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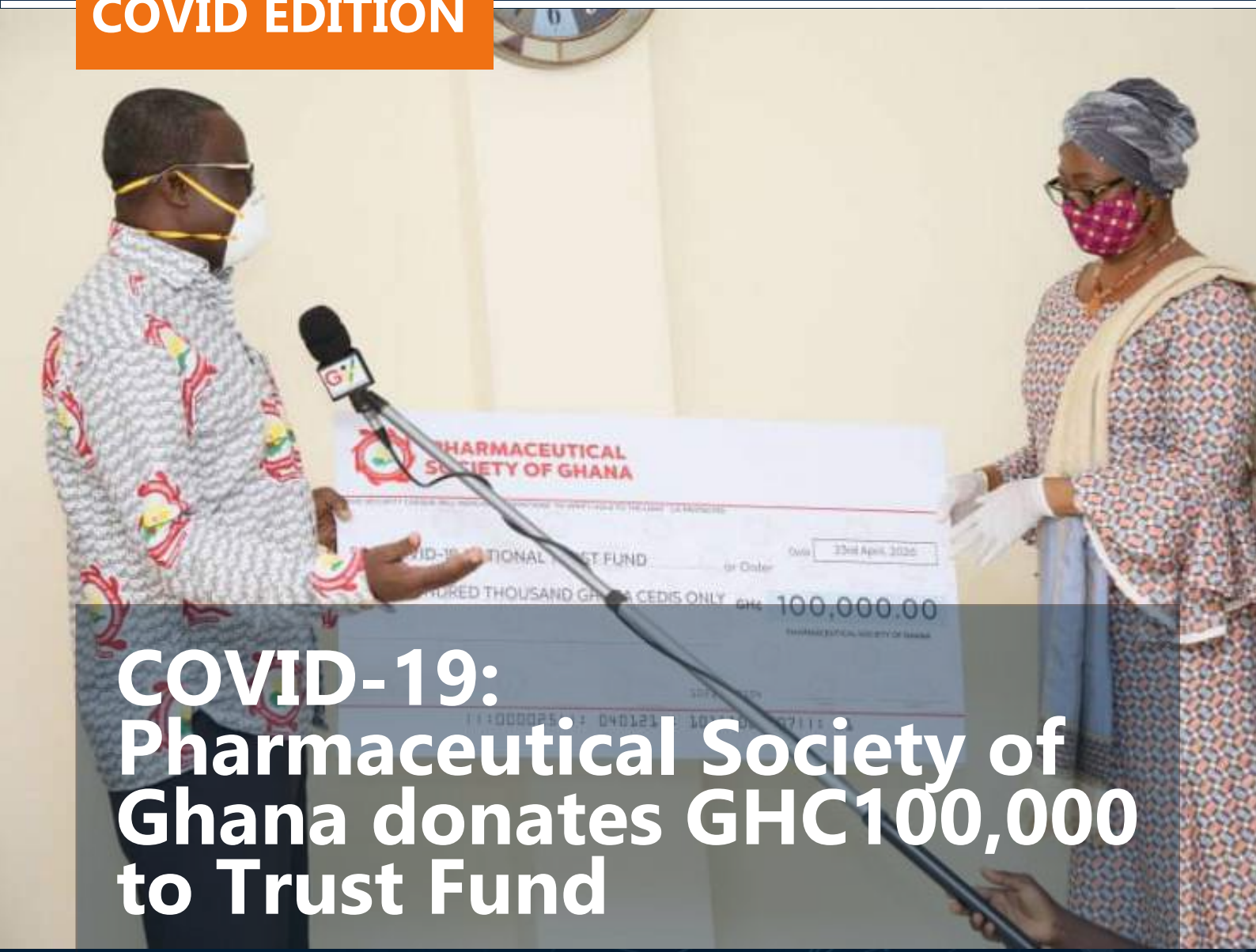

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EDITORIAL

Pharmacy Practice in Ghana should not be "Business as Usual" Post-COVID-19

Will COVID-19 come to an end? Certainly! When will this be? No one can be certain of the "when". One thing we can all be certain of though, is that life as we know it will not be the same post COVID-19. We need to brace ourselves for a new world. And in that new world, Pharmacy Practice as we know it will need to change!

Certain vulnerabilities have been exposed by the pandemic which require urgent attention. For instance, the matter of price regulation should be discussed dispassionately. The profession was given a bad name at the onset of the outbreak in Ghana as prices of hand sanitizers, vitamin C and nutritional supplements went through the roof. There was also the small matter of the definition of "frontline" health workers. As a profession, we ought to be more assertive than we are currently and claim the turf that is rightfully ours. It is an undeniable fact that many a patient will visit the community pharmacy before considering a trip to the hospital. If being the first port of call for both COVID- and non-COVID-related health care needs does not qualify the Pharmacist to be a "frontliner", then no one else qualifies! It is becoming increasingly clear that we will also transition to a new era where patients will expect more immediate and increasingly digital interactions, with face covering and social distancing becoming an everyday part of life. Online pharmaceutical service delivery will be the new norm, and it is important that we address the security concerns this transition portends.

We have made marginal gains prior to the advent of COVID-19. For instance, the once unsightly overflowing conference rooms where Pharmacists pretended to engage in learning for their CPDs is fast becoming a thing of the past. Online CPDs have come to stay. And how did you pay for your annual subscription to the Pharmacy Council and the PSGH? If you did not do it from the comfort of your phone or computer, then be sure to try that option out next year. Annual subscriptions are now paid online. The age-old practices of the profession are increasingly moving to digital platforms. Clearly, we are walking the talk of "Pharmacy in a digital world".

We have crossed the Rubicon and there is no going back to where we were before. Pharmacy has a lot to offer, but we must urgently position ourselves to take full advantage of the opportunities and risks that a post-COVID-19 world heralds.

COVID-19: Pharmaceutical Society of Ghana Donates GHC100,000 to Trust Fund

The Pharmaceutical Society of Ghana has presented a cheque for GHC 100,000 to the National COVID-19 Trust Fund to help in the fight against the pandemic. Presenting the cheque, Benjamin Botwe, the President of the PSGH, said Pharmacists continued to play their roles throughout the medicine value chain from training and research to manufacturing.

They also undertake quality assurance and quality control, importation, warehousing and distribution, hospital and clinical practice and community Pharmacy practice.

During the partial lock lockdown period, all Pharmacies remained opened as essential service providers and pharmacists were at post to render healthcare services and supply the medicine needs of the communities and general population at great risk to themselves, their staff and families, he said. Mr Botwe expressed the hope that in the utilization of the fund, pharmaceutical research as well as community access to Pharmaceutical care and services would be given priority.

> "WE NEED TO BE SELF-RELIANT IN OUR DRUG PRODUCTION TAKING A CUE FROM WHAT COVID-19 HAS BROUGHT TO THE WORLD TODAY,"

He proposed the establishment of a National Institute of Pharmaceutical Research, Innovation and Development, a National Bioequivalence Testing Centre to support local production of generic medicines and the establishment of a Model Community Pharmacy in every District and major town where there is no Pharmacy.

"We need to be self-reliant in our drug production taking a cue from what COVID-19 has brought to the world today," he said, adding that the PSGH is ready and able to provide technical assistance and concept notes to support these initiatives.

Source:
https://www.gna.org/1.18081383

From the President's Desk

Pharm. Benjamin Kwame Botwe

The COVID-19 pandemic continues to rage on in Ghana and abroad. Nevertheless, Ghanaian pharmacists in both the public and private sector continue to work at the heart of communities and whichever practice area they find themselves to make sure that patients get their treatments, medications and counselling, despite huge changes to practice. Indeed, even in the midst of this adversity, we have truly endeared ourselves to our communities as amicus humani generis. I am proud of every single one of you who has held the fort thus far.

Advocacy efforts

At the recently held 73rd World Health Assembly, the pharmacy fraternity represented by the FIP issued a statement to health ministers highlighting the huge contribution pharmacists are making to primary health care during this pandemic. Further, FIP has called on governments to remove barriers to changes in scope of practice, and to fully include pharmacists and their teams in emergency protocols. Subsequently, the PSGH has officially communicated with government on these resolutions that were issued at the World Health Assembly.

Continued care for patients with non-communicable diseases

At a time when so much attention is being given to managing the immediate COVID-19 pandemic, chronic disease management and the safe and effective use of medicines remain a priority for patients living with non-communicable diseases. Through taking care of patients with minor illnesses or chronic diseases, giving information and performing triage, our profession is relieving the burden on primary health care systems, mainly on doctors, nurses and hospital emergency departments. Our workforce at community and hospital pharmacies and clinical biology laboratories is preventing the spread and supporting the efficient management of infections.

Continued access to medicines and advice

Pharmacists are ensuring continued access to medicines and advice while protecting the safety of vulnerable patients and alleviating the pressure on hospitals and doctors. There are anecdotal reports that some hospitals in some developed countries have had to refer patients to the community pharmacy for care. Such new activities can work as proof of concept for the continuity of these services and the expansion of scope of provision of healthcare services post pandemic. In Ghana several interventions are being made by Pharmacists in the clinical settings and in community practice. Additionally, innovations are taking place in hospital patient specific compounding that has immensely supported treatment particularly in this COVID 19 era. I urge all pharmacists to properly document all such interventions for ease of reference and for contribution to science and health care in general.

COVID-19 Webcasts

In partnership with our cherished sponsors, we have outlined a number of webinars to share experiences and learn from best practices in the COVID-19 fight. The first instalment of these webcasts was executed in partnership with AstraZeneca and the level of interest from members has been phenomenal. The learnings from that session will be used to better the rest of the series.

Presentation to National COVID-19 Fund

Fund to help in the fight against the pandemic. While presenting the donation, I reiterated the various interventions that Pharmacists continue to undertake in playing our roles throughout the medicine value chain.

Planned supply of PPEs

As frontline staff, it is important to ensure that all our members receive the necessary protection in the discharge of their duties. Community Pharmacies being the most visited healthcare facility in our country, it is imperative that Community Pharmacists are provided sufficient PPEs in the COVID-19. This is non-negotiable. Leadership is frantically procuring the needed PPEs for distribution to Pharmacists working on the frontlines. I expect the distribution to commence by the middle of June. NORVATIS has graciously provided a grant to help PSGH purchase PPE's and this is currently ongoing.

Thank you for your continued efforts.
Stay strong, healthy and well.

PSGH BAR Donates to Childrens' Home

In every human society crisis are bound to occur. Currently, the entire world is faced with one of its greatest all-time challenges – the COVID-19 pandemic. This has brought about a lot of inconvenience and inadequacies to the nation which has placed a lot of burden on individuals and the country as a whole. It is in this vein that companies and institutions as well as private individuals decided to make several forms of donations in various items such as Veronica buckets, hand sanitizers, nose masks, etc to the communities.

As friends of the human race, Pharmacists in the Brong Ahafo region donated various food items to the society as part of its corporate social responsibility to help alleviate hunger on the less privileged who have been hardest hit in this crisis. These items were donated to two Children's Homes: Love Compassion Children's Home at Yawhima and Rhema Children's Home also located at Abesim.

