

## Pharmacists Are Able To Give Best Treat and Care For Coronaviruses Patients

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### **ABSTRACT:**

As the number of confirmed cases and deaths attributed to COVID-19 continue to climb worldwide, policymakers should act quickly to respond. As state policymakers take steps to ensure that their communities are prepared for COVID-19, they should evaluate their state's laws and emergency plans to ensure that pharmacists practicing in hospitals, clinics, physician offices and retail settings are able to effectively support the COVID-19 response. In many communities, pharmacists are the most accessible healthcare providers and the first touch point of patient engagement with the healthcare system. In fact, 90% of all Americans live within five miles of a community pharmacy. In rural and underserved communities and in areas experiencing physician shortages, pharmacists may be the only healthcare provider that is immediately accessible to patients. As the lockdowns are being observed all over the globe and the national level pharmacy professionals are performing frontline roles, this editorial highlights the role of pharmacists in the COVID – 19. In an interview with Pharmacy Times, Shawn Hodges, president of the Alliance for Pharmacy Compounding, said protecting pharmacy staff is vital to ensuring continued care during the COVID-19 outbreak. As many restaurants, stores and other businesses begin closing and limiting hours, pharmacists are becoming key players in the rush for reliable information on the novel corona virus (COVID-19). Many state pharmacy associations are offering tips for pharmacists looking to prepare, while national societies have published recommendations for state policymakers in an effort to ensure pharmacists are able to best treat and care for patients.

**KEYWORDS:** Corona virus, COVID-19, Pharmaceutical care, Pharmacists, Pharmacy service and Public health.

### **I. INTRODUCTION**

An outbreak of corona virus disease 2019 (COVID-19) caused by the novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) began in Wuhan, Hubei Province, China in December 2019.<sup>1</sup>The genetic characteristics of SARS-CoV-2 have proven to be significantly different from human SARS CoV and Middle Eastern respiratory syndrome (MERS) CoV.2 Common signs of SARS-CoV-2 infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, organ failure and even death.<sup>2</sup> The virus is highly infectious, spreading rapidly via human-to-human transmission. As of March 12, 2020, there were 80,981 confirmed cases in China (3173 deaths) and 44,067 cases in 117 countries/territories/areas outside China (1440 deaths).<sup>3</sup> Currently there are no approved antiviral therapies for COVID-19. The World Health Organization (WHO) has now declared the corona virus a global pandemic.

Through public preventative measures advocated by WHO, the public are working together in their respective countries to 'flatten the curve'. With a near enough global lockdown there seems to be an even greater dependence on pharmacists as the first point of contact to fulfill the public's healthcare needs. Pharmacies around the world are one of the few places that are kept open for public service even during the strict lockdowns.<sup>4</sup> Community pharmacists and their teams is a vital healthcare provider during the outbreak; they remain on the frontline of public health by serving as direct points of access for their patients. Hospital pharmacists have an important role during the outbreak in infection control as well as patient care and support.<sup>5</sup> Countries severely hit by pandemic are exceedingly facing overburdened Health facilities and shortages as well as burnouts of health care professionals. TRIAGE service has emerged as a supportive modality in this time of crisis which includes pharmacists along with other primary health care workers.<sup>6</sup> A provision of COVID-19 trained health care professionals exists for supporting these services in the time of shortage of medical and nursing staff members and to increase the outreach of the service in Australia as well. The International Pharmaceutical Federation (FIP) has issued a pack of 10 summaries for guidance on COVID-19.<sup>7</sup> American Pharmacist Association (APhA) has also issued guidelines and resource documents for the strengthening and preparedness of the community

