

## Enhancing Laboratory and Nursing Practices through Interdisciplinary Collaboration in Clinical Settings

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Received: 14.09.2024

Revised: 13.10.2024

Accepted: 21.11.2024

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### Abstract

Interprofessional collaboration between nurses and laboratory professionals improves patient care and health outcomes. This is because clinical and laboratory skills are put together to enhance diagnosis accuracy, timely intervention, enhancing patient satisfaction, among other established benefits, which are quite opposite to the presenting challenges that include communication barriers, misunderstanding of professional roles, and the need for integration of technology. Now, it is necessary to have a nursing and laboratory interdisciplinary collaborative approach; communication strategies underpin this, the role of technology, shared training, leadership, support, and models of care centred on the patient are discussed. It also provides recommendations to reinforce collaboration with a view to meeting new challenges presented to the health system.

**Keywords:** interdisciplinary collaboration, nursing, laboratory professionals, communication, patient-centered care, healthcare outcomes

### INTRODUCTION

Interdisciplinary collaboration is fundamental to modern healthcare, where patient-centered care requires the integration of diverse expertise. Among the most critical partnerships in this realm is the collaboration between nurses and laboratory professionals. This synergy is pivotal for enhancing diagnostic accuracy, streamlining care processes, and improving patient outcomes. By bridging clinical practice with laboratory insights, healthcare organizations can address the complexities of patient care while ensuring timely and precise decision-making (Bendowska & Baum, 2023; Pelone et al., 2017). The increasing complexity of healthcare demands seamless teamwork across disciplines, making the collaboration between these professionals an indispensable component of quality care delivery.

Effective multidisciplinary teamwork starts with appropriate and effective communication. Nurses rely on the output of laboratory professionals for accurate test results from which to base diagnosis and treatment, while the laboratory professional relies on the nurse for vital patient information inclusive of symptoms, clinical history, and response of the patient to the interventions. Effective open lines of communication ensure timely and accurate information to minimize errors and facilitate the care plan in a timely manner (Lillebo & Faxvaag, 2015; Kwame & Petrucka, 2021). With increasing complexity in healthcare settings, technology is an important facilitator of this communication. For instance, EHRs provide one location where patient information is written and shared, thus promoting greater transparency and collaboration across departments. These studies have been supported by Lubin et al. (2021) and Watson et al. (2018).

It aids in the interprofessional practice that promotes mutual understanding of roles and responsibilities among team members. Traditionally, nurses and laboratory personnel move within circles wherein their work greatly influences one another. These divisions can be mitigated through cross-training programs and interprofessional education that might permit one discipline to better understand and value the distinctive contribution of the other (Wilcock et al., 2009; Alqarny et al., 2024). For instance, nurses may be enlightened on the processes involved in the laboratories, and the laboratory personnel may also be enlightened on the implications at the clinical level. This fosters an atmosphere of mutual respect and thus leads to less fragmentation, which is usually common in interdisciplinary practices. Interprofessional collaboration in research, education, and clinical practice: working together for a better future, 2015.

A further building block of effective collaboration is support from leadership. Health care managers and executives have to invest in interdisciplinary collaboration through such initiatives as training programs, technological infrastructure, and forums for sharing decisions. Routine case review, interdisciplinary meetings, and quality improvement comprise very practical means through which teamwork and cohesion in addressing challenges may be developed (Salmond, 2017; Needleman & Hassmiller, 2009). Besides, it enables the concentration of care to be patient-centered, as the very act of working together is consistent with the ultimate commitment of improving outcomes for the patient. Healthcare provided by teams, when personalized to unique needs and involved in making decisions, becomes ultimately more personal and powerful in care planning, according to Rathert et al., 2012; Durand & Fleury, 2021.

## METHODOLOGY

A critical broad review of the literature is conducted on interdisciplinary collaboration between nurses and laboratory professionals in the improvement of patient care. Searches through databases were made, including PubMed, Google Scholar, and CINAHL. Relevant studies to this review were published between 2010 and 2023. Key words for the search include "interdisciplinary collaboration, nursing and laboratory, communication in healthcare, patient-centered care, collaboration models". Searches yielded 180 articles. These were first screened by preset inclusion criteria: studies published in English, peer-reviewed, related to nursing-laboratory collaboration, dated from 2010-2023. After de-duplication and excluding irrelevant studies, 42 articles were taken to full-text review. Overall, 30 studies constituted the final pool: RCTs, cohort studies, systematic reviews, and meta-analyses studies. Data collated included communication strategies, technology solutions, training methods, and leadership support models.