The donation by the Brong Ahafo Branch of the Pharmaceutical Society of Ghana (PSGH) was in response to appeals made by the President of the Republic to various bodies to help support the disadvantaged in these difficult times.

Presenting the items to these facilities, the Chairperson of PSGH-B/A, Dr. Doris Adom Nyantakyi said this gesture is the Pharmacists' contribution to the community to help combat the impact of the novel coronavirus on the nation. Receiving the items on behalf of the two homes, the various heads of the Children's Homes expressed their gratitude and appreciated the kind gesture from PSGH and promised to put them to good use.

COVID-19: The Community Pharmacist as a Frontline Staff

By Akosua Debrah
KNUST, Department of Pharmacy Practice, Kumasi

The emergence of the deadly coronavirus has had a lot of physical, emotional, and mental repercussions globally, with increased burden on health workers, especially those on the frontline of COVID-19 healthcare delivery. Some of these health professionals have faced the crisis head-on with unprecedented stress, deep uncertainty and anxiety, and even thoughts of taking their own lives. The enormous workload has pushed some of such workers in the West to commit suicide amid the crisis, possibly because they could not withstand the burden of this huge responsibility shelved on their shoulders.

Managing patients infected with the virus can be a daunting task coupled with an arduous call to detach from family in these times, while enduring the anxiety associated with not knowing when the pandemic will end. These professionals have been diligent in discharging their duties for God and country, risking their lives to save humanity. In the line of duty, some health professionals have who contracted the coronavirus, have been isolated, and taken through the ordeal of treatment without social support systems. Others are battling depression and anxiety alone, with some ultimately losing the battle. There are other health professionals who go through the trauma of not knowing whether they will contract the infection as well, with the fear of succumbing to the virus lingering.

The 2020 May Day celebration of all Ghanaian workforce was marked by virtual concerts and celebrations on several platforms with focus on honoring these heroes and heroines for their commitment to the fight even in the face of death. This was a step in the right direction as psychotherapists have described healthcare professionals as being at greater risk of mental distress with symptoms of stress, insomnia, mild depression, and anxiety.

Pharmacists are a key part of the healthcare multidisciplinary team and have been researched to be the most trusted healthcare professionals. In responding to this global pandemic, pharma industries across the globe have come under immense pressure to team up with other key players in finding a vaccine. In several localities, community pharmacists have also come under intense distress to serve the public quality and affordable medicines to manage the coronavirus infection.

This article seeks to highlight pharmacists as unsung heroes in this fight with a skewed focus on community pharmacists and the critical role they play. Pharmacists have truly lived out their motto "amicus humani generis", which means "friends of the human race", to the core and deserve some accolades. In this write-up, I attempt to help the public appreciate the roles pharmacists have played and elaborate on some actions Ghanaian community pharmacists have undertaken to help "flatten the curve" despite the mental distress accompanying the discharge of their duties.

The first two cases of COVID-19 were confirmed in Ghana on March 12, 2020, with an increased demand for immune boosters, hand sanitizers, and face masks, making the community pharmacy a focal point in the fight against COVID-19. During the time, pharmacists and their support staff experienced stress and exhaustion from long hours of standing to attend to clients, amidst feelings of anxiety. A lot of pharmacists went out of their way to procure hand sanitizers while others manufactured some at affordable prices to curtail the price hike that had entangled the market owing to increased demand. Currently, hand sanitizers have become very

affordable, thanks to the initiative community pharmacists took.

Although scientists are uncertain about the mode of transmission of the virus, whether air-borne or not, pharmacists still have face-to-face interactions with clients and educate the populace on preventive measures against the spread of COVID-19. Moreover, false information circulating on social media brought a lot of brouhahas, such that not even the overwhelming amount of credible information online could deter even the elite from being confused. Community pharmacists had to take on the task of educating their clients to stick to recommendations by WHO and the Ghana Health Service. Some of the myths pharmacists have dispelled include the following: "the virus affects only Caucasians and not blacks or Africans", "introduction of 5G mobile networks facilitates the spread of the disease", and "eating garlic or taking local gins with high percentages of alcohol (akpeteshie) kills the virus".

In this season, community pharmacists have adhered keenly to the precautionary protocols advocated by the WHO. Most have ensured that their workspace is clean and hygienic by constantly disinfecting surfaces, providing areas for clients to wash and disinfect their hands, providing hand-sanitizers at no cost to clients. Managerial costs however has increased hitherto, yet no donations from NGOs and philanthropists are not channeled to pharmacies.The pandemic has also challenged community pharmacists to take up more roles in diagnosing and treating diseases not only of common occurrences. To avoid overwhelming hospital facilities, community pharmacies continue to serve as the first point of call whiles hospitals deal with emergencies only. This has led to a greater dependence on community pharmacists to serve the public's healthcare needs. Occasionally, patients have been referred from hospitals to community pharmacies. Referrals are typically to a higher institution of care but COVID-19 has changed the narrative. Most pharmacists have had to revisit their pharmacotherapy modules to meet head-on with this challenge. For years, community pharmacists have been the most over-trained yet most under-utilized healthcare professional; however, their expertise has been brought to bear in this era.

ALTHOUGH SCIENTISTS ARE UNCERTAIN ABOUT THE MODE OF TRANSMISSION OF THE VIRUS, WHETHER AIR-BORNE OR NOT, PHARMACISTS STILL HAVE FACE-TO-FACE INTERACTIONS WITH CLIENTS AND EDUCATE THE POPULACE ON PREVENTIVE MEASURES AGAINST THE SPREAD OF COVID-19.

A challenge being faced in diagnosing is the reluctance of clients to fully disclose health details to pharmacists. Some patients who suffer the flu and cold, suppress their urge to cough or even deny that they have been coughing or sneezing for the fear of being referred for COVID testing. Some cough and cold medications stocked before COVID-19 was recorded in Ghana are still on the shelves and staff are worried they may expire. Routine health checks including malaria tests and blood pressure, blood sugar, and body-mass index monitoring have been suspended in community pharmacies to reduce exposure to the virus.

This has hampered the delivery of pharmaceutical care services since there is less evidence-based therapy. Pharmacist contact times with patients have also reduced drastically, thereby reducing the impact of pharmaceutical service delivery.

The high demand for immune boosters and other supplements have made wholesalers consider certain items as cash purchases only. Consequently, struggling pharmacists who depend on the credit system face hardships.

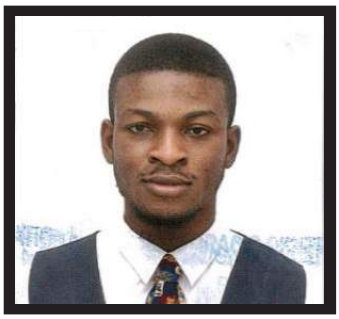
Other issues related to COVID-19 spread that pharmacists and their support staff face in these times is the insurgency of clients; clients wanting to touch medicines on shelves, coughing on counters without covering their mouths, and refusing to wash their hands before entering the pharmacy. Some patients are also indifferent to social distancing protocols and put other clients at the pharmacy, including themselves, at risk.

Public health experts believe that widespread testing for COVID-19 is important in identifying who is infected and who needs to be isolated, in order that interventions can be administered to the affected in a timely manner. Community pharmacists are in a prime position to test clients for COVID-19 after being adequately trained and mentally oriented to take up the challenge. Therefore, the leadership of the health service should consider authorizing community pharmacists to perform COVID-19 tests, as this can contribute to better management of the disease and flattening the infection disease curve.

However, is the Ghanaian pharmacist ready to take up this challenge?

This and other questions need to be asked to have a proper roadmap to this effect.

Pharmacy in a Digital World: PSGH Walks the Talk



By Hasford Carl Apea-Kubi Osasraku

Tianjin University of TCM, China

The Pharmaceutical Society of Ghana (PSGH) in partnership with AstraZeneca (Ghana) organized a three-day insightful and interactive webcast for all pharmacists in the country. The meeting was chaperoned by some season experts in the medical field and from avid sectors of the pharmacy profession which included Hospital, Regulatory and Policy, as well as Research Pharmacy practice.

Dr Peter Puplampu, [Lecturer, Consultant Physician and Infectious Disease Specialist, KBTH and a member of the National Case Management Team], brought to light some of the atypical symptoms exhibited by confirmed cases who were on admission and explained that the gut as well as the renal system were special targets for the virus. He cited an example of a child who reported with rabies-like symptoms and upon investigation tested positive. Others included encephalitis, neuropsychiatric, worsening of previous hemiparesis, dyspepsia and CHD. Some suggestive laboratory findings he mentioned included evidence of coagulopathy, thrombocytopenia, leucopenia,acidosis,hyperbilirubinemia,D-Dimer, ferritin, troponins, Chest imaging (X-RAY), CT scan, bilateral peripheral opacities and lobar nodules. Dr Puplampu stressed on the need for autopsy to be carried out on the casualties recorded.

In line with WHO recommendation on how to combat this pandemic, Ghana was following such protocols of Testing, Testing and Testing. Pharm. Dr. Susan Adu-Amankwah who is a clinical research co-ordinator at the Noguchi Memorial Institute for Medical Research discussed the standing protocols used by the institution. She stated that the number of tests carried out was different from the number of people tested for the virus which stood at 161,000 tests as at the time of the meeting and also verified the claim made by the government that there were no backlogs at the institution. She made a case testing capacity comparison of Ghana to Iceland. Apparently, the number of tests per 1000 people in Iceland stood at 100 per 1000 people while that of Ghana stood at 4.43 per 1000 people as at the time the meeting was held.

She explained the two broad categories of testing: 1. detection of the virus RNA using Polymerase Chain Reaction (PCR) and 2. serological tests that detect the host response to the virus RDT. This piqued interest in why the use of RDTs was not explored to scale up the testing capacity of the country. Pharm. Adu-Amankwah explained that applications of antibody detections (including RDTs) for COVID-19 was currently limited to seroprevalence studies and for retrospective diagnosis of PCR negative patients presenting late during the course of COVID-19. She further discussed the WHO protocol for a person who tests positive. It is stipulated in the guidelines that after initial positive result, after 14 days, a second test needs to be repeated and if it turns negative, a third repeated a week after of which must include a stool sample. After two consecutive negative results, the person is declared to have recovered, but if test turns out positive, a weekly test needs to be carried out until two consecutive negative results are attained.

Currently, Noguchi receives an average of 1500 samples per day, down from an average of 5000 samples per day received during the lockdown period. The institution is equipped with 7 real time PCR machines but currently runs on 4 and uses 3 as backup, having a testing capacity of 10,000 samples per day.

Pharm. Charles Ofei-Palm (Senior

The Renaissance of Pre-Fleming

By Prince George Acquah Jnr. and Samuel Nartey
GPSA-KNUST

Currently I am in a mess.
I am in serious distress.
There is a pressing issue I must address.
My heart is saddened by these current trends.
For so long our focus has digressed
But this issue, this issue, I must address.
Frankly I thought this issue was under control
Till a patient walked into my shop and took me right into Sheol.

