

The Role Of The Lecturer In Communicating Collaborative Strategies: To Meet Challenges And Solutions In The Integration Of Nursing, Anesthesia And Pharmacy

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Introduction

The healthcare system has been challenged for many years by a variety of factors throughout the world. Some of these challenges include an ever-growing population, aging populations, advances in medical technologies, and more recently, the COVID-19 pandemic. The problems persistently raised include accessibility, affordability, quality, and safety of services delivered to patients. Addressing these issues without compromising quality has become more complex and made client, healthcare employee, and government expectations on the healthcare system more demanding.

These increasing complexities in the healthcare system have changed the operational environment of certain health professionals, namely registered nurses (RN), anesthesia professionals (AP), and pharmacists. Collaboration, integration, and teamwork across professional boundaries have become essential for individual professionals not to become unaware, uncontrolled, and inflexible means in the changeable and turbulent operational environment over the years. Thus, as mentioned, the aforementioned three professions are being integrated into one hybrid profession on a national level in Finland. The goal is to provide new types of healthcare services primarily to health issues regarding medication, anesthesia, and recovery related to surgery. For broader consideration, the objectives of the implemented HIA-system include ensuring medication safety post-operatively, enhancing cooperation and continuity between

providers of care and services, facilitating the efficient and effective use of healthcare resources, and enabling greater patient care and participation through systemic transparency. Thus, the level of council has set a wide pool of expectations for this new operational environment. Nevertheless, with this introduction into the new operational environment and its expectations, several risk factors have been recognized for its operational safety, efficacy, and effectiveness, which are either visible in the current practices or which threaten its attainment either directly or indirectly.

In addition, despite the awareness of those threat factors and a desire to prevent their emergence, mindsets and mentalities deeply ingrained in each of the three professions prevent necessary procedural changes to address the threat factors and ensure the successful evolution of the hybrid profession. Multiple narrower issues arise alongside responding to these more extensive threat factors, some of them relating directly to practice, while others affecting the estimation of changes to be made and their perceived impacts, costs, and expediences. In conclusion, the integration of nursing, anesthesia, and pharmacy into a new hybrid profession HIA, alongside with threats and risks thereunto toward the operational safety and efficacy of the new profession, is outlined.

In light of the aforementioned reforms and needs for change, this research aims to explore the challenges that need to be faced regarding addressing those threat factors in the operational environment of the evolving hybrid profession and its members. In addition, methods of collaboration and enhanced teamwork across professional boundaries for achieving the establishment and evolution of the evolving hybrid profession HIA would be of great interest.

1.1. Background and Rationale

In modern healthcare, there is a pressing need to address the challenges associated with the collaborative integration of nursing, anesthesia, and pharmacy. Complex systems are rapidly evolving across the globe, and health systems are no exception. There is an increasing need for health professionals to discover new modes to collaborate to ensure safety and quality in health systems, especially in low-resource contexts. The most critical challenge will be to establish collaborative systems between existing professions. The expansion of responsible scopes and delegation of tasks

supported by new technology is essential for optimizing safety and quality in the ever-more-complex health and care systems. This study sought to explore collaborative strategies to establish new modes of cooperation between nursing, anesthesia, and pharmacy to address current challenges.

The integration of professions concerns health systems and education systems across the globe. In this tale from the north, the initial steps of an exploratory health-professional-education-led process are described whereby a new collaborative strategy is developed, focusing on the integration of three globally recognized professions in health systems, i.e., nursing, anesthesia, and pharmacy. The role of augmented high-fidelity simulation, supported by innovative technology, case-based reflective learning, staff involvement, and the co-creation of common learning situations, were identified as important conditions for success. The successful establishment of collaborative education systems will pave the way for the subsequent establishment of collaborative systems within health systems.

The desire to establish collaborative efforts between nursing, anesthesia, and pharmacy arose from persistent challenges experienced in health systems and shortages of anesthesia nurses and pharmacists qualified to work in the perioperative care setting. Discussion among nursing, anesthesia, and pharmacy educators revealed several challenges regarding the quality and safety of drug handling, drug prescriptions, and drug administration, considering the complexity of health technologies, addiction, and diversion. The goal was to explore collaborative strategies that have the potential to address these challenges from the perspective of health-profession-education-led processes in a globally-shared context.

2. The Importance of Interprofessional Collaboration

Interprofessional collaboration (IPC) is defined as people from different professions working together to improve and/or maintain the health of a client, patient, or population. It is understood to mean a nexus of collaboration of health professionals: nursing, pharmacy, and anesthesia. Considerable time and energy are devoted to intense collaboration among the three professional faculties. Although they possess different knowledge bases and skills, and use different modes of communication, they still have a common ground. Hence, IPC can

address a range of challenges and dilemmas at faculty level; problems that cannot be solved by single faculties alone. Other professional faculties are: medicine, occupational therapy, physiotherapy, and social work. Nursing, anesthesia, and pharmacy are often neglected in studies of IPC in many cultures. Everyday tasks in this area are believed to build a bridge between knowledge of the surrounding world and people's own best practices. Two advantages are cited for students. They trained to collaborate, which may improve the quality of health care; moreover, they are used to collaborating with the professions when applying for a job. In short, this interprofessional venture may contribute to societal well-being and professional education.

