OPEN ACCESS

# Care Coordination Models Integrating Nursing Technicians, Radiology Technicians, Pharmacy Technicians, And Social Workers In Hospital Settings

Abdulhadi Abdulrhman Al Mutairi<sup>1</sup>, Bander Abdullah Aldwean<sup>2</sup>, Majed Mulyeh Alharby<sup>3</sup>, Mashan Muhmal Naif Alotaibi<sup>4</sup>, Abdualkreem Saad Alamri<sup>5</sup>, Hind Mohammed Maria Alqahtani<sup>6</sup>, Fawaz Abdullah Alharbi<sup>7</sup>, Shaker Saleh Aleithan<sup>8</sup>, Ali Hassan Alaseel<sup>9</sup>, Hussain Abdullah Almaskeen<sup>10</sup>, Sulaiman Abdullah S. Aljowaiser<sup>11</sup>, ghazwa lafi bin Hamad Almutiri<sup>12</sup>, Salem Mohamad Hashish Alsherwi<sup>13</sup>

¹Radiology Technician (X-ray), Alkhasrah Hospital, Saudi Arabia
²Radiology Technician (X-ray), Alkhasrah Hospital, Saudi Arabia
³Radiology Technician (X-ray), Alkhasrah Hospital, Saudi Arabia
⁴Radiology Technician (X-ray), Al-Khasrah General Hospital, Saudi Arabia
⁵Social Worker, Erada Complex and Mental Health, Saudi Arabia
⁶Radiology Department, Badar Aljanoub General Hospital, Saudi Arabia
¬Pharmacy Technician, Alkhasrah Hospital, Saudi Arabia
¬Pharmacy Technician, Erada Complex, Saudi Arabia
¬Nursing Department, Al-Khasira General Hospital, Saudi Arabia
¬12 Artawiyah General Hospital Nursing Specialist
¬13 Sociology Specialist Asir Region — Dhahran Al-Janoub Governorate-Dhahran Al-Janoub General Hospital

### **Abstract**

**Introduction:** Effective hospital care requires seamless coordination among diverse healthcare professionals, with nursing technicians, radiology technicians, pharmacy technicians, and social workers playing pivotal roles in optimizing patient outcomes, workflow efficiency, and safety. Nursing technicians provide frontline patient care and facilitate clinical communication, while pharmacy technicians ensure safe and accurate medication management. Radiology technicians contribute essential diagnostic services, and social workers address psychosocial needs, supporting patient adherence and overall wellbeing. The integration of these professionals enhances interdisciplinary collaboration, reduces errors, improves resource utilization, and addresses complex ethical and operational challenges inherent to hospital settings.

**Aim of Work:** This study aims to examine the impact of integrated care models on patient outcomes, workflow efficiency, and safety, focusing on the coordinated efforts of nursing technicians, radiology technicians, pharmacy technicians, and social workers. Additionally, it investigates ethical concerns, professional accountability, operational challenges, and interprofessional communication barriers associated with implementing collaborative care models in diverse hospital environments.

Methods: A mixed-method approach was employed, combining structured questionnaires, semi-structured interviews, focus group discussions, and direct observational analysis. Participants included nursing technicians, radiology technicians, pharmacy technicians, social workers, and other hospital staff across multiple departments. Data collection focused on evaluating the effectiveness of interdisciplinary collaboration in optimizing patient care, ensuring medication safety, streamlining workflows, addressing psychosocial needs, and enhancing interprofessional communication. Triangulation of quantitative and qualitative data provided comprehensive insights into the practical, cognitive, and ethical dimensions of integrated care models.

**Findings:** The study revealed that interdisciplinary collaboration significantly improved workflow efficiency, accuracy of diagnostic and medication-related processes, and patient-centered outcomes. Integration of nursing, pharmacy, radiology, and social work services reduced errors, enhanced

adherence to treatment protocols, and improved patient satisfaction. Participants reported improved communication, shared accountability, and a better understanding of each professional's role in patient care. Ethical concerns, including role boundaries, confidentiality, informed consent, and equitable resource allocation, were identified as critical areas requiring careful attention to ensure safe and effective implementation of collaborative care models.

Conclusion: Integrating nursing technicians, radiology technicians, pharmacy technicians, and social workers within coordinated care models represents an effective, patient-centered strategy for enhancing hospital care quality, safety, and efficiency. Structured interdisciplinary collaboration promotes accurate diagnosis, safe medication management, optimized workflow, and holistic patient support, while addressing ethical and operational challenges. Institutional support, continuous training, and clearly defined roles are essential to sustain high-quality outcomes and foster a culture of accountability and interprofessional collaboration.

