Co-funded by the
Tempus Programme
of the European Union

NURSING PROCEDURES & INTERVENTIONS

CCNURCA

Competency based Curriculum Reform in Nursing and Caring in Western Balkan Universities

CCNURCA: 544169–TEMPUS–1–2013-1-BE-TEMPUS-JPCR

IMPRESSUM

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Editor: Medicinski fakultet Univerziteta u Zenici

Printing: Feta – grand d.o.o.

This book is outcome of CCNURCA: 544169–TEMPUS–1–2013-1-BE-TEMPUS-JPCR and it is free of charge.

CIP - Katalogizacija u publikaciji
Nacionalna i univerzitetska biblioteka Bosne i Hercegovine, Sarajevo

616-082:614.253.5

NURSING procedures & interventions / [authors Dejan Bokonjić ... [et al.] ; [editors Dejan Bokonjić & Mirza Oruč]. - Zenica : Univerzitet, 2017. - 96 str. : ilustr. ; 26 cm

ISBN 978-9958-639-89-0
1. Bokonjić, Dejan
COBISS.BH-ID 23801350

NURSING PROCEDURES & INTERVENTIONS

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Zenica, 2017

CONTENT

Vital signs

Definition

This procedure provides guidelines for monitoring, reporting and documenting patient vital signs. Monitoring of vital signs includes checking the patient's temperature, pulse, respiration and blood pressure. Additionally, neuroscience nurse can include assessment of pupils, level of consciousness, movement and speech as additional vital signs.

Purpose:

- identifying the existence of an acute medical problem.
- measuring of vital signs can rapidly quantify the magnitude of an illness and capacity of the body to deal with the pathologic or physiologic stress.
- can be a marker of chronic disease states

Contributing factors

- age
- gender
- heredity
- race
- lifestyle
- environment
- medications
- pain
- exercise and metabolism
- anxiety and stress
- different acute diseases
- different chronic diseases
- sweat gland activity, reduced metabolism and poor vasomotor control

Clinical signs

The normal body temperature of a person varies depending on gender, recent activity, food and fluid consumption, time of day and related to women the stage of the menstrual cycle. Body temperature can be raised due to the inflammatory or infectious diseases. *Clinical signs of high temperature are; sweating, usually cold hands and foots, raised body temperature, feeling cold or warm.*

The pulse rate is a measurement of the heart rate or the number of times the heart beats per minute. The pulse rate may fluctuate and increase with exercise, illness, injury, and emotions. *Clinical sign of rapid pulse is fast heartbeat, restlessness, palpitations and clinical sign of slow pulse is fatigue, shortness of breath, intolerance of exercise and etc.*

The respiration rate is the number of breaths a person takes per minute. Respiration rates may increase with fever, illness and other medical conditions. *Clinical sign of rapid breathing includes using of auxiliary musculature, intolerance of exercises and etc.*

Blood pressure, measured with a blood pressure cuff and stethoscope by a nurse or other health care provider, is the force of the blood pushing against the artery walls. The higher number, or systolic pressure, refers to the pressure inside the artery when the heart contracts and pumps blood through the body. The lower number, or diastolic pressure, refers to the pressure inside the artery when the heart is at rest and is filling with blood.

Clinical sign of high blood pressure are headaches, shortness of breath or nosebleeds, facial flushing, dizziness

Clinical signs of low blood pressure are: dizziness, fainting, lack of concentration, blurred vision, nausea, cold skin, rapid, shallow breathing, fatigue, depression, thirst,

Nursing diagnosis

Goals

- To follow vital signs, to identify and assess causative/contributing factors

Assessment

When assessing vital signs check and record the following signs:

- evaluate blood pressure, pulse and frequency of breathing
- evaluate respiratory status and respiratory rate
- evaluate heart rate
- evaluate body temperature

Nursing intervention

Goals

- to measure and follow vital signs in patient

Procedure

Measuring blood pressure:

A patient blood pressure can be taken in the following way:

This method represents non – invasive method for blood pressure measurement.

Procedure:

- Like in every procedure first we need to check patient's identity and to ask patient is he/her familiar with procedure (sometimes patients can feel uncomfortable during the air inflation feeling a lot of pressure).
- This procedure comprises few preconditions that can affect measurement and values of blood pressure. After placing patient in comfortable position ask whether she/he has done some physical activity, drunk coffee, smoked cigarettes, experienced something stressful etc.
- While preparing the equipment (apparatus – sphygmomanometer) nurse always need to take care about the size of cuff and perform disinfection of membranes and olives
- First place the patient in comfortable position. If the patient is moveable you can ask him / her to take comfortable sitting position if not than whole procedure can be conducted while patient is lying on his back.
- For routine and daily check of blood pressure is measured on the left

hand and during examination blood pressure is measured on both hands (left and right). Whole hand or part of the hand near the cubital region need to be released from clothes otherwise take into account the impact of clothes on blood pressure. Hand positioned at the heart level fist need to be released while palm should be open upwards.

- Cuff placed 2,00 – 2,5 cm above the elbow need to be tighten so much that you can easily drag one finger below.
- Palpate the brachial artery.
- Place the stethoscope membrane on brachial artery, palpate pulse again, and use stethoscope to listen heartbeats.
- Close the air release valve that is connected to air inflation bulb. When the valve is closed start to inflate the air into the cuff. Inflate the air until you hear the last sound of heartbeat, look at the manometer and remember the value. After that you can add more pressure on air inflation bulb (around 25 – 30 mm Hg).
- The next step is to slowly open valve to release the air from cuff. Air releasing need to be slow - around 2-3 mmHg/second.
- When you hear the last heartbeat again look at the manometer and remember the value, then slowly release the 20-30 mmHg of air after which you can open air releasing valve to free the air very fast till you reach the value of 0 mm Hg.
- First sound that you have heard and that you remembered is considered to be value of systolic blood pressure, while the time of the last heard sound is considered as a diastolic blood pressure value.
- After the procedure is completed note all values in a patient chart, (value, time and date).
- Clean and store all the equipment, disinfect the surfaces (membrane and olives on stethoscope)
- Wash your hand.

Heart rate

A patient's heart rate can be taken in the following way:

- explain the patient procedure
- patient should be relaxed
- the pulse can be found on the side of the neck, on the inside of the elbow, or at the wrist
- in principle it is easier to take the pulse at the wrist.
- using the first and second fingertips press firmly but gently on the arteries until you feel a pulse
- begin counting the pulse when the clock's second hand is on the 12
- count your pulse for 60 seconds (or for 15 seconds and then multiply by four to calculate beats per minute).
- while counting do not watch the clock continuously but concentrate on the beats of the pulse
- if unsure about your results ask another person to count for you.

Respiratory rate

A patient's respiratory rate can be taken in the following way:

- explain the patient procedure
- the respiration rate is the number of breaths a person takes per minute
- it can be measured using stethoscope or watching excursions of thorax
- the rate should be usually measured when a person is at rest and simply involves counting the number of breaths for one minute by checking how many times the chest rises
- when checking respiration it is important to note whether a person has any difficulty while breathing

Temperature

A patient's body temperature can be taken in any of the following ways:

- Orally. Temperature can be taken by mouth using either the classic glass thermometer, or the more modern digital thermometers.
- Rectally. Temperatures taken rectally (using a glass or digital thermometer) tend to be 0.5 to 0.7 degrees C higher than when taken by mouth.
- Axillary. Temperatures can be taken under the arm using a glass or digital thermometer. Temperatures taken in this way tend to be 0.5 degrees C lower than those temperatures taken by mouth.
- By ear. A special thermometer can quickly measure the temperature of the ear drum which reflects the body temperature.
- By skin. A special thermometer can quickly measure the temperature of the skin on the forehead.

Equipment:

- Thermometer (type is depending from the type of measurement)
  Thermometers have characteristic look and design for different kinds of measurement. Thermometer used for axillar, oral and rectal measurement looks like an elongated glass pipe. On one side there is reservoir with mercury (in thin part) and on another part is scale graduated in Celsius of Fahrenheit. Typical scale is graduated from 32 to 42 degrees of Celsius, while special thermometers that measure hypothermia are graduated from 21 degrees of Celsius. Diameters of glass thermometers are different which depends on the place of measurement. Thermometers for oral and rectal measurement are

usually thinner than thermometers for axillary measurement. Handling with these thermometers asks for precaution because they can break easily and hurt a patient or a nurse.

Another type of thermometers are electrical thermometers that can be used in all kinds of temperature measurement. Depending on the place of measurement they can have different design for measuring body temperature on membrane tympani. Positive side of this thermometers is that time of measurement is shortened and they are safer, but nurse always need to follow the *life* of batteries and sensors that can give false results if they are broken.

The third type of thermometers are thermometers based on chemical changes and they are predominantly in the form of stripes. They can be used just for orientation not for precise measurement.

- Alcohol soaked cotton balls
- Few napkins
- Lubricant (in care of rectal or vaginal measurement)

Procedures

Axillar body temperature measurement:

- Check the patient's identity, explain the procedure if he / she is not familiar with it and secure them the privacy and comfortable position. This procedure can be done in sitting position or patient can be laying on his back or side. This procedure is appropriate because it is applicable for all age groups and two big folds of skin are needed.
- Prepare the thermometer. If the thermometer is standing in the container with other thermometers soaked in disinfection than it is needed just to clean thermometer with cold water. If the thermometer is not placed in disinfection than it is needed to disinfect it with cotton balls soaked in alcohol with one move from reservoir till the end. Check the level of mercury if the level of mercury is above 36 degrees of C. Apply one or two energetic moves with thermometer in your hand to shake down the mercury (be careful while doing this not to hit any hard object that can cause damage or breakage of it). Check the level of mercury again and which should be below 36 C (it is recommended that mercury is in reservoir).
- Ask patient to raise his / her hand and clean the axilla (do not rub or make fast moves; tap the axilla with napkins to clean it from sweat).
- Place the thermometer into axilla in that position that reservoir of mercury covers all sides, then ask the patient to lower his hand and to hold the thermometer with his hand in that way that he will hold his hand on the

opposite shoulder or at the level of opposite hip if he cannot touch the shoulder.

- Thermometer should stay in axilla 8-10 minutes (for adult patient) or 4-8 minutes (children).
- After this time take the thermometer out, check the level of mercury and write it down in the patient chart and nursing chart (type, value and date).
- Disinfect the thermometer
- Wash your hands

Oral body temperature measurement:

- Check the patient identity, explain him procedure if he is not familiar with it and secure him privacy and comfortable position. This procedure is very effective and shorter than axillar method of measurement but it has a lot of limitations like right positioning of thermometers (below tongue phrenulum), time of food consummation, temperature of food, awareness of patient about the procedure and possible injuries if they do not follow the procedure, age of patient.
- Place the patient in a comfortable position.
- Check with the patient to eliminate all factors that can influence on value like; did he have any meals, drinks or cigarettes in last 15 minutes, physical activity or a hot shower in last 45 minutes.
- Check the oral cavity for any signs of injuries or malformation.
- Place the thermometer into mouth (prepare the thermometer like it was described in previous text; thermometer used for this procedure is thinner than thermometer for axillar measurement), right position is below the tongue phrenulum.
- Instruct the patient to hold thermometer with lips, not to hold it with teeth, because it can break and cause injuries. Thermometer should stay in the patient mouth for 3-5 minutes or (according to some authors) 8-9 minutes.
- After that take the thermometer out and check the mercury level. Write the value into patient chart and nursing chart.
- Disinfect the thermometer and store it
- Wash your hand.

Rectal body temperature measurement

When all other methods cannot be used for body temperature measurement than this type of measurement can be used. This method is very often in podiatry but sometimes when there is no other way it can be used with adult persons. This method is very uncomfortable for patients and takes a lot of risk to perform it.

- Check the patient's identity and if the patient is aware explain the whole procedure and what is expected.
- Ensure the patient privacy.

- For this procedure you need non-sterile gloves, wear them.
- Place the patient in a suitable, comfortable position (laying on the back, or on side; if this method is applied on a child than place the child on your knees lying on the stomach so an anal region is in front of you).
- Prepare the thermometer (as it is described previously, but be aware what kind of disinfect was used, to wash it because of the rectal mucosa), prepare the lubricant on a napkin or cotton gauze and rub the thermometer with lubricant, from reservoir till the end.
- Ask a patient to take few deep breaths, with your non - dominant hand move out the gluteus using your finger exposing rectum (check the rectum for any sign of infection, bleeding etc.), apply the thermometer into rectum 4-5 cm in adults or 2-3 cm in children. (Be aware that part with mercury reservoir is taken into rectum). During applying the thermometer take care not to damage rectum or its mucosa. Thermometer should be in rectum for 5 minutes.
- Take of the thermometer after proper time and clean it with napkin (it can be dirty from fecal masses) and read the value.
- Place the patient into a comfortable position.
- Wash, disinfect and store the thermometer, dispose the gloves and all used materials.
- Wash your hands
- Document all values into nursing chart and patient chart.

