Impact of the COVID-19 Pandemic on Internal Medicine Residency in the Philippine General Hospital*

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Abstract

Rationale and Objectives

The COVID-19 pandemic and the subsequent designation of the Philippine General Hospital lead to necessary adjustments in internal medicine residency training. This study investigated the impact of the COVID-19 pandemic on internal medicine (IM) residents in the Philippine General Hospital.

Methodology

A questionnaire was developed and distributed among internal medicine residents employed in the years 2020 and 2021. Qualitative data was then gathered through online and face-to-face interviews.

Results

A total of 43 Internal Medicine residents responded. This study found that the pandemic significantly affected internal medicine residents and their overall training. The participants reported changes in the number and profile of patients seen, the limited outpatient clinical exposure, the difficulties of telemedicine, and the reduced interactions with consultants and subspecialty fellows. Infection control protocols and workforce limitations also affected the number of procedures done by the residents. Resident participants reported that they were able to allot more time to studying from the textbook because of the skeletal schedules and decreased number of patients. Other learning avenues were shifted to online conferences and lectures.

The COVID-19 pandemic also brought about changes in residents' day-to-day routines, schedules, and rotations. Communicating with patients and relatives was also reported to be more difficult. Lifestyle changes varied among residents. Socialization also shifted to online avenues and social messaging platforms. Having colleagues who test positive for COVID and subsequently requiring quarantine lead to constant changes in workforce dynamics. This lead to feelings of anxiety and isolation among its trainees.

However, a number of participants still believed that the pandemic allowed them to become better physicians. This was brought about by a sense of service and pride, camaraderie among colleagues, commitment to finishing the program, financial stability, and administrative support. Still, the participants stated areas for improvement, including more consistent protocol measures, additional financial compensation, added workforce, and more transparent administrative support. All in all, participants felt that they were still able to meet the learning outcomes and minimum competencies. Majority of the participants believed the experiences brought about by the pandemic helped them become a better internist.

Conclusion

Ultimately, the new challenges from the pandemic strengthened the sense of service, resilience and clinical acumen of the residents.

Keywords: COVID, Impact on IM residents, training

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INTRODUCTION

The Philippine General Hospital (PGH) is the national university hospital and premier referral center of the country. It has served as home to many training programs, producing specialists in various fields to serve the underserved Filipinos. It has honed many aspiring physicians, with the aim of producing doctors who are at the forefront of training, service and research while placing honor and excellence at the core. Residents are simultaneously employees and students of the institution, and thus training programs have the responsibility to ensure that quality service is delivered while at the same time developing residents' competencies (1). Residency training activities include patient rounds, academic learning sessions, research, and evaluation through examinations (2). Residents are also expected to supervise and teach medical students rotating in the hospital. They are also expected to collaborate with nurses, pharmacists, fellows-in-training and other allied health care workers.

The Internal Medicine residency training program is a three-year program accredited by the Philippine College of Physicians. It is dedicated to the prevention, diagnosis and treatment of internal diseases in adults. The mission of the PGH Department of Medicine is "to attain excellence and relevance in Internal Medicine and its specialties through the implementation of effective quality programs in primary to tertiary levels of service, training and research." (9)

In three years, trainees rotate in various parts of the hospital, acting as the primary physician-in-charge of patients, under the guidance of department consultants. The first-year residents rotate in the General Medicine wards, pay services, and ICUs. Second-year resident trainees rotate in the emergency room, subspecialty rotations, and receive referrals for co-management. The third-year residents act as the seniors of each General Medicine Service and physicians-in-charge at the ICU. Other activities of residents include monthly written examinations, annual oral examinations, department conferences and research.

However, in March 2020, PGH was designated as one of the COVID referral hospitals. This led to changes in policy, infrastructure, processes, and strategies. More importantly, this designation led to restructuring of the residency and fellowship training programs in the hospital, including the internal medicine residency training program, because of two mains reasons: restriction of the variability of admissions in the hospital to accommodate COVID-19 confirmed patients, and the closure of the outpatient department.