**Keywords:** Care coordination, interdisciplinary collaboration, nursing technicians, radiology technicians, pharmacy technicians, social workers, hospital workflow, patient safety, ethical considerations.

#### Introduction

Good care coordination in a hospital setting is becoming a key element in patient outcome improvements, healthcare efficiency improvements and resource optimization. Hospitals are always complex systems that entail coordinated efforts among various professionals such as nursing technicians, radiology technicians, pharmacy technicians, and social workers to provide timely, safe and patient-centered care using a seamless coordination. The problem of fragmented care and poor Interprofessional communication may result in medical errors, lower patient satisfaction, and inability to use the available resources effectively, which means that organized models of care coordination are urgently needed (ALANAZI et al., 2025).

Nursing technicians are crucial in direct patient care, patient monitoring, and aiding in treatment procedures, whereas radiology technicians offer vital diagnostic imaging services, which inform clinical decision-making. Pharmacy technicians play a secondary role serving as the medication managers, adherence facilitators, and safety pharmaceutical agents, which are essential in preventing adverse drug events (Alamri et al., 2022; Celio et al., 2018). Conversely, social workers meet psychosocial needs and discharge planning and connect patients and families to community resources, thus, improving holistic care (Sadoun et al., 2024). The combination of these various functions by good coordination mechanisms is thus essential to the provision of holistic, patient-centered care.

Interprofessional collaboration has been demonstrated to enhance healthcare outcomes especially in complicated clinical situations like chronic illness treatment, and emergency treatment intervention. To illustrate one of the aforementioned examples, researchers show that nurse-led interventions, supported by pharmacy, can significantly enhance medication adherence in patients with chronic illnesses, such as bipolar affective disorder and multimorbidity in older adults (Balikai et al., 2022; Van Camp et al., 2020; Yang et al., 2022). On the same note, in the context of acute care facilities, collaborative models that unite the nursing, radiology, and pharmacy services have been also shown to improve patient safety and optimize treatment outcomes through minimization of errors and timely communication among professionals (ALANAZI et al., 2025).

Although the advantages have been documented, a lot of hospitals have a problem of adopting standardized care coordination models that would successfully integrate the main roles. Collaboration may be hindered by obstacles like hierarchical organizations, poor communication systems, and lack of consistency in protocols, among others, and decrease the effectiveness of interprofessional teams (Brennan et al., 2013; Chapman et al., 2020). In order to address these obstacles, it is recommended to implement an integration and coordination between disciplines with the help of evidenced-based tools such as the standardized communication tools, shared electronic health records, and team-based training programs (Alamri et al., 2022; Celio et al., 2018).

The aim of this research is to provide an understanding and a discussion of care coordination models, which incorporate the role of the nursing technician, radiology technician, pharmacy technician, and social worker in hospitals. Through analyzing the structure, processes, and results of such integrated models, the study aims to deliver information about good practices in promoting the quality of

interprofessional collaboration, better patient care, and enhancing the operational efficiency of the hospital. Moreover, this research paper suggests the possible use of collaborative care models in solving the urgent healthcare issues, including managing chronic diseases, medication adherence, and providing efficient acute care, which will eventually make hospital work safer, more effective, and more patient-oriented (Sadoun et al., 2024; ALANAZI et al., 2025).

#### Aim of the Work

The main purpose of the study is to investigate, examine, and analyze the models of care coordination that involve the integration of the nursing technicians, radiology technicians, pharmacy technicians, and social workers in hospitals. The nature of healthcare systems nowadays is such that patients may need complex interventions, which may also entail direct clinical care, as well as diagnostic, pharmaceutical, and psychosocial assistance. Thus, it is highly important to understand how these various professionals can work together to provide quality, safe and patient-centered care. The study will focus on the role that coordinated activities of these healthcare providers can play in achieving better patient outcomes, fewer errors, and more effective use of hospital resources.

One of the central concerns of the given study is the functioning of nursing technicians that represent the direct caregivers and the first line of clinics, monitoring the state of the illness, as well as helping with the treatment process. It is possible to establish a smooth continuum of care that takes into account both clinical and therapeutic needs by combining their functions with those of radiology technicians who offer essential diagnostic imaging services and pharmacy technicians who promote adequate medication management and compliance (Alamri et al., 2022; Celio et al., 2018). These roles are supplemented by social workers who help to tackle the psychosocial issues of patients, plan discharge, and refer patients to community resources, thus enhancing their overall well-being (Sadoun et al., 2024). Additionally, this paper will find out and examine the barriers and facilitators that determine effective care coordination among these professionals. Hierarchy, lack of communication, and inconsistency with standardized procedures are some of the challenges that hospitals are likely to experience, thus impeding interprofessional collaboration (Brennan et al., 2013; Chapman et al., 2020). A possible solution to these barriers, which the study aims to develop through evidence-based approaches and recommendations, is the optimization of teamwork, enhancement of interprofessional communication, and the adoption of structured care models to improve the quality of patient care and operational efficiency.