"White capsules" was her request.
Then I had a premonition to query the reason behind her request,
Her response sent a bolt right through my chest.
Apparently, chloramphenicol can now treat "sugar disease" in children when inserted as a suppository.
This is not even the only inappropriate use I can cite with authority.
From the ritual user who thinks every stomach ache requires flagyl
To the poultry farmer fattening chicks with tetracycline
To the use of azithromycin to manage common cold and waist pains,
Right down to the concoction of amoxicillin and locally brewed alcohol to manage syphilis.

There are a myriad of scenarios constantly hastening the microbial victory.
Sadly, in this fight against microbes we currently do not stand a chance.
Retrogression has only been our progress.
A step forward is greeted with several backwards.
Fleming must be wailing!

I am filled with so much remorse.
Common gonococcal infections now require an ambulance.
Curable conditions keep turning people into corpse.
Good prognosis keeps becoming worse.
This is more than the apocalypse.
But everyone acts unperturbed as if our sights have been eclipsed.

Everyone thinks it is a game.
Maybe it is a game.
The likes of which can only be compared to playing Russian roulette.

And if I must confess,
We opened this Pandora's box
So, heed to my words!
Hear the agonizing cries in my voice!
This threat is real and it has always been real
Though it comes not clad in Bin Laden's robes.
Please take it not as mere noise.
Men in the East and those farther in the West.
Redirect your course
Far away from this curse!

Some battles may be lost but for the war, we still stand chance.
It is time to assemble and correct our wrongs.
Now is the time to converge and plan our revenge.
Our last line of antibiotics cannot just submerge.
Friends of the media, help us with the best coverage.
With one accord, let us all converge
And join the campaign against antibiotics resistance.
For only through that can we emerge victorious.

Pharmacy in a Digital world cont'd

Specialist Pharmacist, KBTH and Head, KBTH Pharmacy COVID-19 team) emphasized the differences between isolation and quarantine. Pharm. Dr. Amah Nkansah (Consultant Clinical Pharmacist at KBTH) delved into some non- pharmacological interventions and therapies that could be used as adjuncts as well as prophylaxis against the virus which has proven to boost the immune system. These include neem leaves, ginger, garlic and some local foods. She also elaborated on the role of Pharmacists in public education as well as in the collective effort in combating the virus.

Pharm Jennifer Boateng (Senior Pharmacist and member of the Greater Accra Regional Hospital COVID-19 Management Team) discussed treatment objectives in the management of COVID-19, case classification and its clinical features as well as recommended therapy. She explained her role in the management of cases at the treatment center and her role as a pharmacist in terms of how and when the medications are administered. She further gave a case presentation and commented on delays in results which clearly increase cost and stay of hospitalization and suggested ways out to get results in on time.

Are Immune Boosters the Panacea for COVID-19 Management?

Key takeaways

- *Immune boosters and nutritional supplements do not cure or prevent the disease.*
- *At this stage of the COVID-19 pandemic, there is no known conventional cure. Claims of alternative medicines such as immune boosters and nutritional supplements as treatment options for COVID-19 are unverified.*
- *The only sure way to prevent infection is to avoid exposure to the virus by observing physical distancing, practicing frequent hand hygiene, and avoiding touching the face.*

With no known cure for COVID-19, there has been a surge in the demand for immune boosters, ostensibly to "assist" the immune system in warding off the pathogen that causes the disease. That is not difficult to understand. Of course, if anyone is going to catch the virus, it would be best if their immune system is in the best possible shape. But how do we really boost our immune system? Many of my patients have enquired about taking food supplements, probiotics, and herbal immune boosters. The response to this query is not as straightforward as it may seem. Many of them erroneously believe that an "enhanced" immune system will protect them from contracting the virus. To be certain, the only sure way to prevent infection is to avoid exposure to the virus by observing physical distancing, practicing frequent hand hygiene, and avoiding touching the face. However, to adequately address this issue, it may be necessary to briefly discuss how our immune system works.

By Harry K.A. Okyere
Chara Pharmacy Ltd; Advanced Global College

The Immune system

The immune system is a complex network of cells, tissues, and organs that work together to defend the body against attacks by "foreign" invaders, which are primarily infection-causing organisms such as bacteria, viruses, fungi, and parasites. Generally, and for simplicity, the immune system works along three lines of defense. Physical and chemical defenses are the most rudimentary form of innate immunity and the first line of defense against invading pathogens.

The skin, mucus membranes, tears , and vaginal opening work to keep invaders out of the body. If an infectious pathogen invades and is able to infiltrate a host's physical defense system, innate immunity is used to halt progression of the infection. Innate immunity is present from birth and utilizes a preexisting but limited repertoire of receptors to recognize and destroy pathogens. Innate immune cells are a group of white blood cells. When these cells are stimulated by foreign pathogens, some of them secrete inflammatory mediators. Some of these cells also act as phagocytes, which allows them to recognize, internalize, and destroy invading pathogens.

The third line of defense is mounted against specific pathogens that cause diseases. Specialized cells produce specific antibodies against the pathogen, and the cells that have become infected are killed.

Can we truly boost the immune system?

In the strictest sense of the word, the only evidence-based approach to truly "boosting" the immune system is immunization, either through vaccination or by passively providing immunoglobulins (antibodies) to patients against specific antigens. Not only is "boosting" the immune system in general impractical, it may not necessarily be a good idea. This is because the immune system is tightly regulated to work within a limit, and an overactive immune system presents with many challenges.

Usually, the stronger the immune response mounted against an invader, the higher the chance of fighting off the infection. This partly explains why children and younger people are relatively less vulnerable to the coronavirus. Conversely, the increased risk of severe COVID-19 and death in older people is partly explicable by immunosenescence– the gradual deterioration of the immune system as a result of aging. When the immune system is done fighting off an invader, it is programmed to shut itself off. In some few cases of people battling with serious infections, the immune system may still rage on even when the pathogen is no more a threat. This overactive immune system can harm the body's own organs and even cause death. In this case, it is the body's response that harms the patient and not the pathogen itself.

Are immune supplements important then?Our body requires food nutrients in optimum quantities to support our daily functions, including those that help the immune system to work optimally to protect us against many infectious diseases. Moreover, malnutrition and micronutrient deficiencies are strongly associated with impaired immunity. It is well recognized that nutrition is a crucial factor in modulating immune homeostasis.

Considering the current COVID-19 pandemic for which there is no effective preventive and curative medicine available, a healthy immune system is the most important weapon against the viral infection. However, it is worth noting that every system of the body functions better when it is supported by healthy lifestyle choices, which include eating varied and balanced diets rich in fruits and vegetables, doing regular aerobic exercises, and having adequate sleep.

It must be emphasized that no "immune boosting" supplements can replace a varied and balanced diet. However, in the absence of proper nutrition, especially in these times when movement is restricted and the food supply chain may be disrupted, supplementation with important vitamins and trace elements may be beneficial. At the two epicenters of the COVID-19 pandemic in Ghana, which are Accra and Kumasi, protein-energy malnutrition is largely uncommon. However, subclinical deficiencies of at least one micronutrient may be prevalent in the population, when you consider that the indigenous diet is largely carbohydrate-based.

However, supplementation should not be viewed as the magical wand that will suddenly switch the immune system into full gear. A false sense of protection can be dangerous. It is still important that we observe the preventive protocols such as hand washing, social distancing, and the use of a face mask where necessary.

There are several vitamins and trace elements which are essential for normal functioning of the immune system; important among them are Zinc, Selenium, Copper, Magnesium, and Vitamins A, D, E, and C.

For a viral pandemic like COVID-19, for which there is no universally accepted preventive or curative pharmacotherapy, and whose exact time of ending looks gloomy, nutritional strategies for supporting immunity is something to be explored. Selective micronutrient supplementations may be beneficial, especially for vulnerable populations such as the elderly.

Clinical Pharmacists: Essential Frontline Workers in the Management of COVID-19

Dr Josephine Mensah
University of Ghana Medical Center

The routine role of clinical pharmacists entails the provision of pharmaceutical care to patients to ensure safe and reasonable use of medications for optimal patient outcomes [1]. However, in the wake of the COVID-19 pandemic, clinical pharmacists have modified their work strategies beyond the call to duty in our efforts to help curb the menace. Clinical pharmacists have therefore had to play an important role during this outbreak in infection prevention and control as well as patient care and support [2].

Clinical pharmacists have had to be innovative, developing internal guidelines in our departments for effective work to be carried out in response to the high demands of caring for COVID-19 patients [1]. In some facilities, pharmacies and pharmacy stations have been established near patient care areas and isolation wards in order to bring clinical pharmacy services closer to the patients. The pharmacists have had to adjust work schedules and develop innovative work plans to facilitate work output. A look at the bigger picture reveals that clinical pharmacists have offered expert advice in the development of Standard Treatment Guidelines for Novel Coronavirus Infection and other case management protocols together with other members of the interprofessional health care team; a vital role which cannot be overemphasized.

With our main focus on pharmaceutical care, clinical pharmacists ensure prompt supply and availability of medications recommended in the national guidelines for management of patients diagnosed with COVID-19. Other medications required for the management of patient comorbidities are focused on, to ensure that patient medication needs are met with a holistic approach. Thus, frantic efforts are made to constantly identify and mitigate medication shortages since such shortages can lead to prescription of suboptimal therapy and affect patient outcomes [3].

Clinical pharmacists partake in patient reviews with other members of the multidisciplinary team where patients diagnosed with COVID-19 are interacted with, and effective patient counseling is offered. Patients are also communicated with through telephone calls whiles on admission and after discharge. Through patient reviews, review of patient medical records, review of patient prescriptions and medication history taking, clinical pharmacists are able to make meaningful contributions in both the pharmacological and non-pharmacological needs of the patients. Patient recovery progress and other relevant parameters are monitored by the clinical pharmacists who do not hesitate to recommend interventions on pharmaceutical care issues identified, contributing to overall improved patient outcomes [4].

Clinical pharmacists also in the course of work apply pharmacovigilance principles, probing to monitor patient outcomes and identify incidence of adverse drug reactions in the patients.

Therefore, patient complaints, investigation results and other relevant subjective and objective parameters are evaluated so as to achieve swift identification unwanted reactions experienced after medication administration. This in turn paves way for necessary actions to be taken in order to mitigate the reactions. We also liaise between our institutions and the Food and Drugs Authority, ensuring that such incidences are duly documented and reported [5].

Clinical Pharmacists are actively involved in COVID-19 management teams and partake in clinical meetings where we share our expertise with the other members of the multidisciplinary team. As frontline workers in hospitals, clinical pharmacists play major roles in patient advocacy and education. The general public and other health workers are also educated on the disease, its presentation, progression, preventive measures and management; both pharmacological and non-pharmacological [1].