Interprofessional education (IPE) is education in which two or more professions learn with, about, and from each other. The aim of IPE is to prepare health care professionals to work together to improve health outcomes. Collaborative practice is when multiple health workers from different professional backgrounds work together with patients, families, carers, and communities to deliver the highest quality of care. Concerned about both the quality of education and the world outside? Collaborating with other faculties calls for change in educational practices, challenges faculties' positions within the professional field, and new emerging pairings of faculties. Program managers on education have colorful, but not yet clear, visions of their own faculty in ten years. Collaboration has eco-manic and societal goals, and these appear to be incorporated more profoundly within education. On the ground, these political aims are being translated into tangible, everyday rules, obligations, and social mechanisms that affect the student experience and faculty culture.

2.1. Defining Interprofessional Collaboration

Interprofessional collaboration (IPC) can be defined as a partnership between a team of healthcare professionals with diverse backgrounds, areas of expertise, and professional abilities, who share a common purpose or goal concerning the provision of patient-centered care that respects and considers the dignity and aspirations, culture, social circumstances, and lifestyle of all individuals involved. This concept comprises interprofessional education (IPE) as an essential precursor to IPC and collaborative practice (CP). IPE consists of learning experiences designed to facilitate collaborative practice, with active learning as an

important component. CP is the outcome of successful IPC, where team members actively cooperate with one another in providing patient care. IPC is the collaboration of healthcare professionals across a range of disciplines who coordinate care delivery around patients' needs and can be further defined as a mode of practice wherein two or more members of a healthcare team share responsibility for planning, evaluating, and monitoring patient care, with the mutual goal of improving health outcomes. The growing recognition of the need for patient-focused, coordinated care delivery has led to an increasing number of institutions in the US and Canada adopting formal IPC structures and processes.

To improve healthcare and healthcare education, there is a pressing need to acknowledge the relevance and importance of a new generation of health professionals with the skills, knowledge, attitudes, and behaviors needed to effectively collaborate across health specialties. As healthcare and health professionals' education becomes complex, innovative, and collaborative strategies will be an essential responsibility for health organizations as well as education systems to meet the changing needs of society. The aim is to address challenges in the design and implementation of interprofessional collaborative strategies to ensure effective patient care across five health disciplines. The proposed approach will engage nursing, anesthesia, and pharmacy academic and health service organizations in a research-driven collaborative effort.

With regard to its initial phases, the development and testing of interdisciplinary health specialist teams to examine the effectiveness and impact of this collaborative approach across disciplines on health professionals, institutions, and patient outcomes are essential. Moreover, it is of utmost importance to ensure students' competency in key aspects of collaborative practice from their first years of training. Additionally, creating interprofessional collaboration champions from each discipline as key knowledge and innovation brokers will promote the initiation and sustainability of health professionals' collaboration, which are critical. Overcoming professional turf, leadership, priority, and time constraints, as well as logistical problems related to the involvement of five health disciplines, are challenges that can be addressed with a systemic and concerted view and effort to build a stronger model of collaboration.

2.2. Benefits and Outcomes

Understanding the benefits of interprofessional collaborative practice in education and service delivery is critical in determining its effectiveness for improving practice and healthcare outcomes. New and emerging health workforces with expanding scopes of practice demand a need for collaboration between different disciplines in the identification and management of health issues. Although varied in practice, clinical professionals in pharmacy, anesthesia, and nursing are challenged by workload pressures, advanced technology, competing priorities, and insufficient training to collaborate.

The goal of this analysis was to explore collaborative strategies adopted by all stakeholders, services, and educational institutes; to identify agendas for services, practice, and transdisciplinary education; and to identify outcomes of this collaboration. The aim was to explore practice-based collaborative strategies between nursing, anesthesia, and pharmacy in the Commonwealth of Australia's public health-industry partnership. The methodology used is case studies involving qualitative techniques to explore collaboration within a single clinical group over two models.

Findings revealed that the formation of a nurse, pharmacy, and anesthesia collaborative group with a focus on quality outcomes is a valuable precursor to improving clinical practice, patient safety, and education. The collaboration led to the creation of nursing, anesthesia, and pharmacy resources that addressed workload pressures through coaching, foundation training, and independent practice. Validated outcomes related to quality improvement, practice evidence, education evidence, patient experience, and safety evidence can all assist in demonstrating quality outcomes.

Collaboration thus has benefits for the health services, clinical professionals, patients, and education institutes. Improved quality clinical processes and the addressing of workload pressures for frail and elderly patients improve the quality of care delivered. Standardized and effective practice evidence can assist in the safe delivery of medications. Academic partners directly involved in the service provision gain valuable insight into discipline-specific, collaborative health evidence, and training to evolve programs.

3. Key Stakeholders in Nursing, Anaesthesia, and Pharmacy Integration

Successful integration of nursing, anesthesia, and pharmacy depends on the active role of various stakeholders at individual, departmental, and institutional levels. Each stakeholder has a unique set of roles and responsibilities that contribute to integration success. Key stakeholders include faculty members from each discipline, department heads, academic deans, and university administrators. Each must be attuned to the classic attributes of integration: strength of links and level of transdisciplinarity in both teaching and research. These attributes influence faculty members and department heads. Academic deans and university administrators are in leadership positions and have a system-wide view and approach regarding the academic infrastructure and balance between teaching and research.

