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The Clinical Nurse Consultant role in incident surveillance and patient safety: A case report

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ABSTRACT

The Clinical Nurse Consultant (CNC) role emerged in New South Wales, Australia in 1986 as an advanced practice position. There is a growing body of literature seeking to articulate the multifaceted roles and responsibilities of the CNC within the Australian context. In this paper, we present a clinical case report that demonstrates how high risk medication administration errors via newly implemented syringe driver pumps, were identified and managed by a CNC. The CNC role was central in the identification of this series of medication errors that occurred across a number of hospitals, although these incidents could have been dismissed as human error. This report outlines the investigation, incident management process and subsequent release of a NSW state-wide Safety Alert. It also provides a discussion on the three key components for the successful management of a clinical incident investigation: leadership, teamwork and a 'no blame' culture. The specific role of the CNC in this case report provides evidence that the role of the CNC is pivotal to patient safety.

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1. Introduction

Advanced practice nurses are registered nurses who have a higher level of comprehensive skills, experience and knowledge in nursing care and practice (Barton, Bevan, & Mooney, 2012). Arising from specialty areas of nursing practice, these advanced roles have evolved over time to broaden the scope of nursing practice. In New South Wales (NSW) Australia, one such position is the Clinical Nurse Consultant (CNC) which emerged in 1986 as an advanced practice nurse (Chiarella, Harford, & Lau, 2007). The roles of the CNC focus on the five domains of practice defined in the industrial award as Clinical Service and Consultancy, Clinical Leadership, Research, Education, and Clinical Services Planning and Management (NSW Ministry of Health, 2011). These domains are categorised in three

grades in ascending order of complexity and work value. In the workplace the 'lived' role can be diverse with activities undertaken by CNCs found to be institutionally, individually and contextually constructed (Wilkes, Luck, & O'Baugh, 2015).

In recent years, a number of researchers have sought to articulate the key attributes and the multifaceted roles of CNCs within the Australian context (Atsalos et al., 2014; Baldwin et al., 2013; Fry et al., 2013; Fry et al., 2013; Giles, Parker, & Mitchell, 2014; Jannings, Underwood, Almer, & Luxford, 2010). These studies highlight the diversity of the CNC role and the value they add to improve service delivery and clinical care whilst acknowledging that the roles may not be consistently understood and could be underutilised as leaders (Bloomer and Cross, 2011).

One of the difficulties with identifying the value of CNCs is the various contexts of their practice and the diversity of employer requirements. A recent phenomenology study examined the lived experience of the CNC role and identified that the role was characterised by its 'head up' nature, a metaphor for the ability of the CNC to look up from the immediate demands of direct patient care to

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broader health service and specialty care needs (Cashin et al., 2015). Without a direct patient load, Cashin et al. (2015) proposed that CNCs have the flexibility to cross boundaries by moving through the health system acting as a conduit for communication across disciplines. They also suggest that the CNC role "... enables clinically focused system work with a focus on remediation and rescue", for example, through their leadership in risk management and patient safety quality activities (Cashin et al., 2015).

An exemplar of the 'head up' nature of the CNC role is seen in the advanced surveillance of clinical practice and investigation of patient safety incidents undertaken by CNCs. Nursing surveillance is defined as "... purposeful and ongoing acquisition, interpretation, and synthesis of patient data for clinical decision making" (Henneman, Gawlinski, & Giuliano, 2012, p. e9). All registered nurses have a responsibility for surveillance of clinical practice and the notification of any clinical incidents. For CNCs, surveillance is an advanced role which involves scrutinising patterns of incidents ranging from the bedside of individual patients to a wider, in-depth analysis across wards or hospitals (Bloomer and Cross, 2011). In this context, an incident refers to "... any unplanned event resulting in, or with the potential for, injury, damage or other loss, this includes near misses" (NSW Ministry of Health, 2014).

In this paper, we present how a series of clinical incidents that involved high-risk medication administrations via syringe driver pumps were identified and managed by a CNC. We report the specific role of the CNC in incident investigation and provide evidence that the role of the CNC is central to patient safety.