Through media such as seminars and webinars, we share hands-on practical experience gained from being part of the patient management teams with other pharmacists who work in other fields such as administration, technology, entrepreneurship and regulatory affairs, thereby giving our colleagues a better insight into happenings at the COVID-19 treatment centres.

Clinical pharmacists contribute to infection prevention and control by partaking in and supervising the preparation of essential items such as hand sanitizers, liquid soaps and other disinfectants which help to significantly reduce the burden of procurement cost borne by the treatment facilities. In our efforts to minimize unnecessary personal protective equipment use and limit unnecessary entry into patient areas, clinical pharmacists work in concert with the nurses, medical doctors and other members of the team to align medication supply and administration times with their schedule to ensure a coordinated approach to patient care[3].

Clinical pharmacists are also constantly reading and evaluating research in order to help find best approaches to patient care, so as to augment the efforts of the clinicians in providing optimal medication therapy to patients with COVID-19. Several clinical pharmacists are currently involved with COVID-19 related researches which will contribute to knowledge and science, laying a platform for further studies to be conducted in future [4]. Clinical pharmacists play a key role as experts on medications contributing to patient medication therapies.

We ensure constant medication availability for patients in order to mitigate shortages and prevent suboptimal pharmacological management of COVID-19 patients. We serve as a resource to clinicians and other members of the interdisciplinary healthcare team and are involved in several COVID-19 based research projects. Clinical pharmacists are indeed essential frontline workers in the fight against COVID-19 whose immense contributions go beyond and above the call of duty!

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A Pharmacist in the Northern Region Devises **Innovative Strategies to Ensure Social Distancing Within the Community Pharmacy**

COVID-19 Crisis: A Clarion Call to Local Pharma Industries

By Harry K.A. Okyere
Chara Pharmacy Ltd; Advanced Global College

On March 12, 2020, the Ministry of Health announced the first two confirmed cases of COVID-19 in Ghana; these were imported cases as both persons had returned to Ghana from Norway and Turkey. Since then, the number of confirmed cases has shot up exponentially. Ghana's approach of elaborate contact tracing and aggressive testing is commendable; however, there are still fears that some positive, undetected, and asymptomatic cases may be spreading the virus unknowingly.

It is apparent that any epidemiological modelling of the course of the pandemic in Ghana will be very different and perhaps more desirable than that for the hardest hit countries. Nevertheless, there are still legitimate fears of a fully-fledged COVID-19 epidemic in the country.

Besides morbidity, mortality, and economic issues, COVID-19 presents peculiar challenges to developing countries like Ghana. Of particular concern is how the already strained health system will be able to contain the full-blown epidemic in Ghana and not merely mitigate it. This is because a large-scale outbreak in Ghana is expected to overwhelm the health services, including the pharmaceutical sector, and put immense pressure on the economies of health.

Invariably, COVID-19 will impact the Ghanaian pharmaceutical sector as many countries restrict international travels and shipments. Moreover, prolonged factory closures in China and elsewhere means that certain products and equipment are not being produced. As a result, shortage of medical products and supplies is anticipated in the case of a full-blown pandemic. It is also prudent to expect that supply chain bottlenecks will hinder the supply of medical devices to sub-Saharan African nations including Ghana, at least, in the short term.

COVID-19 has already begun to impact the global pharmaceutical sector, with pharmaceutical ingredients that are manufactured in China being unavailable or increasing in price after extended factory closures and supply chain disruptions. India's Directorate General of Foreign Trade announced in early March that the country would restrict export of 26 medical products and ingredients, including paracetamol and some antibiotics, which could lead to a shortage of supply in Africa. India produces a large percentage of the world's generic medicines.

Already, the World Health Organization (WHO) has warned that severe and mounting disruption to the global supply of personal protective equipment (PPE)–caused by rising demand, panic buying, hoarding, and misuse–is putting lives at risk as regards COVID-19 and other infectious diseases. The WHO has therefore called on governments and industries to increase manufacturing of PPEs by at least 40% to meet the rising global demand.

The pharmaceutical industry in Ghana should be anticipatory of such crises. The continuous supply of medicines for disease prevention, diagnosis, and treatment should be guaranteed. A look at the Ghanaian pharmaceutical market shows that approximately 30% of products are locally manufactured, whereas 70% are imported; the latter originating mainly from India and China. Within the West African sub-region, Ghana has a comparatively strong pharmaceutical industry. Ghana has 32 registered pharmaceutical industries, compared to, for example, Nigeria, which has approximately 90 pharmaceutical manufacturers. This means that if local industries are adequately supported with funds, incentives, and favourable economic policies, and are provided with the needed technical support, Ghana should be able to produce most of the medicines and devices required for the fight against COVID-19 locally. Additionally, post-COVID-19, Ghana should work towards producing more than 60% of the medicines needed locally.

Currently, there is no specific approved treatment or vaccine for COVID-19. Treatment of the condition mainly involves supportive care and is therefore based on the clinical condition of patients. Such supportive treatment includes oxygen therapy, hydration, and management of fever and pain. Antibiotics are also administered if bacterial co-infection is present. Many of the medications used can be produced locally when industries are supported. This is especially important considering that COVID-19 management and SARS-CoV-2 containment are very resource-intensive.

Hygiene and Safety at the Pharmacy in the Wake of a Pandemic

By Joan Naadu Hazel
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The new Coronavirus disease, having lately held the entire globe at ransom, is undeniably the most topical issue especially, in the field of health. The practice of pharmacy, just as other healthcare disciplines is among the essential services that remain available even when some others were temporarily suspended. In an unprecedented manner, pharmacists and support staff have had to remain at the frontline of providing pharmaceutical care and advice to patients.

Pharmacists have a vital role to play in educating the public on safety and hygienic precautions to prevent the spread of the COVID-19 disease, identifying patients with suspected symptoms of the disease and referring them to seek further medical attention. It is not surprising that community pharmacies especially, may experience an increase in the number of client visits to buy over-the-counter medicines for varying reasons including panic stocking. More patients possibly visit pharmacies nowadays to seek first aid for simple ailments. This may be to avoid routine and "unessential" visits to the hospitals in the wake of the pandemic.

The obvious increased exposure as first responders puts pharmacists and pharmacy support staff at an increased risk of infection with the dreaded Coronavirus disease. Having measures in place at pharmacies that prevent the spread of the disease and protecting staff and clients from exposure to possible sources of contagion will put us all at ease in these times. Pharmacy owners and managers should as a matter of necessity develop standard operating protocols (SOPs) for Infection Prevention and Control at their facilities. This article summarizes some practices that may be adopted especially at community pharmacies to prevent the spread of the disease.

Personal Protective Gear, Physical Barriers & Administrative Measures

Face masks, face shields, gloves and other forms of personal protective equipment should be provided for all pharmacy staff. A NO FACE MASK, NO ENTRY policy should be enforced for clients visiting the facility. As has been severally advised, pharmacy staff and clients should wear them appropriately, covering the nose and mouth fully and disposing them off in the right manner. Pharmacy designs with shelves that are accessible to clients for self-service may provide gloves for clients who wish to pick up items. Gloves should be worn by staff when they handle prescriptions, money and other items passed to or from clients.

A cursory visit to some community pharmacies in town is likely to reveal the use of notices. These are often displayed at the entrance of pharmacies, informing clients of administrative measures to prevent infection at the facilities. Directions such as "remaining within demarcated areas" and "not stepping beyond floor markings" are a way of enforcing social distancing. Pharmacy managers may go a step further by consistently communicating to clients, the need to stay at home especially when they are unwell and to have medications delivered or picked up by someone else. Some services provided at pharmacies such as blood pressure monitoring may have to be temporarily suspended unless an effective protocol for disinfecting the B.P. monitors and cuffs is adopted after every use. The number of clients in the facility at any given time should be controlled to allow social distancing within. Effective communication of administrative measures would promote compliance and foster client trust in management's drive to protect and serve.

Aside the counter that presents a barrier of sorts between staff and clients, acrylic glass or perspex screens may be mounted over the counter to shield staff from direct contact with clients. Chairs or tables may be placed as barricades to prevent clients from going beyond designated areas for waiting. Alternatively, the pharmacy may

be closed to entry of clients while a drive through window is installed to take orders and fill prescriptions.

Limiting Exposure, Protecting Vulnerable Staff

Pharmacy staff in these times are a valuable asset in battling the Coronavirus disease. Much as they are needed at post, protecting staff from the virus translates to protecting the general public that comes into contact with them. The risk of infection is shown to be markedly reduced with limited exposure and human contact (social distancing). Where possible, the working hours for individual employees may be reduced and locum staff employed to cover those extra hours. Vulnerable staff who may be pregnant, diabetic or with other underlying health conditions should not be unnecessarily exposed and in contact with clients in offering services such as malaria testing or blood sugar testing. Pharmacy management should ensure that staff stay home when they are unwell or have suspected symptoms of the Coronavirus disease.

Disinfecting Surfaces, Handwashing and Sanitation, Waste Disposal

A major aspect of infection prevention and control is handwashing with soap under running water or alternatively, the use of an alcohol-based hand rub (at least 60% v/v) where the hand is not visibly soiled. Hand hygiene protocols should be enforced. Staff reminders to wash hands at least every 30 minutes may be set using applications on the facility's mobile phone(s) and computers. Hand washing stations or hand rub dispensers may be placed at the entrance of facilities for use by clients. Aside the routine cleaning and disinfection of floors, shelves and counters with appropriate detergents and antiseptic agents, other surfaces such as computer screens, keyboards, door knobs and handles, point of sale (POS) devices should be disinfected as often as they are used by different persons.

Washrooms should remain hygienic at all time. Toilet cleaning agents provided should be effective enough to thoroughly disinfect the toilet bowl as the coronavirus has been recently shown to remain in stool and urine long after an infected person recovers.

The removal and disposal of PPEs should be guided by acceptable protocols that prevent contamination. For instance, a face mask should be removed by first detaching it from around the ears while ensuring that the part of the mask covering the mouth and nose is not touched. All PPEs should be properly disposed into a specially dedicated waste bin and not mixed up with regular waste at the pharmacy. Same goes for sharps such as lancets that are used at the facility.

The measures described above are not exhaustive and every pharmacy owing to its unique situation should adopt its own system of preventing infections among staff and visitors of the facility. Where protocols are designed, their implementation should be adequately supervised and possibly reported for the purpose of improving processes and encouraging compliance. Effective communication of precautionary measures is equally necessary for all stakeholders, especially clients. Communication with clients in this regard should be unambiguous, respectful and relevant at all times.

As the world comes together in battle against an unseen enemy, pharmacists and pharmacy teams owe it to the world to remain "friends of the human race" by stopping the spread of the virus, educating the public and providing pharmaceutical care. As leaders of pharmacy teams, pharmacists should rise to the occasion and take charge of initiatives to ensure safety and hygiene at the facilities they manage or are employed at. Collaboration with other healthcare facilities or professionals and the National COVID-19 Response team may be necessary in the line of duty. It is hoped that when this pandemic finally ends, pharmacies would be better prepared to fight any emerging infectious disease that the world is threatened with.

