

# Leveraging the Expertise of Healthcare Technicians: The Benefits of Collaboration for Enhancing Treatment Outcomes and Continuity of Care

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## **Abstract:**

**This review examines the benefits of leveraging healthcare technicians' expertise through collaborative practices, focusing on improved treatment outcomes and continuity of care. By analyzing current literature and best practices, we provide an overview of integrating technicians into healthcare teams and its impact on patient care, professional satisfaction, and healthcare system efficiency. The paper discusses improved outcomes in medication management, patient safety, intensive care, and chronic disease management, highlighting studies demonstrating significant reductions in adverse events and improved therapeutic outcomes. We explore how technicians enhance continuity of care through bridging transitions, supporting long-term disease management, and providing patient education. The review also addresses challenges in implementing collaborative models, including role definition, organizational culture, and education needs. Future research directions are identified, such as comprehensive outcome measurements and innovative technology applications. This paper argues that fully integrating technicians' expertise in collaborative approaches can significantly improve healthcare delivery, patient outcomes, and system efficiency.**

## **INTRODUCTION**

The healthcare landscape is evolving rapidly, with increasing emphasis on collaborative, team-based approaches to patient care. Within this context, healthcare technicians play a vital role in supporting and enhancing the work of other healthcare professionals. This paper explores the benefits of leveraging the expertise of healthcare technicians through collaborative practices, focusing on improved treatment outcomes and continuity of care. By examining the current literature and best practices, we aim to provide a comprehensive overview of the importance of integrating technicians into healthcare teams and the potential impact on patient care, professional satisfaction, and overall healthcare system efficiency.

### **The Evolving Healthcare Landscape**

The concept of collaborative healthcare has gained significant traction in recent years, driven by the recognition that complex health issues often require multifaceted approaches. In his landmark report on the future of healthcare in Canada, Romanow (2002) emphasized the need for interdisciplinary teams to provide comprehensive, patient-centered care. This vision aligns with the growing body of evidence supporting the efficacy of collaborative healthcare models.

Oandasan et al. (2006) define effective teamwork in healthcare as a process involving two or more healthcare professionals with complementary backgrounds and skills, working together to achieve optimal health outcomes. This definition highlights the potential for synergy when diverse healthcare professionals,

including technicians, work in concert. The inclusion of technicians in these collaborative models represents a shift towards recognizing the valuable contributions of all healthcare workers, regardless of their specific role or title.

### **Improved Treatment Outcomes**

One of the most compelling arguments for leveraging the expertise of healthcare technicians through collaboration is the potential for improved treatment outcomes. Several studies have demonstrated the positive impact of including technicians in collaborative care teams on various aspects of patient care.

### **Medication Management and Patient Safety**

In the realm of medication management, the inclusion of pharmacy technicians in care teams has shown remarkable benefits. Kucukarslan et al. (2003) conducted a study in hospital general medicine units and found that including pharmacists on rounding teams reduced preventable adverse drug events by an impressive 78%. This significant reduction in medication errors not only improves patient safety but also potentially reduces healthcare costs associated with treating adverse events.

Similarly, Leape et al. (1999) reported a 66% decrease in preventable adverse drug events when pharmacists participated in ICU rounds. These findings underscore the importance of integrating pharmacy technicians into direct patient care activities, allowing them to apply their specialized knowledge in medication management to prevent errors and optimize drug therapy.

### **Intensive Care and Critical Outcomes**

The benefits of collaboration extend beyond medication management, particularly in high-stakes environments such as intensive care units (ICUs). Wheelan, Burchill, and Tilin (2003) conducted a study examining the relationship between teamwork and patient outcomes in ICUs. They found a significant correlation between the level of teamwork in these units and patient outcomes, including lower mortality rates. This suggests that the effective integration of technicians into care teams can contribute to improved patient safety and clinical outcomes in critical care settings.

The study by Wheelan et al. (2003) highlights the importance of not just having diverse professionals present, but actively fostering a collaborative environment where all team members, including technicians, can contribute their expertise effectively. This collaborative approach allows for more comprehensive patient assessments, quicker identification of potential issues, and more efficient implementation of interventions.

