

# **Guidelines for the Care of Hospitalized Patients with Bariatric Care Needs**

Standardizing and Improving  
the Care of Adult Patients with Obesity  
in Alberta Hospitals

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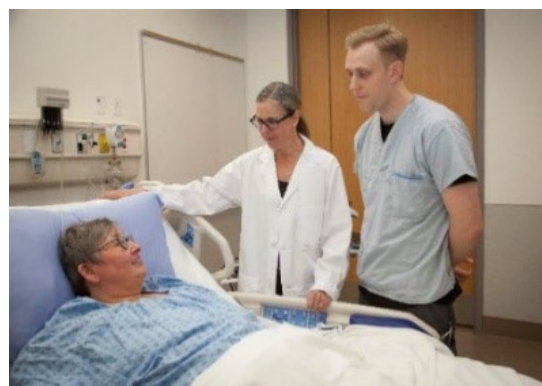


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## Introduction / Background

The continuing rise in obesity is a global health issue. Nearly three out of five Albertans over the age of 18 have a BMI that would classify as overweight or obese (1). As of 2017, 29% of adults in Alberta have obesity (2). Obesity was classified as a chronic disease by the Canadian Medical Association in 2015.

Patients with obesity in a health care settings are at a higher risk for complications and injury due to inadequate facility design and equipment. Many health care providers lack knowledge of the complex nature and causes of obesity; and believe that if a person simply exercises more and eats less, they can lose weight (which is not true). (3) (4)

Weight bias generally refers to negative attitudes toward a person because they have obesity, and can be manifested in different ways, leading to prejudice and discrimination. Patients living with obesity who are admitted to hospital have reported being treated with disrespect by health care practitioners. Weight bias can prevent healthcare providers from delivering optimal care, and negatively impacts the patient's experience in the hospital. It also impacts the patient's ability to build a trusting relationship with health care providers. Weight bias increases patient risk for psychological distress and delays patients in seeking future medical treatment.

The Diabetes, Obesity and Nutrition Strategic Clinical Network™ (DON SCN) is leading a provincial initiative to improve and standardize the care of patients with obesity when they come into Alberta hospitals. The Bariatric Friendly Hospital Initiative is focused on implementing standards and guidelines to create a bariatric friendly environment within Alberta hospitals,

This initiative supports health care providers to become more knowledgeable about obesity and its impact on quality care, develop competencies in the unique care needs of patients with obesity, and work effectively and compassionately with patients with obesity. It also focuses on safe patient handling to help prevent patient and provider injury.

Medicine Hat Regional Hospital was the pilot site for this initiative, and in January 2019 implemented standards and guidelines to improve the care and experience of patients with obesity. Evaluation of the pilot site demonstrated an improvement in staff attitudes and beliefs towards persons with obesity, increased access to bariatric equipment, and staff who agreed bariatric care had improved in their area.

The Bariatric Friendly Hospital initiative is not focused on treatment interventions for obesity, but on the safe and competent care of patients with obesity, and therefore details in regards to providing weight loss interventions will not be part of these guidelines.

Regardless of the limitations of a physical care setting, there are several modifications that can ensure quality care for patients with bariatric care needs.

### Purpose of the Guidelines

The purpose of these guidelines is to provide staff, students, physicians and administrators who work in Alberta hospitals key resources and recommendations to assess and plan safe and sensitive care for patients with obesity who have bariatric care needs.

For the purpose of these guidelines, bariatric care needs should be assessed for all patients who have a body weight of 113kg (250lbs) or more. The reason for this weight cut-off is that some equipment / furniture in the hospital environment has a maximum weight capacity of 113kg (250lbs).

Note: some patients may have a body weight of less than 113 kg, and may require assessment for bariatric care needs because of their body shape or stature.