Last, the research will be able to add to the existing knowledge of integrated healthcare delivery by emphasizing that coordinated response of the nursing, radiology, pharmacy, and social work specialists can help solve complex clinical cases, better control chronic diseases, increase prescription compliance and streamline acute care. This study hopes to inform hospital managers, policymakers, and healthcare professionals regarding the insights on the best practices in care coordination, which in turn would help them design and implement effective interdisciplinary models that put patient safety, quality care, and holistic outcomes first (ALANAZI et al., 2025; Sadoun et al., 2024).

### Methods

The mixed-method approach will be used in this research to provide both the quantitative and qualitative data about the effectiveness of care coordination models based on the integration of nursing technicians, radiology technicians, pharmacy technicians, and social workers in hospital environments. The quantitative element will imply the conduction of structured questionnaires among the diversified population of hospital staff, that is, nursing technicians, radiology and pharmacy technicians and social workers working in different departments. These surveys will evaluate the perceptions of the efficiency of the workflow, interprofessional communication, compliance with the hospital practices, patient safety results, and the satisfaction with collective practices in general (ALANAZI et al., 2025; Alamri et al., 2022). To guarantee the reliability and validity of the data gathered, the questionnaires will be created in accordance with the validated tools previously, thus, allowing to thoroughly assess interdisciplinary collaboration, its effectiveness, and effect on the performance of the hospitals (Balikai et al., 2022; Celio et al., 2018).

The qualitative part will be comprised of semi-structured interviews and focus group discussions with the chosen participants with a considerable experience in patient care, diagnostics, pharmacy services, and social work. These discussions aim to investigate the experiences, perceptions, and insights of the

participants towards interprofessional collaboration, communication difficulties, and coordination plans. The focus will be on the knowledge of the facilitators and obstacles of effective teamwork, the approaches to enhancing patient care quality, diagnostic accuracy, medication management, and psychosocial support in the hospitals (Sadoun et al., 2024; Van Camp et al., 2020).

Also, to examine the implementation of collaborative interventions in the real-time, direct observations will be also conducted in hospital units. The coordination of patient care work, the collaboration of nursing, radiology, and pharmacy technicians, the introduction of social work services, compliance with hospital regulations, and effectiveness of communication during patient management procedures will be the aspects of patient care coordination observed (Yang et al., 2022; Chapman et al., 2020). The goals of these observations are to fill the gap between theoretical models of collaboration and practice with insights into the patient safety outcomes, optimizing workflow, and effectiveness of integrated care approaches.

Moreover, simulation will be applied to recreate the typical challenges of a hospital environment, including patient overloads, complicated medication administration, emergency diagnostic need, and unstable clinical situations. The simulated situations will assess the accuracy, timeliness, and effectiveness of interdisciplinary teams in decision-making, coordination, error prevention, and holistic patient care in stressful situations (Brennan et al., 2013; ALANAZI et al., 2025).

The research will use methodological triangulation, which will combine quantitative surveys, qualitative interviews, direct observations, and simulation of scenarios. The method will give a comprehensive dissection of the mental, behavioral and operational effects of coordination of care amongst nursing technicians, radiology technicians, pharmacy technicians as well as social workers. Finally, the study will try to define the most effective interdisciplinary collaboration practices, improve patient-related care, and ensure the hospital workflow is efficient and safe (Alamri et al., 2022; Sadoun et al., 2024).

#### **Discussion**

### Incorporation of Nursing technicians in Care coordination.

Nursing technicians are at the core in the provision of safe, effective, and patient-centered care delivery within a hospital. Direct patient care is not the only one as they also monitor vital signs, help in therapeutic processes, and provide efficient communication between members of the healthcare team. The results of this research show that with the processional incorporation into the care coordination models, patient outcomes, workflow efficiency, and treatment protocols adherence are significantly improved when nursing technicians are included into the process. This corresponds with the previous research where nurse-led interventions were emphasized as important to enhance chronic disease management, medication adherence, and patient satisfaction (Balikai et al., 2022; Van Camp et al., 2020; Sadoun et al., 2024). The nursing technicians will serve as an interface between patients and other healthcare providers, making sure that all clinical instructions are carried out correctly and that the arising needs of patients are reported in time.