The COVID-19 Effect – "Big Pharma"

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The COVID-19 pandemic has devastated countries across the globe with its impact being felt by all segments of the population in one way or another. The overwhelming effect of COVID-19 has shrouded other news and masked the world with a thick fog. Health workers are putting up a valiant fight against the virus, and with such an impressive recovery rate in Ghana, we applaud our Ghanaian health workers. However, the world is not at a standstill as it seems, and life still goes on. A meningitis outbreak has claimed several lives in the northern part of the country, and as you read this first paragraph, a child just died from malaria, which kills every two minutes!

A notable effect of the pandemic is that majority of adults are reluctant to visit healthcare facilities, with up to 65% of respondents in an online survey conducted by a digital media company Morning Consult in the USA, preferring not to visit hospitals or clinics during this pandemic. Anecdotal evidence in Ghana suggests several people share the same sentiments. A number of hospitals, especially treatment or isolation centres have seen a sharp decline in out-patient department (OPD) clinic attendance. With several other major health facilities being forced to fully or partially close down their outpatient department units or adjust their operating hours at a point in time, there remains a heavy disease burden that requires attention.

The worrying global burden of chronic diseases such as hypertension and diabetes which are major causes of morbidity and mortality in Ghana exists as well. Management of these conditions however requires constant patient review and monitoring.

"Another child just died from malaria"

Since the COVID-19 pandemic has severely affected our healthcare delivery system, it is imperative that the general public is protected not only from the disease of the moment COVID-19, but also from the chronic ailments we have been battling with for centuries. Our health care resources are already limited, and to reduce the overload on the already limited hospital and clinic infrastructure, it is necessary now more than ever for the general public to patronize the services of community pharmacies and Pharmacists for key interventions in the health space.
Pharmacists are well trained in the management of several medical conditions. Considered also as the experts in medication therapy management, Pharmacists are available to make meaningful impact in the management of several chronic conditions such as diabetes and hypertension. Pharmacists are in a better position to easily identify medication related problems such as dosing, medication selection and medication use problems thereby ensuring that patient medication therapy is tailored to meet their specific needs.

In an ideal healthcare system, which we should envisage after this pandemic, Pharmacists work together with other members of the multidisciplinary healthcare team to evaluate patient medical records and achieve set health care goals for patients. With access to health facilities being a challenge however, pharmacies in Ghana are well equipped to provide evidence-based disease management at their level of primary care. This implies that in the era of this pandemic, Pharmacists are available to manage a myriad of medical conditions in the communities. Services such as wound dressing, provision of first aid , management of ailments such as malaria, sexually transmitted diseases and other infections, coughs, colds and inflammations are being effectively provided in community pharmacies by Pharmacists, bearing in mind that Pharmacists are also trained to know when to refer patients to hospitals for more intensive monitoring or further therapy.

This pandemic has also led to some worrying statistics that community pharmacies can help plug. A press

COVID-19 in Sickle Cell Disease: The Role of the Pharmacist

By Janice Osei Donkor
Tema General Hospital

COVID-19 is a respiratory infection caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) strain of coronavirus, which is a positive-sense single-stranded RNA virus[1]. The virus is a recently identified pathogen, previously unidentified in humans and is highly contagious. It is in the same set of viruses as SARS coronavirus (SARS-CoV) and influenza viruses, but SARS-CoV-2 is a different strain with peculiar characteristics [2, 3]. COVID-19 disease, reported first in Wuhan, China, in December 2019, has subsequently spread rapidly across the world, prompting the World Health Organization (WHO) to pronounce COVID-19 a pandemic[2].

Sickle cell disease (SCD), an inherited disorder of the blood causes the body to produce abnormal sickle hemoglobin (HbS), which yields a sequence of resultant medical complications. These complications include anemia from hemolysis, bacterial infections, and iron overload resulting from frequent blood transfusions, acute chest syndrome, vascular occlusion, stroke, pulmonary hypertension and episodic pain crises [4]. SCD is a crucial public health problem with over 200,000 SCD babies born every year in Africa. It can extremely decrease the quality and expectancy of life as well. In Ghana, nearly 15,000 (2%) of babies born annually are diagnosed with sickle cell disease, with 55% of them having the homozygous form [5].

Patients regularly have underlying cardiopulmonary co-morbidities which could predispose them to poor outcomes if they are infected with SARS-CoV-2 [2]. It is therefore paramount that pharmacists play their essential role in ensuring that an ultimate treatment and management plan is delivered for each individual patient battling this disease. Pharmacists are also expected to encourage SCD patients in this era, and empower them to care for themselves.

Pharmacists must endeavor to re-evaluate patient medication supply in the various health facilities, ensuring that SCD patients are provided with 90 days' supply of medication and other essential items. Medications can also be delivered to patients if possible to reduce trips to the hospital and pharmacy and prevent exposure of SCD patients to possible COVID-19 infection. [2]

Pharmacists must educate and encourage patients to get emergency care if they experience symptoms such as fever, severe pain that is intolerable and new pain in any part of the body, alterations in behavior, a faint or a seizure, abdominal pain, nausea or vomiting, worsening headache, dizziness and lightheadedness, numbness in the face, arms or legs, darkened urine and reduced frequency in urination. Management of these underlying conditions especially under emergency care is essential since failure to do so can predispose patients to possible bad outcomes with COVID-19 infection. Contacts should be made available for SCD patients to enable them call in if they have any concerns about their health. [4]

SCD patients must be encouraged to keep a distance of 6 feet or 1.8 metres away from other people who may appear sick, and they must be advised to stay home when sick. They must wash their hands as often as possible with soap and water and avoid touching their eyes, noses and mouths with unwashed hands. It is necessary for them to be advised to use alcohol-based sanitizers (at least 60% alcohol) if soap is not available. Patients should also be encouraged to cover their noses and mouths when they sneeze or cough and dispose off the tissue properly afterwards. [2]

The SCD patients in addition, should be encouraged by their pharmacists to take their vitamins and minerals as directed. Folic acid and zinc as supplements help to avoid problems of the blood vessels that can occur in sickle cell disease and also help decrease frequency of pain respectively. Patients must be motivated to drink a lot of water (3-4 litres a day) to stay hydrated as dehydration increases the risk for a crisis. Furthermore, they must be encouraged to eat balanced diet with lots of fruits and vegetables, participate in moderate exercise and avoid exercising to the point of fatigue and dehydration. Alcohol should be avoided and smoking ceased in patients with SCD. Pharmacists should also encourage their patients to take enough rest and stay positive always [5].In the wake of the corona pandemic, it is essential that pharmacists play their vital role in ensuring that an

cont'd on page 21

The COVID-19 Effect – "Big Pharma" cont'd

cont'd on page 21

release by Marie Stopes Ghana on the 22nd of April 2020 stated that due to the COVID-19 pandemic there could result in an estimated 9,768 unintended pregnancies in the Greater Accra and Greater Kumasi metropolitan areas as well Kasoa. A further 16,740 unsafe abortions were also estimated to occur, with about 26,600 women at risk of losing access to effective contraception. Pharmacists as experts in medication therapy and sexual health can play a key role in helping to avert such a worrying trend. With various types of contraceptives available in pharmacies both over the counter and on prescription basis, safe sexual practices can be promoted by Pharmacists. It is no surprise therefore that in the French city of Nancy, pharmacies are also serving as a safe haven for people escaping from incidents of domestic and sexual violence.

Pharmacies have also played a role in ensuring availability of hand sanitizers, face masks and other essential commodities to the general public. Pharmacists have been involved in public education, sensitizing the general public to the harmful effects of COVID-19, its prevention and appropriate use of personal protective equipment. As experts on medications, Pharmacists have also been enforcing the rational use of medications such as hydroxychloroquine, a medication initially used in the management of rheumatoid arthritis which has been found useful in the management of this novel coronavirus disease. Pharmacists have averted the massive rush for such prescription medications, demanding for valid prescriptions before supplying them which has helped to curb sudden shortages in medication availability.

In our quest to ensure that we do not emerge from this pandemic with more problems than before, it is heartwarming to know that "pharma" can indeed be big in these times, reducing the impact of COVID-19 on a drained population that is uneager to visit hospitals.

Pharmacists have contributed their quota to ensure the risk of COVID-19 transmission to individuals at high risk is reduced due to the brave efforts of our community Pharmacists and other Pharmacists at COVID-19 treatment centres. "Pharma" can also come big in managing several non-communicable diseases, safeguarding sexual reproductive health and regulating the use of medications such as hydroxychloroquine, Therefore, we know that once we emerge out of this dark cave filled with "COVID bats", we will not be excessively entangled with webs of non-communicable diseases, unintended pregnancies and avoidable fatalities from treatable medical conditions such as malaria.

COVID-19 in Sickle Cell Disease cont'd

ideal treatment and management plan is provided for SCD patients. Pharmacists, being the most accessible healthcare providers, are key players in making the lives of patients with sickle cell disease better. Through pharmacists' efforts, SCD patients can be empowered to minimize exposure to COVID-19. Inputs from pharmacists can help ensure optimum management of their conditions and enable them improve their quality of life.

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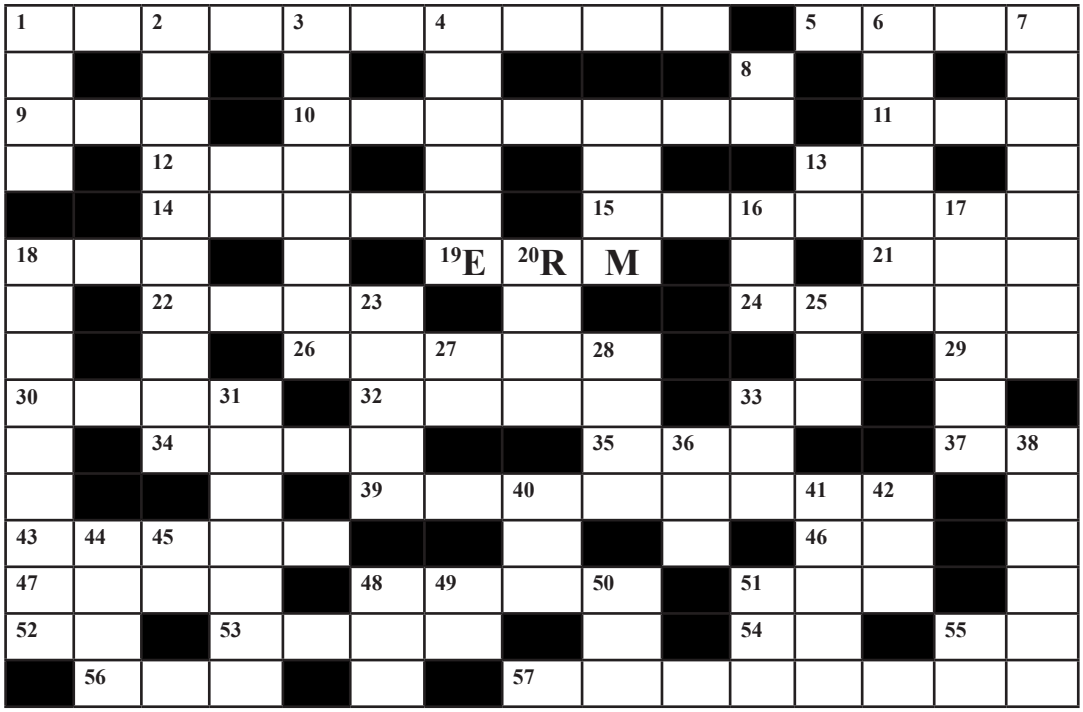
Crossword Puzzle