### Key Objectives

- Meet the bariatric care needs of patients who are hospitalized
- Promote safety for patients and staff
- Promote quality care free of weight bias and stigma
- Facilitate transitions in care within the hospital, as well as transitions to other care settings

### Target Audience

- All health care providers involved in direct patient care including but not limited to Nurses, Healthcare Aides, Registered Dietitians, Pharmacists, Physiotherapists, Occupational Therapists, Therapy Assistants, Respiratory Therapists, patient transport technicians, diagnostic and treatment technologists
- Hospital Administrators
- Physicians responsible for direct patient care
- All those who influence workplace safety



## Guiding Framework

The R-E-S-P-E-C-T model was applied in the development of this guideline (Bejciy-Spring 2008). The RESPECT model for sensitive treatment of patients with obesity provides a framework for healthcare professionals to provide patient and family centred care. At the core of this model is a belief that a patient with bariatric care needs has the right to care that meets their individual needs and is provided by healthcare professionals that are competent and attentive to providing quality care that is appropriate, safe, and dignified. Seven core concepts are included in the model that are summarized in Table 1.

R-E-S-P-E-C-T Model and defining principles adapted for use in this guideline (5)

<b>Core Concept</b>	<b>Description</b>
<b>Rapport</b>	Interpersonal relationship with a patient and their family that includes connection, empathy and understanding that together create a foundation of trust. <ul style="list-style-type: none"> <li>Take time to get to know your patient and take care not to make assumptions about them based on their size.</li> </ul>
<b>Environment / Equipment</b>	Provision of adequate space and equipment (including furniture) to improve the quality of care, enable participation in care, and promote mobility and autonomy. <ul style="list-style-type: none"> <li>Create an accessible and safe environment with equipment that is appropriately sized, such as exam tables, stretchers and wheelchairs.</li> <li>Have a selection of chairs in patient, exam and waiting rooms.</li> <li>Ensure there are appropriate sized gowns, blood pressure cuffs and any other items that might be required.</li> <li>Ensure patient has easy access to toilet/commode in private area.</li> </ul>
<b>Safety</b>	A focus on critical safety considerations including weight capacity of equipment, safe patient handling techniques, knowledge on the operation of equipment.
<b>Privacy</b>	Protecting all aspects of privacy for patients with bariatric care needs including adequate coverage of the body. <ul style="list-style-type: none"> <li>Not all hospital rooms or patient care areas are an ideal size or layout. You may need to be creative in the way you ensure your patient's privacy.</li> <li>If taking your patient's weight, do so in a private area and without judgmental commentary.</li> </ul>
<b>Encouragement</b>	Taking the time to meet the needs of patients with bariatric care needs and provide opportunities to promote independent self-care and mobility where appropriate.
<b>Caring / Compassion</b>	Commitment to actions that contribute to the dignity and comfort of a patient with bariatric care needs. <ul style="list-style-type: none"> <li>If unable to use bathroom in room, a private discrete area for toileting is provided.</li> </ul>
<b>Tact</b>	Interactions with patients with bariatric care needs, their family members and the healthcare team are respectful and free of weight bias. <ul style="list-style-type: none"> <li>Be aware of nonverbal signals and terms of reference such as "fat" that may be offensive to a patient living with obesity.</li> <li>Use people-first language such as "patient with obesity" instead of obese patient.</li> </ul>



## Understanding Obesity

It is important for clinicians caring for patients with obesity to understand that it is a complex and chronic disease. Obesity has multiple causes and factors and is not as simple as eating too much and not exercising enough.

Simply eating less and exercising more will not cure a person's obesity.

Obesity is a chronic disease.

### Definition

Obesity is defined as abnormal or excessive adipose tissue that impairs health and wellbeing (6). Obesity is a complex disease with many causes and factors (7). Once established, obesity becomes a life-long chronic disease.

### Body Mass Index

Body mass index (BMI) is a screening tool used to classify weight in adults. It is calculated by dividing a person's weight in kilograms by their height in meters squared ( $\text{kg/m}^2$ ). BMI only provides information about body size. It is not useful to identify bariatric care needs or the health status of individual patients. When used in combination with waist circumference, it can indicate risk for obesity related illness such as diabetes, hypertension and cardiovascular disease.

