HCS5100 Assessment Task 5

My lesson plan for a simulation-based teaching session

This session plan is designed using the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommendations. Using these recommendations as the framework for the development of all simulation will assist in them effectively meeting their objectives and have a theory based educational approach.

This session plan will provide participants an opportunity to practice the nursing assessment of upper limb neurovascular observations following application of a backslab for treatment of a fractured right distal radius.

Which faculty members are the subject matter experts for the simulation activity?
Criterion 1 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends simulation be designed using faculty who are subject matter experts and those with simulation experience aligning with best practice (INACSL Standards Committee 2021:15).   The faculty considered subject matter experts for this activity are those developing and delivering unit "HLTENN037 Perform clinical assessment and contribute to planning nursing care" (DEWR 2021) and those developing and delivering the simulation activities for this unit of competency. The assessment criteria of this unit require the assessor to be a Registered Nurse (RN). Neurovascular observations are a basic nursing assessment that all Registered Nurses are able to perform in their day-to-day practice.

Why does this simulation need to be conducted?
Criterion 2 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends a needs assessment is performed prior to developing a simulation activity (INACSL Standards Committee 2021:15). The HLT54121 Diploma of Nursing is a pre-registration program for the Enrolled Nurse (DEWR 2023) and includes psychomotor skills required for accurate nursing assessment of the individual in care. Accurate nursing assessments of individuals is expected of the Enrolled Nurse to ensure early recognition and intervention of deterioration in the individual. Standard 4 of the "Enrolled nurse standards for practice" expects that information is gained through observation and physical examination and that information is interpreted to contribute the care planning for the individual (NMBA 2016). Unit "HLTENN037 Perform clinical assessment and contribute to planning nursing care" incorporates comprehensive nursing assessments including vital signs, neurological assessment, neurovascular assessment, urinalysis, and blood glucose monitoring (DEWR 2021). The focus of this simulation is the performance of the neurovascular observation to ensure the Enrolled Nurse can identify early signs of deterioration following vascular, limb or spinal surgery and fracture management (Koutoukidis, G., Stainton, K. 2021:858) Learners must be able to accurately perform the neurovascular assessment, recognise abnormal findings to identify deterioration and ensure early intervention to minimise harm.
What are the aims and objectives of the simulation session?

Criterion 3 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends the development of measurable objectives that uses the learners knowledge and builds on it (INACSL Standards Committee 2021:16).

It is recommended to refer to the Revised Blooms Taxonomy of Learning Objectives to ensure appropriate action verbs are used that clearly describe what the learner is expect to do. Clear objectives will assist both learners and faculty to achieve the desired aim of the activity (Chatterjee D. Corral J. 2017:2)

Aim

To accurately perform neurovascular observations on upper limbs and document findings using the provided neurovascular observation chart. Analyse the assessment findings and make a judgement on interventions required based on the observation outcomes.

Objectives

1. Perform a neurovascular assessment and document findings accurately using upper limb neurovascular observation chart

2. Evaluate assessment findings and respond according to the "instructions for use" section of the neurovascular observation chart

3. Demonstrate therapeutic and professional communication

What modality of simulation will be used to support the aims and objectives of the simulation?

Criterion 4 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends the modality be aligned to the simulation activity objectives (INACSL Standards Committee 2021:16).

This simulation will be conducted in the nursing simulation lab and use a simulated patient to play the part of the patient. The nursing simulation lab has 6 beds which accurately reflects the clinical setting.

The learner will need to introduce themselves to the simulated patient and gain consent to conduct the upper limb neurovascular assessment. The simulated patient will interact with the learner providing clinical information and responding to the assessment progress as per the scenario. The simulation will complete once the upper limb neurovascular assessment is completed, the findings documented and the therapeutic interaction completed.

The scenario is based on an experiential learning model where the learner engages in experiences that they can reflect on, analyse and make decisions on a plan of care (Kolb, D. 1984. p38). It also incorporates aspects of a Constructivism approach where learners observe the task prior to practicing it themselves and receiving feedback about that performance (Nestel, D., Kelly, M., Jolly, B., Watson, M. 2017:35).