(*By Dr. Josephine Mensah*)



ACROSS

1 An investigational nucleotide analog with broad-spectrum antiviral activity being tested as specific treatment for COVID-19 (10)
5 The end part of a person's arm beyond the wrist, supposed to be washed frequently using soap and running water or an alcohol-based hand sanitizer (4)
9 Unhappy (3)
10 Persons confined to an institution (7)
11 Prefix, combining form means part of the body which is the upper opening of the digestive tract; an entry point for Coronavirus (3)
12 Join to something else so as to increase the size, number, or amount (3)
13 Sickle cell trait (2)
14 A color between blue and yellow in the spectrum; _____ zones are free of Coronavirus infection (5)
15 Extremely bad; appalling (7)
18 Coronaviruses replicate their _____ genomes using enzymes (3) *Abbr*
19 Disease, a fibrocellular tissue found on the inner surface of the retina (3) *Abbr*
21 Intense and usually openly displayed anger (3)
22 The thin layer of tissue forming the natural outer covering of the body of a person or animal (4)
24 People need to stay two metres _____to avoid coronavirus infection (5)
26 To expel air from the lungs with a sudden sharp sound (5)
29 Third person singular, present of be (2)
30 A chemical element with the symbol Pb and atomic number 82 (4)
32 Due to the coronavirus, until further notice, you cannot apply for a ___at an embassy (4)
33 Family name of Chinese doctor who sounded the alarm on the Wuhan coronavirus (2)
34 Several countries confirmed sharp ___in new coronavirus infections after lockdown restrictions were eased (4)
35 A soft murmuring sound made by a dove or pigeon (3)
37 Two letter country abbreviation for Spain (2) *Abbr*
39 An emergency measure in which individuals are restricted from certain areas in an attempt to control exposure or transmission of a disease (8)
43 To change or become different (5)
46 Several countries have stepped ___ measures to contain COVID-19 (2)
47 A technique of general anaesthesia using a combination of agents given solely by the intravenous route and in the absence of all inhalational agents (4) *Abbr*
48 To remove a PPE (4)
51 A specialized agency of the United Nations responsible for international public health (3) *Abbr*
52 ___cells are pluripotent stem cells derived from the inner cell mass of a blastocyst (2) *Abbr*
53 Come to an end or cease to happen (4)
54 A type of arthritis that causes inflammation in the joints, breakdown and gradual loss of joint cartilage (2) *Abbr*
55 Within a vein (2) *Abbr*
56 Protective clothing designed to protect the wearer's body from infection (3) *Abbr*
57 Difficulty in breathing (8)

DOWN

1 Older people and those with underlying medical conditions are at a higher ____of COVID-19 infection (4)
2 Country that has launched a herbal remedy touted as a cure for COVID-19 (10)
3 A widespread occurrence of an infectious disease in a community at a particular time (8)
4 Resistant to a particular infection or toxin due to the presence of specific antibodies (6)
6 The loss of the sense of smell (7)
7 The coronavirus is transmitted through direct contact with respiratory ____ of an infected person (8)
8 A Latin word meaning bone (2)
13 Left ear (2) *Abbr*
16 A very old-fashioned formal way of saying "yes," used mainly in voting (3)
17 Quarantine people who ___ at the airport for two weeks (6)
18 To make an exact copy of, reproduce (9)
20 Coronavirus cases have been confirmed in many offshore oil ____ (4)
23 New and not resembling something formerly known or used (5)
25 Any of a group of drugs that inhibit the activity of (H+/K+-ATPase) and are used to inhibit gastric acid secretion (3) *Abbr*
27 The unintentional loss of urine (2) *Abbr*
28 To gain unauthorized access to data in a system or computer (4)
31 An illness or sickness (7)
33 A toilet (3)
36 Different to what is usual or expected; strange (3)
38 Watery liquid secreted into the mouth by glands, providing lubrication for chewing and swallowing (6)
40 A chemotherapy combination used to treat breast cancer (3) *Abbr*
41 A large city in China where coronavirus outbreak was first identified (5)
42 Nothing by mouth (3) *Abbr*
44 A speech defect in which s is pronounced like "th" in thick and z is pronounced like "th" in this (4)
45 A piece of electrical equipment with a glass screen on which you can watch programmes with pictures and sounds (2) *Abbr*
48 To put on (3)
49 Surgical operation (2) *Abbr*
50 To move in or pass through the air with wings (3)
51 An Italian or other southern European (3)
55 Latin for "in other words" (2) *Abbr*

SPOTLIGHT
Dr. Samuel Amoateng Kontoh (KATH)

Good day Sir. Thank you for making time out of your busy schedule to interact with us.

1.Who really is Dr. Samuel Amoabeng Kontoh?

Dr. Samuel Amoabeng Kontoh is a Specialist Clinical Pharmacist and a Member of the Ghana College of Pharmacist since 2018 and holds Doctor of Pharmacy and Bachelor of Pharmacy degrees from KNUST. I also hold a Professional Diploma in Project Design Management (LS-DPDM) from the Liverpool School of Tropical Medicine and a Focal Person Trained by the WHO for the production of the WHO-recommended alcohol hand sanitizer since 2013.I am a Staff and Specialist Clinical Pharmacist at the Komfo Anokye Teaching Hospital (KATH) with the Cardiovascular and Thoracic Unit, specialist pharmacist of both the Cardiology and Neurology Team of the Internal Medicine Directorate of KATH.I am also a member of the Clinical Management Team of Cases at KATH and Ashanti Region.

2.You were in the news recently as part of a team of clinicians who conducted a dual chamber pacemaker implantation procedure. I want to congratulate you on that.

a.In view of that, can you walk us through your professional journey as a pharmacist so far?

Thank you so much for your compliments, I am very grateful. I was recommended by Pharm. Dr. Charles Anane to join the Cardiology Team at Internal Medicine Directorate in 2011 and this was sanctioned by Mr. Anthony Mensah, Director of Pharmacy – KATH. This gave me the opportunity to work with various international Cardiovascular and Thoracic Surgery Missions to KATH. As a result, I was introduced to the role of the Pharmacist before, during and after an open-heart surgery and Cardiothoracic Intensive care pharmacy practice.

Since then, I have been an integral member of all missions to KATH, namely, Boston Children Hospital Cardiovascular Mission (USA), Belgium ALST Cardiovascular Mission, Cardiostart International Mission, Guandong Cardiovascular Team (CHINA), James Cook University Hospital Cardio thoracic (United Kingdom) and currently the pharmacist in charge of the Cardiothoracic unit.

In 2019, KATH and The James Cook University Teaching Hospital (United Kingdom), gave me an opportunity to be part of the Core Clinical team of Cardiothoracic Unit-KATH to be trained to build our capacity in establishing the above unit at KATH.

I have been a member of the Highly Infectious Disease Team of KATH since 2011 and actively participated during the H1N1, EBOLA and H3N2 flu outbreak and currently the COVID-19 pandemic.

I am currently a member of the Governing Council of the Ghana College of Pharmacists, the Treasurer of the PSGH-Ashanti Chapter, a member of other Committees at KATH, the Secretary of the Komfo Anokye Teaching Hospital Pharmacists Association (KAPA),

the Secretary of the KATH Pharmacy Department Welfare, The Head of Communications - PSGH Ashanti, A Delegate for the Government and Hospital Pharmacists Association (GHOSPA) for Ashanti and Secretary of GHOSPA National Communication Team.

I am a preceptor to residents from the Ghana College of Pharmacists, the Faculty of Pharmacy (KNUST) and other Tertiary Institutions whose students receive their clinical attachment at KATH.

3.Dr. Kontoh, you are involved in COVID-19 fight as a front liner.

a.How did you get there?

Hmmm, it all happened when one fateful morning whiles coming to work and listening to the radio, I heard about the COVID-19 infection in China and the mortality rate associated with it. As the days went by, it became clear that our country must as a matter of urgency start putting its house together as other countries had started having patients testing positive.

The Infectious Disease Team of KATH were then called for a meeting and this was led by the

current Medical Director of KATH, Prof. Baffour Opoku. It was then obvious that I was the Pharmacist on the team even though I had the opportunity to say no because of the devastating nature of the disease. But I said to myself, I have to stand in and make sure Pharmacy is well represented in this regard to provide comprehensive pharmaceutical care services with the support of my Director of Pharmacy, Mr. Anthony Mensah, Pharmacists and Staff of the Pharmacy Department.

I received an invite from the regional management team to be part of the training for frontline staff which I accepted and participated fully. At the end of the program, I got an invitation to be part of the Ashanti Region Management Team as a Pharmacist from KATH.

b. How are patients with COVID-19 being managed?

We have so far been managing Moderate to Severe COVID-19 positive cases at the Intensive Care Unit of the Treatment Centre of KATH. The patients are managed comprehensively taking into consideration all other co-morbidities. The Clinical Management Team of KATH meet every morning at 8am to update on the current condition of our patients. All challenges are discussed and the best option to solving it is noted and followed. The patients are reviewed four times a day by the clinical team made up of the lead clinician, Specialists (MD, Pharmacist), Psychologist, Nurse and Nutritionist.

c. Can you speak to your roles and responsibilities in that regard?

As the pharmacist, I have the responsibility to undertake Medication Therapy Review of every patient, check for any possible drug interactions (Drug-drug, drug-disease or comorbidity, drug–food), look at the renal function report,

serum biochemistry result, the serology and virology report, blood culture and sensitivity result, monitor the patient's vitals individually and make recommendations to change one therapy or the other. I also counsel the patients in a full PPE in the ICU to find out if they have any drug-related care issue so it could be addressed.

I ensure there is the availability of all prescribed medicines and if not available recommend alternatives to ensure therapy is not compromised. In some instances, I have had to buy some of the medications out-of-pocket.

When the patients are finally going home after a second and third negative repeat test, I do discharge counselling to ensure that all medication-related concerns are addressed and continued, providing care whiles the patient is at home by making available my cell phone number for them to call if they need assistance.

As the team's Pharmacist, I also have an oversight responsibility of ensuring that patients under self-quarantine and self-Isolation are monitored whiles at home for any possible medication-related care issue and advice the team appropriately.

d. Can you speak to the critical role of pharmacists in this pandemic?

The pharmacist plays a very crucial role to ensure a compressive management of the patient.

