NURS2006 ASSIGNMENT 5 Clinical Practice Improvement Project Report
Student Name, FAN and ID:
Project Title:
Prevention of medication error in acute care setting, nurse's perspective.
Project Aim:
Developing preventative measures for medication error by nurses in acute care setting by using clinical practice improvement (CPI) tools. Reduction of medication error and prevention of all possible factors contributing to medication error.
Relevance of Clinical Governance to your project
Medicines are the essential part of healthcare practice. Medication (a medical product) is a product that contains a compound with proven biological effects, plus excipients or excipients only; it may also contain contaminants; the active compound is usually a drug or pro-drug, but may be a cellular element (Aronson & Ferner, 2005). The United States National Coordinating Council for Medication Error Reporting and Prevention defines a medication error as "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing, order communication, product labelling, packaging, and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use" (NCC MERP, 2015). Nurses are the key professionals responsible for safe medicine delivery to the patient or the last link of medicine administration (Durham, 2015; Huynh et al., 2016). Research and review data show nearly 2-3% of medication errors are happening in hospital setting in Australia (Roughead et al., 2016). The factors are different in medication error and it varies from wrong labelling to patient negligence (WHO, 2016). In healthcare practice patient safety is primary target and it can achieve through clinical excellence and safe and secure clinical practice (FDA, 2018). The incidents of medication errors can be identified and rectified. Improvement and safe guideline by using clinical practice improvement (CPI) tools enables

nurse to minimise or avoid medication errors in acute care setting (NCC MERP, 2017).

The term medication error can be elaborated as a failure involved in the treatment process, that could either result into or has the possibility to result into a harmful healthcare related outcome for the patient (Aronson, 2009).

Medication errors not only causes troubles in practice but it may affect fatally to the patient. It can lead to the prolonged hospitalisation, moderate to severe adverse drug reactions and even affect the life of patient (AHRQ, 2017).

The events of medication error can possibly start from, the prescription, dispensing, administration or it can even be post-discharge from hospital (AHRQ, 2017).

As per Australian commission on safety and quality in healthcare, Health service institutions are following protocols and guidelines for the safe medication practices prescribing, dispensing, supplying, administering, storing, manufacturing, compounding and monitoring of the effects of medicines. Medication incidents are the second highest reported category of incident, after falls, within healthcare incident monitoring systems (De Winter et al., 2010).

Clinical governance is important for quality in clinical practice. There are various factors that can prevent such incidents in Medication safety are:

- Increase in patient clinician communication.
- Adaptation of evidence-based research reports in practical care,
- Developing system of verification and reporting.
- Staff support and staff counselling service, including legal aspects related to medication error.
- Accessibility of electronic data and adaptation of electronic verification of treatment plan and drug delivery (Sahebalzamani & Mohammady, 2014; ACSQHC, 2017).

A medical team consists of various healthcare professionals, that includes physicians, clinical nurses' specialist, laboratory technicians, pharmacists, physiotherapist, audiologist, etc. The healthcare policy must include the entire professionals who contribute for the patient care. Drug usage policy and safe medication guidelines must be communicated to all professionals in care (CARNA, 2018). The patient data should be assessable to all health professionals and it enables the chance of errors in health delivery and the same must be

prioritise while considering patient information confidentiality (CRNNS, 2014).

Evidence that the issue / problem is worth solving:

Medication safety in different clinical care settings, especially in acute care in Australia is a major issue. The extent of medication-related problems in acute care needs to be addressed within the context of increasingly complex health care (ACSQHC, 2018). There are an estimated 230,000 medication-related hospital admissions occurring per year. This suggests an annual cost of medication related admissions of AU$1.2 billion (Roughead et al., 2016). Medications are an integral part of healthcare system, and therefore they are itself one of the most common sources of error and adverse events in health care (Benner, 2012).

Australia for drug safety standards are prescribed by National Safety and Quality Health Service (NSQHS) and NSQHS provides detailed guidance for the safe use of medicines (ACHQHC, 2013).