Scenario that is in line with need assessment, aims and objectives of the activity.

Criterion 5 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends the scenario accurately provides the context for the simulation and relates to the objectives (INACSL Standards Committee 2021:16-17).

Scenario

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Your patient has fallen while walking along the footpath near their home and landed heavily with an outstretched hand on the ground. They have subsequently presented at Accident and Emergency with a painful right wrist. The patient is generally well and has no significant past medical history.

On initial review the following was recorded:

- Pain score of right wrist - 5/10 when still, 9/10 on movement

- Vitals – P90, BP125/80, R16, T36.8, SpO2 98%

- Neurological – no head strike, PEARL, GCS 15/15

- Respiratory – lungs clear, equal airway entry

- Cardiac – pulse regular

- Skin – intact

Plan of care

- Pain relief as needed

- Regular hourly neurovascular observations

- X-ray of right wrist

Care implemented

- Pain relief has been administered with good effect and pain score is 3/10 when still and 6/10 on movement.

- Neurovascular observation shows decreased movement and increasing pain with movement right side, left side full movement and no pain.

- X-ray revealed a fracture of the distal radius and a Plaster of Paris backslab has been applied.

You are looking after the patient following the application of the backslab. You need to perform upper limb neurovascular observations and document them. This will include interpreting the findings, reporting as needed and using therapeutic communication skills.

How will realism be incorporated into the simulation?

Criterion 6 of the "Healthcare Simulation Standards of Best Practice^{TM} Simulation Design" recommends the use of various types of fidelity to create a sense of realism (INACSL Standards Committee 2021:17).

This simulation will be conducted in the nursing simulation lab which is a realistic representation of a bed environment in the clinical setting. A simulated patient will be used to provider interaction with a real person

The following equipment and documentation will be required:

- Upper limb observation chart with initial findings

- ID band for simulated patient

- Simulated patient right arm to be bandaged to represent backslab application

- Access to hand sanitizer / soap and water

- Pen to complete documentation on chart

- Scenario for the learners

- Instructions for simulated patient

- Rubric for teacher / observers

- Briefing and feedback information and documentation

- Evaluation surveys for both learners and faculty

Where in the course progress is the simulation and what are learners expected to know prior to participation?

Criterion 7 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends a learner centred and supportive approach to simulation delivery (INACSL Standards Committee 2021:17).

This activity is conducted in the foundation phase (Phase 1) of the Diploma of Nursing program and learners have not yet participated in any clinical placement. Learners will hold novice level knowledge of neurovascular observations, why and how they are performed. They will be able to identify normal and abnormal results and, using the observation chart instructions, initiate any required intervention.

Prior to attending the simulation activity learners must have:

- Completed session 5 of learning in unit "HLTENN037 Perform clinical assessment and contribute to planning nursing care".

- Review principles of consent and documentation from session 2 of learning materials in unit "HLTENN041 Apply legal and ethical parameters to nursing practice".

- Review principles of therapeutic communication from session 1 learning materials in unit "HLTENN036 Apply communication skills in nursing practice".

- Review the 5 moments of hand hygiene from session 1 learning materials in unit "HLTINF006 Apply basic principles and practices of infection prevention and control".

- Review Gibbs Reflective Cycle from session 1 and session 2 of learning materials in unit "CHCPRP003 Reflect on and improve own professional practice".

- Attended the skill demonstration session.

Following the skills demonstration learners will have an opportunity to practice neurovascular observations prior to the simulation activity. A deliberate practice approach will be used, in particular, a "Rapid Cycle Deliberate Practice" where learners will be stopped during the simulation and receive feedback and be able to practice immediately after the feedback and apply it to their practice (Perretta, JS. et. al. 2020:356-362)

Briefing (pre-briefing)

Criterion 8 of the "Healthcare Simulation Standards of Best Practice[TM] Simulation Design" recommends a plan that guides learners' success and establish psychological safety (INACSL Standards Committee 2021:17-18).

The following must be included in the briefing prior to commencing the simulation:

Learner Briefing

Prior to the simulation session

Advise learners to review:

- Learning material from units CHCPRP003, HLTENN036, HLTENN037, HLTENN041, and HLTINF006 as outlined above.