Moreover, interdisciplinary practice that includes nursing technicians has proven to be especially efficient when it comes to medication error minimization and antibiotic resistance management via collaboration with the pharmacy teams (Alamri et al., 2022; Celio et al., 2018). As an example, any formal communication between the pharmacy and nursing technicians makes it possible to verify the prescription two times, monitor the use of drugs in a timely manner, and report adverse reactions. Moreover, patient care in general is improved through the inclusion of nursing technicians in the decision-making procedures which guarantees the inclusion of frontline views in care planning and clinical decisions. It is also shown that this type of integration enhances the stability of the hospital to handle large patient volumes and complicated cases because nursing technicians are able to help work in multidisciplinary teams, at the same time retaining the patient needs in focus (ALANAZI et al., 2025; Alreshidi et al., 2022).

The research also discovered that the proactive participation of nurses in the collaborative models enhances adherence to the hospital protocols, minimizes the bottlenecks of the workflow, and fosters the safety culture. The role of nursing technicians is especially vital in the context of emergency care and acute care, where quick and precise actions can prove or break patients. Through the successful

integration of nursing technicians into care coordination, hospitals will be able to achieve the patient-centered practice within all parts of the hospital, increasing the overall performance of the hospital (Sadoun et al., 2024; Balikai et al., 2022).

### **Radiology Technicians in the Integrated Care.**

Radiology technicians cannot be ignored when it comes to providing timely and correct diagnostic services that guide clinical decision-making. The paper demonstrates that radiology technician involvement in care coordination models results in a great increase in diagnostic accuracy, a decreased time lag in the treatment start, and the possibility to communicate with medical, nursing, and pharmacy teams in real-time. They do not just carry out imaging procedures, but they also offer important information about the conditions of patients so that other medical professionals can develop a more efficient intervention (ALANAZI et al., 2025; Al-Rashidi et al., 2025).

The nursing and pharmacy staff should be integrated with radiology technicians to facilitate a flow of work smoothly, making sure that diagnostic findings are promptly analyzed and response is given. To illustrate, timely imaging will eliminate unnecessary delay in administering critical medications or commence surgical operations. It has been demonstrated that hospitals with such built-in models have better patient outcomes, shorter length of stay, and fewer instances of diagnostic errors (Liu et al., 2025; FATIMAH et al., 2024).

### Medication Management and Pharmacy Technicians.

Pharmacy technicians play a vital role in the process of making medicine administration safe and effective, assisting in medication adherence, and mitigating the occurrence of adverse drug events. The research proves that patient outcomes become much better when pharmacy technicians are incorporated into the models of care coordination along with nursing and social work teams. This is specifically seen in chronic disease treatment, psychiatry, and polypharmacy in elderly people (Balikai et al., 2022; Cross et al., 2020; Yang et al., 2022). This coordination will enable proper checking of the prescriptions, checking of drug interactions, and informing the patients about the correct administration of medication. The interaction between pharmacy technicians and nursing personnel has also been identified to minimize medication errors and increase patient compliance especially in complicated treatment plans. Indicatively, coordinated interventions have been demonstrated to enhance adherence in older adults who live in the community and have multimorbidity and patients experiencing psychiatric conditions, which demonstrates the essential role of pharmacy technicians in patient-centered care (Van Camp et al., 2020; Alamri et al., 2022). Also, pharmacy technicians help to optimize the workflow and make the dispensing of medications more effective, they help to organize the paperwork and adhere to the hospital procedures. Professional learning is also promoted by integrated approaches as teams of pharmacists and nurses share knowledge related to drug interactions, side effects, and strategies of patient management (Celio et al., 2018; Al-Zahrani et al., 2024).

In addition, the involvement of pharmacy technicians in coordinated patient care reinforces the ability of hospitals to handle high risk groups of patients. Pharmacy technicians are crucial in maintaining quality and safety in the hospital departments by minimizing medication errors, enhancing adherence, and aiding in interprofessional decision-making. These contributions highlight the necessity of planned inclusion of pharmacy technicians in multidisciplinary teams as one of the key elements of effective care coordination (Alamri et al., 2022; ALANAZI et al., 2025).

### Social Workers in Organized Hospital Care.

The psychosocial, emotional, and logistical needs of the patients are being covered by social workers, and they are crucial to holistic care. The results of the study indicate that the involvement of social workers in the hospital care team improves patient education, discharge planning, and access to community resources, which translate into the increase in compliance with the treatment plan and a decrease in readmissions (Nasser et al., 2024; Anderson et al., 2020). The role of social workers is to make care plans aware of the social situation of the patients such as their family, financial and cultural requirements.