Documentation

- document the blood pressure
- document the heart rate
- document the respiratory rate
- document the body temperature

Evaluation

- The patient will have all vital signs measured and followed
- All values will be precisely documented
- The patient will experience a minimum of discomfort during the procedure

Urinary incontinence

Definition

Urinary incontinence (UI) is defined as the "involuntary loss of urine so severe as to have social and/or hygiene consequences" (NIH,1988). UI or unintentional loss of urine is a health problem causing inconvenience and distress to many individuals. There are several types of incontinence like stress incontinence, urge incontinence, mixed incontinence, over-flow incontinence, transient incontinence and functional incontinence.

Purpose

- to determine the cause of the incontinence,
- to detect related urinary tract and nervous system pathology,
- and to evaluate patient mental and physical status, comorbidity, medications, environment, quality of life and availability of resources.

Contributing factors

- pregnancy,
- childbirth,
- excessive weight,
- dietary choices,
- smoking,
- bladder infection,
- hormone disturbances
- pelvic organ prolapse,
- diabetes,
- brain or neurological disorders,
- mobility issues,
- severe constipation
- and other medical problems.

Clinical signs

Stress incontinence: Urine leaks when you exert pressure on your bladder by coughing, sneezing, laughing, exercising or lifting something heavy.
Urge incontinence: A sudden, intense urge to urinate followed by an involuntary loss of urine. Urge incontinence may be caused by infection, or a more severe condition such as neurologic disorder or diabetes.

Overflow incontinence. Frequent or constant loss of urine due to a bladder that doesn't empty completely.
Functional incontinence. A physical or mental impairment stops patient to go to the toilet in time.
Mixed incontinence. Several types of urinary incontinence.

Nursing diagnosis

Goals

- To follow urinary incontinence, to identify and assess causative/contributing factors

Assessment

When assessing urinary incontinence, check and record the following signs:

- history-taking: ask about: past medical/ surgical/ obstetric history, medications, duration of UI, circumstances of leak e.g. coughing, straining, sense of urgency, bladder storage symptoms e.g. frequency, urgency, nocturia, psychological and social history and etc.
- physical examination: conduct systematic physical examination to identify abnormalities that have a direct bearing on the incontinence
- direct observation of leakage: observe for urine leakage after coughing
- send a sample of urine for urinalysis and culture
- measure residual bladder volume by in-out catheterization or bladder scanning within a few minutes after voiding.
- following amount of voiding preferably for three days using a bladder chart

Nursing intervention

Goals

- to measure and follow urinary incontinence signs in patient

Procedure

- explain the patient procedure
- make sure that patient feels comfortably
- identify and treat causes of transient UI
- develop an individualized plan of care using data obtained from the

history and physical examination. Implement toileting programs.

- avoid medications that may contribute to UI
- avoid indwelling urinary catheters whenever possible to avoid risk for UTI
- monitor fluid intake and maintain an appropriate hydration schedule.
- limit dietary bladder irritants.
- consider weight loss for those with a high body mass index (BMI)
- modify the environment to facilitate continence.
- prevent skin breakdown by providing immediate cleansing after an incontinent episode
- for stress UI: explain pelvic floor muscle exercises, provide toileting assistance and bladder training and include other team members if pharmacological or surgical therapies are warranted.
- For urge UI: implement bladder training and collaborate with team members if pharmacologic therapy is warranted.
- for overflow UI: allow sufficient time for voiding, discuss with interdisciplinary team the need for determining a post-void residual (if catheterisation is necessary sterile intermittent is preferred over indwelling catheterization)
- for functional UI: provide individualized, scheduled toileting, timed voiding, provide adequate fluid intake, include physical and occupational therapy and modify environment to maximize independence with continence

Documentation

- document the presence/absence of UI for all patients on admission
- document assessment of continence status throughout hospital stay.
- document the presence/absence of an indwelling urinary catheter
- identify and document possible etiologies of the UI

Evaluation

- The patient will have fewer or no episodes of UI or complications associated with UI.
- The patient will feel much more comfortable

URINARY CATHETERISATION

Problems that are caused by pathological work of urinary system like urinary incontinency, anuria, urine retention, preoperative and postoperative health care, obstruction of urinary tracts, retention caused by neurological paralysis of a patient are followed by procedure of urinary catheterisation. This procedure enables patient's normal urine flow by positioning special urinary catheter (Foley) catheter in urinary bladder.
Nurse role in this procedure is vital; this procedure is followed by all sterile rules and sometimes is uncomfortable for patients. Depending on the rules of Institution a nurse can perform full procedure or work as a member of team. This procedure if performed by using all rules of sterile techniques with extreme precaution to prevent injuries or infections.

Equipment

- Sterile set for catheterisation or if you are not using factory made set than equipment need to be adequately prepared and sterile.
- Sterile Foley catheter (proper size)
- Syringe with 5-8 ml of sterile aqua
- Towel and napkins
- Soap and water
- Oilcloth or linen baking
- Sterile gloves
- Non – sterile gloves
- Sterile compress with an appropriate open
- Sterile cotton balls and sterile pincette antiseptic suitable for perianal region
- Dish for urine disposal
- Sterile lubricant
- Sterile urine collective bag
- Plaster


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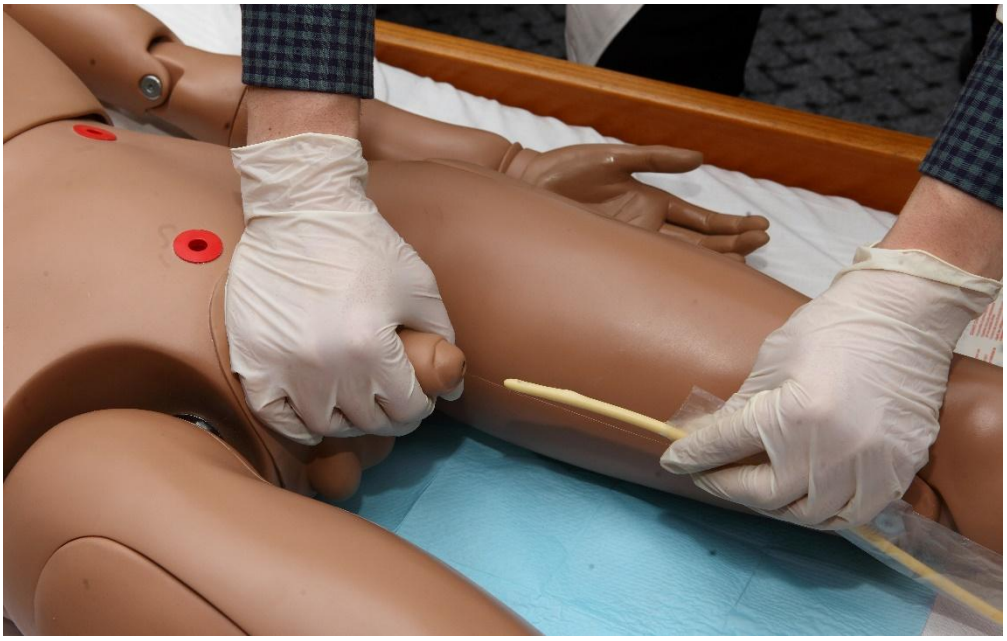
Procedure:

- Verify order for catheter insertion by checking a nursing chart or a patient chart if is prescribed that patient need catheter.
- Check with patient allergy history, especially check the allergy on lates or different types of lidocain, iodine povid or similar.
- Explain the whole procedure to the patient considering all aspects of patient nature (age, education level, cultural and religious influence etc.), be honest with patient and tell him what to expect. Ensure the patient privacy.
- Wash your hands
- Place the patient in a right position. Male: supine position with legs extended, female supine position with knee flexed and separated, feet flat on the bad.
- Clean the perianal area with soap and water and let it dry.
- Create an area for the sterile field and open packaging using sterile hygiene trolley or a table near the bad or similar.
- Drape the patient with sterile drapes supplied in the kit or outside kit.
- Wear the sterile gloves (from this moment the whole procedure must be sterile).
- Soaked the cotton balls/swabs with iodine solution for disinfection (if the patient is allergic to iodine use other disinfection means with similar impact).
- Open the lubricant and lubricate the catheter up (minimum for 5 cm.)
- Check the clamp of urine bag that is closed (sometimes if you are not using catheterisation kit, this procedure is slightly different, you need to prepare all this steps before putting on sterile gloves).
- Prepare the place for insertion of catheter. It is different for male and female:

  Female: Use your non-dominant hand to separate labia for cleaning process. Use your dominant hand to clean the area (non-dominant hand is continuously holding labia separated), with one single downward move first clean the edges, then centre and meatus itself (you need minimally 4 cotton balls/swab, be careful to keep cotton balls/swabs clean)

  Male: use your non-dominant hand to retract the foreskin before cleaning if the patient is uncircumcised and if it is circumcised you can skip this step. Use your non-dominant hand to hold the penis in 60 – 90 degree angle. Make circular moves with cotton balls/swabs soaked in disinfection means with dominant hand, start from meatus and continue outward. Repeat this 3-4 times and each time use new cotton ball/swab.

- use your dominant hand to prepare catheter take the catheter from a sterile bag or a kit and be very attentive to maintain sterility.
- Insert the catheter through urethra meatus until you see the urine: Female 6 – 8 cm Male: to the catheter bifurcation.
- If you felt any resistance stop immediately and note the physician.
- Attach the saline – filled syringe and inflate the balloon if indwelling catheter.
- Hang the urine collection bag below bladder level.
- Dispose al used equipment
- Clean the perianal area
- Cover a patient to restore privacy
- Wash your hands
- Document the procedure and patient tolerance to the catheter size, colour, clarity of urine and any other relevant information.



How to remove urinary catheter

This procedure is quite simple.

- Check the patient identity, date of catheter application and order to remove catheter.
- Explain the patient the whole procedure, tell him that he can feel little uncomfortable.

- Wear non – sterile gloves
- Connect the syringe to the valve mechanism on catheter.
- Pull the syringe clip backward (thus you will empty cuff that is holding catheter fixate). Amount of aqua that is inserted into cuff should be noticed into a patient chart or on the cuff. Wait until the full amount is in syringe.
- Take the catheter with an absorbent cotton and pull it very easy and gently out.
- Prepare the urination container for patient.
- Note the amount of urine in urine bag before you dispose it
- Check the patient for next 12 to 24 hours to be sure that patient is urinating.
- Document whole procedure, date and time.

OSCE EXAMPLE

Preparation of material: Points (max 4,5 points-each 0,5 points)

a) mask
b) sterile gloves
c) sterile catheter
d) local anesthetic -lidocain gel
e) gauze for disinfection
f) Disinfectant
g) loin
h) urine bag
i) syringe, needle, 0,9%NaCl

Task 1: Explanation to the patient	Points (max 3 points)
a) explanation about procedure and possible complication given to the patient b) ask the patient to take off clothes c) positioning of patient-lie on the back	
Task 3: List of necessary steps for catheterisation	Points(max 8 points)

a) get the sterile gloves b) disinfection of perineal area c) positioning of the loin d) get the sterile catheter out of the pack e) application of local anaesthetic on the top of the catheter f) insertion of the catheter through ureter into urinary bladder-getting urine or aspiration of the urine g) installation of 5 ml of 0,9%NaCl in an appropriate hole on the catheter-for the fixation of the catheter h) connection of the urinary catheter with an urinary bag	

CONSTIPATION - OBSTIPATION - FECAL IMPACTION

Definition

Constipation is generally described as having fewer than three bowel movements a week. Chronic constipation is infrequent bowel movements or difficult passage of stools that persists for several weeks or longer. Obstipation is severe constipation resulting from an obstruction in the intestines. A fecal impaction is a large lump of dry, hard stool that stays stuck in the rectum. It is most often seen in people who are constipated for a long time. It often occurs in people who have had constipation for a long time and have been using laxatives.