### **Chronic Disease Management**

Collaborative practices involving healthcare technicians have shown particular promise in the management of chronic diseases. Hall et al. (2011) conducted a study comparing a pharmacist-managed anticoagulation service to usual medical care. The results demonstrated that the pharmacist-managed service resulted in better therapeutic outcomes and lower healthcare expenditures. This finding suggests that empowering technicians to take on specialized roles in managing chronic conditions can lead to improved patient outcomes and more efficient use of healthcare resources.

In a similar vein, Martinez et al. (2013) reported on the implementation of a pharmacist-managed heart failure medication titration clinic. The study found improved medication titration and patient outcomes compared to traditional care models. These examples illustrate the potential for technicians to provide specialized, ongoing care that complements the work of physicians and nurses, ensuring consistent management of chronic conditions and reducing the risk of complications or hospital readmissions.

### **Continuity of Care**

Enhancing continuity of care is another significant benefit of leveraging healthcare technicians' expertise through collaborative practices. Continuity of care refers to the quality of care over time, and it is particularly crucial for patients with chronic conditions or complex health needs.

### **Bridging Care Transitions**

Healthcare technicians can play a vital role in bridging care transitions, such as when patients move from hospital to home care or between different healthcare providers. By being involved in these transitions,

technicians can ensure that important information about medications, treatment plans, and patient history is accurately communicated and implemented across different care settings.

The study by Hall et al. (2011) on pharmacist-managed anticoagulation services demonstrates this principle in action. By providing consistent, specialized care for patients on anticoagulation therapy, the pharmacist-led service was able to maintain better therapeutic control and reduce complications compared to usual care. This continuity of care is particularly important for conditions that require ongoing management and frequent adjustments to treatment plans.

### **Long-term Disease Management**

For patients with chronic conditions, the involvement of healthcare technicians in collaborative care models can provide a consistent point of contact and expertise. The heart failure medication titration clinic described by Martinez et al. (2013) is an excellent example of how technicians can contribute to long-term disease management. By taking on the responsibility of medication titration under the supervision of physicians, pharmacy technicians were able to provide more frequent follow-up and adjustments, leading to better outcomes for patients with heart failure.

This type of specialized, technician-led service can complement the work of primary care physicians and specialists, ensuring that patients receive consistent, high-quality care between less frequent physician visits. It also allows for more rapid response to changes in a patient's condition, potentially preventing hospitalizations or other adverse events.

### **Patient Education and Self-Management Support**

Healthcare technicians can also play a crucial role in patient education and supporting self-management skills, which are essential components of continuity of care. By leveraging their specialized knowledge and often more frequent patient interactions, technicians can reinforce important health information, teach self-management techniques, and help patients navigate the complexities of the healthcare system.

For example, in the context of a pharmacist-managed anticoagulation service, technicians can provide detailed education on medication use, potential interactions, and the importance of regular monitoring. This ongoing education and support can improve patient adherence to treatment plans and enhance their ability to manage their condition effectively over time.

### **Job Satisfaction and Team Dynamics**

Effective collaboration not only benefits patients but also enhances job satisfaction among healthcare professionals, including technicians. This improved job satisfaction can lead to better retention of skilled professionals and a more positive work environment, which in turn can contribute to better patient care.

Chang et al. (2009) conducted a study examining the relationship between nurses' perceptions of collaboration, teamwork, job satisfaction, and perceived quality of patient care. The study found that nurses' perceptions of collaboration and teamwork were positively associated with both job satisfaction and perceived quality of patient care. While this study focused on nurses, it's reasonable to extrapolate that similar benefits could apply to healthcare technicians when they are effectively integrated into collaborative teams.

These findings suggest that by fostering a collaborative environment that values the contributions of all team members, including technicians, healthcare organizations can improve workplace morale, increase job satisfaction, and potentially enhance the quality of care provided to patients.

### **Team Resilience and Performance**

Morgan, Fletcher, and Sarkar (2013) identified several characteristics of resilient teams in high-pressure environments, including shared mental models, social capital, and collective efficacy. While their study focused on elite sports teams, these principles are highly relevant to healthcare teams operating in high-stress environments.