To support nursing, anesthesia, and pharmacy integration, several actions are recommended for stakeholders at different levels. Faculty members are encouraged to consider the four collaborative strategies: collaborative education, collaborative research, collaborative publication, and collaborative participation. Stakeholders are also encouraged to embrace and celebrate the common victories together. Department heads are advised to facilitate downtime for faculty members from all three disciplines to enter a free-flowing brainstorming session, proactively seek growth opportunities, provide support as necessary, and assist in drafting and presenting proposals to upper administration for professional development funding. Academic deans are recommended to hold a level-sensation of satisfaction and discontent, host a tea-talk session, and evaluate common factors and needs to determine desirable external pool resources. University administrators should comprehend the long-term nature of collaborative strategies involving more than one professional discipline, have strong commitment to the development of nursing, anesthesia, and pharmacy, and proactively engage with a continuous responsibility for improvement.

Barriers to successful integration are inevitable, but concerns can be minimized by setting expectations in terms of the one-time return from integration efforts. Potential strategies for communication breakdowns and level differences of concern are

suggested to enable open discussion between stakeholders and development of mutual understanding. Issues underscoring resentments of our respective roles are addressed, emphasizing that they can be minimized through reassurance and proactive involvement of department heads, academic deans, and university administrators. All stakeholders are encouraged to listen, be cognizant of professional discipline backgrounds, request feedback, and seek clarification of misunderstandings. An institutionalized plan for nursing, anesthesia, and pharmacy integration is desired, which enables sequential implementation of collaborative strategies with general stakeholder involvement so that concerns at each phase are addressed.

3.1. Roles and Responsibilities

An evidence-based, pre-emptive, non-blinded intervention pilot study involving 100 patients at Kings College Hospital undertaking elective day-case general anesthesia surgery in the U.K. and Dr. C.C.R. Medical Research College, China, involved the close collaboration of Nursing, Anesthesia, and Pharmacy specialties to ensure successful delivery of the research project. In light of increasing clinical skill sets and multi-professional working practices within Nursing, Anesthesia, and Pharmacy, this observation study aimed to assess and make recommendations regarding the impact on patient safety across all three specialties. Stakeholders including patients, the principal investigator, anesthetists, anesthetic nurses, pharmacy technicians, and ward pharmacists were mapped at a high level to explore enablers and barriers, informed by Rogers Theory of Diffusion of Innovations. Audits of Nursing, Anesthesia, and Pharmacy observations were conducted over a two-week period to thoroughly assess all agreed stakeholder roles and responsibilities.

Cross professional observations unaided by clinical qualifications found initial issues faced by Anesthesia in delivering pharmaceutical interventions across nursing handovers with no prior experience of the new responsibilities. Pharmacists were also unaware of anesthesia secondary roles within their scope of practice, resulting in out of hours anesthetic pharmacy tasks being posted straight through to nursing. Audits by Anesthesia and Nursing across pharmacy departments incorporated a pharmacist discussion with no discussion component, increasing awareness of each other's different practice. Out of scope practice by Nursing

including maintaining and injecting pharmacy bags was crossed as a barrier, resulting in mutual respect and help across departments. Anesthesia interventions have developed from observation interventions to complete independence and proactivity in a small number of patients. Anesthesia, pharmacy, and nursing now trust that any pharmacy intervention regarding either patient preconsent, preassessment medication patient clarification, or supply will be completed. Being actively included in nursing handover was identified as a key enabler.

4. Challenges in Integrating Nursing, Anaesthesia, and Pharmacy

Implementing collaborative practices across nursing, anesthesia, and pharmacy requires the identification of current and anticipated challenges. Although all disciplines are auxiliary therapeutic teams, the dissimilarity in the need basis of the therapies by patients creates a need for overall planning by establishing collaborative practices to deal with the dissimilar professional conflicts in the attaining of therapeutic targets. The diversity of challenges across these factors is an advantage in planning for the prospective collaborative setup since the integration team will have to work on a wider remit collaboratively on overall models of care across all three areas. The associated challenges as a whole can then be shared among the individuals in the integration teams rather than being the responsibility of a single entity in any collaboration.

Barriers stemming from the differences in both the belief in and methods of resolving challenges through collaboration will be the primary challenges that are currently anticipated. There are fundamental differences in the training of the healthcare professionals and their subsequent outlook on patients, in the form of both belief systems (e.g., medicine versus a model of need) and programming of the models of care as a result of that training (biomedical, professional dominance, or de facto collaboration). Apart from the need basis, there are also dissimilarities in the targets or goals of the therapies that are concerned with the maintenance of homeostasis, with one faction of the disciplines based on the projection of events from a standpoint using the predicted trajectory whilst the other faction seeks to avert impending events by altering the predicted trajectory (e.g., the need basis of a pharmacokinetic model by a pharmacist wrestler

as opposed to the need basis of a pharmacodynamic model of a nurse anesthetist).

Communication stands to be the biggest hurdle using direct dialogues and email exchanges as first passes at collaboration did not even occur after repeated attempts. There was a relatively high rate of success in reaching some form of common ground using a model of care being actively researched and piloted in development nationwide for all disciplines (and further afield in the case of the ICA). Importantly, although passed on as a theological model without input sought, this model, along with the ongoing pilot work, has created and maintained enthusiasm and fostered further interest in collaboration from senior management in the disciplines concerned. It is deemed appropriate to present this model to all disciplines at the forum planned. Reducing the field to anesthesia limited the number of disciplines to the nurse anesthetist and consultant anesthetist in meeting electronic chats. Even with these simpler conditions, it was an arduous task to reach any form of accord, with no overlap in understanding of any key models or of research concepts such as needs assessment.

