

# Clinical quality registries: An approach to support research capacity building in clinical academic partnerships

Clinical academic partnerships and collaborations have been implemented in a variety of formats for several decades. It is well established that the combination of onsite research and education in the clinical practice setting contributes to improved patient outcomes. The academic-health precinct model is increasingly popular, whereby the university and hospital are co-located on the same campus to promote innovation, learning and research that is embedded in clinical setting. The premise underpinning these collaborations is frequently one of research capacity building where programs are developed in partnership with nursing academics to support clinicians to create new knowledge, implement and translate research evidence to inform the provision of evidence-based care (Fry & Dombkins, 2017). Measures of success are variously reported in the form of University-centric metrics including higher research degree enrolments and completions, volume and quality of peer-reviewed publications produced, conference presentations or research funding successes or measures of research impact (Duke, 2009). In contrast, the effect on the clinical context may not be well understood and often challenging to measure and report.

Recruitment into higher degree's and engagement in research-focused professional development does not necessarily equate to practice improvement or sustained improved patient or system-level outcomes. Further, the sustainability of partnerships remains challenging in nursing. Unique to our model of care is the requirement for nurse/patient engagement 24 hours a day, seven days a week, by the majority of our workforce. Exceptions to this may include distinct settings such as integrated and community health- or clinic-based practitioners, where quarantining and protecting time may be easier to achieve. Developing nursing research skills takes financial investment and time, strategic intent and forward planning. Research is a planned activity that requires vision and strategy combined with investment in the context of risk. Research is a long-term game. Quick gains are rare, yet often irrationally expected. All too often, nurse academics leading research development within collaborations are required to develop and drive capacity building while simultaneously investigating many topics. In contrast, our colleagues in midwifery, medicine and allied health generally have defined cognate areas of specialty practice on which to focus; nurses traverse all of these. The expectation that leaders in clinical academic collaborations support 'all comers' interested in research, while maintaining their own research program, can be problematic particularly when the academic team in the clinical context is small with finite, very limited

resources. This expectation can lead to 'spreading oneself too thin', being distracted from focus, poor development of a focused research track record, needed to secure funding, and academic burn-out you cannot be 'everything to everyone'. The sustainability of these collaborations is highly variable and most importantly, existing evidence continues to indicate that research capacity in nursing lags behind that of our medical and allied health colleagues (Lee et al., 2020).

Clinical registries have also existed for several decades in a variety of formats. These typically involve a minimum dataset that is collected prospectively on a defined group of patients for the purposes of describing a clinical cohort but are also important tools to support practice improvement through audit and feedback mechanisms. Technological advancement has improved ease of access and functionality of these registries. 'Big data' facilitates real-time benchmarking and audit of clinical care quality (Forrest, 2014). An example of this is the data infrastructure provided through electronic health records, in hospital electronic medications and also registries that report patient harm, such as hospital incident databases or statewide hospital-acquired complication datasets. Registries can be dedicated to broad service foci, for example, Australian Bureau of Statistics, or cognate areas of specialty practice, for example, transfusion (Australian New Zealand Massive Transfusion Registry) orthopaedics (Australian and New Zealand Hip Fracture Registry), stroke (Australian Stroke Clinical Registry) (AuSCR), cardiothoracic surgery (Australian New Zealand Society of Cardiac and Thoracic Surgeons). Contemporaneous approaches to registry encourage end-user involvement for timely feedback on key endpoint measures to ensure variations in clinical practice are acknowledged and acted upon which has led to growing interest in clinical quality registries (CQR). CQR present a research approach to monitor quality of healthcare within a specific clinical domain by routinely collecting, analysing and reporting health-rated information to improve a health system (ACSQHC, 2014). Processes of care are reported to CQR to support continuous quality improvement that informs patient outcomes, compliance with evidence-based guideline recommendations and the development of clinical practice guidelines.

Continuous quality improvement initiatives and evaluation in the clinical context is frequently led by nurses. Despite this, nurses rarely lead the design or development of CQR, nor do they contribute to decision-making regarding variables for inclusion. Nurses frequently report a lack of access to registries, further the data potential is not commonly realised by nurses or applied to improve point of care

practices. For example, hospital rates of pressure injury, falls, medication error and unplanned readmission are commonly captured and reported as part of hospital safety standards. Yet, these data are rarely accessed by nurse unit managers, or nurses working in individual clinical units; further clinicians are often not aware of their rates of these incidents, nor engaged in improving these at an individual ward or unit level. The value of capturing and reporting these data are questionable, if no action is taken to improve the quality of care. Therefore, systems that 'close the loop' with registries are needed. Whereby the data are applied at a local level and knowledge translation or implementation science approaches taken to address evidence-practice gaps or clinical variation. As a consequence, CQR that inform the development of clinical practice guidelines specific to nursing care are elusive. Consistent with this is the finding that nurses in leadership roles within healthcare report minimal involvement in research or clinical service planning and management (Roche et al., 2013).

