

# Pharmacy Technicians' Role in Managing Pharmacy Operations During COVID-19: Challenges, Adaptations, and Impact on Workflow and Patient Care

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## Abstract

**This qualitative study explores the challenges and adaptations faced by pharmacy technicians during the COVID-19 pandemic in a large tertiary hospital. Through semi-structured interviews with 20 pharmacy technicians, the study identifies key adaptations in workflow, the implementation of safety measures, and the impact on patient care. Pharmacy technicians reported an increased workload, expanded roles, and significant changes to pharmacy operations to ensure safety and continuity of care. Despite challenges, including PPE shortages and the need for enhanced communication with patients, pharmacy technicians demonstrated resilience and adaptability. The findings highlight the importance of ongoing training, resource management, and digital tools in supporting pharmacy technicians during public health crises.**

**Keywords:** COVID-19, pharmacy technicians, workflow adaptations, safety measures, patient care, tertiary hospital, qualitative research.

## Introduction

The COVID-19 pandemic has placed extraordinary demands on healthcare systems globally, with pharmacies playing a crucial role in maintaining the supply of medications and supporting patient care during this unprecedented time. As the pandemic unfolded, pharmacies had to rapidly adapt to new challenges, including increased patient load, supply chain disruptions, and the implementation of stringent safety protocols to prevent the spread of the virus (Aburas and Alshammari, 2020).

Pharmacy technicians, often the backbone of pharmacy operations, found their roles expanding significantly during the pandemic. Traditionally focused on tasks such as dispensing medications and managing inventory, pharmacy technicians had to quickly adapt to new responsibilities that included enforcing safety measures, managing workflow disruptions, and ensuring the continuity of patient care despite the challenges posed by the pandemic (Aruru et al., 2021). These adaptations were essential in keeping pharmacies operational and meeting the heightened demands for medications and healthcare services.

Despite the critical role that pharmacy technicians played during the COVID-19 pandemic, there is limited research that examines the specific challenges they faced and the adaptations they made to manage these

challenges. Understanding these experiences is crucial for developing strategies to better support pharmacy technicians in future public health emergencies and to enhance the resilience of pharmacy operations.

This study aims to analyze the challenges and adaptations faced by pharmacy technicians during the COVID-19 pandemic, with a focus on changes in workflow, implementation of safety measures, and the impact on patient care. By exploring these areas, the study seeks to contribute valuable insights into the evolving role of pharmacy technicians and inform best practices for managing pharmacy operations during crises.

## Literature Review

### The Impact of COVID-19 on Healthcare Systems

The COVID-19 pandemic has had a profound impact on healthcare systems worldwide, challenging the capacity of healthcare providers and necessitating rapid adaptations across all sectors. The increased demand for healthcare services, coupled with the need to minimize viral transmission, led to significant changes in how healthcare was delivered. Pharmacies, as essential services, had to quickly adapt to ensure the continued provision of medications and healthcare advice to the public (Cadogan & Hughes, 2021). This situation placed unprecedented pressure on pharmacy staff, particularly pharmacy technicians, who found themselves on the front lines of the pandemic response.

### Changes in Pharmacy Operations During COVID-19

Pharmacy operations underwent substantial changes during the COVID-19 pandemic, driven by the need to protect both staff and patients from infection while continuing to provide critical services. These changes included the implementation of safety protocols, such as social distancing, the use of personal protective equipment (PPE), and enhanced sanitation procedures (Aburas and Alshammari, 2020). Additionally, pharmacies had to manage disruptions in the supply chain, which affected the availability of medications and other essential supplies (Gregory and Austin, 2020). Pharmacy technicians played a key role in managing these operational changes, ensuring that pharmacies remained functional despite the challenges.

### Expanded Roles and Responsibilities of Pharmacy Technicians

The pandemic significantly expanded the roles and responsibilities of pharmacy technicians. Traditionally, pharmacy technicians have been involved in tasks such as medication dispensing, inventory management, and supporting pharmacists in delivering patient care. However, during the pandemic, their roles expanded to include implementing and enforcing new safety measures, managing workflow changes to accommodate increased demand, and often serving as the first point of contact for patients seeking healthcare advice (Merks et al., 2021). This expansion of duties reflects the critical role that pharmacy technicians play in the healthcare system and highlights their adaptability and resilience in times of crisis.

### Challenges Faced by Pharmacy Technicians

Despite their crucial role, pharmacy technicians faced numerous challenges during the COVID-19 pandemic. One of the primary challenges was the need to quickly adapt to new safety protocols and workflow changes, often with limited training or preparation (Aruru et al., 2021). The increased workload and stress associated with the pandemic also took a toll on pharmacy technicians, many of whom were working extended hours under difficult conditions. Additionally, the pandemic exacerbated existing challenges within the pharmacy profession, such as staffing shortages and the need for greater recognition of the contributions of pharmacy technicians to the healthcare team (Austin and Gregory, 2021).