BMI Category (for Adults)	BMI Range ( $\text{Kg/m}^2$ )	*Disease Risk with Waist Circumference	
		Men 102 cm (40 in) or less Women 88 cm (35 in) or less	Men greater than 102 cm (40 in) Women greater than 88 cm (35 in)
Underweight	<18.5		
Normal	18.5-24.9		
Overweight	25-29.9	Increased	High
Obesity Class I	30-34.9	High	Very High
Obesity Class II	35-39.9	Very High	Very High
Obesity Class III	$\geq 40$	Extremely High	Extremely High

\*Disease risk for Type II diabetes, hypertension and cardiovascular disease  
(8) (9)

Note: Research is still ongoing to determine if traditional BMI cut offs are appropriate for all ethnicities. For example a lower BMI cut off may be more appropriate in some Asian populations. For persons 65 years and older the 'normal' range may begin slightly above BMI 18.5 and extend into the 'overweight' range (10).



### Causes of Obesity

There are many **factors** that can lead to weight gain including (11):

- Environmental / socioeconomic
- Genetics
- Age
- Hormones
- Mental health
- Medications
- Other

The causes and contributing factors of obesity are many and it is not just as simple as eating too much and not exercising enough.

For more information and details about causes or contributing factors for obesity; please see [Appendix 3](#).

### Why is Obesity a Chronic Disease?

The World Health Organization, Canadian Medical Association, American Medical Association along with other national and international scientific societies recognize obesity as a complex chronic disease with genetic, environmental, and behavioral determinants (12) (3). The characteristics of obesity are the same as other chronic diseases:

- complex causes
- modifiable risk factors
- long latency periods  
(time between onset of the illness and feeling its effects)
- long duration
- functional impairment or disability.
- no cure

With the exception of pregnancy, once an individual gains weight their body will protect this extra weight (13). It doesn't matter how or why they gained the weight. As a result, when an individual tries to lose weight the body puts mechanisms in place to defend the weight and put the weight back on. These mechanisms include:

- an increase in appetite
- a reduction in metabolic rate
- a reduction in activity thermogenesis (the body reduces its fuel consumption)

These mechanisms are all the body's efforts to try and protect its body weight and promote weight regain. This is why when people lose weight they often end up putting it all back on.

People with obesity have tried to lose weight but the weight often comes back.

Bodies will fight to regain their highest weight.

Individuals can maintain good health at a wide range of body weights.

This has significance for how health care professionals think about obesity and how they manage it clinically. They need to approach obesity using all of the principles of chronic disease that are used for other conditions like diabetes and hypertension. Treating, controlling and managing obesity is a lifelong process. There is no simple cure for obesity and simply losing weight does not solve the problem. (14)

## Obesity Treatment Options

This section is a brief overview of treatment options to provide a comprehensive understanding of obesity. As mentioned previously, these guidelines are not focused on treatment of obesity.

Obesity in adults is a chronic disease that requires long term, life-long management. The three treatment options are: behaviour modification, medication and bariatric surgery. Medication and bariatric surgery options work best when combined with behaviour modification. There is currently no cure for obesity and when treatment is stopped, the disease returns (13).

### Behaviour Modification

The goal of behaviour modification is to improve healthy habits and change other habits, and then maintain these changes. Best results are achieved when patients work with an interdisciplinary team. Behavioural changes that support weight loss include self-monitoring (keeping a food and activity record), healthy eating, being active, improving sleep quality, and learning to better manage stress and emotions.

There is no cure for obesity.  
Once treatment stops the disease returns.

Obesity treatment is about improving health and well-being, and not simply reducing numbers on the scale.

Success is different for every individual.

