existing designs and installation of additional equipment to optimize biosafety protocols when handling live (biohazardous) samples in the facility.



COVID-19 Lab

1. Procurement & Installation of Magnehelic Pressure Gauges

The PGC is equipped with an air handling unit (AHU) which allows for the controlled differential distribution of negative/positive air pressure within different sections of the facility. The current method for determining functionality of the system requires monitoring of pressure gauges located in the AHU control room, which is separate from the laboratory itself. As such, the TWG recommended a real-time indicator to determine maintenance of differential air pressure within the unit itself.

Magnehelic pressure gauges are cheaper methods of real-time measuring of differential air pressure between units and requires daily checking before the start of operations. More expensive real-time solutions with sound alarms were deemed excessive, as the AHU in itself is a standard feature in Biosafety Level 3 (BSL3) facilities. Given that the minimum requirement for COVID-19 testing is a BSL2 facility, the TWG recommendation took advantage of the exceptional features of the PGC and recommended the installation of pressure gauges in order to enhance the facility's biosafety features even further.

Figure 1. Magnehelic Pressure Gauge installed at the entrance of the COVID-19 laboratory. The "0" rating indicates a negative airflow pressure gradient from the positive (high) pressure hallway to the more negative (low) pressure inner laboratory. Opening the door allows for reading of the total pressure of the system in equilibrium, and shutting the door should result in a quick return to baseline ("0"), indicating proper functioning of the pressurization unit.

Total Amount: Php 85,578.14

P.R. No.: PGC PO-004

2. Procurement & Installation of Pass-Through Box

Figure 2. Pass-through box as seen from the record section of the COVID-19 laboratory passing into the RNA Extraction area. The latter is the "dirtiest" section of the laboratory where actual processing of potentially virus-containing samples occur. A safety lock mechanism is also installed preventing simultaneous opening of both sides of the pass-through box during operation.

Total Amount: Php 140,000.00

P.R. No.: PGC PO-003

The 3rd floor laboratory setup differs from the laboratories found on the ground floor and 2nd floor of PGC building 1 in that the later features sectioned units that progress deeper into the laboratory, representing the movement of sample from "dirty to clean". This design is ideal for setups requiring purity of the specimen, such as in cases of DNA sequencing or RT-PCR specimen handling. The 3rd floor, however, has a large single teaching laboratory setup, and the adjacent laboratory lacks the appropriate number of spaces (rooms) to accommodate a complete seamless workflow without risking cross-contamination as the sample passes through cleaner areas of the lab.

To overcome this limitation in design, a pass-through box was installed to avoid passing of dirty samples through the clean rooms. Aside from its safety features, it also provides efficiency of work by allowing for the movement of equipment and tools between people working inside and outside of the laboratory without breaking biosafety protocols.

111. Medical Clearance for Personnel

As part of the established Standard Operating Procedure (SOP) for COVID-19 screening, laboratory personnel need to undergo initial medical examinations and their medical occupational histories are collected by the lab's biosafety/medical officer. Staff and personnel involved and will be working within the testing facility are also required to have the latest flu vaccines in compliance with the CDC/WHO interim guidelines for COVID-19 laboratory biosafety. Hence, vaccines have been administered to all the active staff of the PGC-CGL including building and engineering personnel, as well as lab volunteers.

3. **Procurement of Quadrivalent Flu Vaccine for 10 COVID-19 laboratory staff and 20 MBB volunteers**

4. **2nd batch of Quadrivalent Flu Vaccine 30 vials for CFB staff, PGC Security staff, and Maintenance Personnel**

Figure 3. Influenza Vaccine (Fluarix 2020) administered to PGC staff and volunteers per WHO/CDC laboratory protocol.

Quadrivalent Flu Vaccine

Total Amount: Php 23,252.00

Quadrivalent Flu Vaccine
2nd Batch

Total Amount: Php 20,700.00

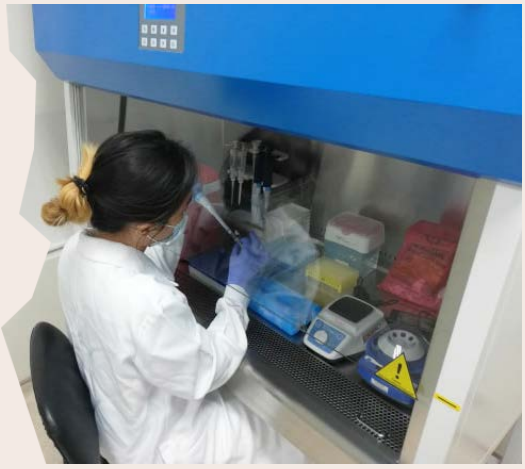
IV. Supplies Inventory and Management

Ensuring adequate stock of essential laboratory supplies and reagents for conducting COVID19 tests is crucial in avoiding inadvertent termination of operations during the pandemic. Procurement of essential supplies was done in accordance to hospital-level operational standards to target a projected working supply of up to two weeks-worth of operations.