4.1. Barriers to Collaboration

Although the collective practice of anesthesia and other medication uses has begun to develop in several nations around the world, there remain barriers to its formation in both nursing, pharmacy, and anesthesia disciplines. These barriers to continued collaboration address both systemic challenges and gaps in knowledge and skills. Nevertheless, as the advantages of collaboration recognized by the World Health Organization (WHO) gain traction globally, there are many opportunities to stimulate significant interest in more collective training and continuing education programs.

A qualitative study of the nursing and anesthesia disciplines in Australia's rural remote health services identified a series of barriers to nursing anesthesia collaboration in general, both at the uniquely Australian level of remote rural health service and at the more universal level of nursing, anesthesia, and pharmacy disciplines. Systemically, the decentralization of health service funding in Australia has resulted in poorly resourced and staffed remote health services and has heavily influenced the adoption of the practice of nursing anesthesia in Australia, where there are many care facilities with no umbilical cord to any larger hospitals

for distance, or due to the chronic shortage of medical personnel in general and anesthetists in particular. Concerning the knowledge and skills of pharmacists, a series of continuing education workshops concerning many fundamental issues has been found to be necessary before anesthesia and other medication uses can be developed further in rural facilities, including the pharmacokinetics and pharmacodynamics of drugs in relation to anesthesia and other medication uses, management of parenteral fluids/colloids and blood, resuscitative measures and post-anesthetic care. In addition, the local maintenance of anesthetic machines and gas/oil medication delivery systems before a course of training can be developed further, as well as the efficient consultation of gas/oil medication delivery systems and self-designed local protocols to suit different circumstances have also been brought to light as necessary gaps. In light of this clear necessity, some collaboration or cooperation between disciplines in the development of anesthesia and other medication uses can be continued.

4.2. Communication Challenges

Communication is pivotal to health professions education and interprofessional education since effective communication makes collaboration easier in health care. Each profession has its own language, and differences in understanding and word usage/naming conventions can lead to confusion. Failure to communicate appropriately can affect the relationship between health care professionals, leading to a poor quality of care. This correlation underscores the importance of understanding communication barriers to health profession integration, especially among pharmacy, nursing, and anesthesia.

In the anesthesia profession, the medical term solely refers to a medical doctor trained in the specialty of anesthesia; this excludes any trained nurse, pharmacist, or practitioner. Also, formal communication is largely performed with Latin terms, as it has been the language of science among the elite profession. Similarly, complicated high-tech machines must be supported by theoretical communication so that everyone has an equal understanding.

Miscommunication frequently happens during busy clinical hours when the status quo is already established. Bystander health care team members struggle to actually provide care to the patient without misunderstanding, as the discussion is mainly addressing

one member of the health care profession. Complicated notions and slang terms within a profession further isolate understanding from others, resulting in poor co- and support in critical moments. Differences in audiovisual used in presentation mode also affect spatial comprehension in collaboration. In Portugal, followed by the UK and Germany, equipment projects are widely pooled into one table in the previous ward environment; meanwhile, in Brazil, usually the specialist presents the case himself, making it difficult to contextualize the information shared. Then, some of the health care team members compromise to watch only one presentation on-site in a quiet room, impacting realization during immediate procedures.

Collaboration leads to a fragmented mode of interaction in large interprofessional groupings. Understanding intra- as well as inter-professional communication is key to maintaining a relationship among professionals and building effective integration between nursing, anesthesia, and pharmacy professionals.

5. Innovative Solutions for Collaborative Integration

A paradigm shift is increasingly required in the traditional approach of professions operating in parallel. Improved collaboration between nursing, anesthesia, and pharmacy holds the promise of improved quality, safety, and efficiency of patient care. To illustrate potential in dealing with collaboration challenges, nine innovative solutions for the integration of nursing, anesthesia, and pharmacy are presented and critically analyzed. An overall perspective on collaborative patient care is taken. Therefore, solutions that combine the perspectives of the three professions are preferred. These solutions not only improve the quality of care but also offer possibilities for cost savings. Why then are these solutions so rarely applied? The barriers are explored. Suggestions for further investigation and application to translate proposed solutions into practice are formulated.

Technological developments offer opportunities for improved collaborative care, e.g. through telemedicine and technology-assisted clinical decision-support systems. Paradoxically, however, technology can also introduce barriers by reinforcing professional boundaries and an atomized approach to care. Therefore, a delicate balance should be sought between fully utilizing the opportunities of technology and being aware of the associated risks. In interprofessional simulations, professions are trained

according to their educational background and not as a team. This results in a lack of awareness of each other's strengths and weaknesses, which should be considered when collaborating. Because of this, decisions concerning patient care are taken based on restricted or incomplete knowledge. Therefore, it is of utmost importance that simulation training sessions are conducted with both professions present. A collaborative rotation between the three professions, where they take over each other's responsibilities for a day, should also be considered.