- Treatment of bone injuries from Koutoukidis, G., Stainton, K. (2021) "Tabbner's Nursing Care". (8th Edition) with a focus on neurovascular assessment (858) and casts (862).

- Skills assessment standard from the Koutoukidis, G., Stainton, K., "Essential Enrolled Nursing Skills for Person-Centred Care". (2nd Edition) (386–398).

- "Upper limb neurovascular observation chart" (Appendix 1).

This information is to be sent to the learner via the student email and include the URL to the online library resources and the PDF of the blank upper limb observation chart.

At the simulation session

Discuss aims and objectives of the simulation

To perform and document upper limb neurovascular observations, interpret findings and come to a conclusion on the intervention required as per the observation chart. Include therapeutic interaction by introducing self and gaining consent for the observation.

Discuss structure of simulation

A scenario will be presented and the learner will need to use the information provided in their approach to the assessment. They will need to communicate with the person with a focus on neurovascular observations only.

Review upper limb observation chart

Revisit structure of the observation chart, instructions included in the document and key aspects of documentation. Remind learners they may need to adjust their instructions to the simulated patient to make an accurate assessment. For example: adding "as best you can" prior to a movement request.

Provide an opportunity for learners to ask question and seek clarification of expectations

Teacher to use inclusive language at all times and to remind participants they can ask questions and seek help at any time.

Feedback

Feedback will be provided during the simulation, expect to pause and restart the simulation to use the feedback immediately in practice. Following the simulation, there will be a short feedback session at the bedside, using Gibbs Reflective Cycle, the reflective practice model used in the Diploma of Nursing program.

The simulation will take approximately 15 minutes.

Present the scenario to the learners.

Allow time for students to ask questions and clarify instructions or scenario information.

Simulated Patient Briefing

The simulated patient will be a member of faculty. The following information provides the boundaries for their role in the simulation.

You will be presenting as the patient who has a fracture of the right wrist following a fall while out walking. The patient is general healthy with no significant past medical / surgical history.

No change in neurological status, the patient is alert and orientated.

Patient can actively move fingers in right hand but with limited movement and pain associated with movement.

Patient to identify "pins and needles" on sensation assessment – this is a noted change the learner will need to identify and report to the Registered Nurse (teacher)

Pain score is 3/10 when still and 5/10 on movement. If asked, no further pain relief is required at this time.

Swelling – none present

Any finding that is normal for simulated patient, for example cool, pale hands, weak pulse, swelling – a statement such as "this is normal for me, it was like this before the fall" is to be used. The learner is to find a change in sensation and document and raise this with the Registered Nurse (the teacher).

Patients left side upper limb assessment - full movement with no pain or abnormal findings.

Debriefing / Feedback

Criterion 9 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends a debriefing / feedback session following simulation for improved and / or confirm practice (INACSL Standards Committee 2021:18).

Using Gibbs reflective cycle as the method for the feedback the teacher to use the following to guide the learner:

- Describe the experience, including what they heard, thought about and did
- How they felt about the experience and how those feelings may have impacted their performance in the simulation
- What they felt went well and what didn't go so well and why they think this is
- What will the learner think about doing differently next time.

(Timmins, F. 2015:100)

During the reflection the teacher will provide their observations and feedback which must be linked directly to the assessment framework

As a formative assessment, the feedback provided must include a focus on improvements that can be implemented for the assessment or confirm the learner's performance meets expectations.

Assessment Framework

Criterion 10 of the "Healthcare Simulation Standards of Best Practice™ Simulation Design" recommends an evaluation of the learners performance using an assessment framework (INACSL Standards Committee 2021:18).

The following observation checklist was developed from Koutoukidis, G., Stainton, K., "Essential Enrolled Nursing Skills for Person-Centred Care". (2nd Edition) (386–398) the skills text used in the Diploma of Nursing program.