Pharmacists undertake Medication Therapy Review of every patient, check for any possible drug interactions, monitor patients' vitals individually and make recommendations to change one therapy or the other. Pharmacists counsel patients on admission to find out if they have any drug-related care issues so they could be addressed and also at discharge.For Pharmacovigilance, Pharmacists ensure that any side effects and/or adverse effects are documented, recommend the appropriate antidote and monitor patients for response to intervention given up to recovery if it is an ADR and reported to the FDA.

4. As someone who's on the frontline, what has been the hardest part of the job so far?

The hardest part of the job so far is with respect to how contagious the disease is and the fact that there is currently no treatment or vaccine for COVID-19 and the fact that the pathophysiology is not yet fully understood. The frightening aspect is that some of our frontline staff have been infected too but because of the grace of God and the presence of a psychologist, I have been able to overcome the negative effect of these challenges

5. What has been the most fulfilling part of the job?

The only fulfilling part of the job so far is that, our patients are responding to the management being given so far and are being discharged home after testing negative, recovering fully from the infection.

a. How has your relationship with your family been during this moment especially as a front liner?

In fact, my family has suffered so much since I have to stay away from

them and if even I have to get some things from the house, I go very late when all the children are asleep, and in case they are not asleep, I ensure they are at least two or more meters away from me.

If there is any homework to go through, we discuss it on phone via Zoom to ensure they understand the assignment given. When they are done, I let them, through my wife, take a phone and send it to me for double checking before they are sent to the teacher for marking.

My family has been affected emotionally but I encourage them and assure them I am okay and of God's protection. Visiting family members in Kumasi and Accra is very difficult and if need be, it is done with great precaution and for Accra it is a no go especially as I am an integral member of the management team.

b.What precautions do you take to protect your family?

I sat down with them to discuss the current COVID-19 pandemic, explained to them how the disease can infect anyone and what one has to do to protect themselves. I have made available lots of the face masks approved by the FDA, hand sanitizers and taught them the dos and don'ts of COVID -19 including how to wash your hands with soap under running water and the proper use of the hand sanitizers and its safety precaution to prevent burns and toxicities.

6. As compared to many other countries, the pattern and course of the pandemic seems to be relatively better for Ghana. The positivity, the morbidity and even the mortality rates seem to be low. What could account for this observation?

This is very intriguing because the climate of our part of the world is similar to countries like Brazil and the like but we seem to doing well.

I believe this is due to unmerited favour from Almighty God, and also due in part to the strength of our immunity acquired over the years, the number of vaccines that Ghanaians have received, the type of active ingredients in our meals and

the good measures the Government of the Republic of Ghana and the Ministry of Health put in place and the commitment of Ghanaians to obey and implement that has helped in this regard.

6. What advise will you give to policymakers in their efforts to contain the virus?

I humbly advise policymakers to ensure they do not lose focus and to ensure that all that is needed to be done is done without fear or favour. I believe this will go a long way in ensuring the protection of every person in Ghana and across the world.

7. How long do you see this pandemic lingering on globally and nationally?

From the trends so far, it may be lingering for a year or two or more but an antidote may be found to contain the situation and treat patients who become infected.

8. Should we consider adding more courses in infectious diseases in pharmacy training post-COVID-19?

I think that will be very good to help broaden our knowledge base and build capacities of our students or professionals in understanding disease and pandemics to appreciate them and its managing styles.

9.What take home message do you have for young pharmacists who aspire to take similar professional trajectory as yours?

Pharmacy is a good profession and the training we have received is an excellent one to let us shine as Pharmacists anywhere we find ourselves in the performance of our duties. All we need is to be ready to go the extra mile, be ready to sacrifice your comfort, remain focused, humble, respectful in all your dealings and I believe with the help of the Almighty God and your superiors you will by all means succeed and also help raise the flag of our profession high.

LAPAG and PSGH Provides Care Packages to UGSOP students

On 24th March 2020, LAPAG in collaboration with PSGH donated care packages to seventy three quarantined pharmacy students of the School of Pharmacy University of Ghana and also donated data package to the confirmed patient in isolation.

Background

On Sunday 22nd March 2020 LAPAG was informally informed of the quarantined students and LAPAG decided to reach out to the students and the Dean of the school of pharmacy, Prof. Isaac Gyekye to know if there was any help LAPAG could render to the students. After consultations with the dean and the students in quarantined and PSGH, a LAPAG-PSGH CARE PACKAGE donation drive was started to raise funds to provide essentials.

With generous and voluntary contributions, pharmacists and members of PSGH rose to the challenge and donated Six thousand Six Hundred and Sixty Ghana Cedis (6,660.00). PSGH graciously supported with Five Thousand Ghana Cedis making a total of Eleven Thousand Six Hundred and Sixty Ghana Cedis (11,660.00).

Further to this there were partnership donations from three pharmaceutical companies namely:
Pharmatrust - Hand Sanitizers (200ml) – 80 pcs
Equitorial Healthcare Services – Hand Sanitizers (500ml) – 32 pcs Cedar Point Chemist – Cedarvite Multivitamin – 40 pcs
The Standard Care Package List was made up of
1. Beverage – Milo (800gm) – 1
2. Milk – Cowbell (400gm) – 1
3. Mouthwash – 1
4. Water – 1 bag of Sachet Water and 1 pack of 15 bottles of Mineral Water
5. Fruits – Bananas and Apples
6. Multivitamin – 1 pack(30's) of Cedarvite
7. Sanitizer (200ml) – 1
8. Vitamin C (500mg) – 1 pack (30's)
9. Toilet Roll – 1 pack
10. Sugar

The Female Care Package had Sanitary Pad added and a few special packages had Tooth Brushes, Toothpastes and a pack of Cornflakes.

Visit / Presentation – 24th March 2020 at 4:00pm

LAPAG- PSGH was ably presented by
Dr. Paul Owusu-Donkor – Editor and Rep of President

Backrow – Dr. Paul Owusu-Donkor, Prof. Isaac Gyekye, Dr. Charles Norah (L-R)
Front Row – Lady Pharm. Naa Nhyirabea Armooh, Prof. Abraham Annan, Lady Pharm. Naana Quayson (L-R)

of PSGH
Lady. Pharm. Naana Quayson - National Chairperson, LAPAG
Lady Pharm. Naa Nhyirabea Armooh – Member, LAPAG.

The team was well received by
Prof. Abraham Annan – Head of University of Ghana Emergency Response Team
Prof. Isaac Gyekye – Dean of School of Pharmacy
Dr. Charles Norah – Supervisor of Emergency Response Team in Charge of the Quarantined Students.

Lady Pharm. Naana Quayson made the presentation to the University of Ghana team and thanked them for the support they have been giving to the students while in quarantine. The importance of quarantine in the COVID-19 pandemic cannot be over emphasized and to have the students and team abide by the rules of conduct while in quarantine is deeply appreciated by PSGH, LAPAG and the Pharmacy Fraternity. A small gesture of appreciation to the students is the idea behind the LAPAG-PSGH Care Package and to Dr. Charles and his team Sanitizers were also presented to them. In all Eighty (80) Care packages were donated.

Receiving the items on behalf of UG was Prof. Isaac Gyekye who expressed deep appreciation for the gesture done despite the short notice.

Dr. Charles Norah and Prof. Abraham Annan also thanked LAPAG and PSGH for their kind gesture and conveyed messages of gratitude from the Pro-VC.
During the visit the LAPAG-PSGH team were informed of the daily activities done by Dr. Norah and his team.
1. Each Team member is assigned a maximum of 10 students to cater for during meal time.
2. Each student is quarantined in one room and they have access to their phones and laptops
3. No student is allowed out of the hall and no one is allowed in. There are security measures 24/7 to ensure adherence to this rule.
4. Team regularly during meal time check students temperatures and review them with screening guide.
5. As at 24th March 2020, all tested quarantined students have negative results.
6.Quarantined students will be tested again on Friday 27th March 2020 and hopefully if they are all declared negative, they would be free to go home over the weekend.
7.Some of the students would require additional counselling as occasionally, the team reports of some having nightmares.
An Internet Data Package of Two Hundred Ghana Cedis (Ghs200) was also donated to the confirmed COVID-19 Patient in Isolation.

Feedback responses from the students have been very encouraging and have made the exercise worth taking.

Acknowledgement
LAPAG would like to express her profound appreciation to PSGH and all pharmacists who donated to make this project possible within the shortest possible time (two days 22nd March – 24th March 2020).

God bless us all.
Amicus Humani Generis
Yours in the Acts of Service
Lady Pharm. Naana Quayson National Chairperson
0244380959 naanaafia@gmail.com

From my COVID Diary

By Naessiamba Eab-Aggrey

These few weeks have been nerve-racking for me. Just like a wildfire approaching from a distance, so was the COVID-19 outbreak. It was devastating in hearing how people were dying in a short period.March 7th was the day that the impact of the COVID-19 outbreak hit me. I was anxious, always-on social media gleaning desperately for any information that would benefit and contribute to my well-being. I kept up with news channels to understand what was happening. The following days were scarier; schools closing, gyms, restaurants, and offices doing the same, as the COVID-19 took over the world like a never-ending storm.

On the 11th of March, the COVID-19 outbreak was reported by the World Health Organization as a global pandemic as death rates increased in the United States, U.K, and Italy. “What could be more devastating?”, I thought. COVID-19 has taken the very life of our communities. One truth, however, seems to remain; though COVID-19 is causing unemployment, exhaustion on the part of front-liners, depression, anxiety, fear, panic attacks, and death; it has made me realize the most important things in life; life itself, family, and not taking things for granted. I must say, I am highly impressed with the switch of most activities online for some jobs, churches, and schools; this is phenomenal.

One of the most distressing moments for me was on the 17th March when I went to the supermarket and found racks empty; no milk, no tomato paste, no chicken, no toilet rolls and so many items. The most essential things to me were gone! “How will I survive?”, I thought. It was hard and I was running out of cash.

Well, it is about four months since this disease was first discovered. I sit here saying how I feel, but honestly I don’t know when this will end. I however believe that if we are united as a people,we will overcome. Not with extreme isolation or suicide but with solidarity, love, care, and a great sense of faith over our fears.

What better way can we deal with this crisis than what I’ve just told you. Remember to stay home as much as possible, practice social distancing, eat well, exercise, practice good hygiene,and hold on to your faith.