2. Background

In NSW, approximately 18% of incidents reported in the state-wide Incident Information Management System (IIMS) are medication-related, many of which involve infusion pumps (Clinical Excellence Commission (CEC) and NSW Health, 2011). Medical devices such as infusion pumps are recognised as a risk to patient safety due to the potential for human or system errors (Brady, 2010; Carthey, 2013; National Health Service National Patient Safety Agency, 2010; U.S. Department of Health and Human Services, 2014).

In 2011, NSW Health adopted one standard infusion pump for use across all NSW public hospitals to reduce clinical risk (CEC and NSW Health, 2011). Between 2011 and 2012, one health district installed around 500 new infusion pumps for use in adult settings of which approximately 25% were syringe driver pumps. The changeover proceeded without any major problems.

Approximately 18 months after the changeover and during routine surveillance of the IIMS, the Cardiology CNC noticed an unusual error involving rapid infusion of medication via a syringe driver pump. In the following weeks, two further incidents were identified. Table 1 provides a summary of the three incidents.

2.1. Incident management by the CNC

The CNC initiated the NSW Health Incident Management Process. In NSW Health the Incident Management framework provides nurse clinicians with clear guidelines when an incident occurs. The nine-step systematic process involves "... identifying, notifying, prioritising, investigating and managing the outcomes of an incident" (NSW Ministry of Health, 2014, p. 3).

2.1.1. Step 1: Identification

The Incident Management Process begins with identification of an incident. After the CNC had noted incident 1 during routine surveillance of the IIMS, she initiated the incident management process in collaboration with the Nursing Unit Manager (NUM). The initial investigation into incident 1 raised awareness of an

error involving a syringe driver pump, which resulted in medication being delivered more rapidly than intended. When a second incident occurred involving a syringe driver pump, the CNC suspected a potential pattern of error. This was confirmed when a third incident was identified during the process of investigation of incident 1 and 2.

2.1.2. Step 2: Immediate action

The patients involved in the three separate incidents received immediate attention to prevent deterioration as outlined in Table 2. Nursing staff documented the clinical incident in the health record and in the IIMS. The immediate follow-up action for incidents involved the CNC and Nurse Unit Manager (NUM) interviewing staff about the incident, reviewing the medical records and communicating with the patient and their significant others. During interview, the RNs recalled entering the patient's weight into the syringe driver pump. One RN recalled entering the patient's weight with the thought that "*more information is better*". The second RN recalled that the machine input included drug name, patient's weight, rate of infusion and the time infusion commenced.

The CNC assessed significant patient risk by aggregated analysis of the three incidents and notified her manager. The Clinical Governance Unit was notified of the patient safety issue and the need for wider investigation. A multidisciplinary team who had expertise to deal with all facets of risk management was formed. The team included the CNC, Clinical Governance staff, senior nurse clinicians, pharmacists and a biomedical engineer who consulted with the device vendor. The second syringe driver pump was isolated for examination by the biomedical engineer.

2.1.3. Step 3: Notification and communication

If a pattern of clinical incidents becomes apparent, clinicians have a responsibility to share patient safety information with colleagues and peers. The CNC and Clinical Governance Unit adapted the NSW Health's Safety Alert Broadcast System (SABS) (NSW Ministry of Health, 2013) and developed a local safety notice to alert clinicians within the health district of the potential safety risk. The syringe driver pumps remained in use during this time with education sessions provided by Clinical Nurse Educators. Increased vigilance and mandatory two person checks aimed to ensure no further incidents occurred during the investigation period.

The Therapeutic Goods Administration of Australia was also notified as this is mandatory when suspected or actual risk/incidents involve medical devices.

2.1.4. Step 4: Prioritisation- applying a severity assessment code (SAC) score

Clinical incidents are categorised by a numerical score ranging from 1 (highest risk) to 4 (low risk), based on consequence and potential to reoccur. This score directs the level of investigation required. In this case, the separate incidents were each rated as medium risk (SAC 3) as they resulted in no harm to the patient (Australian Commission on Safety and Quality in Health Care, 2013). However, the identified pattern of three similar incidents made the investigation a higher priority for the health district.

2.1.5. Step 5: Investigation

The CNC and investigation team rapidly established the key factors surrounding the incidents:

- All incidents involved intravenous medications infused via syringe driver pumps.
- All incidents involved the reloading of infusions already running.
- Staff recalled a prompt to enter the patient's weight into the syringe driver pumps. As this is not usually required, only one staff member could recall entering the patient's weight and rate

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