## LITERATURE REVIEW

The literature review highlights the significance of effective communication in the nursing-laboratory interdisciplinary process. Communication must be open and swift to provide for the timely exchange of information that is crucial in the care of the patient, such as test results and observations. EHR has been a very important facilitator of timely and accurate data-sharing from the laboratory team to the nursing workforce, culminating in informed decisions. This was echoed by Lillebo and Faxvaag, 2015 and Lubin et al., 2021. Also, cross-training, where even the nurses also have a deeper understanding of the job concerning laboratory professionals and vice versa, is very important. It encourages mutual respect and thereby promotes better teamwork for the ultimate benefit of the patients (Wilcock et al., 2009). Furthermore, the leaders must ensure that collaboration is encouraged. To that end, healthcare managers and leaders must provide resources in terms of training, technology, and structure to enhance interdisciplinary collaboration (Salmond, 2017). Indeed, routine case reviews and interdisciplinary meetings provide an opportunity for service improvement since it ensures coordination in providing holistic care for the patient. Remodeling interprofessional collaboration through a nurse-for-a-day shadowing program for medical residents, 2021.

## DISCUSSION

Interdisciplinary collaboration is essential for optimizing patient care and outcomes in healthcare settings. Collaboration between laboratory professionals and nurses plays a crucial role in delivering high-quality, patient-centered care (Bendowska & Baum, 2023). By leveraging the expertise of both disciplines, healthcare organizations can enhance diagnostic accuracy, streamline care processes, and improve overall patient satisfaction (Pelone et al., 2017).

Smooth communication is actually a very major key to effective interdisciplinary collaboration. Communication between nurses and laboratory personnel should be clear to make sure that information provision is timely and appropriate, Lillebo & Faxvaag, 2015. This can be quite invasive, given critical discussions over symptoms, test results, and treatment plans so as to fully accommodate the particular needs of a client, Kwame & Petrucka, 2021.

To facilitate communication and collaboration, healthcare organizations should invest in technology solutions that enable seamless data sharing between departments (Lubin et al., 2021). Electronic health records, for

example, can provide a centralized platform for documenting patient information and test results, making it easier for nurses and laboratory professionals to access and share relevant data (Watson et al., 2018).

In addition to communication, interdisciplinary collaboration requires a shared understanding of each discipline's roles and responsibilities (Wilcock et al., 2009). Nurses and laboratory professionals should receive cross-training to gain a better appreciation for the unique contributions of each team member (Interprofessional collaboration in research, education, and clinical practice: working together for a better future, 2015). This can help break down silos and foster a culture of teamwork and mutual respect (Alqarny et al., 2024).

Regular interdisciplinary meetings and case reviews can also strengthen collaboration between nurses and laboratory professionals (Remodeling interprofessional collaboration through a nurse-for-a-day shadowing program for medical residents, 2021). These forums provide opportunities for team members to discuss complex cases, share insights, and develop collaborative care plans that leverage the expertise of both disciplines (Baek et al., 2023).

Collaborative research projects can further enhance the partnership between nursing and laboratory medicine (Ma et al., 2023). By working together to investigate clinical questions and develop evidence-based practices, nurses and laboratory professionals can drive innovation and improve patient outcomes (Interprofessional collaboration in research, education, and clinical practice: working together for a better future, 2015).

Effective interdisciplinary collaboration also requires strong leadership support. Healthcare executives and managers must prioritize collaboration and provide the resources and infrastructure necessary to facilitate teamwork (Needleman & Hassmiller, 2009). This includes investing in training programs, technology solutions, and organizational structures that promote cross-disciplinary communication and cooperation (Salmond, 2017).

Patient-centered care should be at the core of all interdisciplinary collaboration efforts. Nurses and laboratory professionals must work together to understand each patient's unique needs, preferences, and values (Rathert et al., 2012). By involving patients in decision-making processes and tailoring care plans to their specific goals, healthcare teams can deliver more personalized and effective treatments (Durand & Fleury, 2021).