The new set-up necessitated limiting patient interactions, both to reduce the risk of infection and to promote efficient use of already scarce resources. These limitations have subsequently lowered the clinical exposure of trainees (1). Elective surgeries and face-to-face outpatient consults were suspended for weeks while inpatient non-COVID admissions were limited. Institutions also implemented skeletal schedules (e.g. one week on, one week off routines) and subspecialty rotations were also temporarily put on hold. Department conferences, face-to-face lectures and grand rounds were also postponed (2).

As a response to these changes, PGH, like other institutions, has been compelled to adapt new ways to educate and train its residents. Learning activities have shifted towards webinars, video lectures, and online conferences. Though useful, these still seem to be inadequate to replace the lost clinical exposure, especially for surgical fields (1, 2, 3). Schwartz et al (2020) describes that the remoteness of learning is complemented by interactive, question-based learning to engage the audience and encourage critical thinking (4). Other measures such as implementation of telemedicine, synchronous and asynchronous online structured learning activities, virtual patients, and simulators

have also been proposed and implemented (1, 3, 5). Self-directed learning remains an essential part. While clinical exposure has become limited, trainees have been encouraged to continue self-directed learning and pursuit of research endeavors (4). In the UP-PGH Department of Medicine, monthly online exams have also been done as part of trainees' evaluation (6).

The suspension of routines and traditional structures of training have placed trainees at a unique position. Fear, anxiety, uncertainty, and vulnerability are common among trainees as they are fielded on the frontlines of the pandemic. Common concerns among residents include the fear of the disease itself and of infecting others, the difficulties in acquiring and using personal protective equipment (PPE), the ethical dilemmas in dealing with critical patients, and questions of their own competency (2, 7, 8). Jaiswal (2020) also cites "lack of decisive leadership, poor infection control practices, and lack of communication" as additional problems during this time (2). Despite these, trainees continue to render service and fulfill their commitment, considering it a privilege to serve these patients (2, 6, 7).

Residents-in-training are then placed at the receiving end of many of these changes. By identifying and understanding the key issues they face with rapidly changing roles and new challenges in the context of a pandemic, we may be able to propose evidence-based solutions. Thus, we would like to investigate: what is the impact of the COVID-19 pandemic on Internal Medicine (IM) residents in PGH?

OBJECTIVES

General Objective: The main objective of this study was to describe the impact of the COVID-19 pandemic on IM residents and residency training in PGH. Specifically, this study aimed:

1. To develop a questionnaire to measure the residents' perceptions to the changes implemented during a pandemic
2. To describe changes in roles and responsibilities of IM residents during the COVID pandemic
3. To identify gaps in training from the perspective of IM residents
4. To identify solutions to the issues regarding the transition and identified gaps in training

METHODOLOGY

Design: This study made use of mixed methods (Explanatory). It consisted of 2 parts - Phase 1 is quantitative and Phase 2 is qualitative.

Population:

All male and female first to third year IM residents from the PGH Department of Medicine in 2020-2021

Inclusion and Exclusion Criteria

Inclusion criteria

- Filipino males and females
- 21 years old and above
- Employed as IM residents in UP-PGH in the years 2020 and 2021
- Consent to participate in the survey

Exclusion criteria

- Those who went on leave for more than 20% of the total number of work days during the COVID pandemic
- Residents from other residency training programs in PGH
- Resident investigators of this study

Ethical Considerations

The study was conducted in compliance with the ethical principles set forth in the Declaration of Helsinki, the Data Privacy Act of 2012, and the National Ethical Guidelines for Health and Health-Related Research of 2017. The study was reviewed and approved by UPMREB 2020-0737-01.

RESULTS AND DISCUSSION

The investigators underwent a workshop training on qualitative research methods through the efforts of the Department of Medicine Research

Committee in 2020, and developed a questionnaire. Pre-test was done on 10 residents from other departments. Informed consent was secured.

From the feedback and suggestions of those who participated in the pre-test, the questionnaire was improved by clearer questions, including durations, and putting emphasis on time points by capitalizing words such as "before", "during". It was also suggested to provide choices for most questions. The revised questionnaire was then administered to the study population.