Pharmacies as front line health care workers in the global health crisis.<sup>8</sup> Reliability of information and control of scare and misinformation are important concerns during the worldwide spread of the disease. Community pharmacists also continue to play their role towards public uninterrupted for regular supplies of medicines, as well as supporting governments<sup>9</sup> for disseminating information on precautions related to COVID-19 spread including hand washing technique to availability of face masks and instructions for their proper use and disposal. USP has issued guidelines for the compounding and pharmacists and manufacturers for preparation of hand sanitizers to cope with the stock outs.<sup>10</sup> The community pharmacy has a unique credible role with ease in accessibility. In France, the campaign against domestic violence also involved the use of the code “Mask 19” to report domestic violence by the victims.<sup>11</sup> Pharmacists are an integral component of healthcare performing extraordinary roles in the earlier pandemics and health crisis, with some like Ebola and Zika posing global health security risks as well.<sup>5</sup> Likewise, by contributing in the prevention, preparedness and response to COVID-19 pandemic community pharmacists are delivering their role towards public health in dealing with this crisis.<sup>12</sup> In many countries, Pharmacies have worked in close collaboration with the International humanitarian organizations like Red Cross and local community workers to increase its outreach to public and ensure home delivery of medicines.<sup>13</sup> In New Zealand, the pharmacist’s contribution is appreciated by the government by extra remuneration for their support. Hotline numbers have been issued for encouraging on phone consultation and prescription orders for home supplies to reduce public visits which are to be avoided in case of suspected and confirmed COVID cases.<sup>14</sup> It is encouraged for pharmacies in Australia to support remote dispensing of prescriptions using prescriptions received through mails/faxed/emailed or making use of electronic transfer of prescriptions (ETP) technology couples with home delivery services in particular for the old and vulnerable populations.<sup>15</sup>

#### **RESPONSIBILITIES AND ROLE OF COMMUNITY PHARMACY IN COVID-19**

Community pharmacies in outbreak-affected and unaffected areas are often the first point of contact with the health system for those with health-related concerns or simply in need of information and reliable advice.

Community pharmacists have the shared responsibility of:

1. Storing and supplying appropriate stocks of pharmaceutical products and devices, such as medicines, masks, etc
2. Informing and educating the public
3. Counselling, Promoting disease prevention and promoting infection control.
4. A Pharmacy is probably one of the last services that will be considered for any possible closures or reduction of activities in our communities. As of today, there haven’t been any closures or reduction of activities announcements, or any recommendations to restrict this part of the health care system as a direct result of the outbreak in Canada. In fact, pharmacies are becoming busier, more active and more responsible as the outbreak evolves.<sup>16-17</sup>
5. The possibility of a virus carrier (either a patient or a family member) coming to the pharmacy especially for over the counter medications seems possible. Pharmacies, as far as the common cold and flu symptoms are concerned are the front line of the whole health care system. A person infected with the COVID-19 who is looking for a remedy, probably comes to the pharmacy during the highest contagious period of the disease (the first few days).<sup>18,19</sup>
6. The number of patients referring themselves to the pharmacies is higher than in all other health care services.<sup>20</sup>

In addition to the COVID-19-related roles, Pharmacies provide an essential public service to the whole population through the supply of medicines and pharmaceutical care. Ensuring the continuity of these services is essential.

In some countries or territories, such as France and Portugal Pharmacists have been authorized to repeat dispensing of prescribed medicines for patients with long-term conditions, to reduce the need for medical appointments and release resources.

The American Pharmacists’ Association has also urged health insurers and pharmaceutical benefit managers to immediately remove/waive any administrative barriers.

#### **RESPONSIBILITIES AND ROLE OF CLINICAL PHARMACY IN COVID-19**

Currently, more than 80 clinical trials have been registered in the Chinese Clinical Registry to test for a corona virus treatment. During the first week of February, China launched two placebo-controlled trials of remdesivir, slated to include 760 people with COVID-19. The studies should be completed by the end of April, 2020. A few trials have started to test chloroquine, an antimalarial drug that killed off the SARS-CoV-2 in cell cultures. Researchers are studying whether steroids diminish inflammation in people with severe COVID-19, or cause harm. Another 300-person controlled trial is aimed to test whether serum antibodies from COVID-19 survivors could rapidly help someone newly infected with the SARS-CoV-2 virus. Fifteen trials listed in China’s registry expect to enroll a total of more than 2,000 people in studies on a variety of TCMs, including

the largest trial assessing *Shuanghuanglian* with 400 participants.<sup>21</sup> Pharmacists are actively cooperating with research sponsors in the management of clinical trials including the proper supply, use, storage and disposal of experimental drugs in compliance with relevant clinical trial regulations. Pharmacists are also actively conducting pharmaceutical evaluations on the efficacy and safety of related trial drugs. In summary, during the corona virus epidemic in China, the Chinese pharmacy profession has acted swiftly and forcefully with the above seven responses. The impact of these measures needs to be further evaluated, especially the several responses that rely on the public trust of pharmacy as a profession in China.