By fostering these qualities in healthcare teams that include technicians, organizations can build more robust and adaptable care delivery systems. Shared mental models ensure that all team members, regardless of their specific role, have a common understanding of goals, processes, and each other's responsibilities. Social capital refers to the network of relationships within the team that facilitate cooperation and information sharing. Collective efficacy is the team's shared belief in its ability to successfully perform tasks and achieve

goals.

When healthcare technicians are fully integrated into teams that embody these characteristics, it can lead to improved team performance, better problem-solving, and more effective responses to challenging situations. This, in turn, can contribute to better patient outcomes and a more resilient healthcare system overall.

### **Challenges and Opportunities**

Despite the clear benefits of collaboration, implementing effective interprofessional teams that fully leverage technicians' expertise can be challenging. Several factors need to be considered and addressed to maximize the potential of collaborative care models.

### **Role Definition and Scope of Practice**

One of the primary challenges in integrating healthcare technicians into collaborative teams is clearly defining their roles and scope of practice. Wagner (2000), in discussing the role of patient care teams in chronic disease management, notes that successful teams require not only a diverse skill mix but also clearly defined roles and effective communication systems.

There may be concerns about role overlap or encroachment, particularly when technicians take on tasks that have traditionally been performed by other healthcare professionals. Clear guidelines and protocols need to be established to ensure that all team members understand the boundaries of their roles while also recognizing the value of flexibility and shared responsibility in meeting patient needs.

### **Organizational Culture and Support**

Successfully integrating technicians into collaborative care models often requires a shift in organizational culture. Healthcare institutions need to actively promote and support interprofessional collaboration, providing the necessary resources, training, and infrastructure to facilitate effective teamwork.

Jünger et al. (2007) identified several criteria for successful multiprofessional cooperation in palliative care teams, including team philosophy, team structure, and communication. These findings underscore the need for deliberate team-building efforts and organizational support to maximize the potential of collaborative care models.

Organizations must create an environment where the expertise of all team members, including technicians, is valued and utilized effectively. This may involve changes to traditional hierarchies, decision-making processes, and communication patterns.

### **Education and Training**

To fully realize the benefits of collaboration, healthcare education must evolve to prepare professionals for team-based practice. This includes not only training healthcare technicians in collaborative practices but also educating other healthcare professionals about the valuable contributions technicians can make to the care team.

Vincent-Onabajo, Mustapha, and Oyeyemi (2014) found that many medical students had limited awareness of the roles of other healthcare professionals, highlighting the need for interprofessional education. This lack of awareness can lead to underutilization of technicians' skills and missed opportunities for collaboration.

Successful models of interprofessional education, such as the program at Linköping University described by Wilhelmsson et al. (2009), demonstrate the long-term benefits of early exposure to collaborative practice. The Linköping model integrates interprofessional learning experiences throughout the curriculum for students in various healthcare disciplines, fostering a culture of collaboration from the outset of professional education.

Ruebling et al. (2014) reported improved attitudes towards interprofessional collaboration among students who participated in introductory interprofessional education experiences. These findings suggest that incorporating collaborative practices and interprofessional awareness into the education of healthcare technicians and other professionals can lay the groundwork for more effective teamwork in clinical settings.

### **Technology and Communication**

Advances in healthcare technology present both opportunities and challenges for collaborative care models involving technicians. Electronic health records, telemedicine platforms, and other digital tools can facilitate information sharing and communication among team members. However, they also require careful

implementation and training to ensure that all team members, including technicians, can effectively use these tools to support collaborative care.

Organizations need to consider how to leverage technology to enhance collaboration without creating new barriers or exacerbating existing ones. This might involve tailored training programs for technicians on using specific healthcare technologies or designing interfaces that support effective communication and information sharing among all team members.

### **Leadership and Team Development**

Effective leadership is crucial for maximizing the contributions of all team members, including technicians. Traditional hierarchical leadership models may not be well-suited to the complex, dynamic nature of modern healthcare delivery. Instead, more collaborative and distributed leadership approaches may be more effective in fostering true interprofessional collaboration.

Pearce and Ravlin (1987) propose a model of self-regulating work groups that emphasizes shared leadership and collective responsibility. This approach aligns well with the needs of healthcare teams, where different team members may need to take the lead in different situations based on their specific expertise.