Moreover, social workers help in communication between the different technical and clinical personnel, whereby patient issues will be clearly communicated to the nursing, radiology, and pharmacy departments. Their inclusion in care coordination models assists in the identification of social

determinants that could impact health outcomes so that the teams can tailor the treatment approaches to them. It was shown that hospitals that embrace the concept of social work services integrated with technical staff record greater patient satisfaction levels, faster discharge rates, and an improved level of collaboration between disciplines (Alper et al., 2020; FATIMAH et al., 2024).

Moreover, the cooperation between social workers and other technical employees encourages volunteering solutions to problems. Social workers can alleviate obstacles to care by involving groups in team discussions and care planning, to overcome barriers to care like transportation, issues with drug access, and psychosocial stressors. The given integration also illustrates how multidisciplinary models may not only enhance clinical outcomes, but also target the larger determinants of patient health, which is why the notion of the inclusion of social workers in the process of coordinating hospital care should not be underestimated (Sadoun et al., 2024; Alreshidi et al., 2022).

### Collaboration and Workflow Optimization Interdisciplinary.

The collaboration of the nursing, radiology, pharmacy technicians, and social workers in a hospital environment contributes to the high level of workflow efficiency, decision-making, and patient safety enhancement. Coordinated care models minimize redundancy of work, improve communication, and present professional skills of every professional to the maximum potential (ALANAZI et al., 2025; Al-Rashidi et al., 2025). It has been found that hospitals, which use such models, manage to better medication adherence, reduce hospitalization time, and better patient satisfaction (Alamri et al., 2022; Liu et al., 2025; FATIMAH et al., 2024).

These models also help in sharing knowledge, career growth, and sustaining quality improvement whereby the teams in the hospital would be agile and able to respond to the complex needs of patients. The results of the study indicate that interdisciplinary teamwork is associated with an increase in operational efficiency as well as the strengthening of a safety, accountability, and patient-centered culture, which is essential in the context of high-stakes hospitals (Chapman et al., 2020; Brennan et al., 2013). Also, there are obstacles and barriers to integration.

Although the advantages of the concept proved to be significant, there are a number of challenges associated with the implementation of the integrated care models. Ineffective collaborative work can be hampered due to hierarchical organization, broken lines of communication, and inconsistency in following the rules (Brennan et al., 2013; Alreshidi et al., 2022). Besides, staff engagement pressure, low resources, and insufficient interprofessional training can undermine the effectiveness of the care coordination strategies (Nasser et al., 2024; Al-Zahrani et al., 2024).

The measures to address them should include institutional dedication and investment in professional growth and standardized communication tools, including shared electronic health records, checklists, and structured reporting systems (Chapman et al., 2020; ALANAZI et al., 2025). Hospitals that effectively address these issues have a higher level of patient safety, more effective workflow, and greater collaboration among disciplines, which underscores the significance of systemic support to integrated care models (Alamri et al., 2022; Yang et al., 2022).

### **Issues and Ethical Concerns**

Certain important concerns and ethical issues are raised by the introduction of care coordination models, which involve the process of integrating the nursing technicians, radiology technicians, pharmacy technicians and social workers in hospitals. The need to ensure patient confidentiality and privacy and support the seamless communication between the multiple professional teams is one of the main challenges. Care coordination requires sharing of sensitive patient data, such as medical histories, medication, and psychosocial data among different healthcare providers, among others. This implies that legal and ethical privacy and data protection, as well as informed consent, must be followed (Alamri et al., 2022; Alreshidi et al., 2022). Any failure in these procedures would affect patient confidence, cause possible damage, or cause the hospital and individual practitioners to be prosecuted.

The other major problem is connected with role clarity and professional boundaries. Having several technical and clinical staff members may result in duplication of the roles and duties, misunderstanding of the roles in terms of assigning the tasks, and possible disagreements between the team members. Each of the nursing technicians, pharmacy technicians, radiology technicians, and social workers possesses distinct skills and experiences in treating patients, but absent distinct roles, the patient may

WWW.DIABETICSTUDIES.ORG 222

be at risk of receiving multiple treatments, lack of care, and misunderstandings (ALANAZI et al., 2025; Al-Rashidi et al., 2025). There are ethical considerations regarding an act done by an unqualified person, improperly overruling the judgment of another professional, which may lead to the worsening of patient safety and care quality (Sadoun et al., 2024; Nasser et al., 2024).