### **RESPONSIBILITIES AND ROLE OF HOSPITAL PHARMACY IN COVID-19**

After the diagnosis of COVID-19 infection, patients need to be admitted to designated hospitals for centralized and standardized inpatient treatment. Currently, no specific drug has been confirmed to treat COVID-19 and drugs of pre-approval access are still in ongoing clinical trials. The safety and efficacy of these medications remains unclear and some drugs (such as lopinavir-ritonavir and rabidly) may cause serious adverse reactions. Therefore, hospital pharmacists should actively participate in making evidence-based decisions for medications, and assist clinicians in formulating and adjusting drug regimens of COVID-19 patients. Meanwhile, hospital Pharmacists should provide close monitoring and evaluation of medication safety and efficacy, management of drug interactions and monitoring and management of convalescent plasma therapy. Based on the characteristics of special populations and patients with underlying diseases, Pharmacists should provide strengthened Pharmaceutical care services. In addition, the emotional status of COVID-19 patients is also an important factor affecting the treatment and prognosis of the disease. It's necessary for hospital pharmacists to provide COVID-19 patients with emotional counseling and psychological support. Given the importance and urgency of COVID-19 vaccine development for the control of global pandemic, hospital Pharmacists should also provide vaccine-related scientific information to patients. To this end, the pharmaceutical care framework of COVID-19 hospitalized patients for hospital pharmacists was researched and constructed to help promote the pandemic control and patient management.

Currently, most of the COVID-19 therapeutic drugs are in ongoing clinical trials and remain pre-approval access. Combining the available evidence, clinical experience and patients' individual characteristics, providing patients with evidence-based treatment and care is of great significance. As a member of healthcare professionals, hospital pharmacists should give full play to the specialty of pharmacy and fully combine clinical guidance and clinical research to assist clinicians in formulating and adjusting the medication regimens for hospitalized patients with COVID-19. Based on the method of evidence-based pharmacy, PubMed, Embase, Cochrane library and Chinese database were retrieved systematically on March 25, and clinical guidance from Chinese, American, WHO authorities were searched manually. In addition, the American Society of Health-System Pharmacist (ASHP) provided an evidence table for COVID-19-related treatment to help practitioners better understand current treatment options.<sup>22</sup>Based on this available evidence, hospital Pharmacists should help to formulate medication regimens for hospitalized patients with COVID-19 after fully balancing clinical benefits and the risk of medications.

### **RESPONSIBILITIES AND ROLE OF INDUSTRIAL PHARMACY IN COVID-19**

The Indian pharmaceutical industry is the world's third largest drug producer by volume and the country's market manufactures 60 percent of vaccines globally. This constitutes 40 to 70 percent of supply to satisfy the World Health Organization's (WHO) demand for Diphtheria, Tetanus and Pertussis (DPT) and Bacillus Calmette Guerin (BCG) vaccines and 90 percent of the global demand for the measles vaccine. India supplies affordable and low-cost generic drugs to millions of people around the globe and operates more than 250 US Food and Drug Administration (FDA) and UK Medicine and Healthcare products Regulatory Agency (MHRA) approved plants. Furthermore, its active pharmaceutical ingredients (APIs) market is forecasted to attain revenue of \$6 billion by the end of 2020. According to a report on the Indian pharmaceutical industry, the source of APIs is a crucial part of the pharma industry's strategic plan to combat the COVID-19 pandemic. The majority of APIs for generic drug manufacturing across the globe are sourced from India, which also supplies approximately 30 percent of the generic APIs used in the US. However, Indian manufacturers rely heavily on APIs from China for the production of their medicine formulations, procuring around 70 percent from China, the top global producer and exporter of APIs by volume. The Indian pharmaceutical industry maintains great advantages, including the availability of a large labour pool and advanced technologies that enable high regulatory standards of markets like the US and European countries to be met.

Industry pharmacists work in a variety of roles, including drug development and delivery. Many pharmacists in the pharmaceutical industry work in laboratories to develop medications and vaccines to prevent and treat illnesses. In the case of the COVID-19, industry pharmacists are playing an active role in conducting clinical trials of a new corona virus vaccine. You can also find industry pharmacists promoting drugs to consumers in the sales or marketing department, working as drug information specialists and developing and monitoring drug development regulations in the U.S. Food and Drug Administration (FDA).

## **RESPONSIBILITIES AND ROLE OF COMPOUNDING PHARMACY IN COVID-19**

Compounding pharmacists prepare customized or personalized medications in response to a prescription or when commercially available drug products do not meet a patient's individual needs.