A total of 43 Internal Medicine residents completed the survey questionnaire from a total population of 76 residents for a response rate of 56.6%.

Table 1. Distribution of Respondents According to Sociodemographic Characteristics, N=43.

Variable	Results
Age in years, Mean, Sd	27.98, 1.78 (24-35)
Sex (male), N (%)	26 (60.47%)
Civil Status, N (%)	
Single	41 (95.35)
Married	2 (4.65)
Year of entry into residency	
2018	10 (23.62)
2019	8 (18.60)
2020	18 (41.68)
2021	7 (16.28)
Year of Licensure	
2016	2 (4.65)
2017	11 (25.58)
2018	11 (25.58)
2019	16 (37.21)
2020	3 (6.98)
Living Arrangements during the COVID-19 Pandemic	
Lived alone	27 (62.79)
Lived with roommates/ housemates other than family	10 (23.26)
Lived with family	5 (11.63)
Lived with wife	1 (2.33)

During the pandemic years of training from 2020-2022, none of the residents from all year levels actually resigned or went on absence without leave. Absences or leaves were typically due to sickness from COVID-19 or other common infections like respiratory tract infections. A few went on leave because of mental health issues. When asked about their motivations to continue their residency, these were the most common answers: desire to finish training (39/43, 90.70%); financial security (31/43, 72%); commitment and sense of accomplishment, and desire to train and acquire competencies and skills (both 30/43,69.77%), and desire to serve (17/43, 39.53%).

The COVID-19 pandemic created a significant impact on internal medicine residents, and affected various aspects such as training, day-to-day changes, and lifestyle changes.

TRAINING CHANGES

The COVID-19 pandemic shifted certain aspects of the PGH Department of Medicine training experience due to a number of reasons.

Patient exposure differed in terms of patient number. The doctor-patient ratio even prior to the COVID 19 pandemic differed per area per year level. During the pandemic, roles were ever-changing and the department transitioned into a shift-based work schedule to limit COVID exposure of healthcare workers. Pre-pandemic, a first year resident rotating in the service wards handled 8-15 patients at a time. During the pandemic, the first year residents were divided into the COVID and non-COVID areas -- handling 11 - 15 and 5-6 patients respectively. A second year resident at an ER post handled 10-15 patients during a 24-hour duty pre-pandemic times. During the COVID-19 pandemic, a second year resident was assigned either in the COVID wards or at the ER and s/he may be handling 8-15 and 2-4 patients per area respectively. Prior to the pandemic, a third year resident acted as the senior of the service in the charity wards, with 15-20 patients at a time, or as

the senior resident in the ICU, handling 1-2 patients. With the COVID pandemic, third year residents were still assigned to the medical critical care unit, reporting for work i 8-hour shifts. In the ICU, each resident handled 8-12 patients per shift at the height of the COVID-19 admissions. For some, the number was initially manageable as patients only had COVID and simple comorbidities, but in the succeeding months, the complexity of cases grew and became similar to the quality of patients handled pre-pandemic. The participants reported that the patient number was less in certain areas of assignment, particularly in the non-COVID areas, during the pandemic. Although there was a reduction in the patient number, there were still a variety of cases. The residents who were rotating both at the nonCOVID and COVID areas report that the set-up allowed exposure both to must-know cases and this then new disease entity. Residents who were assigned to the ICU report that there was improved clinical acumen in handling the severe forms of diseases (i.e. Acute Respiratory Distress Syndrome was not as commonly seen compared to pre-COVID period). Some informants felt fortunate that in Internal Medicine, training was not compromised since COVID patients are still largely medical, in contrast to surgical fields whose operations were significantly decreased due to reduction in elective admissions.

The participants' outpatient clinic exposure suffered from the COVID-19 pandemic and the consequential quarantine restrictions. The traditional in-person consults have been halted for months, and with the eventual transition to telemedicine. While the participants viewed telemedicine as the only way to follow-up patients at that time, many found it difficult for the following reasons: no proper training was received; near-impossible comprehensive assessment was frustrating; the process of sending materials back and forth was tedious; and consults were subjected to many technical difficulties. Expertise on managing cases of ambulatory clinic quality was compromised and the telemedicine practice failed to fill in the gaps. It was also OPD training that was also the last to adapt back to face to face consults, which only resumed fully in 2022.