Contributing factors

- older age
- inadequate fluid intake
- low-fibre diet
- inactivity
- immobility
- medication use
- lack of privacy
- pain, fear of pain
- laxative abuse
- pregnancy
- tumor or other obstructing mass
- neurogenic disorders
- use of medications, particularly narcotic analgesics
- stress and depression
- privacy issues (being away from home, hospitalized or otherwise being deprived of adequate privacy can result in constipation).

Clinical signs

- Infrequent passage of stool
- Passage of hard, dry stool
- Small, semi-formed stools
- Straining at stools
- Passage of liquid fecal seepage

- Frequent but non-productive desire to defecate
- Anorexia
- Abdominal distention, cramping and bloating
- Nausea and vomiting
- Dull headache, restlessness, and depression
- Verbalized pain or fear of pain
- Rectal bleeding
- Bladder pressure or loss of bladder control
- Lower back pain
- Rapid heartbeat or light-headedness from straining to pass stool

Nursing diagnosis

Goals

- To identify and assess causative/contributing factors

Assessment

- Evaluate usual dietary habits, oral/dental health, eating habits, eating schedule and liquid intake.
- Evaluate change in mealtime, type of food, disruption of usual schedule
- Assess activity level and exercise pattern
- Evaluate current medication usage (drugs that can cause constipation include the following: narcotics, antacids with calcium or aluminium base, chemotherapy, steroids, antidepressants, anticholinergics, antihypertensives and iron and calcium supplements).
- Determine access to bathroom (ability to perform self-care activities) and assess privacy for elimination (use of bedpan, access to bathroom facilities with privacy during work hours).
- Evaluate pain with defecation (hemorrhoids, anal fissures, or other anorectal disorders that are painful can cause ignoring the urge to defecate, which results over time in a dilated rectum that no longer responds to the presence of stool).
- Identify areas of stress (personal relationships, occupational factors, financial problems)
- Ask about anxiety
- Assess usual pattern of elimination; compare with present pattern. Include size, frequency, odour, colour, and quality of feces ("Normal" frequency of passing stool varies from twice daily to once every third or fourth day. It is important to ascertain what is "normal" for each individual).

- Assess degree to which patient's procrastination contributes to constipation (ignoring the defecation urge eventually leads to chronic constipation, because the rectum no longer senses, or responds to, the presence of stool. The longer the stool remains in the rectum, the drier and harder (and more difficult to pass) it becomes.
- Ascertain duration of current problem and degree concern (short-standing or long-standing)
- Evaluate laxative use, type and frequency.
  Evaluate reliance on enemas for elimination.
- Assess for history of neurogenic diseases, such as multiple sclerosis, Parkinson's disease.
- Palpate abdomen and provide rectal exam

Nursing intervention

Goals

- to help the patient to establish and maintain normal bowel habits

Procedure

- Encourage daily fluid intake of 2000 to 3000 ml per day, if not contraindicated medically (Suggest drinking warm, stimulating fluids (tea, hot water) to promote soft stool).
- Encourage increased fibre in diet (raw fruits, fresh vegetables) to improve consistency of stool and facilitate passage; a minimum of 20 gm of natural dietary fibre per day is recommended.
- Encourage patient to consume prunes, prune juice, cold cereal, and bean products.
- Encourage physical activity and regular exercise.
- Encourage a regular time for elimination.
- Encourage/support treatment of underlying medical causes where appropriate to improve body function, including the bowel.
- Encourage isometric abdominal and gluteal exercises
- Teach use of pharmacological agents as ordered, as in the following:
    - *Bulk fibre (Metamucil and similar fibre products)-these increase fluid, gaseous,*
      and solid bulk of intestinal contents
    - *Stool softeners (these soften stool and lubricate intestinal mucosa).*

- *Chemical irritants (these irritate the bowel mucosa and cause rapid propulsion of contents of small intestines.*
- *Suppositories (these aid in softening stools and stimulate rectal mucosa; best results occur when given 30 min before usual defecation time or after breakfast.*

- Apply oil retention enema (to soften stool) if needed
- Apply lubricant ointment if needed
- Digitally remove fecal impaction if necessary.
- Suggest the following measures to minimize rectal discomfort (shrink swollen hemorrhoidal tissue):
  - *Warm sitz bath*
  - *Hemorrhoidal preparations*

For hospitalized patients, the following should be employed:

- Orient patient to location of bathroom and encourage use, unless contraindicated (*A sitting position with knees flexed straightens the rectum, enhances use of abdominal muscles and facilitates defecation).*
- Offer a warmed bedpan to bedridden patients; assist patient to assume a high Fowler's position with knees flexed (*This position best uses gravity and allows for effective Valsalva's manoeuver).*
- Curtain off the area
- Allow patient time to relax.

- Educate patients
- Explain or reinforce to patient and caregiver the importance of the following:

  - A balanced diet that contains adequate fibre, fresh fruits, vegetables, and grains (twenty gm/day is recommended)
  - Adequate fluid intake (eight glasses per day or 2000-3000 ml per day, unless it is differently advised by the doctor)
  - Regular meals (successful bowel training relies on routine)
  - Regular time for evacuation and adequate time for defecation
  - Regular exercise/activity
  - Privacy for defecation

Documentation

- Document date and time of assessment

- Document pattern of elimination, colour, consistency, frequency and amount of stool passed
- Document found contributing and causative factors
- Document type of intervention
- Document further preventive strategy

Evaluation

- The patient's rectum will be free of feces
- The patient will establish and maintain normal bowel habits
- The patient will experience a minimum of discomfort during the procedure

ENEMA ADMINISTRATION PROCEDURE

An enema is the installation of a solution into the rectum and sigmoid colon. An enema is given to treat severe constipation, unresponsive for other measures, or to cleanse the bowel for diagnostic procedures.

Goal

- To safely and effectively administer enema with the minimum of discomfort for the patient

Indications

- Patients who has constipation and faecal loading
- Patients being prepared for surgery or a procedure
- Patients needing the removal of residual barium enema/meal

Equipment

- Micralax enema or fleet (phosphate) enema
- Lubricant (Vaselinum)
- Non-sterile gloves
- Blue under sheet
- White coat or uniform
- Protective eyewear (if at risk of splash)
- +/- Bedpan as required

Procedure

- Explain procedure to patient
- Obtain required equipment
- Ensure patient's privacy
- Put on white coat or uniform and protective eyewear
- Perform hand hygiene and put on non-sterile gloves
- Position patient in the left lateral position in a knee-chest position if tolerated and place a blue under sheet under their buttocks
- Remove cap and lubricate tip of an enema tube
- Instruct patient to relax and to breath normally
- Slowly and gently insert a tube approx. 3 cm into the rectum
- Ask the patient to take a deep breath in (relaxes the sphincter), if resistance is encountered at the internal sphincter
- Squeeze the tube to instil all of the contents into the rectum, and keep the chamber compressed as you withdraw the tube (prevents suction of fluid back into the chamber)
- Dispose of rubbish adhering to infection control policy

- Instruct patient to remain lying in bed for as long as comfortable before opening bowels
- Assist patient to mobilize to bathroom or onto bedpan as required
- Perform hand hygiene
- Offer patient the opportunity to perform hand hygiene

Documentation

- Document date and time of procedure
- Document colour, consistency, odour and amount of stool passed
- Document any alterations in perianal skin integrity
- Document the patient's tolerance and reaction of the procedure (note any complication from the procedure and pain)

Evaluation

- The patient's rectum will be free of faeces
- The patient will experience a minimum of discomfort during the procedure
- The patient will not experience any adverse side effects during or as a result of this procedure

DIGITAL REMOVAL OF FECAL IMPACTION

Sometimes, because of severe constipation, the faeces become so hard and large that it will not pass through the anus without tissue damage. When this happens, nurse needs to remove the faeces manually.

Goal

- To safely and effectively remove impacted faeces with the minimum of discomfort for the patient

Equipment

- Disposable absorbent pads
- Bedpan
- Non-sterile gloves
- Plastic shovel
- Blue under sheet
- Bag for faeces removal
- Soap
- Wash bowel
- Towel
- Water/soluble lubricant

Procedure

- Explain procedure and rationale to patient
- Obtain required equipment
- Pull curtains around bed or close door to room to maintain patient's privacy.
- Ask the patients to lay down on the side with knees flexed and back toward the nurse.
- Place a blue under sheet under the patient's buttocks, and a bedpan to hold removed stool nearby.
- Perform hand hygiene
- Put on non-sterile gloves and apply lubricant to the index finger that will be inserted to break up the impaction.
- Insert a gloved, lubricated index finger and massage around the anal sphincter and edges of the impaction, gradually working the gloved finger into the mass to break it up.
- Dislodge the broken-up pieces of stool carefully working them downward toward the end of the rectum.

- Check regularly to assure that there are no untoward effects such as weakness, diaphoresis or clamminess, or changes in pulse rate.
- Stop procedure if heart rate drops or rhythm changes from the patient's baseline.
- Dispose used under sheet and gloves into the plastic bag and safely dispose it in the space provided.
- Wash your hand thoroughly

Documentation

- Document date and time of procedure
- Document colour, consistency, odour and amount of stool passed
- Document any alterations in perianal skin integrity
- Document the patient's tolerance and reaction of the procedure (note any complication from the procedure and pain)

Evaluation

- The patient's rectum will be free of faeces
- The patient will experience a minimum of discomfort during the procedure
- The patient will not experience any adverse side effects during procedure or as a result of the procedure

DECUBITUS

Definition

Decubitus (bed sore, pressure) ulcer is an ulcer occurring on the skin of any bed-ridden patient, particularly over bony prominence or where two skin surfaces press against each other. Four grades of decubitus ulcers can be recognized on the basis of pathophysiology of soft tissue breakdown overlying bony prominences (Table 1). Pressure relief and pressure reduction devices for the prevention of skin breakdown include a wide range of surfaces, specialty beds, mattresses and other devices. Preventive measures are usually not reimbursable, even though costs related to treatment once breakdown occurs are greater.

Table1. Classification of decubitus

Stage	**Description**
Stage I	intact skin with redness (erythema) and sometimes with warmth
Stage I	partial-thickness loss of skin, an abrasion, swelling, and possible blistering or peeling of skin.
Stage III	full-thickness loss of skin, open wound (crater), and possible exposed under layer.
Stage IV	full-thickness loss of skin and underlying tissue, extends into muscle, bone, tendon, or joint. Possible bone destruction, dislocations, or pathologic fractures (not caused by injury).

Contributing factors

- Old age
- Immobility
- Mechanical forces (pressure, shear, friction)
- Pronounced bony prominences
- Poor circulation

- Poor nutrition
- Poor hygiene
- Altered sensation
- Incontinence
- Edema
- Spinal injury
- Presence of circulatory problems
- Obesity
- Diabetic foot
- Environmental moisture
- History of radiation
- Hyperthermia or hypothermia

Clinical signs

- Redness, heat, tenderness and discomfort in the area
- The area becomes cold to touch and insensitive
- Local edema
- Later, the area becomes blue or purple
- Due to continued pressure that circulation is cut off, the gangrene develops and affected area is sloughed

Nursing diagnosis

Goals

1. to provide the assessment of the decubitus ulcers
2. to provide the assessment of the risk/contributing factors

Assessment

- Determine age.
- Assess general condition of skin (healthy skin varies from individual to individual, but should have good turgor, feel warm and dry to the touch, be free of rashes scratches, bruises, excoriation) and have quick capillary refill (less than 6 seconds).
- Specifically assess skin over bony prominences (sacrum, trochanters, scapulae, elbows, heels, inner and outer malleolus, inner and outer knees, back of head).
- Assess patient's awareness of the sensation of pressure.
- Assess patient's ability to move (shift weight while sitting, turn over in bed, move from bed to chair).
- Assess patient's nutritional status, including weight and weight loss

- Assess for edema (skin stretched tautly over edematous tissue is at risk for impairment).
- Assess for history of radiation therapy (radiated skin becomes thin and friable, may have less blood supply)
- Assess for faecal and/or urinary incontinence.
- Assess for environmental moisture (wound drainage, high humidity).
- Check for repositioning
- Assess surface that patient spends majority of time on (mattress for bedridden patient, cushion for persons in wheelchairs).
- Assess amount of shear (pressure exerted laterally) and friction (rubbing) on patient's skin.
- Reassess skin often and whenever the patient's condition or treatment plan results in an increased number of risk factors.
- For grade 1 decubitus ulcers skin integrity complete checklist at least monthly
- For decubitus ulcers grade 2 – 4 skin complete checklist at least weekly
- For patients at risk of decubitus ulcers or have healed decubitus ulcers reassess for pressure release need at least every three months for as long as it is required.
- Check for pain
- Check for infection

Nursing intervention

Goals

- to improve circulation
- to facilitate healing
- to prevent infection
- to prevent further damage
- to treat decubitus ulcers

Equipment

- hypoallergenic tape
- syringe 10 ml
- needle 21 G
- two pairs of gloves
- isotonic saline solution
- sterile gauze swabs 10x10 cm

- sterile cotton tampons
- sterile dressings
- blue under sheet
- sterile scissors
- alcohol swabs
- waste receptacles

Preparation

- The setting should be prepared including the decontamination of the working surface or tray to be used with detergent and water or detergent wipes and then dried
- Hand hygiene should be performed
- The extent of the use of drapes and protective clothing will also depend on the type of procedure and its' complexity.
- All packaged sterile items for the procedure should be assembled prior to starting the procedure.
- Staff should check the packaging is intact and expiry date has not been exceeded.
- All packaged sterile items, such as needles and syringes, should be opened carefully by peeling back the packaging and not pushing it through the backing paper.
- If possible 30 minutes should be left after bed making or domestic cleaning before exposing or dressing wounds.