For instance, a compounding pharmacist may change a medication to alter its strength for a child who needs a lower dose, add a flavor to make it taste better, remove non-essential ingredients (e.g., gluten or dye) for patients who are allergic, or change its form (e.g., from pill to liquid) to make it easier to use or swallow. They work in highly sterile, controlled and safe laboratories, which can be independent or inside of a medical facility. Compounding pharmacists work daily to provide medications to a variety of patients, but don't typically interact with them directly. You enjoy the idea of creating custom medicines and solving complex problems. Additionally, you want to work in a unique and less common area of pharmacy and would prefer to work in a laboratory setting.

## **OTHER PHARMACY ACTIVITIES**

Pharmacists have an extremely important role in health care during this COVID-19 pandemic. As stated by the National Alliance of State Pharmacy Associations (NASPA), "Pharmacists are the most accessible healthcare providers and the first touch point of patient engagement with the healthcare system. In fact, 90% of all Americans live within five miles of a community pharmacy."

With the strain on our healthcare system during these heightened times, pharmacists are positioned to ensure the public has access to necessary medications and other healthcare services. Pharmacists and pharmacy staff are a part of the essential healthcare workforce. Pharmacies are essential, not because of the products in the aisles, but because of the medications and information provided by these highly trained clinicians every day.

Pharmacies are remaining open throughout this crisis and many pharmacies have taken steps to minimize both patient and staff exposure risk to continue to be able to continue to provide services in a safe way. These procedures may vary by pharmacy, some closing lobbies, making home delivery, drive-through, or curbside pick-up more available. Patients should contact their pharmacy to find out what policies are in place during this pandemic.

Please be patient with your pharmacist and pharmacy staff as they work to ensure the best outcomes for you and your community. Even prior to this crisis, pharmacies were operating on a razor's edge because of anti-competitive practices from middle men in the prescription insurance sector. Additionally, many pharmacists were experiencing staffing shortages and challenging working conditions. Pharmacists' commitment to providing safe patient care has not wavered under these conditions and it will not waver under the threat of COVID-19. That said, like other frontline health care providers, the pharmacy team needs personal protective equipment and measures to help prevent the spread of this disease.

For your health and safety, beware of scams and false treatments for COVID-19. At this time, there are no recommended treatments, so do not purchase anything that purports to prevent or treat COVID-19. This includes chloroquine and hydroxychloroquine if you are currently healthy. Pharmacists are working with their patients to determine if they should continue receiving one-month (30-day) prescriptions or increase to a 90-day supply. Most insurance companies in Vermont, including Vermont Medicaid, will allow 90-day fills to encourage social distancing and minimize visits to a pharmacy. However, drug shortages and stress on the pharmaceutical supply chain are concerns and may be exacerbated. In the event of drug shortages, Pharmacists have the training to perform 'therapeutic interchange' to ensure patients receive their necessary medications.

VPA's President Sandy Rosa, RPh stated, "In the 'Oath of the Pharmacist,' which applies to all aspects of the profession it says, 'I promise to devote myself to a lifetime of service to others through the profession of pharmacy. In fulfilling this vow, I will consider the welfare of humanity and relief of suffering my primary concerns.' Pharmacists are willingly putting themselves on the frontlines to meet the needs of their patients. We are here and ready to help!"

## **PHARMACY OPERATIONS AND FACILITIES: ENSURING SAFETY AND CONTINUITY OF SERVICE**

### **Professional oversight/managing pharmacist**

In case the managing pharmacist cannot assure his/her presence and role at the pharmacy, these can be taken up by a second pharmacist who may or not belong to the pharmacy's personnel. This "second" pharmacist should take up the responsibility for the supervision of all activities of the pharmacy and all the personnel.

### **Opening hours**

In case a pharmacy cannot assure its normal opening hours due to non-availability of staff because of COVID-19, the new opening hours should be communicated to the public in a visible place at least outside the pharmacy. The new opening times need to assure minimal service to the community in terms of medicines supply.



### **Patient/customer service**

In order to assure the continuity of the supply of medicines and services to communities where there is only one pharmacy in a certain radius (which may vary from country to country), contact with patients/customers should be minimized by dispensing medicines through a small window on the façade or door, like those often used for night services.

A plastic shield can also be put in front of the dispensing area, or marks placed on the ground to indicate the circa 2m distance between customers and staff. In case neither of these measures is possible, patients/customers should not enter the pharmacy and pharmacists are advised to use appropriate individual protective equipment, where needed.