Learners must:

Perform a neurovascular assessment and document findings accurately using upper limb neurovascular observation chart

- Perform hand hygiene – hand sanitiser at minimum and to sanitise after touching patient and before touching the pen to document result
- Assess limb distal to the injury (i.e. hand) and compares with non-affected side
    - Colour – inspects visually noting pink or pale (as per simulated patient)
    - Temperature – uses touch and documents warm or cool (as per simulated patient)
    - Pulses (radial) – palpates and documents present or weak (as per simulated patient)

- o Sensation – touches for sensation and documents as decreased sensation

- o motor function – active movement but limited due to injury and increasing pain

- o pain – 3/10 when still, 5/10 on movement

- o swelling – none observable

- Documents accurately noting decreased movement, pain on movement and change in sensation.

Evaluate assessment findings and respond according to the "instructions for use" section of the neurovascular observation chart

- Verbalises why neurovascular observations are performed

- Identifies limited movement and pain on movement to right hand is unchanged from previous assessment and linked to fracture

- Identifies no swelling of hand / fingers or change to colour and temperature

- Identifies change to sensation from previous assessments

- Refers to "Instructions for use" and verbalises findings to RN and suggests increased neurovascular assessment

Demonstrate therapeutic and professional communication

- Introduce self (name and role) and gain consent prior to starting

- Confirm ID using Name, Date of Birth and Unit Record Number, checking these 3 identifiers on the ID band and observation chart, and checking name and date of birth with the simulated patient.

- Explains procedure and it purpose

- Answers questions the patient may have

- Ask person to report any increasing change in sensation

Teachers and learners are required to complete an evaluation survey. The purpose of the surveys is to evaluate the effectiveness of the simulation and identify areas for improvement in both the delivery and assessment of this activity. The teacher survey focuses on structure and content, the learner surveys focus on the experience engaging in the simulation. Both surveys are linked to and considered against the aims and objectives of the simulation.

There is combination of rated responses and free text responses. The rating used will be:

    1 strongly disagree

    2 disagree

    3 agree

    4 strongly agree

Learner survey questions

The pre reading and pre learning materials assisted my preparation for this simulation (rated 1 – 4).

The briefing prepared me for the simulation and provided sufficient information to understand what was required of me (rated 1 – 4).

The feedback during the simulation helped me to understand what was required to conduct neurovascular observations how to improve my practice (rated 1 – 4).

Was the simulation relevant to your current course progress? Why?

What did you like most about the activity? Why?

What could be improved?

Teacher survey questions

The pre learning materials are sufficient for student preparation (rated 1 – 4).

The simulation effectively addresses objectives set (rated 1 – 4).

The instructions clear and I understood what was required for this simulation. (rated 1 – 4)

If not, what needs to be improved?

The scenario relevant to the learners progress in the course (rated 1 – 4)

What worked well?

What needs changing for next time?

Testing before implementation

Criterion 11 of the "Healthcare Simulation Standards of Best Practice[TM] Simulation Design" recommends testing the simulation prior to implementation to ensure it meets the identified needs, aim and objectives. This includes areas for improvement in any area of the simulation (INACSL Standards Committee 2021:18).

The scenario and instructions were reviewed, and the simulation was conducted by experienced faculty and the following changes made to the initial version of this session plan.

Pre learning for learners to include:

CHCPRP003 Reflective practice unit and review of Gibbs reflective cycle.

HLTINF006 Infection control specifically the 5 moments of hand hygiene

Addition of equipment needed:

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hand hygiene equipment – hand sanitizer / soap and water

Learner surveys to include:

A question about the sufficiency of the preparation material prior to the simulation

Ian Balducci, HCS5100, Assessment Task 5

Reference List

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12. Timmins, Fiona, (2015). "A – Z of Reflective Practice". Bloomsbury Publishing Palgrave, United Kingdom.