Procedure

- Explain procedure and rationale to patient
- Obtain required equipment
- Pull curtains around bed or close the door to room to maintain patient's privacy.
- Place the patient in the most comfortable position and provide easy access to the ulcer site
- Protect the sheet with a blue under sheet
- Put on gloves, remove the dressing and dispose it into the waste receptacle to prevent the contamination of sterile area
- Clean and irrigate the wound using isotonic saline solution. This may be carried out utilising a syringe in order to produce gentle pressure in order to loosen debris. Dry surrounding skin with sterile gauze swab.

- Do not use gauze swabs and cotton wool for ulcer cleaning because this can cause mechanical damage to new tissue and the shedding of fibres from gauze swabs/cotton wool delays healing.
- Remove visible debris and devitalised tissue if present
- Remove dressing residue
- Remove excessive or dry crusting exudates (wound cleansing should not be undertaken to remove 'normal' exudate)
- Refer the patients with glued, necrotizing material for debrid
- ement.
- Choose and prepare appropriate dressing according to the need of wounds (to be drained, protected or keep moist), dressing effects, the availability and practicality of the dressing. Used the dressing in accordance with the manufacturers' instructions or research protocols.
- When uncertain about which dressing to use, a gauze dressing moistened in saline solution may be applied. Gently put a dressing over the ulcer's surface. Do not impale the gauze into the ulcer. Change the dressing frequently to keep the wound moistened.
- When using hydrocolloid dressing, carefully take the dressing out of the package, remove the protective liner from the adhesive side of the dressing and place it over the ulcer. Creases need to be flattened. If needed, attach edges of the dressing to the intact skin using tape.
- For the ulcers with excessive exudate and infected ulcers alginate dressing may be applied. Switch to another type of the dressing when the drainage stops and the wound bed looks dry. For non-adherent surfaces, foam dressing may be applied. Change the dressing when the foam stops absorbing the exudate.
- For painful ulcers hydrogel dressings may be applied.
- When dressing change is completed, remove the gloves and dispose them into the waste receptacles. Dispose all other waste into the waste receptacles.
- Wash the hands
- Plan preventive strategy

Decubitus prevention

- Encourage implementation of pressure-relieving devices commensurate with degree of risk for skin impairment:
    - For low-risk patients: good-quality (dense, at least 5 inches thick) foam mattress overlay.
        - Mattresses less than 4 to 5 inches thick do not relieve pressure; because they are made of foam, moisture can be trapped. A false sense of security with the use of these mattresses can delay initiation of devices useful in relieving pressure.
        - For moderate risk patients: water mattress, static or dynamic air mattress.
        - For high-risk patients or those with existing stage III or IV pressure sores (or with stage II pressure sores and multiple risk factors): low-air-loss beds or air-fluidized therapy
- Encourage patient and/or caregiver to maintain functional body alignment.
- Limit chair sitting to 2 hours at any one time (pressure over sacrum may exceed 100 mm Hg pressure during sitting. The pressure necessary to close skin capillaries is around 32 mm Hg; any pressure greater than 32 mm Hg results in skin ischemia).
- Encourage ambulation if patient is able.
- For patients in bed, encourage repositioning every 1-2 hours unless contraindicated
- Avoid raising the head of the bed for over than 30 degrees
- Avoid placing the patients directly on his trochanter, instead place him on the flank under the angle of 30 degrees.
- Increase tissue perfusion by gently massaging around affected area.
- Avoid massaging reddened area because this may damage skin further.
- Clean, dry, and moisturize skin, especially over bony prominences, twice daily or as indicated by incontinence or sweating. If powder is desirable, use medical-grade cornstarch; avoid talc.
- Encourage adequate nutrition and hydration:
    - 2000 to 3000 calories per day (more if increased metabolic demands).
    - Fluid intake of 2000 ml per day unless medically restricted (hydrated skin is less prone to breakdown).
    - Consult the doctor if the patient has cardiovascular problem

- Encourage use of lift sheets to move patient in bed and discourage patient or caregiver from elevating HOB repeatedly. Remove all creases of the linen. Place a pillow in a comfortable position.
- Leave blisters intact by wrapping in gauze, or applying a hydrocolloid (Duoderm) or a vapour-permeable membrane dressing (maintains the skin's natural function as barrier to pathogens while the impaired area below the blister heals).
- Teach patient and caregiver the cause(s) of decubitus ulcer development:

    - Pressure on skin, especially over bony prominences
    - Incontinence
    - Poor nutrition
    - Shearing or friction against skin
- Teach patient or caregiver the proper use and maintenance of pressure-relieving devices to be used at home.

Documentation

- Record the date and time of initial and subsequent treatment
- Note the specific treatment given
- Note preventive strategies provided and planned
- Describe the decubitus ulcer's location, size (length, width, depth), colour and appearance of the wound bed, consistency, colour, amount and odour of drainage and the condition of surrounding skin
- Provide and document reassessment of decubitus ulcer's at least once a week
- Note changes in ulcer's appearance
- Note the advice to carers

Evaluation

- Ulcer management is practiced in accordance with the best available evidence for optimizing healing
- Ulcer management dressings, pharmaceuticals and devices are used in accordance with the manufacturer’s instructions or research protocols
- The patient will experience a minimum of discomfort during the procedure
- The ulcer is healed within the expected period of time (in accordance with the phase)
- Patient's skin remains intact

- No redness over bony prominences
- Capillary refill <6 seconds over areas of redness.

OXYGEN THERAPY

Definition

Oxygen therapy is the administration of supplemental oxygen (02) using mask, nasal canulla or laryngo-tracheal tubus at the concentration greater than in the room air to the patient in order to relieve hypoxemia and to treat and to prevent hypoxia.

Purpose:

- to increase oxygen saturation in tissue,
- to treat hypoxia in hypoxemic patients,
- to prevent hypoxia,
- to reduce anxiety associated with lack of oxygen,
- to reduce fear from suffocation and death,
- to achieve effective respiration,
- to improve patient´s comfort and health status,
- to improve the patient´s quality of life

Contributing factors

Chronic obstructive pulmonary diseases
Anemia
Acute respiratory distress syndrome
Medications, which depress breathing
Congenital heart disease — heart defects that are present at birth
Asthma and Bronchitis
Emphysema
High altitudes
Interstitial lung disease
Pneumonia
Pneumothorax
Pulmonary edema
Pulmonary embolism
Restrictive pulmonary diseases
Sleep apnea

Clinical signs
Colour of skin, ranging from blue to pale
Confusion
Cough
Fast heart rate
Rapid breathing
Shortness of breath
Sweating
Wheezing or stridor
Using auxiliary respiratory muscles

Nursing diagnosis

Goals

- To identify and assess causative/contributing factors

Assessment

When assessing for hypoxemia, check and record the following signs:

- evaluate complete vital signs (blood pressure, pulse and frequency of breathing)
- evaluate respiratory status.
- auscultate lungs and heart.
- investigate is there any chronic pulmonary or cardiac conditions.
- check capillary refill on all extremities. Capillary refill time varies with age should return to normal within two to three seconds in all patients.
- evaluate is there peripheral or central cyanosis
- looking for evidence of restlessness
- check how patient is answering questions and is there any confusion
- check the level of consciousness

Nursing intervention

Goals

- to help the patient to establish normal level of oxygen in blood

Procedure

- ensure that a *proper* oxygen device and flow rate or FiO_2, is

introduced

- provide appropriate supplies.
- introduce yourself and explain the procedure to the patient.
- prepare the device and connect it to the flowmeter.
- adjust the oxygen flow rate appropriately
- depends of the device it has been selected adjust the flow to that rate which corresponds to the device being used. Consult the package insert for further instructions.
- be cautious the flow rates in excess of this may increase the expiratory work of breathing.
- place the device on the patient's face. Masks should fit on the face to ensure an adequate FiO2 delivery.
- assure patient comfort and tolerance of the device.
- for infants and children who may not tolerate masks modify the fit as necessary to ensure compliance and adequate oxygenation (prongs, oxyhood, etc.)
- if there is need for transport of patients to oxygen therapy, obtain a transport cylinder; verify its contents.
- tighten the regulator onto the cylinder; open the valve one turn and verify the pressure.
- attach the delivery device for transport
- Continue procedure like it was described above
- monitor the effect of therapy with pulse oximetry and/or blood gas analysis.
- assess the patient for tolerance of therapy

Documentation

- document the initiation of oxygen therapy, changes in therapy, and the effect and tolerance of therapy.
- document the way of usage of therapy
- document mode of delivery (device and FiO2)
- document level of SpO2
- document indications for usage of oxygen.

Evaluation

- The patient will have normalized vital signs and feel better
- The patient will establish and maintain normal blood levels of oxygen

- The patient will experience a minimum of discomfort during the procedure

DRUG APPLICATION – Enteral procedure

Definition

As the part of daily work nurse administers various drug and medications based on physician prescription. Drug administration means taking in different mediation via different absorption ways (mucosa, skin, parenteral etc.).

Usually there are two ways of drug administration; enteral and parenteral. Enteral means that drug is taken in via digestive system. Parenteral mean all other ways that do not use digestive system, like drug application via mucosa, skin, intramuscular way, intravenous way, subcutaneous way and intradermal way.

Nursing procedure for drug administration is very similar in few steps but differs in steps of realization. Most common ways of drug administration is:

Enteral	Parenteral
Digestive system (mucosa of mouth, sublingual, mucosa of buccae, mucosa of whole digestive system)	Intramuscular, Intravenous, Via skin Subcutaneous Intradermal

Nursing diagnosis

- To provide that patients have therapy on time
- To improve rehabilitation process.

Assessment

Before administration of any kind of drugs it is important to make assessment based on patient condition, age etc.

Nursing interventions – oral administration of drugs.

Nursing interventions are various for different kinds of type of drugs and medication. Usually drugs taken via mouth or enteral are different types of tablets, pills, etc.

Before starting of application of any kind of medication it is important to make three checks:

- Check the medication prescription and compare it with medication from pharmacy
- Check the way of medication application, dosage, time of application and route of application
- Check the identity of patient

Equipment:

- Cups for pills,
- Pills
- Glass of water

Procedure

Before giving pills by mouth it is important that nurse checks all contraindication for this procedure like the state of conscience, the state of oral cavity etc.

Before giving medication to patients it is necessary to explain all steps of procedure and possible side effects.

Following steps of procedure are:

- Conduct all necessary check – out
- Explain patient the procedure

- Patient should be positioned in a comfortable position. If it is possible it is semi – seat position (Fowler position); if patient is not able to be placed in this position it is recommended to use patient's bed options for placing him/her in a comfortable position.
- Prepare appropriate liquid (tea or water) that will patient use while taking drugs.
- Explain and show what kind of pills/tablet patient is going to take
- If the patient is in position to take pills/tablet on his own nurse should give him a cup with pill tablet and ask him to swallow. If the patient is not in possibility to do this by his own Nurse should ask a patient to open mouth and nurse puts pills/tablet in his mouth.
- Along with pills Nurse should give a patient a glass of water/tea and asks to drink it with pills and swallow easy.
- It is important to determine if patient is capable to take more than one pill at the time and to make sure that Nurse helps patient to take all necessary pills/tablet.

Documentation

Time, date and type of pills administration trough mouth should be notices on patient chart and Nursing chart. All data should be written clearly with date, time, amount and type of medication given to the patients along with sign of person/nurse who give medication.