Consultant guidance varied among different areas. In the wards during the pre-pandemic times, consultants were assigned to a service for a month. They do rounds with the trainees on varying frequency, from twice weekly to once in two weeks. With the COVID-19 pandemic, consultant assignment was initially on a daily basis. Virtual rounds through Zoom happened almost daily, but this eventually became less frequent. The participants report that they felt the lack of bedside endorsement especially in the COVID wards something that can be improved on. Residents also mentioned that the opportunity for consultants to provide feedback on demo/return-demo procedures was significantly decreased. In addition to this, interaction with subspecialty fellows which was helpful before the pandemic and was viewed as an opportunity to discuss patient cases and reinforce residents' knowledge of the case declined during the pandemic, with conversations and questions coursed mostly through messaging. In contrast, residents rotating in the COVID ICU report that the daily multidisciplinary conference, though virtual, was immensely helpful.

Procedures traditionally honed during training include endotracheal intubation, paracentesis, and thoracentesis to name a few. The participants rotating in the COVID ICU report that these procedures were performed less often due to the protocols in place - this means that these cases are referred to subspecialty or other services (e.g. pulmonology or interventional radiology). Even intubations during peak of the pandemic were deferred to the Anesthesiology Airway team, hence there were less opportunities then to try these procedures. They also cite that the use of PPE, particularly the hazmat suit with goggles and face shield was prohibitive. These reasons make the residents feel less confident in

performing the procedures by themselves. In contrast, residents rotating in the ER report that they performed more procedures because of the limited workforce provided in the ER setting. Because of the absence of other members of the healthcare team like the medical interns, residents had to carry out orders made, such as blood extraction of stat laboratories, arterial blood gases and collection of microbiologic cultures.

Time spent studying the textbook (Harrisons Principles of Internal Medicine) and guidelines was reportedly increased during the pandemic period. The 2-week off period for every 1 week of work shift provided time to study. The participants cite that there were less distractions (commercial entertainment or leisure activities were prohibited), objectively less work, and studying diverted their attention and took their minds away from the anxiety due to the global crisis. Before the pandemic, it was almost impossible to study for a first year resident rotating in the wards due to the heavy workload. Learnings mainly came from the cases encountered and it was difficult to keep up with the matrix for the periodic examinations. However, during the pandemic, the first year residents were able to cover a great portion of the coverage of these exams - reportedly studying for almost 2 hours daily for a period of two weeks. Examinations during the pandemic were done online via Google form, open over a 3 day period, taken at a convenient time for the resident. Some participants report that they favored the previous set up in the sense that there was a more structured approach before and after the pandemic - there was more pressure to study and the exam proper setting set the mood. Others say that more patient exposures before the pandemic helped because handling the cases personally helped with knowledge retention beyond the scope of exams.

Conferences were an avenue for learning for the participants. During the pandemic, there was a shift to virtual setting with 2-3 weekly webinars and Zoom lectures from the consultants. Participants report that the skeletal schedule allowed them to attend these conferences with a present mind, while others prefer the in-person department conferences and lectures which evidently dwindled with the pandemic. Postgraduate conferences outside of PGH were limited as well -- which was an opportunity to go out and participate in quiz bees. With the COVID-19 pandemic, conferences increased in number, but these were mostly, if not all, virtual. A participant felt that these were a lot less engaging hence less fruitful.

THE RESIDENCY EXPERIENCE

Changes in Day-to-Day Patient Care

The bedside dynamic in patient care was also affected by the changes brought about by the pandemic. In general, resident's schedules and rotations became more unpredictable and would change on a weekly or monthly basis based on the need and some residents had difficulty adjusting to these sudden changes and uncertainties.