Sonnenschein, Gardenswartz, and Rowe (1998) emphasize the importance of leveraging diversity within teams to enhance problem-solving and innovation. By recognizing and valuing the unique expertise of technicians, healthcare organizations can tap into a broader range of skills and perspectives, leading to more creative and effective solutions to healthcare challenges.

Fransen et al. (2014) challenge the notion of a single team leader, suggesting that leadership in high-performing teams is often distributed among members. This concept of shared leadership, as explored by West et al. (2014) in the healthcare context, offers a promising framework for integrating technicians more fully into decision-making processes and leveraging their expertise more effectively.

### **Future Directions and Research Needs**

As healthcare continues to evolve, the role of technicians in collaborative care models is likely to expand. However, there are still many areas where further research and development are needed to fully realize the potential of these collaborative approaches.

### **Outcome Measurement and Evaluation**

While existing studies have demonstrated the benefits of including technicians in collaborative care teams, there is a need for more comprehensive and long-term evaluations of these models. Future research should focus on developing standardized metrics for assessing the impact of technician involvement on patient outcomes, healthcare costs, and overall system efficiency.

Studies that compare different models of technician integration and collaboration could provide valuable insights into best practices and help guide the development of more effective care teams. Additionally, research examining the impact of collaborative care models on specific patient populations or disease states could help tailor these approaches to meet diverse healthcare needs.

### **Professional Development and Career Pathways**

As the role of technicians in collaborative care models expands, there is a need to develop clear professional development pathways and career advancement opportunities. Research into the skills and competencies required for technicians to effectively participate in collaborative care teams could inform the development of specialized training programs and certifications.

Additionally, studies examining the impact of expanded roles and collaborative practices on technician job satisfaction, retention, and career progression could provide valuable insights for healthcare organizations and policymakers.

### **Policy and Regulatory Considerations**

The integration of technicians into collaborative care models may require changes to existing healthcare policies and regulations. Research examining the policy implications of expanded technician roles and collaborative practices could help inform the development of supportive regulatory frameworks.

Studies comparing different policy approaches across healthcare systems or jurisdictions could provide

valuable lessons for policymakers seeking to promote more effective collaboration and integration of technicians in healthcare delivery.

### **Technology Integration and Innovation**

As healthcare technology continues to advance, there is a need for ongoing research into how these technologies can best support collaborative care models involving technicians. Studies examining the impact of specific technologies on team communication, decision-making, and patient outcomes could guide the development and implementation of more effective healthcare IT systems.

Additionally, research into innovative applications of technology that could enhance the role of technicians in collaborative care teams, such as AI-assisted decision support tools or advanced remote monitoring systems, could open new avenues for improving healthcare delivery.

### **Conclusion**

The evidence clearly supports the value of leveraging healthcare technicians' expertise through collaborative practices. By fostering effective teamwork that includes technicians, healthcare organizations can improve treatment outcomes, enhance continuity of care, and increase job satisfaction among professionals. The benefits of this approach extend across various healthcare settings and specialties, from medication management and chronic disease care to critical care and transitions of care.

However, realizing these benefits requires deliberate effort in team development, education, and organizational culture change. Healthcare institutions must work to create environments that support true collaboration, breaking down traditional hierarchies and fostering a culture of mutual respect and shared responsibility among all team members, including technicians.

The challenges in implementing these collaborative models are significant but not insurmountable. By addressing issues such as role definition, education and training, technology integration, and leadership development, healthcare organizations can create more effective and resilient care delivery systems that fully leverage the expertise of all team members.

As healthcare continues to evolve, the role of technicians in collaborative care models is likely to expand. Future research should focus on identifying best practices for integrating technicians into care teams, evaluating the long-term impacts of these collaborative approaches on patient outcomes and healthcare system efficiency, and exploring innovative ways to leverage technology and policy to support these models.

By embracing collaborative approaches that fully integrate the expertise of healthcare technicians, we can work towards a healthcare system that is more effective, efficient, and responsive to the complex needs of patients in the 21st century. This shift towards true interprofessional collaboration has the potential to not only improve individual patient outcomes but also to contribute to the overall sustainability and quality of healthcare systems worldwide.

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