Evaluation

Evaluation of procedure comprises three levels:

1. After the medication is administered it is important to check did the patient swallow the medication
2. After the end of shift/day it should be evaluated whether the prescribed medications were administered
3. At the date of patient discharge it should be evaluated did the patient received all necessary medication in a proper way.

EXCEPTION

If there is an obstacle for administration of drugs through mouth different types of medications can be administered by nasogastric tube (procedure of nasogastric tube is explained in a separate procedure). General description, Nursing diagnosis and Assessment resembles the procedure of medical application through mouth.

Procedure:

Equipment:

- Drug soluble in water (tablets, cup for tablets,)
- 2x Syringe
- Gloves
- Waste disposal dish
- 15-30 ml of water

Procedure:

- Check the identification of patient, if patient is communicating ask him for his name, if not check the bracelet or patient chart for his name.
- Check the medication in accordance with all rules for drug administration.
- Prepare all necessary equipment (if the drug is in the form of tablet it should be chopped up in small pieces). Drug can be chopped in small pieces with a spatula and a cup for pills after which 5 ml of aqua should be added.
- Nurse should wash hand and put on the gloves.
- Put the patient in an appropriate position, semi – sitting position (Fowler position) if patient is in ability to take that position alone, if not Nurse should help him and use the bed options to make easier for patient to obtain Fowler position.
- Remove the plug from nasogastric tube
- Check the position of nasogastric sonda. If necessary aspirate some of the gastric content. (Aspiration of gastric content is done by connecting Syringe with minimum of 50 ml to nasogastric tube). If the aspiration is conducted and it is positive, syringe used

for aspiration should be detached and syringe with prepared drug should be connected.

- Check again is the drug/tablet ready for application.
- Applicate the drug using the methods of free fall with syringe.
- After the drug is administered, nasogastric tube should be washed out with 15-30 ml of water (maximum 50 ml of liquid). Amount of this liquid should be noted on the patient chart and Nursing chart.
- Syringe used for drug administration should be removed and Nasogastric tube should be plugged,
- Patient should stay in Fowler position at least 30 minutes and comfortable conditions should be ensured for him.
- All equipment that is used for this drug administration equipment should be discarded (what is for a single use).
- Nurse must wash her hands thoroughly.
- Notice the amount of drugs, liquid, time, date and person who administered this drug in patient chart and Nursing chart.

Documentation

Time, date and type of pills administration trough mouth should be notified on the patient chart and Nursing chart. All data should be written clearly with date, time, amount and type of medication given to the patients along with sign of person/nurse who gave medication.

Evaluation

Evaluation of procedure comprises three levels:

1. It is important to check did the patient swallow the medication
2. After the end of shift/day nurses check are the prescribed medications administered
3. On date of patient's discharge it should be evaluated did the patient received all necessary medication in a proper way.

RECTAL/ANAL DRUG ADMINISTRATION

Definition

When there is obstacle to administer drug orally some of the medications can be administered per rectum (PR). Medication that are usually administered PR are good for local and for systematic treatment, because the physiology and anatomy characteristics of rectal mucosa ensure fast medication absorption. Enema procedure is used for therapeutic and diagnostic purpose and sometimes it can be used for medication administration (Enema medication administration is described in procedure about enema). Usually types of medication administered per rectum are different types of suppositories and different types of unguents.

This method with all benefits also has some deficiencies that are usually caused by contraindication. Contraindication for this procedure are the lack of consent, anal surgery, abnormalities or trauma, pruritus or any other malformation of anal region.

Nursing diagnosis:

- To help in recovery process
- To give therapy at proper time and prescribed way

Assessment

This procedure requires very serious approach. Nurse needs to examine perianal region for following signs: soreness or redness, infestations, hemorrhoids, pruritus, skin tags, bleeding, foreign bodies wounds etc. Nurse needs to assess is the perianal region suitable for drug administration. Furthermore, it is very important to confirm that all above mentioned contraindications are not existing otherwise they can cause serious problems for patients.

Procedure

Equipment:
This procedure has several similarities with procedure for enema insertion but it is simpler and demand lower number of material units for this procedure:

Materials that are necessary for this procedure are:

- Suppositories
- Gloves (clean not sterile)
- Lubricant
- Waste bag
- Absorbent pad
- Gauze swabs or tissues
- Bedpan and toilet paper.

Procedure:

Once the equipment is prepared nurse can start with procedure according to the following steps:

- Conduct the check of medication and compare is it the medication prescribed by physician the same with the prescription on patient's chart.
- Check the patient's identity by comparing his name on the patient's chart with the name on the patient's bracelet or (if patient is communicative) ask him for his name and surname.
- After the first two steps it is very important to explain to the patient procedure in terms that patient is able to understand (what to expect from procedure etc.) and ask the patient does he/she understand the procedure.
- Ensure privacy for patients by using curtains around the bed space.
- Nurse now need to wash hands and to prepare medication (suppository or unguentum)
- Patient should be positioned in an appropriate position: it is position on the left side with the right knee raised towards the chest. The next step is to uncover gluteal area. *This position helps*

nurse to enable gravity – assisted flow through rectum toward the sigmoid colon. Under the patient's hips and buttocks place an absorbent pad. When patient feels comfortable and ready for procedure start with the application of suppository.

- Wash your hands once again and wear non-sterile gloves.
- Remove all packaging of suppositories and place it onto a clean dressing trolley or similar.
- Take the lubricant and squeeze sufficient amount on gauze and lubricate the apex of suppository.
- Ask patient to take deep breath, to relax and concentrate on breathing. With non-dominant hand part the buttocks, while with dominant hand place the suppository in an anal canal for 2- 4 cm using a gloved index finger. If there is several suppository prescribed repeat this step. **Note to patient that is very important to keep suppository in an anal canal as long as possible or at least for 20 minutes while defecation reflex passes.**

  Exception: procedure is the same for administration of unguentum, just for unguentum special factory made applicator is used.
- Wipe away excess traces of lubricant from the anal area
- Place all used equipment in clinical waste and wash your hands with disinfection agent
- Patient should be left in a comfortable position to ensure medication absorption
- Document type, amount, time and person who delivered medication on the patient chart and Nursing chart.
- Observe patient for any adverse reactions.

Documentation

A nurse must document all steps that are conducted within this procedure like: type of medication that is used, dosage, time and person who administrated this medication

All steps should be documented in the patient’s chart and Nursing chart.

Evaluation

Procedure can be evaluated in the following manner:

1. Immediately after procedure evaluate is the patient suitable to hold medication in an anal canal to ensure absorption of medication
2. After the medication has been absorbed check the benefits of the treatment.

PROCEDURE OF VAGINAL DRUG ADMINISTRATION

Definition

Vaginal drug administration represents a local drug administration where vaginal mucosa is a media for drug conducting. Anatomical and physiological characteristics demand specific medication that can be used in a vaginal area. Usually it is different types of suppository, unguentum, gels etc.

These medications are usually used for treatment of various infections inflammations and as contraceptive. Vaginal drugs usually are prepared with special applicator what ensures that drug can be applied in all parts of vaginal area.

Nursing diagnosis

- To help improvement of treatment
- To provide on–time application of therapy

Assessment

It is necessary to asses all factors that can lead to contraindications of vaginal drug administration. It is necessary to check identity of the patient, the appropriateness of drugs, dosage and time. Patient should be able to take position laying on back and it is recommended to apply this drug before sleeping if it is not indicated differently.

Procedure

Equipment

- Vaginal mediation with applicator or without
- Glows non – sterile
- Swabs
- Sanitary pad
- lubricant

Procedure

- Prepare all equipment on the hygiene trolley or similar
- Check the patient identity by asking her name, check the bracelet, patient's chart and the number of room and bed.
- Check the dosage, date and the type of vaginal drug.
- Ensure the patient comfort and intimacy using bed curtains. Explain the procedure to the patient. It is good for patient to empty an urinary bladder before implementation of vaginal drugs.
- Put patient in a gynecological position, laying down on the back with separated band knees.
- Wash your hands and put on non-sterile gloves.
- Uncover the vagina area, only perineum.
- If unguentum, cream or gel is used you need an applicator. Put the clip in the applicator on a drug tube. Easily put pressure on a drug tube so that applicator fills with drug. Take off the applicator from a tube and lubricated it. The applicator should be held for a cylinder and inserted into vagina. To ensure patient's comfort point applicator first downstream toward the spine and then up and back toward the cervix and then press the applicator clip. If you use suppository, place the suppository into the applicator, put the applicator in a position as described earlier. If suppository comes to the distal end of vagina press the clip and take the applicator out while holding pressure on the applicator clip. Before placing suppository into the applicator suppository it must be lubricated.
- After placing vaginal medication place the sanitary pad to prevent bed and clothes of patient from getting dirty.

- Help the patient to take comfort position and tell her to stay as long as possible in the bed for next few hours.
- After finishing application all equipment that is for single use should be disposed. If an applicator is for multiple use it must be washed with soap, disinfection media and warm water (*one applicator can be used just for one same patient).*
- Wash your hands
-

Documentation

Document all that you have done, note the date and time of application, drug dosage, usage of applicator, effects of treatment and all other relevant information.

Evaluation

It is very important to notice that this drug can make local complication like local irritation. This procedure can be evaluated after few hours to see has the vaginal drug been absorbed properly.

NOTE: it is recommended to teach the patient to be able to administer vaginal medication by herself.

IV THERAPY

Definition

More than 800% of hospitalized patients receive some kind of i.v therapy (i.v. – intravenous therapy). I.V. therapy means that medication is put directly into blood flow into veins by using some of the methods for application of blood therapy. I.V. therapy can be performed in two ways:

1. One that is using peripherals veins and
2. Central venous therapy using major large veins

Peripheral veins are used for application of infusion solution using hand, pals, and leg and foot veins for short time for the occasional application of therapy. Central venous therapy is usually used vena cava superiors and vena jugulars

interna and externa and it is used for patients that need to take large amount of solution, hypertonia solutions, medication with caustic impact and high calories parenteral nutrition.

I.V. therapy is mostly used for fluid and electrolyte compensation, maintenance of water-salt balance, medication application, blood transfusion and parenteral nutrition (feeding)

I.V: therapy can be applied in hospital and house environment.

Nursing diagnosis

- To apply therapy
- To improve nutrition status of patients via parenteral feeding
- To improve status of electrolytes
- To maintain water – salt balance

Assessment

Indications for I.V. therapy are various depending on therapy goals, the length of therapy, diagnosis, age, veins status etc. I.V. therapy can be used for a single application of medication if the medication need to be put in blood flow immediately. There are three types of medication I.V. application:

1. Infusion solution through peripheral veins
2. I.V. bolus putting medication directly into blood flow
3. Using central vein

Procedure

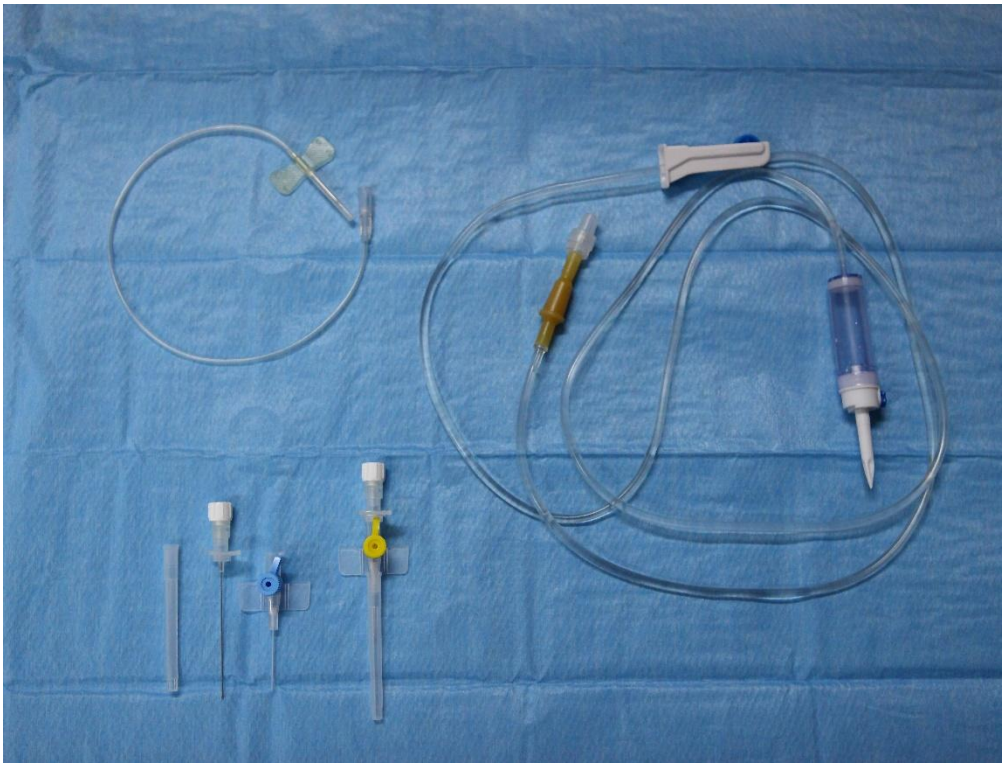
This procedure, as mentioned above, will be shown in three different areas: using infusion system, using I.V. bolus and the role of the nurse during the placement of central vein catheter.

