**Nursing managements for st-elevation myocardial infarction (stemi) in patients with acute coronary syndrome (acs)**

**Summary**

The prevalence of ACS in Australia was significantly lower in the past 10-15 years but is has increased and bound to further increase by 2020.

There is need to adopt STEMI management guidelines in the clinical practice to enhance timely intervention and management of the condition.

New nurses lack the adequate skills in STEMI management; hence, the need to do a learning session with them

This learning plan adopts Bloom’s taxonomy to incorporate critical thinking in the new nurses learning process.

A proper learning programme is documented to help learners achieve the objectives of the study design about STEMI within a definite timeline.

The success of the plan is based on sustainability initiatives, which is proposed; the prospect of routine offering of this learning programme to new nurses. The essence of the learning plan is to reduce ACS deaths that are bound to increase.

**Introduction**

Acute myocardial infarction (AMI) is responsible for 12.6% of deaths every year across the globe (Beltrame et al. 2012). The diagnosis of AMI has changed in the last 10-15 years with the focus now being on early diagnosis for prompt therapy intervention. Clinical classification of AMI is based on the presentation on electrocardiograph (ECG) inform of either non-ST elevation myocardial infarction (NSTEMI) or ST-elevation myocardial infarction (STEMI). In Australia, acute coronary syndrome (ACS) is a major cause of morbidity and mortality with estimated 75,000 hospitalisations every year. Death due to ACS is 10,000 each year with a further projection to reach 13,675 by 2020 (Nadel et al. 2014); hence, the need to create awareness in its management.

**Background Information**

Establishing the difference between the two forms is the foundation of clinical management. To manage STEMI, medical practitioners adopt coronary reperfusion strategies as soon as a patient arrives in hospital. The strategies can be in form of thrombolysis or percutaneous coronary interventions where immediate action significantly reduces chances of death (Nadel et al. 2014).

As documented in the introduction, ACS has significant contribution to the Australian mortality and morbidity. Besides, the urban and rural populations have different outcomes that favour the urban inhabitants. As such, it is important to know the differences in the management of these populations to improve patient safety through identification of causal factors and solving the parity issues.

In the management of ACS, technology plays pivotal role as the use of remote devices could help in the reduction of call-to-needle time, which reduces death risks. Moreover, it it important in in-hospital risks assessment to identify patients who can experience recurrence and encourage evidence-driven pharmacotherapies (Nadel et al. 2014). People with STEMI have complexities that new nurses entering the workplace environment should have knowledge on. Therefore, an education programme that educates health care providers on the management of STEMI is critical in overcoming the identified challenges and reduce death risks.

**Programme’s Target Audience**

As explained above, the need to train health care givers on the management of ACS and STEMI is vital. Those entering the field of practice is the target audience for this programme as they lack adequate experience more so in STEMI management unit.

This programme will involve rigorous 2 weeks orientation activities in the form of presentations to let the audience dig deeper into their clinical knowledge on ACS and STEMI. Moreover, the programme will incorporate patient safety measures as they enter the ACS acute unit.

The participants will have the opportunity to visit hospitals and wards followed with completion of an STEMI package preceded by a full hour of learning.

The motive of introducing an hour of learning is to build their theoretical knowledge before they can go to practice in the ACS unit.

**The Clinical Learning Environment**

Presentation programmes will be in form of simulations will be properly coordinated to capture all knowledge acquisition dynamics. The most appropriate learning environment will therefore be a case conference room.

The presentation will be cognizant of the need to vary learning skills using visual, audio, and verbal presentations to learners.

Simulations will be prepared using Microsoft PowerPoint slides with colourful audio and visual aids to diversify the learning styles of the participants.

Other techniques such as use of concept mapping, checklists, and group discussions will be incorporated to break boredom and improve critical thinking on ACS and STEMI management.

**A concise summary**

“ST-elevation myocardial infarction: New Zealand Management Guidelines,” is a document published for application in the management of STEMI after updates from the 2005 practices (ST-Elevation 2013). It is prepared from the general practices of emergency department physicians, invasive and non-invasive cardiologists, and general cardiologists working in New Zealand hospitals for local and modifications for application in other locations. The document contains developed STEMI algorithms for its management and complies with the United States guidelines and European Society of Cardiology recommendations (ST-Elevation 2013).