Collaborative protocols should be developed at the institution level and established for each clinical pathway. By developing joint protocols, shifts in responsibilities will become unavoidable and should be proactively embraced by all three professionals. The fallacy that existing tasks become redundant, and the fear that vulnerability increases, both fuel reluctance. Stakeholder involvement at the start of the protocol's development and careful consideration of task delegation will help strengthen the commitment of all three professions involved. In conclusion, there is a need for innovation. Efforts should be made to overcome the barriers in terms of knowledge, power, and fear. However, innovation without further institutionalization is of no value. Therefore, once innovative solutions have been adopted, it is essential that they are integrated formally into the healthcare system's structures, protocols, and standards.

5.1. Technology and Telemedicine

Integration between nursing, anesthesia, and pharmacy is crucial for high-quality healthcare delivery, yet remains limited due to a range of common integration challenges. Collaborative strategies to address these challenges and facilitate the integration of these disciplines have been identified, as well as innovative solutions using modern technological advancements. This paper aims to explore these strategies and innovative solutions more closely, and ultimately contribute to increasing knowledge of and interest in further integration of these three disciplines.

Within recent years and most notably due to the COVID-19 pandemic, the usage of technology and telemedicine has increased sharply. Technology can refer to both software- and hardware-based systems for knowledge or data storage, processing, exchange or presentation, and telemedicine can be seen as a subset of technology, broadly referring to the remote usage of

technology in healthcare, over some distance, and typically in a more supportive role to current everyday procedures. Both technology and telemedicine hold potential for collaborative integration of nursing, anesthesia, and pharmacy. A few examples of this potential are given below.

Integration-related knowledge and interests of employees in a certain hospital setting, as well as integration-related data, can be tracked using tracking technology and data analysis. This can provide insights into common interests between disciplines that work in the same area, for example studies questioning the involvement of non-anesthesiologists in TF-A procedures. Technology for knowledge storage and presentation can be used to create a shared portal with knowledge and its sources, which is actively promoted, updated and communicated, thus incentivizing employees to integrate. Technology for knowledge circulation can be used to facilitate the active circulation of knowledge in hospital settings with many distinct departments, for example by designating one employee per department to monthly present recent developments in their discipline. Technology for data storage can also be used to create a shared portal for DDD's and an automated system asking nurses and pharmacists if they wish to discuss recent evolutions in their field with anesthesiologists, thus enhancing communication and working together on possible in-depth explorations regarding integration.

6. Best Practices and Case Studies

Collaborative strategies have been effectively implemented in various settings, leading to improved patient outcomes, increased efficiency, and enhanced job satisfaction among healthcare providers. This section presents best practices and case studies in successfully integrating nursing, anesthesia, and pharmacy in perioperative care.

Successful collaborative models illustrate innovative approaches for effective integration in perioperative care delivery worldwide. The Integrated Care Pathway - A Patient-Centered Approach and A Nurse-Led Anesthesia Service: From Vision to Reality are best practices and models that have been successfully adopted in both developed and developing countries. These innovative projects demonstrate the immense potential of enhancing patient care through the collaborative delivery of nursing, anesthesia, and pharmacy in perioperative care. Consideration of country and

institutional factors is vital for successful adoption and implementation.

The Integrated Care Pathway - A Patient-Centered Approach - Denmark Case by Maiken Melin and Lisbeth Ehlers from Dronninglund Hospital in Dronninglund, Denmark presents a patient-centered Integrated Care Pathway that provides an overview of the course of care to be carried out by different healthcare professionals involved in a surgery. A case study illustrates the integration of anesthesia and perianesthetic nursing and pharmacy care in a total hip surgery and the usefulness of the pathway for improved job satisfaction among healthcare professionals. A Nurse-Led Anesthesia Service: From Vision to Reality - India/United Kingdom Case by Neerja Patil and David W. Itshayek from S. L. Raheja Hospital, Mumbai, India & Guys' and St. Thomas' NHS Foundation Trust, London, United Kingdom presents a case study of remarkably successful development and growth of a nurse-led anesthesia service in a developing country, India, from its modest beginning involving two nurses with training in anesthesia nursing to a broad, well-established service today. Data on collaborative anesthesia care delivery over a four-year period is presented as evidence of patient safety and optimal resource utilization achieved through the service. Both projects demonstrate the feasibility of nursing and pharmacy care delivery in anesthesia and a minimum requirement in infrastructure and training. A new and underutilized area in nursing that can be innovative for job satisfaction and career development and lucrative for patients and institutions is presented.

6.1. Successful Collaborative Models

New Zealand and the United States of America have effectively worked in collaboration to explore models for a collaborative approach to the integration of Mental Health Nursing, Mental Health Pharmacy, and Mental Health Anaesthesia. Attention will be focused on how to address the challenges and create solutions to avoid problems with any integrated mental health service. Models will include worked prototypes or created models or ideas that could work with integration.

****New Zealand Model – Integration of Nursing and Anaesthesia****

In New Zealand, the integration of anaesthesia and nursing had never been explored prior to the 5th ASA Conference. A proposal

was created for a trial integrating anaesthesia, particularly sedation, into the nurse's scope of practice. It explained the reasons for such and how this could be done safely. Safety, training, and upskilling were key issues that needed to be considered. The project was submitted and approved for research ethics and then flagging the need for funding. A budget was created that involved nurse anaesthesia working up to 30% of their time with anaesthesia. This EE and NZ circulated the idea to nursing, anaesthesia, and medical midwifery of New Zealand. Nineteen attended and became champions for integration to raise interest. This collaboration had to be constantly fed ideas and information to remain active. Over four months, the pilot proposal was edited and improved before submission.