ANSWER TO PUZZLE ON PAGE 22

[1]R	E	[2]M	D	[3]E	S	[4]I	V	I	R	■	[5]H	[6]A	N	[7]D
I	■	A	■	P	■	M	■	■	■	[8]O	■	N	■	R
[9]S	A	D	■	[10]I	N	M	A	T	E	S	■	[11]O	R	O
K	■	[12]A	D	D	■	U	■	E	■	■	[13]A	S	■	P
■	■	[14]G	R	E	E	N	■	[15]A	B	[16]Y	S	M	[17]A	L
[18]R	N	A	■	M	■	[19]E	[20]R	M	■	E	■	[21]I	R	E
E	■	[22]S	K	I	[23]N	■	I	■	■	[24]A	[25]P	A	R	T
P	■	C	■	[26]C	O	[27]U	G	[28]H	■	■	P	■	[29]I	S
[30]L	E	A	[31]D	■	[32]V	I	S	A	■	[33]L	I	■	V	■
I	■	[34]R	I	S	E	■	■	[35]C	[36]O	O	■	■	[37]E	[38]S
C	■	■	S	■	[39]L	O	[40]C	K	D	O	[41]W	[42]N	■	A
[43]A	[44]L	[45]T	E	R	■	■	A	■	D	■	[46]U	P	■	L
[47]T	I	V	A	■	[48]D	[49]O	F	[50]F	■	[51]W	H	O	■	I
[52]E	S	■	[53]S	T	O	P	■	L	■	[54]O	A	■	[55]I	V
■	[56]P	P	E	■	N	■	[57]D	Y	S	P	N	O	E	A

Website – heathoxhub.com

PSGH COVID-19 Response Assessment Report

Summary
From the 20th to 21st of April 2020, the PSGH undertook a personal engagement and fact-finding exercise to all Covid-19 Treatment Centers in Greater Accra to understand the role of Pharmacists in the pandemic as well as receive feedback on specific needs of each of the Centers. Altogether, 5 facilities were visited and all reported active involvement as frontline members in the national fight against the virus. The most pressing needs all the Centers outlined were PPEs with particular emphasis on face masks as well as access to medicines, particularly Chloroquine, antihistamines, antitussives and multivitamins.

Assessment Team

1.Rev. Dr. Dennis Sena Awitty	Executive Secretary
2. Dr. Paul Owusu Donkor	Editor
3. Naana Aboagye Quayson	LAPAG Chair

Background
On the 20th and 21st of April 2020, the PSGH undertook a personal engagement and fact-finding exercise at all Covid-19 Treatment Centers in Greater Accra to understand the role of Pharmacists in the pandemic as well as receive feedback on specific needs of each of the Centers. This was a follow-up to the phone engagements that the President of the Society had held with the Pharmacy team leaders in the various centers. On Monday, the 21st, the Assessment Team visited the Tema General Hospital, the Greater Accra Regional Hospital at Ridge and the Korle Bu Teaching Hospital. The following day, the team visited the Ga East Municipal Hospital and the University of Ghana Medical Center.

Tema General Hospital

At the Tema General Hospital, the Director of Pharmacy, Pharm. Dr. Bismark Atta-Adjapong indicated that all confirmed patients had been put on Chloroquine (CHQ), Hydroxychloroquine (HCQ), Azithromycin (AZT), Vitamin C and Zinc. He intimated that Pharmacists were originally not part of the management team because medications were not in the initial protocol. However, after the provision of a draft protocol and treatment guidelines with the inclusion of therapeutic options, the Pharmacy Department was roped into the COVID-19 management team. The Director mentioned that he had challenges with the initial prescription stated in the draft national protocol. His concerns stemmed from the length of drug administration and the relatively long half-life of HCQ. He raised these concerns and has had the team revise the protocol to include a CHQ 400 mg bd loading dose, then 200 mg bd x 4/7. The Tema General hospital has recorded 5 cases (1 discharged), with two of the staff testing positive.Although pharmacists are recognized as players in the therapeutic monitoring of patients, physicians and nurses continue to play the role of main frontline team. This is because the Pharmacy team is understaffed to take on additional tasks.

Needs & Challenges
In terms of pressing needs, the Director requested for gowns, goggles and face shields. He said that hand sanitizers were made in-house and they did not have need for them at the moment.

Ridge Hospital

The Assessment Team held a meeting with the Medical Director of the Accra Regional Hospital,Dr. Emmanuel Srofenyoh, the Director of Pharmaceutical Services Pharm. Joseph Adjei Tsiase and other leaders in the pharmacy department. This included Pharm. Jennifer Boateng, Pharm. Millicent Provencal and Pharm. Maame Ewurabena Ansah.The Medical Director was curious about the differences in Ghana's provisional COVID-19 management guidelines and that of other countries and sought for explanation for the contrast. He stated that he had sighted publications that mentioned administration of CHQ for 5 days in countries like France, Spain and Germany. However in Ghana, CHQ is administered for 10 days. Furthermore, he mentioned that Ivermectin is in use in Australia and so that could be explored in Ghana as well. He also advised that we continue to monitor COVID-19 management guidelines in other countries with emphasis on the use of existing drugs that are readily available in Ghana, so that in the event of scale up of cases, we would be able to contain the situation.

Needs & Challenges
In terms of pressing needs, the Pharmacy Team requested for PPEs especially N95 nose masks and other nose masks as well as Zinc and Vitamin C for the pharmacy staff.Other needs they had included saline nasal drops, antitussives, zinc, antihistamine, infusions. They added that even though they had stock of multivitamins, sanitizers and coveralls, they would appreciate support in buffering these stocks.

Korle Bu Teaching Hospital (KBTH)

The Assessment Team met with Pharm. Dr. Daniel Ankrah (Director of Pharmacy) and Pharm. Dr. Mrs. Amah Nkansah. The Director appreciated the holistic approach shown by the leadership of the PSGH in responding to the needs of the Pharmacy fraternity. He added that since KBTH was only added recently to the list of treatment centers, the Pharmacy team has also started to assert itself as a frontline member in the management of confirmed patients. The Pharmacy Team is currently situated at the holding bay of the treatment center.

Needs & Challenges

In terms of needs, he mentioned that the Government had provided locally made face masks to the hospital. However, he added that the Pharmacy Department would appreciate additional donation of 250 boxes of surgical face masks and 20 boxes of N95 nose masks.

Ga East Municipal Hospital

The Assessment Team was received by the hospital administrator, Rev. Samuel Obeng Mensah, who expressed his appreciation at the thoughtful gesture of the Pharmaceutical Society. In attendance were the Director of Pharmacy, John and Pharm. Gabriel Owusu-Duah. The team was informed that over one hundred patients were currently being held at the facility, with most of them exhibiting mild to moderate symptoms.

Needs & Challenges

The Pharmacy Department is well stocked with the needed medications, but the growing challenge is that prescribers were prescribing only HCQ with several CHQ quantities untouched. Currently, the Department has in stock 59,000 tablets of CHQ but only a handful of HCQ tablets. Doctors have been engaged to switch to CHQ. The absence of PPEs is discouraging Pharmacists from serving as frontline players at the hospital. The Director of Pharmacy expressed the desire of his Department to be actively engaged as frontline players and called on the PSGH to support them in obtaining the needed PPEs. Their immediate concern is to receive protective gowns, goggles, gum boots and N95 nose masks.

University of Ghana Medical Center

The Assessment team was received by the Director of Pharmacy, Dr George Asumadu Amoateng. He indicated that although UGMC was a relatively new facility, the pharmacy department had become an integral part of the care of COVID-I9 patients at the facility. He added that current regimens being used for management of the patients included HCQ+AZT, CHQ+AZT+CET or AZT alone. Other supportive treatment/medications given included Zinc sulphate tablets, Vit C, Zincovit tabs, Paracetamol tabs and IV, IV methylprednisolone, PPIs and antacids. He added that in order to facilitate pharmaceutical service delivery to the patients, a pharmacy station had just been established at the block where patients were quarantined to guarantee provision of medications to COVID-19 patients.The department was therefore involved in securing medications from the National COVID management team for patients and procurement of other medications needed for supportive care and management of other patient comorbidities. Additionally, pharmacists were in patient reviews with other members of the healthcare team. The Department also contributed to patient medication reviews and resolution of ADRs. They therefore liaised with FDA to ensure that incidents of ADRs were documented. He further added that the UGMC Pharmacy Department contributed to IPC by producing UGMC Hand Sanitizers which cut down cost of procurement of hand sanitizers by the facilitytremendously.

Challenges

The hospital provides PPEs, scrubs etc but pharmacy will be grateful if there is extra donation of 3 ply surgical face masks, N-95 facemasks, crocs and any other incentive to motivate staff.

Table 1. Needs Assessment of Treatment Center

	Tema General	Ridge	Korle Bu	Ga East	UGMC
Surgical nose mask	√(20)	√(30)	√(250)	√(10)	
Sanitizers		√(100)			
N95 nose mask	√(10)	√(12)	√(20)	√(10)	
Multivitamins		√(1000)	√(1000)		
Zinc	√(100)	√(1000)	√(1000)	√(1000)	
CHQ	√	√	√	√	

Recommendations

1.A communication platform (perhaps WhatsApp?) should be set up for all the Pharmaceutical care teams to enhance the sharing of best practice and synchronize treatment protocols.

2.The Assessment team should reach out to Pharmacists in the other national treatment centers, including KATH, Suntreso Government Hospital, Tamale Teaching Hospital among others, to ascertain the prevailing conditions in those areas and provide one another with the needed support.

3.The Ghana College of Pharmacists should aggressively pursue the establishment of an Infectious Diseases Pharmacy course as a much-needed next line of action.

4.Pharmacists at the fore-front of the fight should make good use of the data available to them. They should be encouraged and coached to communicate their findings and innovations in recognized journals.

JOKES

Judge asks woman seeking divorce...

J: How did you get married?

W: I was working in a chemist shop and he came and asked for XXXXL size condom.

J: How did the marriage fail?

W: I later realized that he was stammering

More Jokes.....

1. What do you call panic-buying of sausage and cheese in Germany? The wurst-kase scenario.
2. Back in my day you would cough to cover up a fart. Now, with COV-ID-19, you fart to cover up a cough.
3. You know who buys up all the toilet paper? Assholes.
4. Nail salons, hair salons, waxing center and tanning places are closed. It's about to get ugly out there.
5. Why don't chefs find coronavirus jokes funny? They're in bad taste.
6. What should you do if you don't understand a coronavirus joke? Be patient.
7. I'll tell you a coronavirus joke now, but you'll have to wait two weeks to see if you got it.
8. Finland just closed its borders. You know what that means. No one will be crossing the finish line.
9. What do you tell yourself when you wake up late for work and realize you have a fever? Self, I so late.
10. Did you hear the joke about the germ? Never mind, I don't want to spread it around.
11. Where do sick boats go to get healthy? The dock!
12. Why do they call it the novel coronavirus? It's a long story….
13. Why didn't the sick guy get the joke? It flu over his head.
14. What types of jokes are allowed during quarantine? Inside jokes!
15. What's the best way to avoid touching your face? A glass of wine in each hand.
16. If there's a baby boom nine months from now, what will happen in 2033? There will be a whole bunch of quaranteens.
17. What's the difference between COVID-19 and Romeo and Juliet? One's the coronavirus and the other is a Verona crisis.
18. I ran out of toilet paper and had to start using old newspapers. Times are rough.
19. You know what they're saying about 2020. It went viral faster than anyone thought it would.
20. What did the sick parent make their kids for lunch? Mac and sneeze.
21. If coronavirus isn't about beer, why do I keep seeing cases of it?
22. So many coronavirus jokes out there, it's a pundemic.