STEMI is a fatal type of heart attack that affects one of the main heart arteries supplying the nutrients rich blood and oxygen to the heart. The artery is blocked and detection is made through by ST segment elevation on 12-lead ECG (ECG 2018; ST-Elevation 2013).

A persistent STEMI can be because of either an ST-elevation ≥1mm in both contiguous limb leads, presence of a left bundle branching with a block pattern, or ST elevation≥2mm in both contiguous chest leads. The management of STEMI should support percutaneous coronary intervention (PCI) in the thrombolysis within the first 12 hours when a patients shows symptom onset (Nadel et al. 2014).

A 20 or more-minute persistence of ST segment elevation on ECG in ACS case indicates occlusion in the epicardial artery. In this subset of patients, those with a presentation of new left bundle branching in the block pattern should be included (ST-Elevation 2013).

A patient with ischemic symptoms presentation that lasts for 20 or more minutes or syncope should be considered for management if there is a new onset of ST-elevation. New onset can is also probable if left bundle branch block (LBBB) presentation takes place in on ECG (ST-Elevation 2013).

Urgent reperfusion is necessary if symptoms presentation happens in not more than 12 hours. This is done using catheter-based reperfusion or fibrinolysis backed by good nursing care for patients with STEMI (ST-Elevation 2013).

**The Educational Theorist/s Important in the Plan/Rationale**

As mentioned the learning process should involve critical thinking as work challenges require health care workers to be critical thinkers; hence, the preference for Dr Benjamin Bloom’s education theory.

This rationale for this teaching plan for clinical application is to help the new nurses and other employees who could find the workplace as strange.

The clinical learning plan is the basis for understanding the significance of critical thinking that is incorporated in the teaching aids for application.

According to de Beer (2017), Bloom’s taxonomy have higher order probing abilities and imparts creative-thinking skills on learners such as the newly graduated nurses. It is also essential in teacher’s learning method formulation.

**The Best Approach to the Plan using the Teaching and Education Literature**

Bloom’s taxonomy has three domains psychomotor, cognitive, and affective for procedural, knowledge, and affective purposes respectively (Molly, 2013). The management of STEMI is so dynamic that nurses will need essential practical skills to solve the diverse needs of patients (Molly 2013; Halbert 2014).

The nurse educators should set objectives and let learners know at the start to boost their observational skills and a better learning experience (Molly, 2013). The nurse educator will develop a detailed outline of the whole learning process by reviewing and making assumptions on the anticipated challenges. All needed teaching resources for formal and informal learning methods will back this learning approach to achieve the creativity level envisaged by Bloom’s theory.

**The Learning Objectives**

1. To help learners define STEMI and its pathophysiology
2. To assist learners establish what AMI paths lead to STEMI
3. To impart learners with workplace skills required for clinical practice in the management of STEMI
4. To assess nursing strategies crucial to the management of patients presenting symptoms of STEMI, the complexities, and ways of overcoming challenging tasks
5. To develop strategies of evaluating new knowledge and retention by new nurses such as formulation clinical history for future reference and improvement of practice
6. To help learners reflect on their new nurse education and its significance

**Technical, Physical, Human, and other Resources Required**

**Physical**

1. A neat case conference room with pinned posters and other useful information of on AMI, ACS, and STEMI,
2. A fully furnished computer desk,
3. Comfortable chairs.

**Technical**

1. A laptop with a bid screen projector for PowerPoint presentations,
2. Projector,
3. ACS protocol,
4. Automated external defibrillator.

**Human**

1. New nurses,
2. New nurse graduates,
3. A clinical nurse,
4. A senior nurse,
5. Other interested parties to the learning plan.

**Other**

1. Aspirin,
2. Oxygen,
3. 60 ml syringes,
4. Lubricants,
5. Injection vials (water),
6. A catheter,
7. Stethoscopes,
8. Beta blockers,
9. Morphine,
10. Nitroglycerin,
11. Anticoagulants,
12. Evaluation forms.