5. Procurement of Essential supplies for conducting COVID19 tests

Pipettors (4 sets)

Total Amount: Php 118,560.00
P.R. No.: PGC PO-005



Filtered Tips

Total Amount: Php 63,240.00
P.R. No.: PGC PO-007

Personal Protective Equipment (89 kits)

Total Amount: Php 149,520.00
P.R. No.: PGC PO-006

Hard Shell® 96-Well PCR Plates

Total Amount: Php 21,000.00
P.R. No.: PGC PO-008

Micro Amp™ Optical 8/cap strips, Fast Optical 96-Well reaction Plate & 10uL Ext. Length, Micropoint Tip

Total Amount: Php 67,923.00
P.R. No.: PGC PO-009

Biologix Screw Cap Microtubes

Total Amount: Php 23,900.00
P.R. No.: PGC PO-010

GenAmplify™ (DNA/RNA Extraction Kit - Magna Beads)

Total Amount: Php 745,120.00
P.R. No.: PGC PO-012

RNA QIAamp RNA Extraction Kits

Total Amount: Php 824,000.00
P.R. No.: MBBDFI PO

V. Updates on Operations

As of May 25, the Clinical Genomics Laboratory has been in operation for 20 days and within that time has performed a total of 2,711 tests, serving over 20 different hospitals and LGUs in Quezon City, Pasig, San Juan, Rizal Province, and Central Luzon. We have received samples from 1,928 different patients and have contributed to the identification of over 300 cases of COVID-19 in our respective catchment area. At the start of operations, the CGL projected a daily processing of up to 80 patient samples with an average turn-around-time of 48-72 hours. At present, we currently process up to 250 samples a day with an average turn-around-time of 24-48 hours.

The CGL has also played an active role in supporting the local UP University Health Service (UHS) by providing direct consultation and assistance in setting up the UP Palma Hall quarantine facility, which also aids in testing patients and obtaining clinical samples that are processed by the CGL. As of May 25, the UHS has already provided the CGL with 20 samples and has assisted in identifying 2 patients positive for the disease.

The PGC-CGL strives to improve its services to the Filipino people with further enhancements both in terms of equipment and manpower. We are already in the process of acquiring additional automated systems for RNA extraction, as well as more medical technologists to aid in the daily operations of the laboratory. Our goal is to increase our diagnostic output capacity to 500 samples a day by the first week of June.

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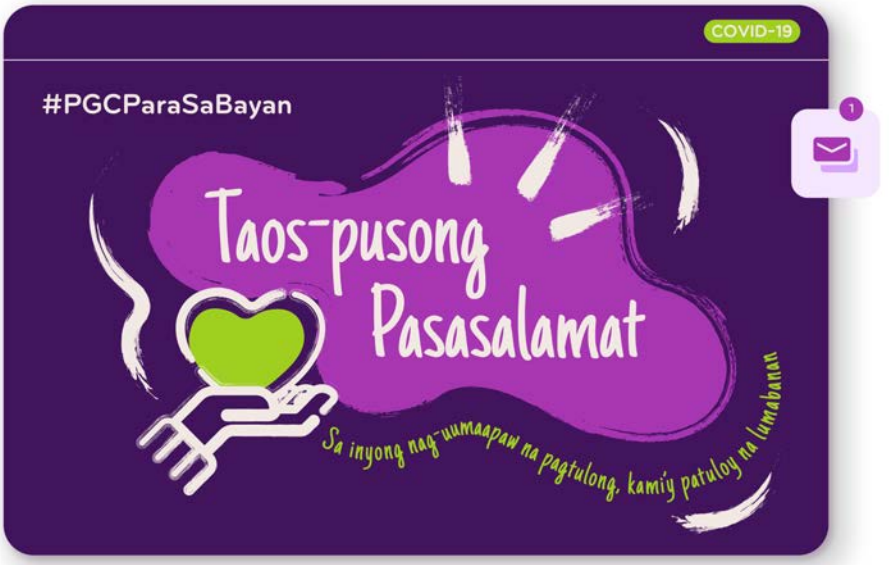

Sent on Wed, May 13, 3:00 PM

The **Philippine Genome Center** gives its thanks to all the individuals, groups, private and public institutions who have extended their help through donations and are continuously supporting PGC in its response to the COVID-19 emergency.

With the contributions from donors, the Center's role in the locally developed (GenAmplify) kit's validation and field testing (in cooperation with the UP NIH and RITM) and its accreditation to perform independent testing for SARS-CoV-2 (COVID-19), would not have been fully possible.

Kami'y taos-pusong nagpapasalamat sa inyo!

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