Pharmacies in general are also advised to dispense medicines through this window whenever this may be necessary to minimize contact while ensuring continuity of service.

In order to avoid concentration of people inside the pharmacy, patients and customers should be asked to wait their turn outside the pharmacy. In any case, patients/customers should keep a distance of 1–2 meters between them while waiting in the queue.

### **Medicines supply**

When appropriate, the supply of medicines to pharmacies should be done without anyone external to the pharmacy staff entering the pharmacy (or at least the non-public areas of the pharmacy). Additionally, the cases used by wholesale distributors for the delivery of medicines should be cleaned and disinfected before they are taken inside the pharmacy facilities.

### **Medicines home delivery**

In order to ensure the appropriate supply of medicines to patients and the public and especially in small towns where other pharmacies may have closed, open pharmacies may organize the home delivery of medicines. Pharmacies that are able to offer this service are encouraged to do so, especially for patients who may be in home quarantine or isolation, or who may belong to a higher risk group or have reduced mobility.

In the case of home delivery, the person in charge of the actual delivery should avoid any direct contact with the patient and their personal objects. Medicines and other items can be left outside the door of the patient/customer or in another designated place and the deliverer should move to keep a safe distance of 1–2 meters while visually ensuring that medicines are collected by the patient or an authorized person.

### **Recommendations for the pharmacy team**

1. To ensure continuity of pharmacy activities, it is recommended to divide the team in shifts (for example, one in the morning and one in the afternoon), with the possible closure of the pharmacy between them, to disinfect the entire pharmacy, ensuring that the members of each shift do not cross each other.
2. Employees with diseases that compromise their immune system should use masks and preferably perform back office tasks. Hand hygiene measures should be reinforced.
3. Employees should change coats more often.
4. The wearing of accessories such as bracelets, watches and rings should be avoided.
5. Whenever it is necessary to put on a mask, hygiene and disinfection of the hands should be performed before and after.

### **IMPACTS ON PRACTICE**

1. To authorize registered pharmacists to conduct the COVID -19 tests along with other services and suggests the concept of 20-days prescription drugs supply.
2. National emergency drug formularies should be created and pharmacists should monitor and resolve potential drug shortages associated with a pandemic.
3. Pharmacists should be allowed to conduct COVID-19 testing, interpreting, counselling patients on test results and available treatments, initiating treatment and ensuring that appropriate legal and regulatory authorities support pharmacists' call to action to provide essential patient care.
4. Authorizing pharmacists operating across states to provide telephonic health consultation and conduct routine examinations
5. In situations where there are product shortages, pharmacists should be authorized to conduct therapeutic interchange and substitution without physician's authorization

## **II. CONCLUSION**

The Government needs to utilize the vast pool of highly qualified professionals (pharmacists) at all appropriate levels in the healthcare sector. Involvement of pharmacists in the fight against COVID-19 could be a game-changer. I have requesting that every pharmacy/chemist shop should be asked to send a list of persons

approaching them with symptoms of COVID-19, duly signed by the pharmacist of the shop to local and state authorities. This will further help the Government in the process of identifying, screening and quarantining suspected COVID-19 cases.”

Presently, India has approximately 12 lakh registered pharmacists out of which only four lakh pharmacists are employed in government healthcare setups. The rest of the pharmacists are working in different public, private and unorganized sectors.