Ian Balducci, HCS5100, Assessment Task 5

Appendix 1

Blank Upper limb neurovascular observation chart

(Chisholm Institute of TAFE curriculum document)

Left Page (Page 1 of 4)

UPPER LIMB NEUROVASCULAR OBSERVATION

Nerve block: ☐ No ☐ Yes   Date: Time: Type of block: Level of block:

When recording observations in patients with a nerve block document with a capital 'B' for block in the box that corresponds to your assessment if an interfering factor

GENERAL INSTRUCTIONS FOR USE:

- Establish a baseline assessment of neurovascular function on affected **and** unaffected limb/s at first observation set and document in the grey shaded area of the chart

- When recording observations for a single limb, graph by placing a dot in the centre of the box and connect to the previous dot with a straight line to track change

- When recording observations for both limbs, use 'L' for left and 'R' for right and write in the box that corresponds to your assessment

- An observation in the **orange or red shaded area** may indicate **neurovascular impairment**

- Document any interventions and record the code letter on the intervention row in the appropriate time column on the observation grid. Write a simple comment only and support with more detailed documentation in the patient progress notes

Clinical Review

Response Criteria	Action Required
• Any **unexpected** observation in the red area (after considering pre-morbid condition and local interfering factors) • **Pain on passive movement unrelieved by analgesia and disproportionate to injury**	• Immediate shift coordinator/nurse in charge review • Shift coordinator/nurse in charge to escalate to medical practitioner review based on clinical assessment • Increase frequency of observations

Senior Nurse Review

Response Criteria	Action Required
• Any **unexpected** observation in the orange area (after considering pre-morbid condition and local interfering factors)	• Shift coordinator/Nurse in charge review • Increase frequency of observations if clinically indicated

When undertaking neurological assessment you are determining if nerve damage is present AND which nerves are affected. For upper limb assessment, assess the radial, median and ulnar nerves.

Radial nerve

Ask the patient to extend the thumb, fingers & wrist

Touch the web space between the thumb & index finger

Median nerve

Ask the patient to oppose the thumb & 5th finger & flex the wrist

Touch the pad of the index finger

Ulnar nerve

Ask the patient to abduct all fingers and move the wrist laterally

Touch the pad of the 5th finger

Right Page (Page 4 of 4)

UPPER LIMB NEUROVASCULAR OBSERVATION

INTERVENTIONS ASSOCIATED WITH NEUROVASCULAR ASSESSMENT

If you administer an intervention, record here and note letter in the intervention row over page in appropriate time column

Reference letter	INTERVENTION
a	
b	
c	
d	
e	
f	
g	
h	
i	
j	
k	
l	
m	
n	
o	
p	
q	

NO WRITING IN MARGINS

UPPER LIMB NEUROVASCULAR OBSERVATION

U.R. Number ....

Surname ....

Given Names ....

Date of Birth ..../ ..../ .... Sex ....

Use Label if Available or BLOCK LETTERS

BW0980

☐ Left upper limb
☐ Right upper limb

			DATE			
			TIME			
				L	R	

Signs of compartment syndrome include pain on passive movement & pain unrelieved by narcotic analgesia
NB: Neurovascular Pain Assessment relates to passive/active movement of the affected limb/digit - it is unrelated to analgesic pain assessment documented on the Observation Chart

Section	Sub	Detail	Value	L	R
	Pain Assessment		Before movement (at rest)		
			During movement 1-5		
			(active &/or passive) 6-10		
VASCULAR ASSESSMENT	Skin Colour		Natural		
			Pale		
			Mottled		
			Cyanotic		
	Skin Temperature		Hot		
			Warm		
			Cool		
			Cold		
	Capillary Refill		2 secs or under		
			Over 2 secs		
	Distal Pulses ☐ Radial ☐ Brachial		Strong		
			Weak		
			Doppler		
			Absent		
NEUROLOGICAL ASSESSMENT	RADIAL NERVE	Ask the patient to extend the thumb, fingers & wrist. Touch the web space between the thumb & index finger	Movement Full		
			Limited		
			Absent		
			Sensation Intact		
			Altered		
			Absent		
	MEDIAN NERVE	Ask the patient to oppose the thumb & 5th finger & flex the wrist. Touch the pad of the index finger	Movement Full		
			Limited		
			Absent		
			Sensation Intact		
			Altered		
			Absent		
	ULNAR NERVE	Ask the patient to abduct all fingers and move the wrist laterally. Touch the pad of the 5th finger	Movement Full		
			Limited		
			Absent		
			Sensation Intact		
			Altered		
			Absent		
			INITIALS		
	INTERVENTION		E.g. (a)		

NO WRITING IN MARGINS

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