### Medication

As of 2022, there are four prescription medications that are approved to assist with weight management in Canada. When a person loses weight, appetite increases; the most effective medications work by decreasing appetite. Medication works best when coupled with behaviour modifications, as described above. Medications help patients lose more weight than is possible with behaviour modification alone, and help them to keep the weight off. (15)

### Bariatric Surgery

Bariatric surgery is a treatment used to help individuals with obesity manage their health and weight. It is currently the most effective treatment for obesity, and it works best when it is coupled with behaviour modification. The most common bariatric surgeries performed in Alberta are:

- Sleeve Gastrectomy
- Gastric Bypass

Both surgeries create a smaller stomach which will help an individual feel full after small amount of food. Both surgeries also change the gut hormones that impact hunger, satiety and blood sugar. The one difference is with the gastric bypass, a portion of the small intestine is bypassed causing less absorption of calories and nutrients.

Most surgeries are performed laparoscopically with hospital admissions being between 1-3 days. To be assessed for bariatric surgery, patients must be referred to one of five bariatric specialty clinics in Alberta by their primary care practitioner.

For more information about Obesity Treatment options, refer to [2020 Canadian Adult Obesity Clinical Practice Guidelines](#).

## Weight Bias and Obesity Stigma

Weight Bias is the negative stereotyping of individuals living with excess weight or obesity.

It often leads to prejudice and discrimination.

Weight bias is defined as negative attitudes, beliefs or assumptions towards individuals who are living with being overweight or have obesity (16). Weight bias is prevalent in society and individuals with obesity are often stereotyped as lazy, unintelligent, noncompliant, and sloppy.

Unlike other chronic diseases, excess body weight associated with obesity is a visible characteristic. Weight bias remains socially acceptable and is rarely challenged when it happens. Individuals with obesity are often seen as responsible for their weight.

Obesity stigma involves actions against people with obesity that can cause exclusion and marginalization, and lead to inequities.

### Weight Bias in Healthcare

Weight bias is prevalent in healthcare. Negative attitudes about patients with obesity have been reported by physicians, nurses, dietitians, psychologists and medical students (17). Research has shown that even healthcare professionals who specialize in the treatment of obesity can hold negative attitudes. When health care providers have weight bias, the quality of care a patient with obesity receives can be decreased. (18) (19)

### Weight Bias Impact on Patients

Patients who have experienced weight bias are at an increased risk for anxiety, depression, low self-esteem and poor body image. Experiencing weight bias and stigma can also increase stress hormones and may put patients at increased risk for heart disease and stroke. (20)

Patients with obesity are more likely to cancel or avoid healthcare, put off preventative routine screening and may present with more advanced disease or illness (19).

Patients with obesity often report that they are made to feel that their obesity is the cause of their presenting problem, concern or illness when that may not be the case at all (19). It is important for healthcare professionals to assess a patients presenting concern and not make assumptions that a patients current health concern is due to their weight.

Patients report that they are made to feel that their obesity is the cause of their presenting problem.

## Factors that Decrease Weight Bias

One of the most important strategies to reduce weight bias is self-awareness. Individuals should identify and address their own personal assumptions and attitudes about weight. One might ask themselves:

- How do I feel when I care for patients with obesity?
- What stereotypes do I have about persons with obesity?
- Do I make assumptions regarding a person's character, intelligence, abilities, health status or behaviours based on their size?

## Check Your Attitude

Testing assumptions is an important first step. The questions listed in the table below can help people become more aware of their attitudes and beliefs about weight and obesity. (21)