Majority of the participants said there were added steps to seeing patients, including the donning and doffing of PPE and the safety protocols that must be followed, and the "mental and psychological pressure" and the "asphyxiating feeling" of staying 8 hours in PPE. Some residents felt that doffing the PPE to take a break in between the 8 hours was wasteful, and would just push through the entire 8 hour shift. As a structural barrier, the PPE also affected the way patient interaction was carried out, making it harder to hear patients and communicate with them, and affecting bedside examinations such as auscultation. Despite the PPE, there was also the psychological torture and fear of contracting the disease, at a time when very few information was available about the disease, and patients and fellow doctors were dying left and right.

With the 8-hour shift-based work, establishing rapport with and getting to know the

patient on a deeper level, which used to be easy before the pandemic, was a challenge. Instead of being the resident in charge, some residents felt that they did not know the full picture of the patient, just the current problems, and what was going on at the moment. At the time when management of COVID was new and no formal guidelines have been released yet, residents also felt the need to rely on Infectious Disease Service's direction in patient management. Residents also mentioned feeling the need to go the extra mile by being more perky and friendly in order to establish rapport.

Communicating with the relatives also proved to be more difficult. Especially for invasive procedures in patients who could not give their own consent, There are instances where it is the first time a COVID critical patient is managed by a resident and at times, where a patient deteriorates and expires in a shift, the ICU physician on duty feels like a stranger, introducing himself to the family for the first time, at such a crucial moment to relay the bad news. In times like these, residents strive to adapt in order to convey empathy rather than to make the process simply transactional.

Personal Lifestyle Changes

For some residents, there were also personal lifestyle changes that resulted from the pandemic. For some, it was a shift to a more sedentary lifestyle as they stayed at home more, and shifted to food deliveries for convenience. Despite the free time they got from weeks off there was little motivation to workout. However for the others, the pandemic made them put greater importance on their health as they started to become more active and have healthier food choices. There was also more time for rest and sleep, particularly in the initial 1 week duty, 2 weeks off duty cycle.

Another lifestyle change among residents was the inability to socialize as much face to face. Previous vacations and dinners outside which were often used to destress were all halted in the pandemic. For some though, the pandemic was an opportunity for them to use social messaging apps in order to update their loved ones and keep in touch with their families more frequently. For some the habit of asking family members daily how they are feeling has been carried over to this day.

According to the participants, the pandemic brought about feelings of anxiety from too many changes occurring rapidly, including having to cover for workmates who test positive; isolation due to inability to come home to loved ones, limiting the much needed sanity breaks; and burn out due to the repetitive nature of work.

MOTIVATION DESPITE PANDEMIC

Through the key informant interviews, the researchers were able to delve into the residents' motivation to proceed with the Internal Medicine Residency Training Program despite the challenges brought about by the COVID-19 pandemic.

Sense of service was one of the most cited reasons for staying in the program. Working in a COVID referral center, the participants felt that they had their key role as physicians during a time of health crisis. It was an obligation the residents felt proud to fulfill. As the hospital system was overwhelmed, the participants saw that there was really a need to stay in the workforce.

Camaraderie within the hospital, or particularly within the department was highlighted during the pandemic. Hierarchical barriers from seniority were broken down. There came a time when consultants and fellows go on 24-hour duties, senior residents shared the roles with the junior residents, and there was an open line of communication within the team. Trust was built among the participants and other members of the health care team.

The participants also cited that the **commitment to the program** pushed them to carry on. Finishing the program aligns with the

participants' career plan - which was ultimately to become an internist. It also gave them a **sense of pride** to have served during a pandemic. Internal medicine is a field of interest of the participants, and working at a COVID referral helped pave the way to be up to date on the latest evidence and practice on this new disease.

The training program provided **financial stability** for the participants in the form of a steady source of income at a time of economic uncertainty. A number of participants were earning for the first-time and felt secure in having a regular paycheck.

Administrative support also helped the residents continue to perform their duties. The Executive Committee members composed of the senior consultants directly kept in touch with the residents. Consultation and debriefing were done especially for major changes in the work flow. Small group discussion or processing was done with a Psychiatry consultant. The strong support from the Department of Medicine to the residents gave the latter reassurance despite the concerns for safety, and ever-changing expectations and roles.