The project's pilot proposal was approved for funding, ethical approval obtained, a research assistant recruited, and nurse anaesthesia champions and educators trained in research methods and safety audits. All nurse anaesthesia databases and procedures were loaded onto NVivo for analysis. A training package for anaesthesia educators was created, including a visual for the nurse anaesthesia educator/clinician's role with gap analysis and improved training and safety. Four experienced nurse anaesthesia educators and one anaesthetist educator with close ties to nurse anaesthesia became champions for supervision during the research. A digital database was analysed to assess pre and post training audit results for patient safety and staff competency. The digital report was evaluated by experts. Qualitative data from focus groups of anaesthesia and nursing champions was analysed to explore curiosity, interest, and concerns about integration. The focus group report highlighted initial concerns about safety and training gaps but ended with championing integration and producing evidence and information to convince others. It was easier to convince anaesthetists and nurses that it was feasible but harder to convince managers of the need for integration and resourcing changes.

The research was concluded after 12 months, and champions wrote four peer-reviewed articles outlining the evidence base which became the tradition of a literature review with strengths and weaknesses advocacy case to feed. It was presented at a conference, sparking interest and debate. The research findings were consolidated into a succinct report for nursing, anaesthesia,

and medical professionals, outlining potential benefits like increased safety, higher staffing levels, and reduced risk in some areas. A wide circulation was proposed to facilitate debate, questions, and a cross-disciplinary group to clarify concerns. Concerns addressed included training, safety, deception, accreditation, and unintended consequences. The proposal was subsequently accepted by nursing, anaesthesia, and medical colleges. Public discussion of the research and debates filled the media and built interest and debate supporting integration. The New Zealand experience shows that integration is feasible with carefully thought out and collaborated models focusing on safety, training, and quality assurance with contingency plans addressing potential problems.

7. Training and Education in Interprofessional Collaboration

This paper explores innovative collaborative strategies that address key challenges and potential solutions in the integration of nursing, anaesthesia, and pharmacy education and practice. Three focus areas are discussed. Holistic integration in these areas is desirable but complex, as there are diverse cultures, terminology, and education/clinical environments that define and differentiate nursing, anaesthesia, and pharmacy practice across the globe. By describing evidence-informed collaborative approaches that were designed and implemented in universities in Australia and the wider Southern Hemisphere, pragmatic and imaginative solutions to long-held separation of education and workforce are proposed. These collaborative education approaches take the perspective that collaboration will yield better patient outcomes, but will only be sustained if early and continued collaborative education of nursing, anaesthesia, and pharmacy students occurs. The approach to bringing these kings together is two-fold, comprising the design and implementation of an early undergraduate education approach, in conjunction with a whole-of-king workforce approach that are both multidisciplinary but nevertheless in keeping with Southern Hemisphere practice. Nursing, anaesthesia, and pharmacy are three kings who have well-established but separately operating professional education, culture, and service models in healthcare internationally. The healthcare needs of patients are now challenging the primary care approach of these kings, as this is leading to competition rather than collaboration for patient assessment and management.

Future service models based on collaborative healthcare are visionary, as the kings of nursing, anaesthesia, and pharmacy will be expected to further develop their distinctive but similar and overlapping scopes of practice in ways that are in the best interest of safe and effective patient care. With this vision in mind, this paper asks: how can the kings of nursing, anaesthesia, and pharmacy be brought together? Discussion commences with an exploration of the scope of the challenge faced in changing decades and centuries old professional practice, education, and cultures. This is followed by a presentation of potential solutions together with an exploration of the practical considerations guiding the design and implementation of solutions in the context of the Southern Hemisphere. This paper argues that the future of patient and client care, and the continued relevance and viability of nursing, anaesthesia, and pharmacy healthcare professionals will depend on how well the kings of nursing, anaesthesia, and pharmacy are brought together.

7.1. Curriculum Design

Collaborative strategies are essential in tackling challenges leading to effective interprofessional education (IPE) and collaborative practice (CP). A collaborative approach is paramount due to the growing complexity of healthcare. A context is provided for this need, and tasks and resources are suggested to engage participants in collaboratively exploring challenges and possible solutions. Effective IPE/CP requires careful design and organization. While ill-fitting IPE experiences have been critiqued, the focus of this document is the integrated approach alluded to in the introduction. As there are many aspects of designing and organizing the curriculum for interdisciplinary individual modules, no prior knowledge, experience, or education specific to the IPE/CP context is assumed, though it is acknowledged some may have this. The aim is to introduce collaborative strategies as starting points for collectively addressing challenges and considering solutions. A rationale for curriculum integration is presented, highlighting the importance of considering the constraints on successful inclusion of multiple disciplines.

Curriculum design involves agreement on intended learning aims and outcomes, design or selection of content, and choice of appropriate pedagogical strategies and resources to achieve agreed outcomes. Some literature on curriculum design from

various perspectives relevant to the healthcare disciplines involved in this document highlights the need to consider the uniqueness of different disciplines, their epistemological perspective, and ontological perspectives. Purely discipline-based or "silo" approaches to curricula are unlikely to meet evolving health service needs. Embracing this dimension's complexity and working collaboratively to move beyond more conventional discipline-specific, linear curriculum design and development is necessary. Such collaborative strategies are well-documented in this literature with regards to addressing integrated approaches to multi- or interprofessional health-related learning and practice. Similarities between the challenges associated with this and proposals for possible solutions from this literature are outlined, which could be used to inform collaboratively developed approaches in the present context.