Question	Fact / Supporting Evidence
Do you assume a patients' health, characteristics, behaviours and abilities are based on their body size, weight and shape? Yes/No	People come in difference sizes and shapes. Body size, weight and shape are not directly associated with a persons' health, work ethic, willpower, intelligence or skills.
Do you think that every patient with a larger body size or a higher BMI has obesity and needs to lose weight? Yes/No	Obesity is a chronic disease defined as excess or abnormal weight that impairs health. BMI is an indicator of size, not health. Not everyone with a large body size or high BMI has obesity. (eg. an athlete with a large amount of muscle bulk, as muscle is more dense and weighs more than adipose tissue)
Do you believe patients with obesity are personally responsible for their condition? Yes/No	Many people think obesity can be controlled by simply eating healthier and being more active. But more than 300 factors contribute to obesity ranging from physiological and psychological factors to genetic, social and environmental factors. Many of these are beyond an individuals' control.
Do you let negative comments about a patient who has a larger body size or has obesity go unchallenged? Yes/No	Calling attention to inappropriate, blaming or shaming jokes, comments or conversations about people with obesity or a larger body size are important to reduce such behaviour.

The above 'Check Your Attitude' questions are also [available online](#) if you would like to share with others.

## Educational Resources to Decrease Weight Bias

There are a number of online modules and webinars that provide education for healthcare practitioners for the purpose of eliminating weight bias and weight based discrimination.

Some are:

**Diabetes Obesity and Nutrition Strategic Clinical Network** [Weight Bias Education Module](#)

This brief 20 minutes online course is the second in a series of 3 developed for the staff of Alberta Health Services. The goal of this course is to increase professional competency, and support staff to work effectively and compassionately with patients with obesity. This brief online course will support health care providers to become more knowledgeable about weight bias, and it's impact on quality care. It will also support them to build weight sensitivity. The other two online learning modules are:

- Understanding Obesity
- Supporting the Care Needs of your Patient with Obesity

#### **Balanced View**, British Columbia Provincial Health Services Authority

Balanced View is a more in-depth online learning resource designed to raise awareness about weight bias and stigma in health care and to help health care professionals reduce weight bias and stigma in practice.

<https://balancedviewbc.ca> (22)

#### **University of Connecticut Rudd Center for Food Policy and Obesity**

The Rudd Center's mission is to promote solutions to childhood obesity, poor diet, and weight bias through research and policy. They have developed online educational resources for health care providers to improve the quality of care for patients with obesity, and help reduce weight stigmatization in clinical settings.

<http://www.uconnruddcenter.org/weight-bias-stigma> (23)

The above resources help raise awareness about personal biases and biases present in the health care environment.

### People-first Language

Using people-first language is now the standard in health care for addressing people respectfully. This means that a person is described as a person first and the name of the chronic condition is used after. Rather than stating "obese person" or "obese patient", state "person *with* obesity" or "patient *with* obesity. This small but important change reinforces that obesity is a chronic disease and not a characteristic or attribute.

"Patient *with*  
Obesity"

instead of  
"obese patient"

### Use of Appropriate Images

Images of people with obesity used online or in print by members of the media, health care professionals, government, industry, and others can be a source of stigmatization. Photos often show individuals with obesity as headless (e.g. only from the shoulders down), from unflattering angles (e.g. with only their abdomen or lower body shown), and engaging in negative stereotypical behaviour (e.g. eating at fast food restaurants or food courts, engaging in sedentary activity). These images degrade and dehumanize individuals with obesity while perpetuating myths and stereotypes.

It is recommended that all online and printed material only use images of persons with obesity that do not degrade and dehumanize. Images should portray individuals living with obesity in ways that are positive and non-stereotypical. Such images are available as a free resource from Obesity Canada via the Image Gallery ([www.obesitycanada.ca](http://www.obesitycanada.ca)). As well; similar images are available in the image bank on the AHS internal website.

## Identifying Patients with Bariatric Care Needs

Bariatric care needs should be assessed on patients who have a body weight of 113kg (250lbs) or more. The reason for this weight cut-off is that some equipment / furniture in the hospital environment has a maximum weight capacity of 113kg (250lbs).

### “Bariatric Care Needs”

*Considerations needed to provide safe and sensitive care for persons who have a body size for which standard size hospital equipment and clinical procedures may not be appropriate.*

The term “bariatric care needs” will be used from this point forward in this document and refers to the considerations needed to provide safe and sensitive in-hospital care for persons who have a larger body size for which standard size hospital equipment and clinical procedures may not be appropriate, or who have unique care needs related to their size.