What was Good, and What Needed Improvement

All the residents appreciated the support that came in different forms, such as counseling services and psychosocial processing sessions with the Department of Psychiatry which played a big role in easing out issues and anxieties. There was also support in the form of a steady supply of PPE from the hospital. Furthermore, public support in terms of food packages and goodies for frontliners were appreciated.

Despite this, others wished for improved quality of support specifying a more empathic and healthcare worker centered approach, "taking care of the ones who take care of the patients." In particular, some residents would have wanted a more consistent protocol of the hospital in terms of quarantine rules when exposed to a positive case and duration of isolation. There were some who felt that the duration was shortened for Department of Medicine residents and that the threshold for testing and isolation was different compared to other departments, just because Internal Medicine was the "most frontline specialty" in the pandemic. Although these residents understand that if the same protocol was applied to the department, the number of duty residents will be critically low, along the way it made them feel like a pawn in battle, and wished that the department would have been more assertive and protected its residents more.

Others wished for more support from their colleagues especially for those who were incidentally positive but asymptomatic, in sharing the load of clinical work left behind particularly for work that can be done remotely such as seeing Telemedicine patients. Finally, for others, additional financial incentive/compensation for the amount of effort IM residents put in as front liners would have been appreciated. Others felt that the hospital should have hired more staff since lack in manpower and shortcomings in patient service is often compensated for by residents who do the procedures (ABG, extractions, blood run).

In terms of support from the hospital, others would have appreciated more transparency and consultation with stakeholders. Some residents felt that it was all commands coming from the higher ups and one had no choice but to comply with the top down, more than bottom up approach. For them, plans could have been relayed earlier so there was time to digest and react before a change is implemented. Others added that they wished for more visibility among consultants and hospital administrators, and hoped that they listened more.

HOW THE PANDEMIC SHAPED THEM AS AN INTERNIST

In general, when asked if they would have been a different internist without the pandemic, all said yes. In terms of competencies, some felt that

they were able to achieve the learning outcomes and minimum competencies, set by residency, however they felt that they would have been a "well-seasoned internist" in terms of the variety of patients seen and they would have been more confident doing procedures independently if not for the pandemic.

Contrary to this, others felt that it was the same because what was lacked in quantity was made up for in quality. In addition, they believed they had an advantage because of the pandemic, learning to be an "intensive internist" being more equipped in handling ICU cases.

The pandemic removed the monotony of the everyday life of an Internal Medicine resident in terms of routine. It was a different kind of push in the aspect of character building compared to regular residency, and because of this, majority felt that the pandemic made them a better internist in terms of character, attitude and resilience. Others added that seeing patients die alone and with an audio recording or a voice call as their family's only last line of communication, the pandemic further emphasized the humanistic side of medicine for them. Furthermore, the pandemic reaffirmed the sense of duty residents had to their patients and brought forth selflessness and moral courage, leaving a stronger batch of residents and a stronger department for it.

The limitations of the study include: some sensitive information might have been withheld by interviewed participants because there was only one interview session. Participants may not have enough time to discuss their experiences in its entirety.

The investigators recommend correlating outcomes such as grades, procedure log, and patient census to have an objective measure of outcomes pre and during the COVID 19 pandemic. Future studies can explore the long-term impact of the consequent training adjustments made during the pandemic. Mental health issues triggered and/or unmasked during the pandemic can be examined deeper. The study did not specify a particular post-pandemic timeline - an area of study which can be probed further now that we have transitioned to this "new normal" globally.

Conclusions

The residents of the Philippine General Hospital Department of Internal Medicine were tested by the challenges from the COVID-19 pandemic, being at the forefront of a COVID referral center. Necessary adjustments have to be made to make up for the lack of manpower and in compliance with national and local health policies. Consequently, these have impacted on the number and profile of patients seen, procedures done, and bedside clinical skills practiced. The global crisis also stirred feelings of anxiety and isolation in the participants. A lot of the participants feel that the COVID-19 pandemic, while posing restrictions, helped shaped them to become better physicians. Ultimately, the new challenges from the pandemic strengthened the sense of service, resilience and clinical acumen of the residents.

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