Nursing has the benefit of connection with industry, but our graduates and contemporary workforce are relatively unprepared to lead clinical research, with many expressing challenges and knowledge limitations in the interpretation and application of research into practice. Predominantly, higher degree by research training continues to take place in academic settings with graduates progressing into academic roles rather than developing broader capabilities within industry. With industry at our fingertips in clinical-academic collaborations, opportunities for innovative approaches to enacting nursing research abound. CQR provide an avenue from which programmatic approaches to robust nursing research can flourish. Rather than continuing to attempt to be all things to many, leaders within clinical academic collaborations can use CQR to refine strategic organisational priorities and deliver tangible impact in the clinical context. Quality improvement is the cornerstone of the CQR and a nursing strength. What nurses have not done well to date is cultivate that strength with focused research capacity building. We are yet to see well-designed clinical-academic doctoral or postdoctoral pathways in nursing with clear options for PhD studies and postdoctoral career options. Clinicians are often faced with the career discussion of post-graduate honours studies versus a new graduate program, and for others, the first time that 'research' features in a position description is of that of a Clinical Nurse Consultant (CNC) that may have limited skills, capabilities or capacity to deliver this job function, 8 years after graduation with limited exposure to research. The research pathway is broken in practice, much to the detriment of our professional standing. To justify the development of clinical academic career pathways, nurse's need to demonstrate the value of this proposition. CQR provide a mechanism to generate programs of research that draw on clinical acumen while concurrently generating research capability.

Registries frequently align with service specialties but could potentially inform core components of nursing practice, for example wound care. Wound healing is a fundamental remit of the bedside nurse. Wounds can be surgical, traumatic, chronic or iatrogenic and are a high-priority clinical domain. A CQR focused on wounds would

provide a foundation for a consistent approach to generic wound assessment, diagnosis/staging, treatment and monitoring. This type of registry would represent the backbone or trunk of a programmatic approach to research to address the appropriateness and effectiveness of wound care that is influenced by a complex array of factors. Shrimpton and Ashby (2019) describe a business tree model to unpack multifaceted interdependent systems. Roots represent the culture, values and principles underpinning the intent of a registry; the soil, those that contribute to its development. The CQR itself is a trunk providing stability and structure for growth and the branches of that tree represent programs of research that aid growth. Twigs are projects within programs that can bear leaves or fruit or die off. Leaves represent effort put into research and fruit is the desired product; endpoints that substantiate effect on patient outcome. The tree as a conceptual model can be applied to any high-priority clinical domain that would benefit from a CQR including frailty, falls, pain and hospital-acquired infection.

Nurse-led CQR, supported by governance from within clinical academic collaborations, provide an alternative research development pathway that circumvents traditional academic stepping-stones. Instead of removing clinical nurses with an interest in research away from the practice setting, these nurses can progress and lead their own branch of research. Nurses in advanced practice roles can mentor those at the bedside in much the same way that an honours candidate in science might be mentored by doctoral candidates in a basic science laboratory. Evidence indicates that advanced practice roles such as that of the CNC have a workload that is dominated by case management and clinical care (Roche et al., 2013). This impacts on available time for leadership, education and research. Establishing a program of clinical research requires a support team with varied strengths and experience. Successful clinical academic collaborations emerge from the interplay between roots, soil and a solid trunk; an organisation that embraces research, academics and clinicians that have synergistic goals and collective priority foci. Programs of research that branch off a CQR can be grown by the CNC but rather than bear the weight of a branch alone nurses in these roles can embed their research within a clinical academic collaboration, they can mentor teams within units and they can supervise novice researchers with support from those with adequate experience. Being immersed in a research environment that aligns with end user or industry needs will foster a culture of appreciating the value of nurse-led research within nursing. The proposition that nurses can carve out a clinical academic career in a very specific high-priority domain can be realised and when achieved the tangible benefits for patients and healthcare providers will be remarkable. The Western Sydney Chronic Wound Registry is a developing case study of this approach. Developed by Wynne & colleagues the registry aims to describe the clinical profile of patients with chronic wounds in Western Sydney and measure short-, medium-, and long-term outcomes. The registry will be registered with the Australian Register of Clinical Registries (<https://www.safetyandquality.gov.au/australian-register-clinical-registries>) and act as a 'trunk' project, allowing for future 'branch' and 'twig' projects for developing clinical

researchers in Western Sydney. This approach is a strategic priority for both health and university partners. Once the registry is operational, this will provide great opportunities for multi-disciplinary clinical research capacity building with focus on a priority research area that is common and costly and has significant burden for patients, their caregivers and the wider health system.

There are some practical considerations when considering a registry approach to capacity building. It is important to select a topic area that is a strategic priority of both health and academic partners with longevity, and to then explore the use of routinely collected health data. From there options of future branch and twig studies such as discrete projects such as economic studies, data linkage studies or small nested clinical trials can be considered.

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