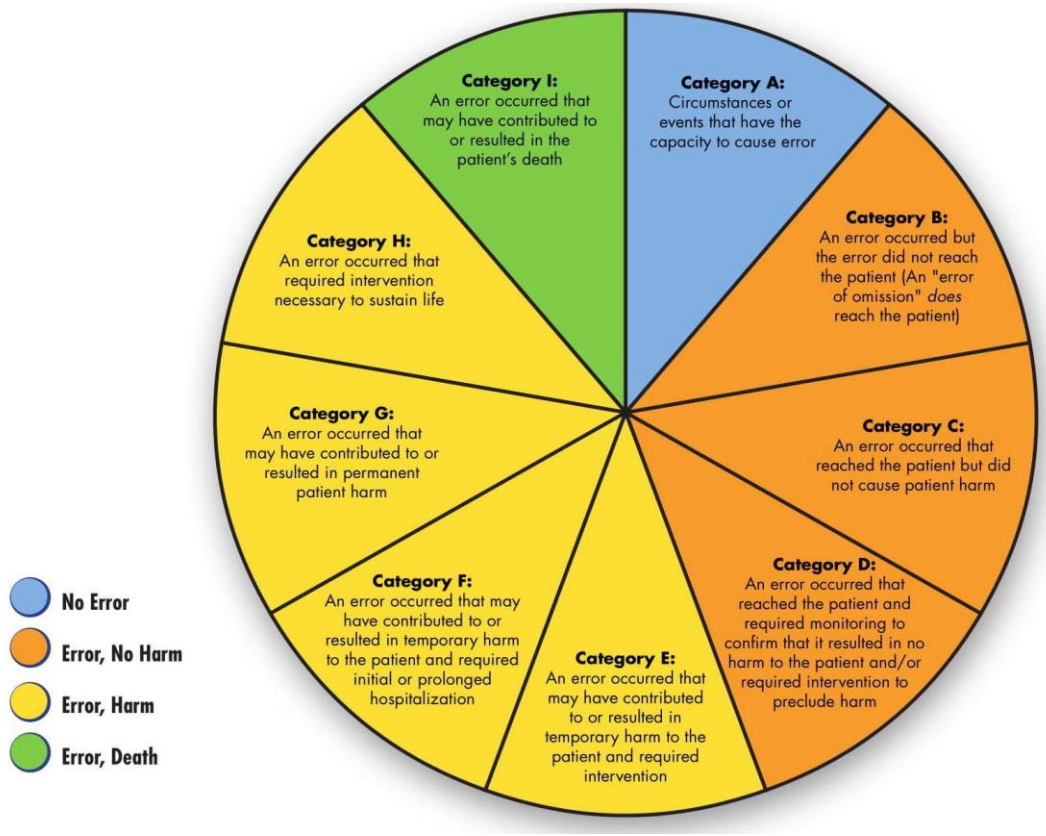

Figure 1: National Coordinating Council for Medication Error Reporting and Prevention, US

(NCC MERP).

Local and national data indicate that medication errors and Adverse Drug Events (ADEs) constitute approximately 25 per cent of all adverse events (Government of Western Australia, 2012). The adverse drug reactions are different from any disease or illness and it can minimise or avoid by various recommended and standardised clinical protocols (Chung et al., 2016).

The average hospitalisation and unwanted clinical procedures may arise from medication error and cause financial as well as physical burden to the patient (Bari et al., 2016). Clinical research data shows medication error occurs once in every 133 anaesthetics administered in Australia (Bari et al., 2016).

Nurses, clinicians and pharmacists are key personals in safe medicine practice. The research reports show reduction in incidents after implementation of drug safety protocols. Still around 10% cases are reporting by clinicians.

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Key Stakeholders:

Since the channel of medication error can start at either of the following levels, which includes, prescription, dispensing and administration, therefore each healthcare professional is responsible for a safe and timely delivery of medications to the patient.

The key stakeholders in CPI tool formation are:

1. Pharmacist – These are considered as primary professionals, that deals with drug. From the procedure of labelling to their dispensing, the pharmacist plays a vital role and therefore the pharmacist must consider the existing practice of drug delivery system in accordance with the health care centre (AHRQ, n.d.; The pharmaceutical Journal, 2018). The specific plan of action can minimise the errors from pharmacists. It has been reported that dispensing creates 1.6 to 2 percent of medication errors (Council of Europe., n.d.).
2. Physicians/ clinicians - The journey of medication begins from here. Prescription related medication error contributes 0.3-9.1% of total medication error (Council of Europe., n.d.). The CPI tool with relevant practice review can assess and suggest the

change in procedure and protocols for prevention of medication error.