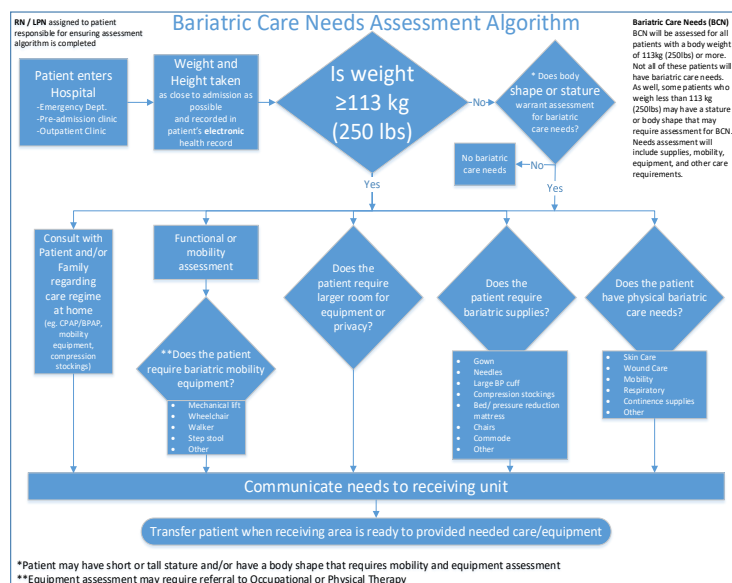
Not all patients who are 113kg (250lbs) will have bariatric care needs. As well, some patients who are less than 113kg (250lbs) may have a stature or body shape that may require assessment for bariatric care needs.

Bariatric care needs should be determined early in the patient’s stay, therefore a patient’s weight should be measured, and recorded in the electronic medical record, as close to registration as possible. Bariatric care needs include: access to special equipment, access to supplies, unique physical care requirements, and or routines specific to the patient’s individual care needs.

### Current Bariatric Care Home Regime

It is important to consult the patient and / or family regarding their care regime at home to see if they use any specialized equipment or have routines that will need to be followed while in the hospital. (eg. if the patient uses a Continuous Positive Airway Pressure (CPAP) machine at home, they will need it while in hospital).

The following algorithm will assist with determining a patients bariatric care needs. A full page version of this algorithm is also available in [Appendix 1](#).





## Body Shape / Weight Distribution

Body shape (weight distribution) may play an important role in a patient's ability to assist with personal care, mobilize, and in the selection of appropriate equipment. The following are descriptions of different body shapes and how they might impact patient care, including ambulation or moving in bed.

Body Shape	Description	Care Considerations
Android Shape	<p>Patients carry their weight high (i.e. in chest and abdominal area).</p> <p>Legs may be relatively average-sized and the patient may have normal hip and knee flexion.</p>	<ul style="list-style-type: none"> <li>Ambulation may be difficult and the patient may become short of breath due to increased pressure on their diaphragm.</li> <li>The patient may be susceptible to skin breakdown or atypical pressure injury between the thighs and pannus due to friction and moisture.</li> <li>Hip flexion can be impaired with an android shape due to obstruction of range of motion from the abdomen area.</li> </ul>
Gynoid Shape	<p>Patients carry their weight in the thighs and buttocks.</p>	<ul style="list-style-type: none"> <li>Weight carried in the lower bodies may make it difficult to reach perineal area, and excoriation is a risk due to groin moisture and elimination problems.</li> <li>Patient may require a wider bed / stretcher.</li> <li>Patient may require bariatric commode.</li> <li>Patient more likely to require bariatric chair (i.e. wheelchair, bedside chair, waiting room chair).</li> </ul>
Bulbous gluteal region	<p>Patients that have excess buttock tissue creating a protruding shelf.</p>	<ul style="list-style-type: none"> <li>Weight carried in the lower bodies may make it difficult to reach perineal area, and excoriation is a risk due to groin moisture and elimination problems.</li> <li>Patient may require a wider bed / stretcher.</li> <li>Patient may require bariatric commode.</li> <li>Patient more likely to require bariatric chair (i.e. wheelchair, bedside chair, waiting room chair).</li> </ul>
Proportional	<p>Patient's weight is evenly distributed.</p>	<ul style="list-style-type: none"> <li>Patient may still require bariatric specific equipment and supplies.</li> </ul>