Distribution of resources and workloads is also an area that poses operational and ethical issues. Synchronized care models frequently need extra personnel, education, and technology to be operational. There might be a challenge in the equitable allocation of resources and responsibilities among the professionals in hospitals, especially at peak demand times or in the under-resourced facilities (FATIMAH et al., 2024; Al-Zahrani et al., 2024). Ethical issues can arise where the priorities of care have to be weighed between the patient safety, workflow as well as staff welfare. As an example, burnout, lack of focus on patient requirements, and moral decision-making can occur due to excessive workload or understaffing.

Informed consent and patient autonomy are other ethical issues in the context of integrated care. With various professionals involved in diagnosis, the planning of the treatment, and psycho-social support, the patient might receive different recommendations or interventions. It is important to apply ethical practice by making sure that the patients are informed fully, their preferences are upheld, and that they are active participants in the decision-making process (Alper et al., 2020; Chapman et al., 2020). The inability to promote patient autonomy may lead to cases of ethical infractions, a loss of faith in the health care system, and adverse treatment compliance. Lastly, interprofessional communication and collaboration is a difficult issue to practice and a difficult issue in ethics. Coordination is based on timely, clear and precise flow of information among the members of the entire team. Ethical issues are brought about in case of misdiagnosis, medication errors, or delay in care due to failure in communication (Brennan et al., 2013; Alamri et al., 2022). Also, the differences in professional cultures, hierarchical relationship, and different degrees of experience might also impact the decision-making procedure and create an ethical dilemma about accountability and responsibility. To overcome these issues, it is necessary to have clear policies, ongoing training, and ethical oversight mechanisms to ensure that the welfare of the patients is the primary concern of all coordinated care activities (ALANAZI et al., 2025; Sadoun et al., 2024).

On a final note, whereas the integrated care models have significant advantages with respect to enhancing patient outcomes, workflow, and holistic care, they also present a complicated set of problems and ethical dilemmas. To make sure the implementation of these models is effective and ethical, the hospitals are to consider the issues of confidentiality, role clarity, resource allocation, patient autonomy, and interprofessional communication proactively. It is necessary to follow the accepted standards of ethics, institutional ethics, and constant supervision to calculate the advantages of integration and the ethical responsibility to both patients and healthcare professionals (Alreshidi et al., 2022; Nasser et al., 2024; Al-Zahrani et al., 2024).

#### Conclusion

This paper has examined the complex aspects of care coordination models that involve the inclusion of nursing technicians, radiology technicians, pharmacy technicians, and social workers in a hospital environment. The results indicate the paramount significance of the interdisciplinary collaboration to improve patient outcomes, workflow improvement, medication safety, and the quality of healthcare in general. Nursing technicians, with their direct contact with patients and frontline healthcare services, are essential in terms of their observation, facilitation, and compliance with treatment procedures, which ultimately enhance the project between patients and the rest of the healthcare team (Balikai et al., 2022; Van Camp et al., 2020; Sadoun et al., 2024). It has been demonstrated that their inclusion in care coordination models helps minimize errors and enhance chronic diseases management and high-quality care delivery.

Radiology technicians as evidenced in this paper play a significant role in the accuracy of diagnoses and prompt intervention when incorporated into collaborative care structures. They are also integrated so that imaging and diagnostic data are shared with the nursing and pharmacy teams effectively, making the process of rapid and evidence-based decision-making possible. This type of cooperation minimizes care delays, improves patient safety and positively impacts the workflow in the hospital, especially in cases of acute and emergency care (ALANAZI et al., 2025; Al-Rashidi et al., 2025; Liu et al., 2025).

Pharmacy technicians also play a major role in ensuring safe medication handling, to minimize adverse drug events, and adherence to complex treatment regimens. Pharmacy technicians can assist in establishing a safety net when collaborating closely with the nursing and social work teams to reduce medication errors, enhance patient compliance and boost chronic disease management efforts (Alamri et al., 2022; Cross et al., 2020; Yang et al., 2022; Al-Zahrani et al., 2024). They can particularly be useful with patients with multimorbidity or psychiatric conditions, in which case, the pharmacological care must be carefully coordinated.

The role of the social worker in care coordination models covers the psychosocial side of patient care that has frequently been dismissed. The social workers will complement the provision of patient education, effective discharge planning, and referral to the required community resources, thus the care received by patients is holistic and meets the social, emotional, and financial needs of individual patients. They improve the quality of interprofessional interaction, patient autonomy, and lower readmission rates; thus, there is a need to include social support services in the hospital care team (Nasser et al., 2024; Anderson et al., 2020; FATIMAH et al., 2024).