3. Nurse - They are usually perceived as guardian angels of care and the patient advocate in care (Davoodvand et al., 2016). Unfortunately, 49.3% of total medication errors are happening while administering medication (Medved, 2016). Various factors contribute towards the same. This varies from the identification of right medication, preparation, route of administration, un-identification of Over the counter (OTC) medication, failure in assessing past drug reactions or allergy etc. (Athanasakis 2012; Cheragi et al., 2013). The significance of medication regarded as malpractice in Sweden and the same character as medication errors worldwide. The legality issues varied from countries to countries (Björkstén et al., 2016).
4. Nursing practitioner - The responsibility and the chance of medication error as par with clinicians (Delacroix, 2017).
5. Patients – The process of medication begins in order to serve the needs of the patient and the ultimate beneficiary of safe medication is the patient itself (AHRQ, 2018). We must ensure that the patients understand it clearly that why he/she receives medication how it should be taken with common associated reactions with it (Da Silva & Krishnamurthy, 2016; Baker & Gilchrist, 2018).
6. Health care administration – They are often been found responsible for ignoring those factors that involves health policy related medication error (Hutchinson et al., 2015). A non-punitive positive work system enables proper and timely recording of medication error and can keep the record for such incidents, which thereby appropriates that they are not being repeated (WHO, 2016).
7. Allied health professionals – Since health care system is multidisciplinary, therefore each professional associated with patient must be well informed (Epstein, 2014). This in turn helps in preventing medication errors and the risks associated with medication errors (Babiker et al., 2014).

CPI Tool:

Clinical Practice Improvement (CPI) programme or the practice give a clear roadmap to health care professionals to review, assess and understand the causes of the failure and helps to find and prepare solutions to improve periodically, it results quality and safe

patient care (Oates et al., 2017; NSW Government, n.d.).

PDSA (Plan-Do-Study-Act)

PDSA is a cyclic process which analyse, intervene, assess and re process an issue for improvement in health care quality. It is an effective tool for CPI (NSW Government, n.d.). PDSA is an iterative four-step management method used in business for the control and continuous improvement of processes and products (Reed & Card, 2016; NHS Improvement, n.d.).

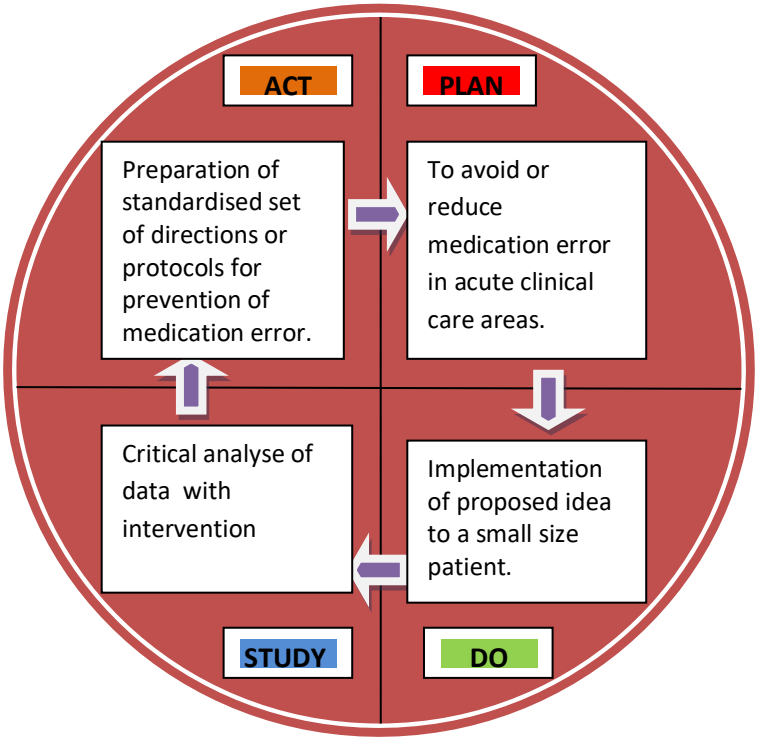
Plan—To avoid or minimize medication error in acute clinical care areas.

Do—implementation of proposed idea to a small size patient.

Study—critical analyse of data with intervention,

Act—preparation of standardised set of directions or protocols for prevention of medication error.

Diagrammatic representation of PDSA cycle



Plan— Critical and primary stage of any act. The aim is to avoid or minimize medication error in acute clinical care areas. Planning phase include (Taylor et al., 2014):

- Development of precise patient identification system to avoid confusing similar patient demography.
- Correct drug identification using specified labelling, coding, tags, storage area etc.
- Proper channel of communication of drug related information from the prescription to patient consumption.