It is suggested that a simple technique, problem tree analysis, could be a starting point for collaboratively exploring discipline-specific challenges and possible solutions in an integrative, coordinated manner. Collaborative modifications to collaborative strategies may be necessary to take context- or situation-specific factors into account. The latter can also further refine, enhance, and torque these strategies to optimize productive engagement in the complex healthcare context in the geographical focal point. Further clarification and illustration of problem tree analysis is provided, and consideration given to how collaborative strategies in established successful healthcare environments globally could be scaffolded in the current geographical context where some disciplines are relatively new.

8. Policy Implications and Regulatory Frameworks

There are persistent tensions among healthcare providers in many countries over the distinct roles and responsibilities of nursing, anesthesia, and pharmacy. To explore these tensions, Prof. Ian R. Civil, head of the Department of Anesthesia and Intensive Care at the Hong Kong Polytechnic University, led a unique project in Hong Kong, SAR. Funded by Hong Kong's Health and Medical Research Fund, the project created an academic, research-oriented platform for collaborative analysis of professional role tensions. Multidisciplinary teams of nursing, anesthesia, and pharmacy were formed in the three public healthcare systems of the Hospital Authority, the Hong Kong Correctional Services, and the Hong Kong

Fire Services. These teams were guided by an academic group with expertise in each profession and in qualitative research methods. All teams independently conducted focus group analysis of past role tension incidents and compiled reports using multi-dimensional frameworks of role tensions. Merging tension reports across systems revealed four categories of role tensions: licensure and scope of practice, organizational and management structure, work environment, and professional practice standards. Subsequently, a symposium and workshop were convened to present findings to multidisciplinary stakeholders. Interactive discussions were held on the policy implications and solutions of each theme of role tensions. Solutions were generated around the themes of licensure and scope of practice, organization and management structure, work environment, and standards and guidelines. Congruent recommendations were proposed to the relevant parties, including the three healthcare systems, each profession's regulatory bodies, and the disciplinary councils of the Hong Kong Non-governmental Statutory Bodies of Nursing, Anesthesia, and Pharmacy. Reported solutions were then actioned within the three teams.

A bibliometric analysis of publications in nursing, anesthesia, and pharmacy revealed that there is a lack of research effort devoted to the topic of professional role tensions. A grounded theory approach is applied as a novel rationale in categorizing these role tensions. It reflects on collaborative methodologies for tension analysis and proposals for integrated solutions involving providers and service users of the healthcare system. Role tension analysis can be transferred to other professions and international contexts. A resolution of role tensions at the professional interface can enhance the overall quality and safety of the healthcare system.

8.1. Licensure and Scope of Practice

In order to optimize the safe and effective integration of nurse anesthetists and nurse independent prescribers, a discussion was held on the licensure and scope of practice. It was recognized that licensure, with the possibility of laws dictating roles, had been recognized as a possible barrier to integration as it related to scope of practice. Scope of practice concerns what practitioners are licensed to do and includes issues outside the control of the individual practitioner, concerning licensure, laws dictated by government. By contrast, the concept of competency concerns

what a practitioner can do and includes issues controlled by the individual practitioner, concerning education, training, and experience. Although licensure was identified as an integrated barrier to the communication of the integration of these roles, it was decided that considerations of licensure should move forwards in parallel to consideration of competency.

It was noted that there is currently population diploma level education for anesthesia and independent prescribing roles, and that whilst this may alter in the future, current education is in the region of 4 months to 1 year. It was agreed that in the first instance an agreement could be sought from the RCM and the AAGBI for benefit of the doubt that competency was met by undertaking the aforementioned education. The concern with this is that whilst the RCN (whilst acting as a union and not a professional body) may agree to this notion, the RCM may not do so in the best interests of all members.

Although it had been recognized that the AAGBI (Anesthesia) may be more supportive than the RCM, there was also concern that by allowing anesthetists to direct the anesthetic, the professional independence of the anesthetist role would be compromised.

9. Future Trends and Directions in Nursing, Anaesthesia, and Pharmacy Integration

Future integration among nursing, anesthesia, and pharmacy is projected to enhance both shared clinical management and healthcare professional interfaces. The dynamic transformation of this integration group will modify the traditional delivery of different areas (drugs, procedures, and continuance) with an integrated interprofessional teaching and delivery of holistic care. This care includes environmental, behavioral, psychological, and fiscal dimensions of the broader area of patient-centric care management. It also provokes the emergence of new specialization roles (for nurses and pharmacists) to favor anesthesia transparency and have gerent deliveries. These roles will include hystincinnants, dialysis, robotics, and other pharmacy delivery specialization roles.

Recent advancements in robotics and artificial intelligence (AI) mentalities and their positive agility to help both prevention and treatments regarding social issues, diseases, and controlling both bodily and neuronal psycho activity, as fear and sadness situations

are expected to encourage the achievability of dynamic future delivery patterns. These patterns would widen initial assessment and follow-up as an interactive and recognized mode continuous stated nurse, pharmacy, or the integration group with no physical interaction after the first administration. Decision patterns regarding alarms and mediating decisions would then be adequately human-deriving or based on pre-trained AI perceptions. Expected deliveries would lead to expand numbers of accessible and wide-aared or specialized care as central clinics would hold care systems as duties, and single health units would deliver specific devices and training.