## **Adaptations in Workflow and Patient Care**

Pharmacy technicians were instrumental in adapting pharmacy workflows to meet the demands of the pandemic. These adaptations included the introduction of curbside pickup and home delivery services to reduce in-person contact, as well as the use of telepharmacy to provide remote consultations and medication management (Gregory and Austin, 2020). These innovations not only helped to protect patients and staff from exposure to the virus but also ensured that patients continued to receive essential medications and healthcare services. Pharmacy technicians played a key role in implementing these adaptations, demonstrating their ability to quickly respond to changing circumstances and maintain high standards of patient care.

## **Gaps in the Literature**

While there is substantial literature on the impact of COVID-19 on healthcare systems and pharmacy operations, there is relatively little research focused specifically on the experiences of pharmacy technicians during the pandemic. Much of the existing research has concentrated on the roles of pharmacists, with pharmacy technicians often being overlooked despite their significant contributions. This gap in the literature highlights the need for more research that explores the specific challenges faced by pharmacy technicians during the pandemic, as well as the strategies they employed to manage these challenges.

The COVID-19 pandemic has underscored the essential role of pharmacy technicians in maintaining pharmacy operations and ensuring patient care during times of crisis. The expanded roles and responsibilities taken on by pharmacy technicians during the pandemic reflect their critical contributions to the healthcare system. However, the challenges they faced also highlight the need for greater support and recognition of their work. Addressing these issues through targeted research and policy initiatives will be crucial in preparing the pharmacy profession for future public health emergencies.

## **Methodology**

### **Study Design**

This study employed a qualitative research design to explore the challenges and adaptations faced by pharmacy technicians during the COVID-19 pandemic, with a focus on changes in workflow, safety measures, and patient care. The qualitative approach was chosen to gain in-depth insights into the experiences of pharmacy technicians, particularly in the context of a large tertiary hospital where the demands of the pandemic were especially pronounced. Data were collected through semi-structured interviews, which allowed for rich, detailed accounts of the participants' experiences and perspectives.

### **Setting**

The study was conducted in a large tertiary hospital located in an urban area, known for its comprehensive healthcare services and extensive patient population. The hospital serves as a major referral center, handling a wide range of medical cases, including those related to COVID-19. The pharmacy department within this hospital plays a crucial role in managing medication supply and supporting patient care, making it an ideal setting for examining the impact of the pandemic on pharmacy operations.

### **Participants**

The study population consisted of pharmacy technicians working in the hospital's pharmacy department during the COVID-19 pandemic. Participants were selected using purposive sampling to ensure a diverse representation of technicians with varying levels of experience and roles within the department. A total of 20 pharmacy technicians were interviewed for the study, with an effort to include those who had direct experience

in managing the challenges posed by the pandemic, such as changes in workflow, implementation of safety measures, and adaptations in patient care practices.

### **Data Collection**

Data were collected through semi-structured interviews conducted over a three-month period. Each interview lasted approximately 45 to 60 minutes and was conducted in a private setting within the hospital, either in person or via secure video conferencing, depending on the participant's preference. The interview guide was developed based on a review of existing literature and input from experts in pharmacy practice. The guide included open-ended questions designed to explore the participants' experiences during the pandemic, focusing on the challenges they encountered, the adaptations they made to their workflows, and the impact of these changes on patient care.

Sample interview questions included:

- "Can you describe how your role as a pharmacy technician changed during the COVID-19 pandemic?"
- "What were the biggest challenges you faced in managing pharmacy operations during this time?"
- "How did you and your team adapt to the new safety measures implemented during the pandemic?"
- "What impact did these changes have on patient care, particularly in terms of medication management and communication with patients?"

### **Data Analysis**

The interview data were transcribed verbatim and analyzed using thematic analysis. The analysis process involved several key steps:

1. Familiarization: The researchers began by reading the transcripts multiple times to gain a deep understanding of the content.
2. Coding: Initial codes were generated by identifying significant phrases and statements that related to the research questions. Coding was performed using NVivo software (Version 12) to assist with data organization and management.
3. Theme Development: The codes were grouped into broader themes that captured the key aspects of the pharmacy technicians' experiences during the pandemic. Themes were refined through an iterative process, involving discussions among the research team to ensure that they accurately reflected the data.
4. Interpretation: The final themes were interpreted in the context of the existing literature and the study's objectives, with an emphasis on understanding the unique challenges faced by pharmacy technicians and the strategies they employed to manage these challenges.