- Central monitoring of drug stock, supply and usage to reconfirm the chance of drug misuse or wrong supply.
- Analysis the existing policies on medication error reporting and management.
- Classification of drugs or medication based on risk factors.
- Planning comprehensive guidelines for drug safety.
- Medication error reporting protocols.
- Periodical drug audits
- Labelling "look alike and sound alike" medications in tall man letters.
- Preparation of specific "medication error reporting checklists and incident reports".
- Availability of dosing calculators and drug interaction databases (Taylor et al., 2014).

Drug safety committee

Each health care institution must have an internal auditing and monitoring facility to assess, and implement health safety norms related to drug safety (FDA, 2018).

DO

Implementation of proposed idea to patients suffering from mild illness.

Medication error prevention guidelines and instructions can be implemented in a small unit or department of hospital. The data can be collected simultaneously and instruct the staffs to fill incidents in prescribed data sheets (Nakayama et al., 2010).

Study—

The data collected has to compare with previous data or incident report. Critical analyse will help to develop a standardised medication error prevention guideline formation along with past reports. The report can be classified according to the type or reason for error (Gillam & Siriwardena, 2013).

1. Dosage on medication.

2. Medication administration time.
3. Unauthorised administration of drug.
4. Wrong technique of administration like insulin to Intramuscular route.
5. Extra dose or overdose caused by multiple care attendees.
6. Prescription errors including errors in recording oral/verbal orders.
7. Wrong patient or incorrect patient identification.
8. Wrong route of administration.

Act

Preparation of standardised set of directions or protocols for prevention of medication error. Acute care areas require constant vigil and should follow the standard operating protocols even while dealing multiple patients simultaneously (Reed & Card, 2016; Spooner et al., 2018).

Medication errors can be minimised through the change in plan and the process of errors will reduce only when adopting changes (Hache et al., 2017).

Summary of proposed interventions:

Human error has been reported to be inadvertent as well unintentional (Takabi et al., 2018)

Australian healthcare regulation and clinical excellence commission proposes quality improvement protocols and it can be a valid tool in order to avoid medication errors and take preventive measures for same (Clinical Excellence Commission, 2014).

The common measures already prescribed in acute health care settings are, Computerised physician ordering entry, clinical decision support systems, Electronic prescription, automated dispensing and Computer-generated medication administration records. The proper implementations of existing facilities are also important in prevention of medication error in acute care areas. Pre-filled syringes and medications must be labelled properly and can be place in safe and secure place with colour coding or bar coding. Medication error prevention steps broadly defined in various headings.

1. **Education and training -** Nurses, pharmacist clinicians and patients are key stakeholders of healthcare delivery system. Each personal who is dealing medicines are expected to be trained with their respective areas. Patients are primary personal

and it is the key responsibility of health care providers to educate the patient on

- What is medicine and why it is important.

  Patients are often confused about the different medications which are used to treatment different illness. The proper information on different medications and its dose will enables to identify each medicine.

- Dosage, time, route of administration.

  The doses of each medication are varying from patient to patient based on various factors like weight, severalty of illness.

- Storage of medicine.

  Medicines are chemicals and it requires special storage instructions and the information carries to keep the potency of medicines like insulin.

- Complication of over dosage.
- Emergency contact details on any unpredicted event.
- Educating family or supportive members on medication (AHRQ, n.d.; Tshiamo et al., 2015).

2. **Communication.**

   - Communication can prevent "medication error to a great extent by providing clear instruction on medication and accessibility of healthcare facility.
   - Patient communication: If any incident related medication must be informed to the patient promptly and corrective measures and progress must be recorded (AHRQ, n.d.).

3. **Environment**

   - Medication safety includes safe storage and segregation. The proper labelling by following both the brand and generic names on prescriptions ().
   - Information on medicine information on prescriptions including the drug action.
   - Pre-set alerts on looks alike and sound alike drugs in computer or electronic health information

- Extra precaution while storage of similar drugs.
- Availability Australian Medicines Handbook (AMH) and Australian Injectable Drugs Handbook or local injectable medicines administration guidelines (AHRQ, n.d.).

4. **Documentation**

- Documentation of each incident results preparation of preventive measures.
- Documentation require knowledge on incident and understanding the magnitude incident, documentation includes (Smeulers et al., 2015)
    1. Type of medication error
    2. How it identified
    3. What intervention has taken for medication error?
    4. Patient information on such incident (AHRQ, n.d.).