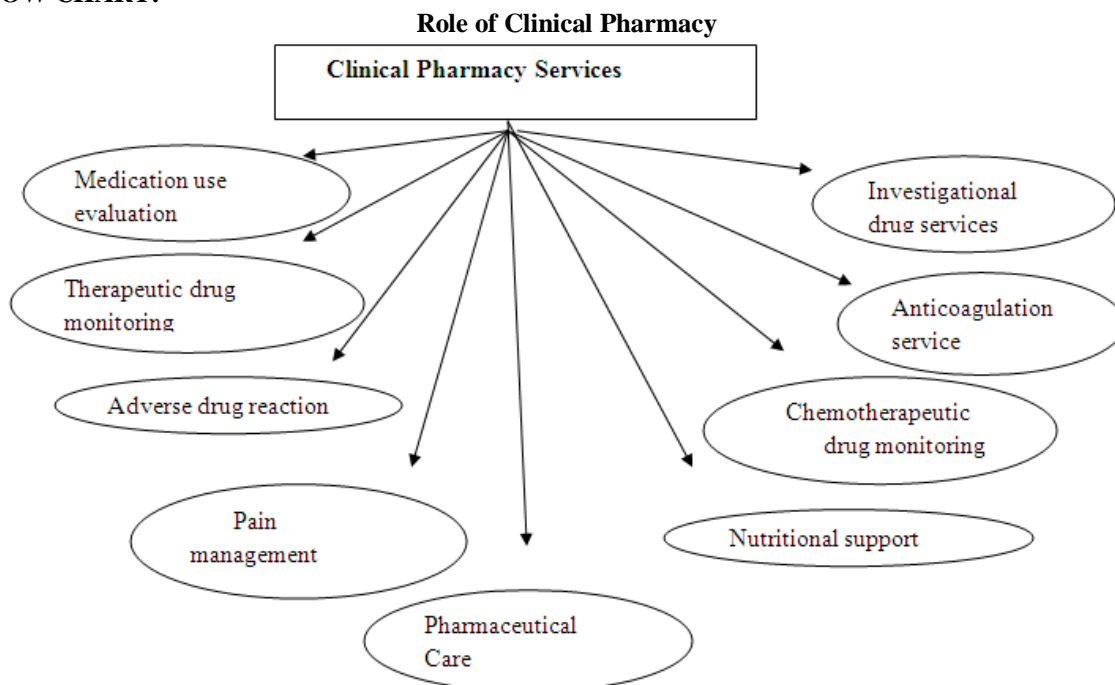
The Central, as well as State governments, are doing emergency recruitment of doctors, nurses and lab technicians at this critical moment of COVID-19 outbreak, they should also recruit pharmacists in the larger interest and improvement of the healthcare sector.

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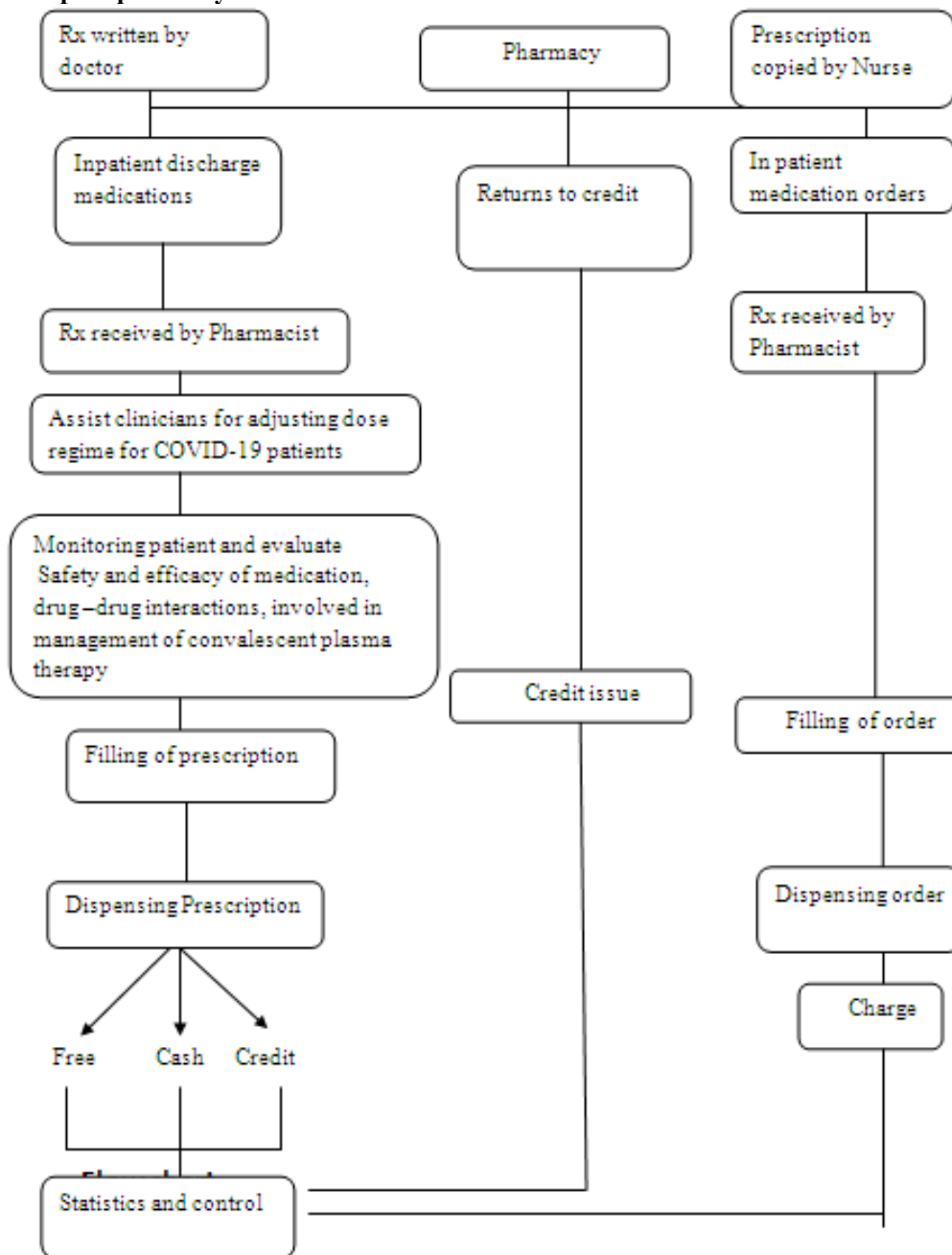
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**FLOW CHART:-**