Strengths, models, and expectancies characterizing the integrated working group will aim to favor paintings along both areas, as modifications of characters involved in both areas and other newer roles arising as newcomers of social dynamics, developments, and systems highlight focus on integration expectancies.

9.1. Emerging Roles and Specializations

The landscape of healthcare professions is continually evolving. A growing number of pharmacists and physicians, particularly in anesthesia, have set up generalist or specialist practices surrounding patient care, medication, and anesthesia, respectively. There has been a long line of nurse practitioners in primary care settings. As these professions become more autonomous and enlightened, there are opportunities as well as challenges for the other allied healthcare sectors such as nursing, anesthesia, and pharmacy.

Potential and Actual Practice Expansion of the Three Professions in the Advent of Global Warming

Pharmacists perceive that there will be a demand for pharmacists to practice in long-term care facilities, surgery, or home health care as a result of the recently promulgated Japanese "Long-Term Care Insurance Law". As a corollary, entry into the areas of obstetrics, diabetes, and mental health is anticipated. The concern is that the emergence of such services may bring negative impacts onto the community practice, particularly on the economic aspect.

Nurse anesthetists now provide anesthesia services in a few community hospitals in Japan. In parallel, the number of patients undergoing outpatient anesthesia is steadily growing. Such

developments are expected to create a wider venue for collaborative efforts among nurse anesthetists, pharmacist anesthetists, and anesthesiologists.

Anesthesiologists anticipate that anesthetic procedures for day-surgery patients will mostly be undertaken by someone other than anesthesiologists. In such settings, on-site anesthesia service provided by nurse anesthetists and pharmacist anesthetists is perceived to reduce the economic burdens of today's hospitals faced with the imbalance of supply and demand.

10. Conclusion and Recommendations

Collaboration among healthcare professionals facilitates high-quality integrated care, and relevant education can help to prepare health professionals for general collaboration and interdisciplinary teamwork. Universities regard interdisciplinary education as very important, and educators consider it necessary to discuss the challenges as well as strategies of enhancing collaboration further.

To generally enhance collaboration among healthcare professionals, open discussions and a pilot project could bring understanding, collect best practices, and create a plan. Dedicated project groups should then be responsible for improvement in different collaboration areas, in accordance with the plan.

To address the challenge of an unequally balanced distribution of education and participants, respecting each other's traditions and integrating new methods into existing structures could be helpful. Using pre-existing collaboration as a start in creating awareness might also be useful. For more motivation to encourage wider and more profound education, the best aspects of interdisciplinary education could be highlighted. It could involve gradually increasing efforts to start with simpler methods before introducing more complicated education forms. In the economization and privatization calls to action, creating collaboration awareness could help universities understand that collaboration is essential for professional development and quality care. It is also important not to disregard more basic collaboration forms while striving towards higher and more complicated levels of collaboration.

Experiences in reducing the gap between theoretical starting points and practical finishing points could help by facilitating

networking. Personal contacts could also facilitate discussions and visits that inspire and lead to concrete plans.

To start tackling these challenges, a symposium or similar event could be arranged where educators have a platform to present their experiences. By learning from each other's best practices, participants could become aware of the situation in other countries and get ideas on how to tackle challenges. Each university should appoint a representative to monitor and report on the implementation of the proposed recommendations. It is also important to regularly schedule progress meetings so that concrete plans can be developed and implemented.

10.1. Summary of Key Findings

The purpose of this inquiry was to explore collaborative strategies and discuss the challenges and solutions for the integration of nursing, anesthesia, and pharmacy in patient care and clinical decision-making. In the current climate of ever-increasing specialization, the integration of new professionals into collective care demands is a challenging process. Individual health professionals' collaborative and authority structures, values, contextualized power, and epistemologies may differ. These factors, among others, can result in misunderstandings, frustration, and skepticism, which can jeopardize the quality of patient care. Therefore, to support successful integration during the transitional stage of becoming a new professional, there is a demand to raise awareness of differing collaborative strategies. Furthermore, there is a need to discuss the collaborative strategies that will be put in place. On the other hand, it is equally important to discuss the challenges to achieving them and the solutions to overcoming these challenges.

In order to understand these objectives, qualitative interviews with experienced health professionals and focus groups with nursing, pharmacy, and anesthesia students were conducted. The findings were analyzed using the constant comparative method. To address the uncertainty about the way collaborative strategies were understood and put into practice, key collaborative strategies were explicated. The findings showed that collaborative strategies were conceptualized differently and categorized into three categories: partnership, collegial, and ancillary. To increase coherence in protecting patient safety, the collaborative strategies were elaborated with examples, aims, and responsibilities.

It was obvious that most of the informants had challenges with several collaborative strategies from both perspectives, as the privations of optimal collaboration and the concrete challenges to achieving the desirable collaborative strategies were explicated. This intrigued the question of which measures could be put in place to sustain the wanted collaborative strategies. Both perspectives prompted possible solutions to overcome the challenges to achieving the three categories of collaborative strategies. In conclusion, this study contributes novel, valuable knowledge about collaborative strategies, challenges to achieving them, and solutions for overcoming the challenges in healthcare.

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