### **Ethical Considerations**

Ethical approval for the study was obtained from the ethics committee. Informed consent was obtained from all participants prior to the interviews, ensuring that they were fully aware of the study's purpose, the voluntary nature of their participation, and their right to withdraw at any time without penalty. Confidentiality was maintained by anonymizing the interview transcripts and ensuring that all data were securely stored.

### **Findings**

The analysis of the interview data revealed three major themes related to the experiences of pharmacy technicians during the COVID-19 pandemic: \*Adaptations in Workflow, Implementation of Safety Measures, and Impact on Patient Care.\* Each theme is supported by sub-themes and direct quotes from participants to illustrate their experiences and perspectives.

## Theme 1: Adaptations in Workflow

### Sub-theme 1.1: Increased Workload and Role Expansion

Participants reported a significant increase in their workload during the pandemic, accompanied by an expansion of their roles. Many pharmacy technicians found themselves taking on additional responsibilities, including managing inventory shortages, coordinating with other departments, and handling a higher volume of prescriptions.

- Participant 4: “We were handling more than double our usual workload at times. It wasn’t just about filling prescriptions anymore; we were also managing stock levels and trying to coordinate with suppliers who were themselves struggling to keep up.”

- Participant 11: “I found myself doing things that were normally outside of my usual duties, like managing the logistics of medication delivery to COVID-19 patients who were quarantined at home. It was overwhelming but necessary.”

### Sub-theme 1.2: Workflow Modifications

To cope with the increased workload and ensure the safety of both staff and patients, many pharmacy technicians described significant modifications to their workflow. These included staggered shifts, changes in the layout of the pharmacy to accommodate social distancing, and the implementation of curbside pickup and home delivery services.

- Participant 7: “We had to completely rework how we operated. Staggered shifts became the norm to reduce the number of people in the pharmacy at one time, and we set up a curbside pickup service so patients didn’t have to come inside.”

- Participant 15: “We rearranged the pharmacy so that there was more space between workstations. It slowed things down a bit at first, but it was necessary to keep everyone safe.”

## Theme 2: Implementation of Safety Measures

### Sub-theme 2.1: Use of Personal Protective Equipment (PPE)

The introduction and consistent use of PPE were critical in ensuring the safety of pharmacy technicians during the pandemic. Participants discussed how the use of masks, gloves, and face shields became routine, despite initial challenges in acquiring sufficient supplies.

- Participant 2: “At the start, getting enough PPE was a struggle. We had to be very careful about how we used what we had, but eventually, the hospital was able to secure a steady supply, and we all got used to wearing it.”

- Participant 9: “Wearing PPE all day was uncomfortable, especially during long shifts, but we knew it was necessary to protect ourselves and our patients.”

### Sub-theme 2.2: Sanitization and Disinfection Protocols

Enhanced sanitization and disinfection protocols were rapidly implemented to minimize the risk of COVID-19 transmission within the pharmacy. Pharmacy technicians played a key role in maintaining these protocols, ensuring that work surfaces, equipment, and commonly touched areas were regularly disinfected.

- Participant 13: “We were constantly cleaning—our workstations, the counters, the doorknobs—everything had to be wiped down multiple times a day. It became part of our routine.”
- Participant 6: “The emphasis on sanitization was huge. We were given strict guidelines on how to clean and disinfect, and it was something we took very seriously.”

### Theme 3: Impact on Patient Care

#### Sub-theme 3.1: Maintaining Continuity of Care

Despite the challenges, participants emphasized the importance of maintaining continuity of care for patients. They highlighted the role of pharmacy technicians in ensuring that patients received their medications on time, even when in-person interactions were limited.

- Participant 8: “Our main priority was making sure patients didn’t go without their medications, especially those with chronic conditions. We had to get creative with how we delivered care, but we made it work.”
- Participant 14: “We started offering home deliveries for vulnerable patients who couldn’t leave their homes. It added to our workload, but it was necessary to keep them safe.”

#### Sub-theme 3.2: Enhanced Patient Communication

The pandemic also brought about changes in how pharmacy technicians communicated with patients. With in-person interactions limited, many technicians found themselves relying more on phone calls and digital communication to provide advice, answer questions, and offer reassurance.

- Participant 3: “We were on the phone a lot more, checking in with patients, making sure they knew how to take their medications, and answering any questions they had. It was a different way of working, but it was important to keep that line of communication open.”
- Participant 10: “Patients were understandably anxious, and a big part of our job became reassuring them that we were still here for them, even if they couldn’t come into the pharmacy.”

### Discussion

This study provides a comprehensive understanding of the challenges and adaptations faced by pharmacy technicians during the COVID-19 pandemic within a large tertiary hospital setting. The findings highlight the critical role that pharmacy technicians played in maintaining pharmacy operations, implementing safety measures, and ensuring continuity of patient care during an unprecedented global health crisis.