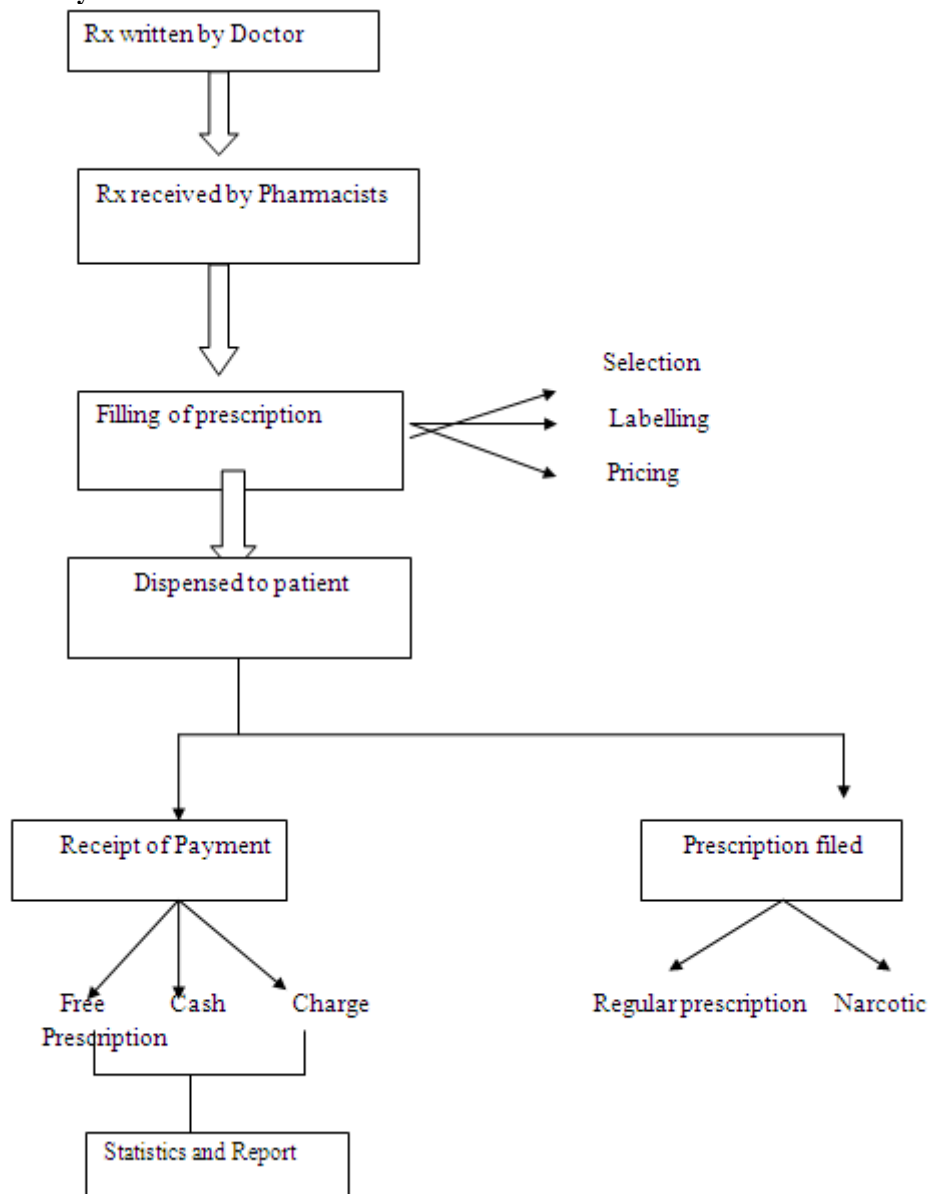


**Role of Hospital pharmacy Flowchart for In-Patients:**

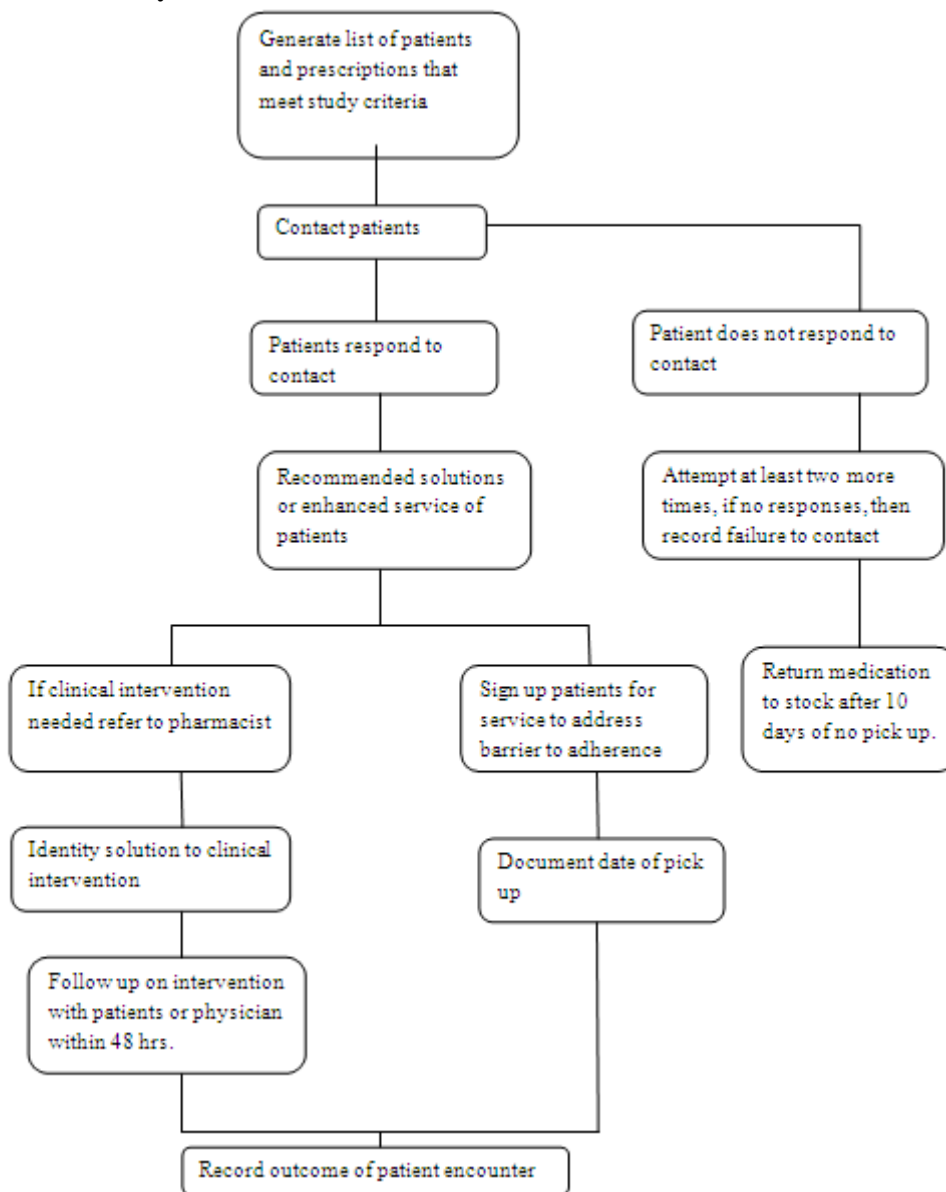




**Role of Community Pharmacist:**



**Role of Industrial Pharmacy:-**



**Role of Industrial Pharmacy:-**