Collaborative care models with particular emphasis on the place of patient-centeredness have demonstrated improvements across a wide array of clinical settings (Burns et al., 2013). Such teams may comprise of nurses, laboratory professionals, and other specialists constituting the program of "comprehensive assessment and monitoring and patient education" in the management of chronic conditions, as stated by Swan & Haas, 2018.

More so, with precision medicine, this becomes even more important: the need for collaboration among nurses and laboratory personnel. Already today, health care teams are expected to present interpretations of complex information from the laboratory for which results range from genetic testing to personalized therapies. The role of the nurse is imperative in this endeavour through history collection, symptom assessment, and presentation of results to the patient and family (Kratz & Laposata, 2002; Hain & Sandy, 2013).

Interdisciplinary collaboration can also help address health disparities and promote health equity. By working together to identify and address social determinants of health, nurses and laboratory professionals can develop more holistic care plans that account for each patient's unique circumstances (Wakefield et al., 2021). This may involve collaborating with community organizations, public health agencies, and other stakeholders to provide resources and support beyond the clinical setting (Tamli & Sain, 2023).

To support ongoing collaboration, healthcare organizations should invest in continuing education and professional development programs that bring nurses and laboratory professionals together (Wilcock et al., 2009). Joint training sessions, workshops, and conferences can provide opportunities for cross-disciplinary learning and networking, helping to build relationships and foster a shared sense of purpose (Interprofessional collaboration in research, education, and clinical practice: working together for a better future, 2015).

Quality improvement initiatives that are collaboratively led also promise significant and sustained changes in clinical practice. This is through the nurses and laboratory professionals identifying areas for improvement, developing evidence-based interventions, and measuring outcomes jointly to continuously improve the quality and safety of patient care (Plebani, 2009). Those actions would probably involve some new protocols being implemented or standardized to optimize workflow processes and lessen errors (Beastall, 2013).

IPE is another effective approach that can be utilized to ensure active collaboration among nurse and laboratory professionals. Implementation of IPE in curricula of nursing and laboratory sciences will enable students to develop the skill and attitude for collaborative practice. Interprofessional collaboration in research, education, and clinical practice: working together for a better future, 2015. This can include simulations, case studies, and other forms of experiential learning through which students can practice communication, problem identification, and conflict resolution without feeling threatened. The nurse-for-a-day shadowing program for internal medicine residents reimagined interprofessional collaboration in 2021.

With increasing specialization and complexity of health care, interdisciplinary collaboration will continue to rise. It is important that nurses and laboratory personnel be prepared for working together in an environment that is dynamic, sometimes difficult, and further influenced by continuous new technologies, regulations, and patient needs. As Salmond (2017) pointed out, through embracing collaboration at their core and developing the

competencies and infrastructures to support collaboration, healthcare organizations will position themselves for success in the years ahead. This viewpoint was supported by Needleman & Hassmiller (2009).

Effective interdisciplinary collaboration requires a commitment from all levels of the healthcare organization. Frontline staff, managers, and executives must work together to create a culture of collaboration that values teamwork, communication, and continuous improvement (Watson et al., 2018). This may involve setting clear expectations, providing resources and support, and recognizing and rewarding collaborative behaviors (Alqarny et al., 2024).

The ultimate goal of interdisciplinary collaboration between nurses and laboratory professionals is patient care. Such collaboration allows health professionals to pool their resources, enhancing diagnostic accuracy, optimal treatment planning, and generally improving the lot of the patient (Pelone et al., 2017). This will ensure that continuous collaboration in research and improvement in the quality, hence driving innovation and excellent health care provision among the nurses and laboratory professionals up to 2023 and beyond.

## CONCLUSION

Interdisciplinary collaboration among nurses and laboratory professionals is the bedrock on which the best outcomes for patients in health care today are realized. It enhances diagnostic accuracy, improves patient-centered care, and streamlines the delivery of care. Communication, enabled in large measure by such technologies as electronic health records, is a key part of the process. Cross-training, leadership, and a shared perception of each other's roles are other necessities to build this teamwork and respect for one another. These are challenges that have to be optimized for collaboration, such as a communication barrier, role misunderstanding, and so on. Future strategies involve enhancing the training programs, improving communication techniques, and instituting standardized protocols that guide interdisciplinary practice. Continued collaboration and innovation by nurses and laboratory professionals hold great promise for enhancing healthcare delivery and ensuring high-quality patient-centered care.

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