5. **Policies and procedures.**

Hospital policies are important for prevention and incident reporting of medication error (Elden et al., 2016). A no punitive environment and policies promote staff moral and this prevents the incident and occurrence of medication errors in hospital (AHRQ, n.d.).

6. **Monitoring of all healthcare related activities.**

Safe hospital includes safety of patients, healthcare workers. Patent safety primarily influenced by the practice of healthcare professionals, drug safety and errors in medication require multidisciplinary approach which includes adoption of latest technologies like bar coding system, biometric patient identification tags, digital medicine prescription (Electronic medication system) etc. Nurses play a vital role in prompt drug deliver. Nurses managers and lead nurses are revealed to be key for medication error prevention (NHS, 2017). Recent studies show that the percentage of medication error reporting among nurses are around 57.4% (NHS, 2017).

Acute care setting requires more safety precautions include storage and supply of

High-alert medications.

Interventions can be specified as:

1. Implementation of clinical governance in practice: A strong clinical management or governance can be an authority to implement and monitor in healthcare practices.
2. Implementation of Clinical Practice Improvement programme.
3. Monitoring and auditing the process and progress of plan.
4. Improve and ensure medication error reporting.

Barriers to implementation and sustaining change:

Some of the primary barriers of medication errors that are being identified in acute care setting mainly includes non-awareness of nurses on medication error or they being not aware about the various systems that are in place that are required in place in order to regulate medication errors (Bayazidi et al., 2012).

The probability of medication error usually starts from the prescription of medication.

A literature review on Medication Safety in Australia by Australian Commission on Safety and Quality in Health Care (2013) criticising issues related to drug safety practices in Australia and focusing the issues in details (Weant, et al., 2014).

1. Prescription errors – includes illegible and confusing hand writing.
2. Communication error among medical professionals.
3. Lack of understanding of medications while admission to the hospital especially in acute care areas.
4. Improper drug safety and medication error reporting mechanism in healthcare setting.
5. Lack of self-reporting by nurses and other medical professionals.
6. Lack of patient awareness on medication.
7. Lack of storage and transportation instructions like insulin and vaccines.
8. Non-implementation of electronic medical records.
9. Lack of medication error preventive measures after discharge.

10. Improper monitoring of non-compliance of drug regime of patients in home care setting.
11. Language barrier to follow the instructions by patients.
12. Work load of nurses and clinicians in acute care setting.
13. Failure in computer generated medicine orders or lack of proficiency to the system.
14. Issues related to the physical environment like lack of proper lighting, ventilation etc.
15. Physical health condition of patient or care providers during medication selection or administration.
16. Psychological status of the patient for adhering medication procedure.

The care areas are not limited to inpatient care and the scope of medication error prevention should be extended to palliative care areas, home care of chronically ill patients etc.

Following multiple system of healthcare practices like traditional medical practice with allopathic system may cause drug interactions. The responsibility of clinician or Nursing specialist while collecting primary data should stress on the past medical as well as any present treatment with alternative system of medicine (Haw et al., 2014; Poorolajal et al., 2015).

Evaluation of the project:

The project implementation data can be accessed through various in-house hospital record and reports including incident report registry. A successful implementation of any policy or protocol requires cooperation from Nurses. Proper support from the employer is necessary so that the incident can be reported in an appropriate manner (OECD, 2018).

The clinical data can be accessed from past patient records and retrospective studies.

A standardised incident report gives an idea of medication error and gives glimpses of prevention (Elden et al., 2016). The incident report provides an idea on the type of medication error, the cause of error, how it has identified, what was the patient outcome and recommendation for the prevention of such incident (Cloete, 2015).

The successful implementation of each programme can be measured by comparing the past

records and reports. The clinical data and incident reports of last six months can be compared with existing data after the implementation of CPI (NHS Foundation Trust, 2015).

A healthy and safe medical practice enables short and effective recovery of patient. As a health care provider, a nurse plays a vital role in patient advocacy and care. Medication error incidents can be avoided in a greater extent by corrective protocols and incident learning (Shahrokhi et al., 2013).

The evaluation of medication error can be assed based on 7 rights of safe medication procedure and the evaluation of safe practices can be assed based on this,

- The right patient
- The right medication (drug)
- The right dose
- The right route
- The right time
- The right reason
- The right documentation

Every safety audits and clinical checks must ensure these fundamental rights of medication must be satisfied (Smeulers et al., 2015).