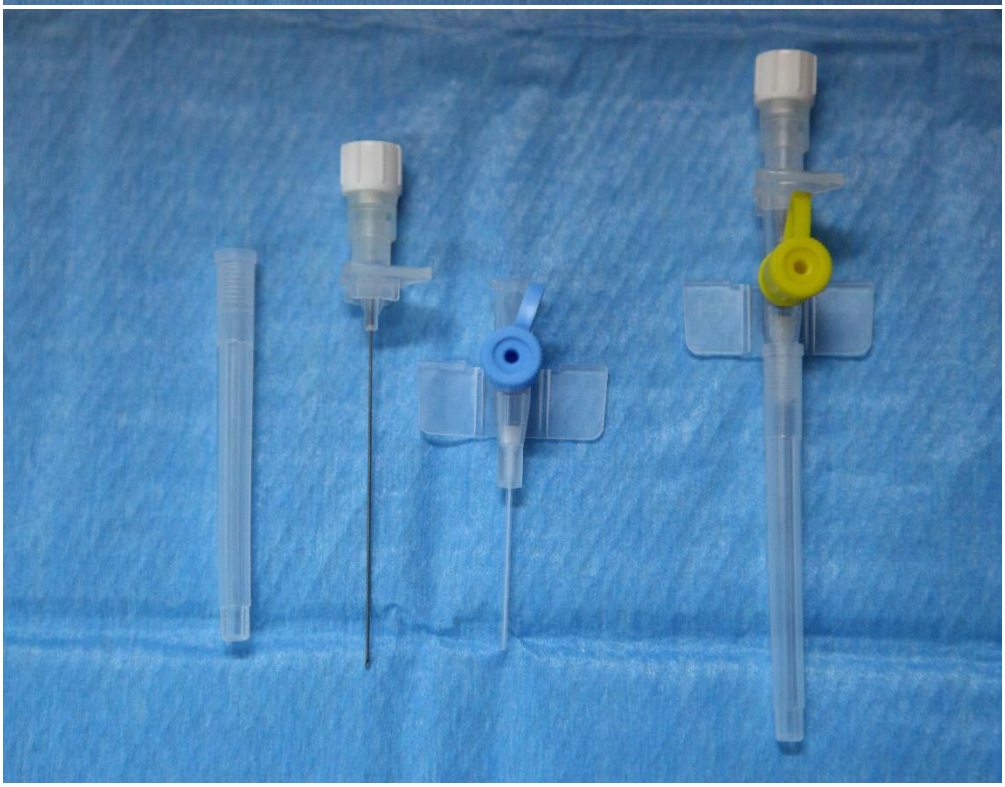
Infusion system

Equipment

- Infusion system
- Tupfers
- Alcohol or other relevant disinfection mean

- I.V. solution
- I.V. medication
- I.V. stand
- Adhesive tape
- Non – sterile gloves
- Tourniquet
- Cannula I.V.
- Needle dispenser
- Sterile gauze





Procedure

- Sort the equipment on the sanitary trolley or similar
- Check the equipment sterilization, dates etc.
- Check the patient's identity from a bracelet, the patient chart or ask a patient for his/her name. Check the infusion solution and medication following all steps for medication/drugs security protocol. Infusion solutions are specific; if the solution is packed in a glass bottle check the bottle for wracks or - if the solution is in a plastic bag check the plastic bag for leaking and check the solution colour which has to be clear not blurred.
- Wash your hands
- Open the I.V. infusion system following all steps to maintain aseptic condition. Take the clamp and move it to the chamber for dropping and then close the regulator wheel.
- If the solution is in a plastic bag place it on the flat, solid surface or hang it on the stand. Take off the protection cap or protective folia of I.V., then take of the protective cap from the pin that goes into a plastic bag on an infusion system. With one hand hold thigh the infusion bag near the place of the connection with an infusion set and with other hand put the pin inside the plastic bad. Hang the infusion bag and press the chamber for dropping to be half full.
- Infusion solution can be packed into glass bottles without valve so you need to remove metal cover from the bottle and remove disk beneath if it exists. Place the bottle on a stabile surface and use an alcohol swab to clean the rubber cap. Take the cap from the pin of infusion system and put it through the rubber cap into bottle. Angle of pin should be 90 degrees. Turn the bottle and you will see forming of bubbles and you will hear the air noise. If there are no such signs throw the bottle away. If everything is correct hang the bottle on the stand and press the chamber for dropping to be half full.
- Bottle with valve procedure is the same like for bottle without valve – only a pin should be placed through the specific place near the air valve (this place is usually marked on these bottles).
- After the connection of bottle with infusion solution infusion system should be prepared (bottle is hanging on I.V. stand), take the infusion system in your hand and if you have in your presence a bedpan or a

bucket or the sink point the distal part of system towards it and slowly open the clamp wheel. Hold the clamp fully open until the all air bubbles that are created in the system go out. When all air bubbles go out hang the system on the stand. (if you are doing this outside the patient's room place the etiquette on the bottle with patient's name, room number, bed number and medication that are in infusion).

- Explain to the patient all procedure and ensure him comfort. Ask a patient to take a comfortable position if he/she can move.
- Before starting procedure choose the place for I.V. (usually veins of hand and palm). It is recommended to use distal veins, so if therapy last longer you can move I.V. places of administration)
- When you choose I.V. place ask a patient to take a comfortable position.
- Put on the gloves and place the tourniquet 15 cm above the place of I.V. set insertion. Easily palpate the vein with the fingers of a non-dominant hand, stretch the skin with non-dominant hand to fixate the vein.
- Make the disinfection of the area by using disinfection media (alcohol or povidon iodum- never combine these two) by making round moves from a centre to a periphery in range 5-0 cm.
- Take the cannula with your dominant hand for a plastic delta part and take of the protective cap, then rotate the needle until the slope is looking up.
- With fingers of a non-dominant hand stretch the skin minimum 4 cm from the place of insertion to fixate the vein.
- Tell the patient the moment when you will place the cannula. Place the cannula in the above explained position using angle of 15 – 25 degrees.
- With an energetic move place the cannula into vein, press the rubber mouth of cannula to see is there any blood that will prove you that you located the vein. If the blood is shown place the cannula minimally half of its length and take the needle.
- Remove the tourniquet
- Place the cannula (full length) into a vein. Place the gauze below the cannula to prevent blood to contact skin, and connect the infusion system if you have not done that before. (An infusion system can be connected before the placing cannula).

- Open the clamp on infusion system and regulate the speed of solution flow.
- Fixate the cannula using U or H or some other methods.
- Stay with patient for next 10 minutes to check possible complication and reaction that can be caused by cannula, solution or some other reason.
- Dispose all used material.
- Document all steps that are done

Exception:

Sometimes medication need to be administer directly into a vein without using an infusion system with an infusion solution. Procedure is very similar to steps for preparation of infusion system with an infusion solution.

Equipment:

- Swabs soaked in alcohol or similar 5 pcs
- I.V. medication
- Adhesive tape
- Gloves (non – sterile)
- Tourniquet
- Cannula I.V. or a needle 2 pcs
- Needle dispenser
- Sterile gauze

Procedure:

- Sort the equipment on the sanitary trolley or similar
- Check the equipment sterilization, dates etc. If the I.V. medication is packed as powder it is necessary to solute medication using sterile aqua in an appropriate ratio that is prescribed.
- Check the patient identity comparing name from a chart, from a bracelet, and patient's chart and ask a patient for his/her name. Check the all medication following rules for medication check.
- Wash your hands
- Prepare all material in a proper way to maintain the aseptic condition of equipment. Open the syringe and fill it with drug. Drug packed in ampulla are easier to be used than those packed as powder. If you use

drugs from ampulla, check the date on ampulla and the type of drug administration. Clean the neck of ampulla with swab soaked in alcohol, and if there is a sign that ampulla can be opened use your non- dominant hand to hold an ampulla still and use your dominant hand to take the ampulla neck with a thumb and a forefinger. With a strong move open the ampulla. If the ampulla need to be opened with a saw first make three sharp move with a saw. Drugs packed as powder need to be soluted in the following way: use a sterile syringe, a needle and an ampulla of 5 ml with sterile aqua. Open the syringe and a needle then connect the needle to the syringe. Remove the protective cap from a needle and pull aqua into the syringe. With a non-dominant hand use your thumb and a fore finger to hold aqua ampulla upside down (vacuum in ampulla will prevent aqua from leaking). With a dominant hand place the needle in ampulla and use three fingers to pull aqua into the syringe. When aqua is in the syringe open the bottle where powder rug is, remove the steel cap and clean the rubber cap with alcohol. Place the needle through the rubber cap by holding bottle with your non dominant hand and by a dominant hand hold the syringe with needle. Insert the aqua into bottle and shake a bottle until you get a clear solution. And with same needle (that is still into the bottle) and syringe pull the appropriate dosage of drug. Before the administration drug into vein it is recommended to change a needle.

- Explain to the patient all the procedure and ensure him/her comfort. Ask a patient to take comfortable position if he/she can move.
- Before starting procedure choose the place for I.V. (usually it is veins of hand and a palm) it is recommended that you use distal veins. Thus if therapy lasts longer you can change I.V. places of administration having in mind that all peripheral veins are appropriate locations I.V. therapy.
- When you choose I.V. location ask a patient to take comfortable position.
- Put on the gloves and place the tourniquet 15 cm above the place of I.V. set insertion. Easily palpate the vein with the fingers of a non-dominant hand, then stretch the skin with a non-dominant hand to fixate the vein.

- Make the disinfection of a selected area by using disinfection media (alcohol or povidon iodum- never combine these two) by making round moves from a centre to a periphery in the range of 5-0 cm.
- For this purpose you can use cannula, (usage of cannula is described in the procedure about infusion) or a needle. The syringe with a needle need to be rotated until the slop looks up (before inserting needle into a vein air need to be pulled out the syringe – with a non-dominant hand hold the syringe with a needle in the straight position and with a dominant hand make an easy pressure on the syringe clip until the air is pulled out.
- With fingers of non-dominant hand stretch the skin minimum 4 cm from place of insertion to fixate the vein.
- Tell the patient the moment when you will place the needle. Place the needle in the above explained position using angle of 15 – 25 degrees.
- With a single move place the needle into a vein, then slightly pull the syringe toward yourself to see have you hit the vein. If the blood is shown place the needle into a vein.
- Remove the tourniquet.
- Administer drug very slowly.
- When the drug is fully administered take out the needle with a slow uninterrupted move then put swab with alcohol on the place of insertion and fixate it with an adhesive tape.
- Explain to the patient that he/she needs to make small pressure on that place to stop bleeding.
- Stay with a patient for next 10 minutes to check possible complication and reaction.
- Dispose all used material.
- Document all steps that are done.

Documentation

It is crucial that all steps are documented: date, time, the type of I.V. system, name, as well as the dosage of infusion system. If some of medication is added to infusion solution it should also be documented. All this data need to be signed in the patient and nursing chart and signed by person who performs this procedure.

Evaluation

All steps of this procedure should be evaluated because of potential complications such as local phlebitis, extravasation, cannula movement, occlusion, vein irritation, pain on the place of application, hematoma, vein spasm, thrombosis, thrombophlebitis, nerve damage etc. Further complications can be systematic infection, allergic reaction, circulation overload and air embolism. All these steps need to be evaluated so that above mention complications could be avoided. Nurses evaluate all steps comprising the laws of antiseptic and aseptic methods, and it must be checked if the patient show any kind of reaction.

Notes

Always use the sterile infusion system, it is recommended that I.V. system stays in vain for 48 or maximum 72 hours.