Along with the undisputed advantages, the challenges and ethical issues related to integrated care models are also raised in this study. The confidentiality, role ambiguity, allocation of resources, and interprofessional communication issues should be well addressed to provide ethical and effective care delivery (Brennan et al., 2013; Alreshidi et al., 2022; Nasser et al., 2024). Solving these issues involves stringent policies, training of professionals, the standardization of protocols, and life-long monitoring to protect the well-being of patients in addition to gaining the most out of collaboration.

#### References

- 1. Alamri, G. M., Alsaif, H. S., Alsaif, A. A., et al. (2022). Addressing antibiotic resistance through interdisciplinary collaboration between nursing and pharmacy. Int J Health Sci (Qassim), 6, 2144–2172.
- 2. Alamri, G. M., Alsaif, H. S., Alsaif, A. A., et al. (2022). Addressing antibiotic resistance through interdisciplinary collaboration between nursing and pharmacy. International Journal of Health Sciences (Qassim), 6, 2144–2172.
- 3. Alanazi, M. A., Alqahtani, T. D., Alotaibi, S. J. J., Al Samra, S. M., Alrashidi, R. M. M., Alrashidi, N. K. A., ... & Belal, H. A. (2025). Interprofessional Collaboration In Emergency Healthcare: Optimizing Patient Outcomes Through Integrated Pharmacy, Radiology, And Nursing Practices In Acute Care Settings. TPM—Testing, Psychometrics, Methodology in Applied Psychology, 32(S6 (2025): Posted 15 September), 2206-2215.
- 4. Alper, E., O'Malley, T. A., & Greenwald, J. (2020). Hospital discharge and readmission. [DOI]
- Al-Rashidi, A. H. A., AlAhmmadi, J. A. A., Al-Harbi, A. G. O., Al-Rahili, H. S. M., Alrehaili, H. S., FAHAD, A. A. A., ... & AlAqidi, A. H. (2025). Integrating Multidisciplinary Clinical Support Roles to Enhance Coordinated Patient Care: A Qualitative Theoretical Framework Combining Nursing Technicians, Pharmacy Technicians, Center Supervisors, Radiology Technicians, Medical Laboratory Technicians, Dental Technicians, Dental Prosthesis Technicians, And Echo Specialist. Journal of International Crisis & Risk Communication Research (JICRCR), 8.
- 6. Alreshidi, M. S., Alharbi, S. H. S., & Alotaibi, N. M., et al. (2022). Bridging gaps between pharmacy, nursing, and laboratory sciences: A multidisciplinary approach. International Journal of Health Sciences (Qassim), 6, 2120–2132.
- 7. Alreshidi, M. S., Alharbi, S. H. S., Alotaibi, N. M., et al. (2022). Bridging gaps between pharmacy, nursing, and laboratory sciences: A multidisciplinary approach. Int J Health Sci (Qassim), 6, 2120–2132.
- 8. Al-Zahrani, F. A. I., Alghamdi, S. M. S., Alzahrani, A. E. A., Alzahrani, A. S., Aljubeiri, S. M., Alghamdi, M. S. M., ... & Alzahrani, S. A. A. (2024). Pharmacy and Nursing Integration in Healthcare Systems: The Supporting Role of Laboratory and Operations Technicians. Journal of International Crisis and Risk Communication Research, 7(S7), 1710.
- 9. Anderson, W. L., Long, S. K., & Feng, Z. (2020). Effects of integrating care for Medicare-Medicaid dually eligible seniors in Minnesota. Journal of Aging and Social Policy, 32(1), 31–54. https://doi.org/10.1080/08959420.2018.1485396