**Role of Learners in Achieving Learning Objectives**

1. Power point slides showing STEMI predictions and presentation
2. Prior background on what learners can expect to manage STEMI patients
3. Engaging in critical thinking by assessing reviewing case studies, clinical literature, and asking questions on how STEMI presents in patients
4. Exhaustive use of provided information
5. Learners’ engagement through group discussions, active listening, and participation
6. A chance for learners to deliberate on issues under discussion and give their feedback
7. Critical reflection on patient presenting STEMI symptoms
8. View simulations on how to identify STEMI complications using computer
9. Filling of evaluation and question forms when the session ends

**Planned Learning strategies and Activities to Ensure Learners Grasp Content**

1. Organize for group discussions, vary learning aid (audio, visual, and physical) to break boredom and enhance content mastery on STEMI
2. Encourage the use of critical thinking for learners to recommend solutions to clinical challenges via use of simulations
3. Assist learners to reflection on main learning points on patients presenting STEMI symptoms
4. Give learners some time at the end to ask questions geared towards the achievement of learning objectives.

**Assessment of Learnt Lesson**

1. Filling of evaluation and questions forms by nurses
2. Nurses answer questions on STEMI and the role of Bloom taxonomy in the learning session
3. Getting feedback from learners on quality improvements

**Proposed Evaluation Determine Success of the Programme**

1. The purpose of learners’ evaluation is to see is they met the study objectives; therefore educator designs evaluations based on set objectives
2. Self reflection on the success of the learning process considering goals achievement and learning outcomes
3. Setting questions that cover all learning objectives
4. Raising questions help to stimulate learners interest on specific topic and subtopic areas
5. Giving motivation to learners so that they can achieve their learning outcomes and objectives of the session
6. Encouraging effective learners’ participation in all learning dimensions such as time, resource utilisation, and answering questions
7. Assess the success of the whole process in compliance with STEMI guidelines spelt out in ST-Elevation (2013).

**Conclusion**

The number of patients’ death after with ACS will increase in by 2020 in Australia. As such, the health care practitioners should recognise the challenges in the management of STEMI and engage in timely interventions to save lives. One of the ways of achieving sustainable management of STEMI is proper orientation on new nurses with the challenges ahead. They should be better prepared to assist patients presenting STEMI symptoms. For sustainability to be achieved, the education programme should be carried out continuously and improved from the feedbacks given by learners after every session.

**Timeline of the Entire Programme**

|  |  |
| --- | --- |
| **Week** | **Activity** |
| 1-3 | * Identifying target audience, setting objectives, and developing teaching plan * Carrying out literature search on the topic |
| 4-5 | * Setting out proposed learning plan and looking for insights on how to make the plan effective from colleagues * Share the plan with managers at work |
| 6-8 | * The plan reaches advanced stage and is about to be completed; therefore, a critical appraisal of the whole plan is done * Engaging colleagues to share their views will be done at this stage * The delivery of programme simulations on 5th May, 2018; Assignment 1 |
| 8-10 | * Getting the views on the programme from senior nurses and other interested parties * Do any proposed improvements |

**References**

Beltrame, J.F., Dreyer, R. and Tavella, R., 2012. Epidemiology of coronary artery disease. In *Coronary artery disease-current concepts in epidemiology, pathophysiology, diagnostics and treatment*. InTech. http://cdn.intechopen.com/pdfs/32288/InTech-Epidemiology\_of\_coronary\_artery\_disease.pdf. [Accessed Apr. 26, 2018].

de Beer, W.A., 2017. Original opinion: the use of Bloom’s Taxonomy to teach and assess the skill of the psychiatric formulation during vocational training. *Australasian Psychiatry*, *25*(5), pp.514-519.

ECG 2018. *What is a STEMI*. [Online] Available: https://www.ecgmedicaltraining.com/what-is-a-stemi/. [Accessed Apr. 26, 2018].

Halbert, L.A., 2015. Teaching Health in the 21st century. *NASN School Nurse*, *30*(1), pp.40-45.

Molly, E. 2013. *Practical guide for clinical educators: medicine, nursing and health sciences*. Monash University: Faculty of Medicine, Nursing and Health Sciences.

Nadel, J., Hewitt, T. and Horton, D., 2014. Acute coronary syndrome in Australia: Where are we now and where are we going? *The Australasian Medical Journal*, *7*(3), pp.149-156.

Piccolo, R.F. and Colquitt, J.A., 2006. Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal*, *49*(2), pp.327-340.

ST-Elevation, M.I.G.G., 2013. ST-elevation myocardial infarction: New Zealand Management Guidelines, 2013. *The New Zealand Medical Journal*, *126*(1387), p.127.