OSCE EXAMPLE

Preparation of the material necessary for the application of the drug: Points (max 3 points, each 0,5 points)

-syringe with medicine and needle

-supporter arm

-alcohol

-gauze for disinfection

-tupfer

-loin

Demonstration	**done**	**not done**
1. Explanation to the patient	done	not done
2. Choose the vein for application	done	not done
3. Ligature of the arm above place of insertion	done	not done

4. Disinfection of the place of insertion	done	not done
5. Removing air from syringe	done	not done
6. Insertion of the needle into vein at an angle of 45 degrees	done	not done
7. Checking the position of the syringe (aspiration of the blood)	done	not done
8. Insertion of needle few mm proximal	done	not done
9. Application of the drug	done	not done
10. Withdrawing the needle	done	not done
11. Application of the tupfer for stopping of the bleeding	done	not done
12. Placing the patch	done	not done
13. Say patient not to bend arm	done	not done

CENTRAL VEIN LINE (CENTRAL VENOUS CATHETER)

Definition

This procedure is very specific because it is combination of a team work (physician and nurse) to open and maintain access to the central vein. Places for vena iugularis externa and interna, vena subclavia and vena basilica. Central vein is used for fast and large therapy including parenteral nutrition of patient. Measurement of central venous pressure can be done when the medication need a large amount of solution. It is highly recommended in emergency cases when peripheral veins are not available. Using CV is suitable for diagnostic purposes because you can take as many samples as you want without using peripheral veins and giving them enough time to recover.

Central venous catheter can be placed in vena subclavia but because of it length it ends in vena cava superior or right atrium, using vena iugularis interna and vena basilica catheter ends in vena cava superior

Potential complications are increased with CV like pneumothorax, sepsis, thrombus forming and perforation of blood vessel and organs. CV can decrease patient movement, and it is very complicated to perform. This procedure is fully sterile and it is conducted in a team work o (physician and nurse). Removing is done by specially educated nurse or a physician if bacteriology analysis of the top of the catheter is obligatory.

Procedure

Equipment

For placing central venous catheter it is necessary to prepare:

- Gloves – sterile (sterile coat)
- Covering, protective surface, sterile pads
- Sterile compress, masks
- Swab with alcohol and swab with some other antimicrobial solution
- Physiology solution 0,9% Na CL
- Syringe 3 ml
- Lidocain
- 5% dextrose solution in water
- Syringes for blood samples

- Material for sutures
- Two central venous catheters size 14 and 16G (this is a typical size for adults – the size of central venous catheter need to be determined based on the patient constitution and age).
- Sterile tupfer 10x10
- Adhesive bandage

For removing central venous catheter you need to prepare following:

- Gloves – one pair of clean and one pair of sterile gloves
- Swabs soaked in alcohol
- Povidone – iodine,
- Sterile gaze 10x10
- Paean
- Adhesive bandage

Procedure is conducted in teams - usually physicians conduct the placement of catheter but nurses are also involved in process.

- Patient needs to be introduced with all the steps of procedure and if he/she is able a patient signs the consent for procedure.
- Patient needs to be positioned in Trendelenburg position (this help vein dilatation and lower the risk of air embolism). If the catheter is placed in vena subclavia it is good to place rolled sheet lengthwise between shoulders. If the catheter is placed into iugular vein rolled sheet should be placed opposite shoulder to make an anatomical position more visible. Under the patient it is recommendable to place protective sheet. It is advisable that patient turns head to opposite direction.
- Prepare the place for catheter insertion (place should be shaved or trimmed)
- Wash your hands
- Sterile field should be prepared on the table using sterile sheet of sterile compress. Person who conducts placing central venous catheter wears a mask, sterile gloves and a sterile coat. The next step is cleaning the area with swab with 70% alcohol solution, using tupfers with iodine making concerting round from centre to outside (this is usually done by nurses).

- Second person (in most cases physician) wears a sterile mask and a coat.
- Nurse opens the 3ml syringe with a needle 25G size and using sterile technique give them to physician. Nurse cleans the top of lidocain bottle and turns it toward physician who will fill up the syringe with lidocain and apply it to the selected area.
- Nurse will open catheter and using aseptic technique give it to physician to conduct application.
- While physician is placing the catheter nurse should prepare infusion set to be connected the very moment the catheter is placed into a central vein.
- When physician confirms that catheter is in the central vein the infusion solution is used.
- Place the label with date and time of placing catheters and its length
- Dispose all used material that are for disposal, and materials that can be reused send to washing and sterilization.
- Document all steps in the patient and nursing chart.

Removing Central venous catheter:

Procedure:

- Place the patient in an appropriate position – on the back to prevent development of embolism.
- Wash your hands, wear the clean gloves and mask.
- Turn of all infusions and put the sterile compress to create sterile field.
- Remove the dressing material from catheter area wearing the sterile gloves. Clean the catheter area with alcohol or iodine solution.
- Remove the sutures and pull out the catheter using slow and continuous move. Patient should make Valsalva maneuver to prevent air embolism
- The location of catheter entering should be cleaned with iodine solution, covered with sterile gauze and fixed with an adhesive track. Place should be covered at least for 48 hours.
- Take the swab from catheter or take part of catheter (it is recommended that is the top of catheter) and send it to microbiology analysis.

Documentation

Central venous catheter is very complex procedure and all steps from placing, drugs administration, dressing, removing and swab control should be noted. Note when, where and who have conducted procedure in the patient and nursing chart.

Every drug administration need to be noted in the patient chart and signed by person whom performed it. Dressing of catheter is very important. Note time and date of central venous catheter dressing which is very important in prevention of infection (it should be noted in the patient chart including date and time of removing of catheter).

Evaluation

Success of the procedure can be evaluated in the following way:

- First evaluation is done after the procedure of placing catheter (checking success and potential complications).
- Second evaluation is done during the use of catheter – follow up the catheter area in order to mark signs of infections or any other complications.
- Third evaluation is done after removing central venous catheter.

INJECTIONS

Definition

Most common type of parenteral therapy is therapy application by injections of different types. Types of injections can be:

- Intramuscular (injection is applied directly into muscle)
- Intravenous (injection is applied directly into vein – described in previous chapter)
- Subcutaneous (sub dermal injection) and intracutanoues injection
- Intradermal injection

Usage of injections enables faster and better impact of drugs increasing the speed of drug impact. Dosage is more precise and it is used when drugs cannot be applied via digestive system. This procedure is quite complex because the nurse and patient need preparation. Procedure is followed by pain occurrence so patient usually feels uncomfortable during this procedure. Preparation of equipment is similar to all types of injection. Choosing location and drug application depends on the type of injection.

Procedure

General equipment:

- Drug that can be packed in ampulla or lagena (powder)
- Syringe 2 pcs
  Syringes are made from plastic and they are for single use. They come in sterile pack with graduation in millimeters or ccm (depending on purpose they can be from 1ml, 2ml, 5ml, 10ml, 20ml and 50 ml). They have two-parts tube (barrel) and clip (plunger). Plunger can be pulled and pushed along the barrel. There is also some special type of syringe like syringes for insulin which are graduated in insulin units.
- Needles 2psc are produced for single use and they can be of different size. The size of needle is measured in gauge from 7 to 34 G, most common use in nursing interventions are 14-28G, as the G higher the needle diameter and length is smaller. Needles are also produced in different colours to make easier work for nurse. Colours are specific for intramuscular use, intravenous use, subcutaneous ET.

- Swabs with alcohol or other relevant disinfection remedy 3- 5 psc
- Bed pen
- Gloves non-sterile

Procedure:

- Each type of injection application is initiated in the same way. First it is necessary to follow all the rules about the drug application (check the date, dosage, time, patient, room, bed number).
- Space/surface where equipment is sorted need to be clean (a hygiene/therapy trolley or similar). Before sorting equipment and before preparation of drugs nurse washes her hands.
- Drug/medication preparation is different if the drug is in ampulla or lagena. Drugs packed in ampulla are easier to be used than those packed as powder. If drugs in the form of ampulla are used it is necessary to check the date on ampulla and type of drug administration. Clean the neck of ampulla with swab soaked in alcohol, and if there is sign that ampulla can be opened without sawing use your non-dominant hand to hold ampulla still and use your dominant hand to take the ampulla neck with a thumb and a forefinger. With a single strong move open the ampulla. If the ampulla needs a saw for opening first make three sharp moves. Drugs packed as powder in lagena need to be soluted in the following way: use a sterile syringe, a needle and an ampulla of 5 ml of sterile aqua. Open the syringe and a needle; then connect the needle to the syringe. Remove the protective cap from a needle and pull aqua into the syringe. With non-dominant hand use your thumb and fore finger to hold aqua ampulla upside down (vacuum in ampulla will prevent aqua from leaking) and with dominant hand place the needle in ampulla and use first three fingers to pull aqua into the syringe. When aqua is in the syringe open the bottle where powder rug is, remove the steel cap and clean the rubber cap with alcohol. Place the needle through the rubber cap by holding bottle with your non dominant hand and with dominant hand hold syringe with needle. Insert the aqua into a bottle and shake the bottle until you get a clear solution. And with the same needle (that is still into bottle) and syringe pull the appropriate dosage of drug. Before administering drug into vein it is recommended to change a needle.
- Before application of drug change the needle.
- Check again the patient's identity by asking him for his name.
- In order to make the procedure as much as comfortable for patient explain to him the full procedure and tell him what to expect.

- Clean the place of administration of drug using swabs with alcohol using round circles moving from centre towards outside in radius at least of 5 cm.
- Tell the patient when you will insert the needle
- Apply the injection and insert drug
- After the insertion of drug remove the injection with one continuous move and on the place of puncture put the alcohol swab

Above described procedure is for all kinds of injections. In the text below specific places of injections and procedure will be explained.

INTRACUTANEOUS INJECTIONS

These injections are given into dermis, mostly used for different allergy tests. Dosage of applied drug by this method is usually 0, 5 ml. Most common places for intacutaneosu injection are inner side of forearm and outer side of upper arm. Suitable place for this injections is also upper back area – shoulder blades area and upper thorax area.

Procedure for intracoutaneus injections is consisted of all general procedure steps for injections with some specifics like:

- Prepare the equipment and drugs as it was explained
- Prepare the patient and explain to him the whole procedure.
- Choose the proper place for injection application – most common is an inner side of forearm.
- Clean the place with cotton swabs soaked in alcohol as it was explained
- Use your non-dominant hand to stretch skin.
- Rotate the needle with syringe so that needle slope is facing up.
- Install the needle using angle of 10-15 degrees. Needle is applied around 3 mm.

- When the needle is in an adequate position insert the drug using easy pressure on the syringe plunger (clip). When the drug is inserted with one single continuous move remove the injection.
- Do not massage place of application.
- If the place of application is used for testing mark the place.
- Dispose all used material in accordance with institution rules.

Subcutaneous injection:

This type of injections represents injections that are given directly into subcutaneous tissue. Most common drugs applied in this way are insulin, heparin and some types of painkillers, vaccine etc. Dosage for application of subcutaneous injection is 1-2ml.

Place for application of subcutaneous injections are: outer part of upper arm, upper part of abdominal wall and back and outer part of thigh.

Procedure is similar to general procedure for injection application:

- Check the medicine following all the steps for drug check.
- Check the identity of patient and prepare equipment and drug (as it is previously described).
- Wash your hands, explain the procedure to the patient.
- Choose the location of drug application. (Location need to be clean without any bruise, oedema, scratch or any other changes in skin integrity. That is recommended whenever you administer subcutaneous injection because this type of injections is used for long lasting therapy).
- Patient should take comfortable position.
- Place of drug insertion need to be cleaned with cotton swab soaked in alcohol using circular motions from centre to outside.
- Remove the needle cap.
- Use your non-dominate hand to wrinkle skin on the place of application and insert the injection using angle from 30 to 90 degrees. Drug should be applied very slowly. After the application take out the needle with slow continuous move.

- Place of injection application need to be rubbed with alcohol soaked cotton swab to improve drug absorption. (Rubbing is not allowed after the application of heparin).
- Patient should be in a comfortable position
- Document all steps about drugs, date and time.
- Dispose all used material and it is recommended to visit the patient after 30 minutes.

INTRAMUSCULAR INJECTION

One of the most common places for injection application is muscle tissue. This method is used for application of drugs of common dosage of 5 ml with fast absorption. Places for application of intramuscular injections are large muscles like gluteus maximum, musculus quadriceps femoris and musculus deltoideus. Musculus gluteus is most commonly used muscle for application of injections for adults.