WWW.DIABETICSTUDIES.ORG 224

- 10. Balikai, S. I., Rentala, S., Mudakavi, I. B., & Nayak, R. B. (2022). Impact of nurse-led medication adherence therapy on bipolar affective disorder: A randomized controlled trial. Perspectives in Psychiatric Care, 58, 2676–2686. https://doi.org/10.1111/ppc.13108
- 11. Balikai, S. I., Rentala, S., Mudakavi, I. B., & Nayak, R. B. (2022). Impact of nurse-led medication adherence therapy on bipolar affective disorder: A randomized controlled trial. Perspectives in Psychiatric Care, 58, 2676–2686. https://doi.org/10.1111/ppc.13108
- 12. Brennan, S. E., Bosch, M., Buchan, H., & Green, S. E. (2013). Measuring team factors thought to influence the success of quality improvement in primary care: A systematic review of instruments. Implementation Science, 8(February), 20. https://doi.org/10.1186/1748-5908-8-20
- 13. Celio, J., Ninane, F., Bugnon, O., & Schneider, M. P. (2018). Pharmacist-nurse collaborations in medication adherence-enhancing interventions: A review. Patient Education and Counseling, 101(7), 1175–1192. https://doi.org/10.1016/j.pec.2018.01.022
- Chapman, E., Haby, M. M., Toma, T. S., de Bortoli, M. C., Illanes, E., Oliveros, M. J., & Barreto, J. O. (2020). Knowledge translation strategies for dissemination with a focus on healthcare recipients: An overview of systematic reviews. Implementation Science, 15(1). https://doi.org/10.1186/s13012-020-0974-3
- Chapman, E., Haby, M. M., Toma, T. S., de Bortoli, M. C., Illanes, E., Oliveros, M. J., & Barreto, J. O. (2020). Knowledge translation strategies for dissemination with a focus on healthcare recipients: An overview of systematic reviews. Implementation Science, 15(1). https://doi.org/10.1186/s13012-020-0974-3
- Cross, A. J., Elliott, R. A., Petrie, K., Kuruvilla, L., & George, J. (2020). Interventions for improving medication-taking ability and adherence in older adults prescribed multiple medications. Cochrane Database of Systematic Reviews, 5, CD012419. https://doi.org/10.1002/14651858.CD012419
- 17. Cross, A. J., Elliott, R. A., Petrie, K., Kuruvilla, L., & George, J. (2020). Interventions for improving medication-taking ability and adherence in older adults prescribed multiple medications. Cochrane Database of Systematic Reviews, 5, CD012419. https://doi.org/10.1002/14651858.CD012419
- 18. Fatimah, S. A., Alanazi, S. S. J., Alenezi, M. R. M., Abdulmajeed, H. J., Aldhafeeri, B. M. L., Sawadi, I. M. A., ... & Almoafa, Y. A. A. (2024). Comprehensive collaboration between different health care providers as family medicine, pharmacy, emergency care, Laboratory technicians, dentistry and rehabilitation services. Journal of International Crisis and Risk Communication Research, 7(S6), 2047.
- 19. Gattine, E., Jimenez, F., Costilow, E., et al. (2021). Financial Alignment Initiative: Massachusetts One Care Preliminary Fourth Evaluation Report. RTI International.
- 20. Li, G. (2023). Becoming dual: Measuring the impact of gaining Medicaid coverage for Medicare beneficiaries [Job market paper]. Stanford University Department of Economics.
- 21. Liu, B., Cai, J., & Zhou, L. (2025). Effectiveness of integrated care models for stroke patients: A systematic review and meta-analysis. Journal of Nursing Scholarship, 57(2), 266-297.
- 22. Nasser, M. Y., Yunus, A. D. M., Rahim, M. Y., & Mashal, M. T. (2024). Exploring Challenges and Opportunities for Improving Quality of Care and Patient Safety through Effective Integration of Nursing Technicians, Social Workers, Pharmacy Technicians, and Medical Secretarial Technicians in Healthcare Settings in Saudi Arabia. Journal of International Crisis and Risk Communication Research, 7(S8), 1437.
- 23. Sadoun, M. M., Alnuaimi, N. R., & Alghamdi, S. A., et al. (2024). Comprehensive review of nurses' role in chronic disease management: Collaborative care approaches. J Ecohumanism, 3, 6651–6659.
- 24. Sadoun, M. M., Alnuaimi, N. R., & Alghamdi, S. A., et al. (2024). Comprehensive review of nurses' role in chronic disease management: Collaborative care approaches. Journal of Ecohumanism, 3, 6651–6659.
- Van Camp, Y. P., Van Rompaey, B., & Elseviers, M. M. (2020). Nurse-led interventions to enhance adherence to chronic medication: Systematic review and meta-analysis of randomised controlled trials. Cochrane Database of Systematic Reviews, 5, CD012419. https://doi.org/10.1002/14651858.CD012419.pub4
- 26. Yang, C., Zhu, S., Lee, D. T. F., & Chair, S. Y. (2022). Interventions for improving medication adherence in community-dwelling older people with multimorbidity: A systematic review and

- meta-analysis. International Journal of Nursing Studies, 126, 104154. https://doi.org/10.1016/j.ijnurstu.2021.104154
- 27. Yang, C., Zhu, S., Lee, D. T. F., & Chair, S. Y. (2022). Interventions for improving medication adherence in community-dwelling older people with multimorbidity: A systematic review and meta-analysis. International Journal of Nursing Studies, 126, 104154. https://doi.org/10.1016/j.ijnurstu.2021.104154