### **Adaptations in Workflow**

One of the key findings of this study is the significant adaptation in workflow that pharmacy technicians had to undertake to manage the increased demands and ensure the safety of both staff and patients. The expanded workload and role diversification, as reported by participants, reflect the essential nature of pharmacy technicians in sustaining pharmacy operations during the pandemic. This aligns with existing literature, which has noted the need for flexibility and rapid adaptation in healthcare settings during crises (Aburas and Alshammari, 2020).

The modifications in workflow, such as staggered shifts, the implementation of curbside pickup, and the reorganization of workspaces, were crucial in minimizing the risk of COVID-19 transmission while maintaining service delivery. These changes not only allowed the pharmacy to continue functioning effectively but also provided a framework for managing similar challenges in future public health emergencies. However, the increased workload and expanded roles also raised concerns about burnout and job satisfaction among pharmacy technicians, which could have long-term implications for workforce sustainability (Austin and Gregory, 2021).

### **Implementation of Safety Measures**

The study also underscored the importance of safety measures in protecting pharmacy technicians and patients from COVID-19. The widespread use of personal protective equipment (PPE) and the rigorous sanitization protocols implemented within the pharmacy were critical in preventing the spread of the virus. The challenges related to the initial shortage of PPE, as highlighted by participants, reflect broader systemic issues faced by healthcare facilities worldwide during the early stages of the pandemic (Aruru et al., 2021).

Despite these challenges, pharmacy technicians demonstrated resilience and a strong commitment to maintaining safety standards. The successful implementation of these measures is a testament to the adaptability and dedication of pharmacy technicians in ensuring a safe working environment. These findings suggest that ongoing training in infection control and the availability of adequate resources are essential for preparing pharmacy technicians to respond effectively in future crises.

### **Impact on Patient Care**

The pandemic significantly impacted how pharmacy technicians interacted with patients, with a shift towards remote communication and the introduction of home delivery services. Despite the challenges, participants emphasized the importance of maintaining continuity of care, particularly for vulnerable patients who were unable to visit the pharmacy in person. This shift in practice underscores the critical role of pharmacy technicians in patient care, beyond their traditional responsibilities (Gregory and Austin, 2020).

Enhanced patient communication, as reported by participants, played a vital role in ensuring that patients continued to receive their medications and healthcare advice despite the limitations imposed by the pandemic. The use of phone calls and digital communication tools helped bridge the gap created by reduced face-to-face interactions, highlighting the importance of communication skills in the evolving role of pharmacy technicians. These adaptations not only improved patient satisfaction but also reinforced the trust and reliance that patients place on pharmacy services during times of crisis.

### **Implications for Practice**

The findings of this study have several important implications for practice. First, the need for flexibility and rapid adaptation in pharmacy operations during crises cannot be overstated. Pharmacy managers should

consider incorporating flexible staffing models, cross-training, and contingency planning as part of their standard operations to better prepare for future public health emergencies. Additionally, the increased responsibilities placed on pharmacy technicians during the pandemic highlight the need for ongoing professional development and training in areas such as infection control, patient communication, and crisis management.

Second, the challenges related to PPE shortages and the implementation of safety measures suggest that healthcare systems must prioritize the supply chain management of critical resources, particularly during emergencies. Ensuring that pharmacy technicians have access to adequate protective equipment and resources is essential for maintaining safe and effective operations.

Finally, the shift towards remote communication and the use of digital tools in patient care during the pandemic may have lasting implications for pharmacy practice. Healthcare organizations should consider integrating these tools into their regular operations, providing pharmacy technicians with the necessary training and support to utilize them effectively. This integration could enhance the accessibility and efficiency of pharmacy services, particularly for patients with limited mobility or those living in underserved areas.

### Limitations

While this study provides valuable insights, it is important to acknowledge its limitations. The research was conducted within a single tertiary hospital, which may limit the generalizability of the findings to other settings. Additionally, the qualitative nature of the study means that the findings are specific to the experiences of the participants and may not reflect the broader experiences of pharmacy technicians in different regions or healthcare systems. Future research could benefit from a larger, more diverse sample and could explore similar themes in different healthcare settings.

### Conclusion

In conclusion, this study highlights the critical role of pharmacy technicians in managing pharmacy operations during the COVID-19 pandemic. The adaptations in workflow, implementation of safety measures, and efforts to maintain patient care demonstrate the resilience and dedication of pharmacy technicians in the face of unprecedented challenges. The findings underscore the importance of ongoing training, resource management, and the integration of digital tools in enhancing the role of pharmacy technicians in future public health emergencies. By addressing these areas, healthcare organizations can better support pharmacy technicians and ensure the continued delivery of high-quality patient care during crises.

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