Procedure for this injection application is similar to general rules of injections applications:

- Check the equipment, prepare the drugs following rules for drug administration
- Check the identity of patients and drug prescription.
- Wash your hands, prepare equipment and drug.
- Explain the procedure to the patient.
- Choose the location for injection insertion.
  If the maximum gluteus is used as the location for intramuscular injection, locating of puncture point of this muscle is very important because if the place is chosen wrongly nervus ischiadicus can be

damaged. Location of intramuscular injection application on musclus glutes is upper lateral quadrant. To determine this quadrant you need to ask patient to lay on his stomach, gluteus need to be open and separated by imaginary lines. Upper horizontal line is spread among two crista illiaca, lower horizontal line is spread among thigh and seat muscles, outer vertical line follows the lateral body line and inner vertical line follows gluteal fissure. The quadrat is divided into 4 quadrants and injection is applied into upper lateral quadrant, 5-7 cm below the spina of illiac bone.

If the patient is lying on the side one imaginary line is drawn between spina illiaca superior posterior and trochanter femors major. Then injection can be applied on the side up from the imaginary line because nervus ischiadicus goes below this line.

If you choose place on thigh you can use muscles rectus femoris and musculus vastus lateralis. Patient needs to lay on his/her back or to be in seated position. Usually this location is used for smaller doses of drug. Places of application are front, lateral and middle third part of thigh. Muscles need to be relaxed not stretched. This place is not recommended for undernourished patient because it can be very painful.

If you choose muscles deltoids as the location of injection you need to know that you can give drug in dosage 1-2 ml. Patient needs to be in sitting or standing position. Choose the middle of muscles deltoids. It is recommended not to use drugs that irritate and nurses need to be careful because radial nerve can be damaged.

- Clean the place for injection application. Use a thumb and a forefinger of non-dominant hand to stretch the skin and with sharp movement at 90 degree angle apply needle.
- When needle is inserted pull the plugger (clip) to check is there any blood. If the blood shows up that is sign that needle hit the blood vessel and procedure need to be repeated. If there is no blood apply the drug easily. Use non-dominate hand and apply alcohol soaked cotton swab and easily rub the place of insertion to lower the pain.
- Place the patient in comfortable position.
- Dispose all used material.
- Wash your hands.
- Document all steps about procedure and drug.

- After 30 minutes visit thee patient.

WOUND CARE

Definition

Acute Wound is the result of tissue damaged by trauma. This may be deliberate, as in surgical wounds of procedures, or be due to accidents caused by blunt force, projectiles, heat, electricity, chemicals or friction. An acute wound is by definition expected to progress through the phases of normal healing, resulting in the closure of the wound.

Chronic Wound fails to progress or respond to treatment over the normal expected healing time frame (4 weeks) and becomes "stuck" in the inflammatory phase.

Aseptic Technique

Aseptic technique means “without micro-organisms”. It refers to the procedure used to avoid the introduction of pathogenic organisms into the vulnerable body site. The principle aim of an aseptic technique is to protect the patient from contamination by pathogenic organisms during medical and nursing procedures.

Contributing factors

Wound chronicity is attributed to the presence of intrinsic and extrinsic factors including medications, poor nutrition, co-morbidities or inappropriate dressing selection**.** A number of local and systemic factors can delay or impair wound healing. These may include:

- Malnutrition
- Reduced Blood supply
- Medication (non-steroidal anti-inflammatory drugs and corticosteroids)
- Chemotherapy
- Radiotherapy
- Psychological stress and lack of sleep
- Obesity
- Infection
- Reduced wound temperature
- Underlying Disease
- Maceration
- Inappropriate wound management
- Patient compliance
- Unrelieved pressure

- Immobility
- Substance abuse including alcohol and cigarette smoke

Clinical signs

1. **Acute Surgical Wound** is a clean cut with a sharp instrument which cuts or punctures the skin deliberately during a surgical procedure. Acute surgical wounds normally proceed through an orderly and timely reparative process resulting in sustained restoration of anatomic and functional integrity. If an acute wound fails to heal within six weeks, it can become a chronic wound.
2. **Trauma Wound** is a stressful event caused by either a mechanical or a chemical injury resulting in tissue damage. Depending on its level, trauma can have serious short-term and long-term consequences.
3. **Burns** are the injuries to tissues caused by heat, friction, electricity, radiation, or chemicals. Burns may be caused by even a brief encounter with heat greater than 120°F (49°C). The source of this heat may be the sun, hot liquids, steam, fire, electricity, friction (causing rug burns and rope burns), and chemicals (causing a caustic burn upon contact).
4. **Chronic Wound** fails to heal in an orderly and timely manner. The clinical signs of chronic wounds may include: non-viable wound tissue (slough and/or necrosis), lack of healthy granulation tissue (wound tissue may be pale, greyish and avascular), no reduction in wound size over time and recurrent wound breakdown.
5. **Pressure injury** is a localised injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, shear and/or friction, or a combination of these factors.
6. **Infected Wound** represents the invasion of wound tissue by and multiplication of pathogenic microorganisms, which may produce subsequent tissue injury and progress to overt disease through a variety of cellular or toxic mechanisms

Nursing diagnosis

Goals

- To provide the assessment of the wound
- To provide the assessment of risk&contributing factors

Assessment

1. **Provide the assessment of wound bed. Check if the tissue is:**

- Granulating: healthy red tissue which is deposited during the repair process, presents as pinkish/red coloured moist tissue and comprises of newly formed collagen, elastin and capillary networks. The tissue is well vascularized and bleeds easily
- Epithelializing: process by which the wound surface is covered by new epithelium; this begins when the wound has filled with granulation tissue. The tissue is pink, almost white, and only occurs on top of healthy granulation tissue.
- Sloughy: the presence of devitalized yellowish tissue. Is formed by an accumulation of dead cells. Must not be confused with pus
- Necrotic: wound containing dead tissue. It may appear hard dry and black. Dead connective tissue may appear grey. The presence of dead tissue in a wound prevents healing
- Hyper granulating; granulation tissue grows above the wound margin. This occurs when the proliferative phase of healing is prolonged usually as a result of bacterial imbalance or irritant forces

2. **Provide wound measurement**

- All wounds require a two-dimensional assessment of the wound opening and a three- dimensional assessment of any cavity
- Use a paper tape to measure the length and width in millimetres. The circumference of the wound is traced if the wound edges are not even
- Measure the wound depth using a dampened cotton tip applicator

3. **Provide the assessment of wound edges**

- Healthy wound edges present as advancing pink epithelium growing over mature granulated tissue.
    - Colour - pink edges indicate growth of new tissue; dusky edges indicate hypoxia; and erythema indicates physiological inflammatory response or cellulitis
    - Raised - wound edges (where the wound margin is elevated above the surrounding tissue) may indicate pressure, trauma or malignant changes
    - Rolled -wound edges (rolled down towards the wound bed) may indicate wound stagnation or wound chronicity

- Contraction - wound edges are coming together, signs of healing
- Sensation - increased pain or the absence of sensation should be noted

4. **Provide the assessment of the exudate**

- Exudate is produced by all acute and chronic wounds (to a greater or lesser extent) as part of the natural healing process. It plays an essential part in the healing process in that it:
    - Contains nutrients, energy and growth factors for metabolising cells
    - Contains high quantities of white blood cells
    - Cleanses the wound
    - Maintains a moist environment
    - Promotes epithelialisation
- Assess the type, amount and odour of exudate to identify any changes (too much exudate leads to maceration and degradation of skin while too little can result in the wound bed drying out. It may become more viscous and odorous in infected wounds).
- The exudate may be: serous (normal, an increase may be indicative of infection), haemoserous (normal), sanguinous (trauma to blood vessel) and purulent (infection)

5. Check for infection

- Check for local indicators
    - Redness (erythema or cellulitis) around the wound
    - Increased amounts of exudate
    - Change in exudates colour
    - Malodor
    - Localized pain
    - Localized heat
    - Delayed or abnormal healing
    - Wound breakdown
- Check for systemic indicators
    - Increased systemic temperature
    - General malaise
    - Increased leucocyte count
    - Lymphangitis

- If any of the above clinical indicators are present medical review should be instigated and referral to microbiology laboratory should be considered

6. **Provide the assessment of the surrounding skin**

- Surrounding tissue may present as
    - Healthy
    - Macerated
    - Dry/flaky
    - Eczematous
    - Black/blue discoloration
    - Fragile
    - Oedema
    - Erythema
    - Induration (hardening)
    - Cellulitis
- Examine surrounding skills carefully as part of the process of assessment and appropriate action taken

7. **Check for pain**

- Provide pain assessment using one of the numerous pain assessment tools
- Document pain scores clearly in patient's record.
- Assess the pain with regard to choice of the most appropriate dressing. Assessment of pain before, during and after the dressing change may provide vital information for further wound management.

8. **Check for diabetes**

Nursing intervention

Goals:

- To promote and provide wound healing
- To prevent wound infection

Equipment:

- Sterile gauze and dressings as appropriate
- Vaseline gauze
- Sterile gloves
- Exam gloves
- Antiseptic swabs
- Tapes
- Waste receptacles
- Bath blanket
- Sterile isotonic saline
- Syringe 10 ml
- Sterile needle 21 G

Preparation

- The setting should be prepared including the decontamination of the working surface or tray to be used with detergent and water or detergent wipes and then dried
- Hand hygiene should be performed
- The extent of the use of drapes and protective clothing will also depend on the type of procedure and its complexity.
- All packaged sterile items for the procedure should be assembled prior to starting the procedure.
- Staff should check the packaging is intact and expiry date has not been exceeded.
- All packaged sterile items, such as needles and syringes should be opened carefully by peeling back the packaging and not pushing it through the backing paper.
- If possible 30 minutes should be left after bed making or domestic cleaning before exposing or dressing wounds.

Procedure

- Gently remove the dressing in a way that minimises pain and exposed wound for the minimum time to avoid contamination and maintain temperature
- Perform the wound cleansing using aseptic technique procedure in a way that minimises the trauma of the wound
- Clean and irrigate the wound using isotonic saline solution. This may be carried out utilising a syringe in order to produce gentle pressure in order to loosen debris.

- Do not use gauze swabs and cotton wool because this could cause mechanical damage to new tissue and the shedding of fibres from gauze swabs/cotton wool delays healing.
- Warm fluids to 37°C to support cellular activity
- **Use Antiseptics only sparingly for infected wounds**
- Avoid alcohol as tissue is degraded
- Remove visible debris and devitalised tissue if present
- Remove dressing residue
- Remove excessive or dry crusting exudates (wound cleansing should not be undertaken to remove 'normal' exudate)
- Choose the dressing according to the stages of healing (Table 1 and 2)
- Maintain a moist environment at the wound/dressing interface
- Be able to control (remove) excess exudates. A moist wound environment is good, a wet environment is not beneficial.
- Do not stick to the wound, shed fibres or cause trauma to the wound or surrounding tissue on removal
- Protect the wound from the outside environment
- Keep the wound close to normal body temperature
- Perform procedure avoiding accidental contamination of sterile equipment and site
- Change the gloves and decontaminate hands at any stage when contamination has occurred
- Reassess the wound with every dressing change to ensure the most appropriate products are used
- Document the outcomes of the assessment
- Educate patients about ongoing wound treatment process

Table 1. Type of dressings

Type of dressing	**Description**
Primary dressing	comes directly in contact with the wound bed
Secondary dressing	cover a primary dressing when the primary dressing does not protect the wound from contamination
Occlusive dressing	covers a wound from the outside environment and keep nearly all wound vapours at the wound site
Semi-occlusive dressing	allows some oxygen and moisture vapour to evaporate

Table 2. Choice of dressing according to the amount of the exudate

Dry wound	Minimal exudate	Moderate exudate	Heavy exudate
Non adherent island dressing	Hydrogel	Calcium alginate	Hydrofibre
Hydrocolloid	Hydrocolloid	Hydrofibre	Foam
Films semi permeable	Silicone absorbent	Foams	Absorbent dressing
		Negative Pressure	Negative pressure wound therapy
		Hydrocolloid: paste/powder	Ostomy bags

Documentation

- Document type and appearance of wound
- Document amount and type of drainage, colour, consistency and odour of exudate
- Document status of surrounding skin
- Document type and amount of solution used
- Document the patient's reaction to procedure
- Capture wound documentation in progress notes and treatment plans

Evaluation

- Wound management is practiced in accordance with the best available evidence for optimizing healing in acute and chronic wounds
- Wound management dressings, pharmaceuticals and devices are used in accordance with the manufacturer's instructions or research protocols
- The patient will experience a minimum of discomfort during the procedure

- The wound is healed within the expected period of time (in accordance with the phase)
- Infectious and noninfectious complications of the wound are prevented