## Equipment Needs

### Identifying Equipment Needs

Selecting the most appropriate equipment for use with a patient with bariatric care needs is essential to ensure patient and staff safety. Key considerations when selecting equipment include ensuring the equipment:

- has the proper weight rating to support the patient.
- has the proper dimensions to accommodate the patient.
- can fit through doorways and in spaces in which the patient will be using the equipment.

All patient handling equipment should be clearly labelled with the weight capacity in a way that staff will see and understand, and is not stigmatizing to patients.

The following equipment should be considered in the care of the patient with bariatric care needs:

- Emergency Department stretcher
- Transport stretcher (with motorized push assist if possible)
- Speciality beds/examination tables
- Specialty mattresses (for pressure reduction)
- Bariatric walkers (28-40+ inches or 71-102 cms)
- Bariatric room chairs
- Bariatric bed that lowers closer to the floor
- Mechanical lifts / slings (including pannus support and / or limb slings)
- Gowns / pants / robe (of appropriate size)
- Bariatric bedside commodes
- High capacity scale to weigh patient (specialty bed / standing scale / other)
- Bed trapeze appropriate for patient's weight
- Bariatric wheelchairs
- Bariatric table in operating room
- Supplies (gowns, appropriate sized BP cuffs)
- Bariatric foot stool (larger base and higher weight capacity)

Other considerations include:

- Room size
- Shower access
- Bathroom and toilet access

### Beds

When selecting a bed it is important to consider the weight limit of the bed, the width of the patient and the types of mattresses or surfaces available for use with the bed. Most hospital beds will support a weight of up to 227kg (500lbs) however such beds may not provide enough surface to support the full width of a patient comfortably. The use of a bariatric care bed that can support a weight of more than 227kg (500lbs) and typically has a width of greater than 90cm (35inches) is recommended when the patient requires such weight support and/or requires a wider support surface. A bariatric bed may require more than two people to move it. Some bariatric beds have a built in motor that will help propel the bed limiting the number of people required for transport. Additionally a pressure reduction, or pressure redistribution, mattress may be required if the patient has limited mobility.

If this type of bed is not available on your unit, or at your site; it is likely available for rent from the company that your site has a contract with.

Note: Using a wider bed can increase the risk of injury for staff with respect to reaching, so it is important to use a wider bed only if it truly improves the functioning of the patient, improves bed mobility, and or comfort for the patient.

### Toilet

It is important to ensure that the toilet the patient is using can accommodate their weight.

**Caution: wall mounted toilets** exist in some hospitals. Many of these wall mounted toilets have weight capacity that will not safely support a patient with obesity.

Options when there is wall mounted toilet in the patient's room include:

- A toilet jack designed to sit under base of toilet and provide the toilet with extra load and capacity.
- A bariatric commode over the toilet

Note: It is important to ensure that there is enough space in the bathroom to provide the care required if the patient needs assistance with toileting. If staff struggle to move a commode into the bathroom, or if they cannot get reasonable access to the patient from the side to do the care required, it may be necessary to use the commode at bedside or in another space with enough room.

## Mobility Equipment

### Bariatric Mechanical Lifts

Options for bariatric mechanical lifts include: stand assist lifts; sit-stand lifts; mechanical passive floor lifts and ceiling lifts. Options will vary depending on the unit / site you work at, and the patient needs. It is recommended that all units / sites have access to mechanical lifts that have the weight capacity to support the patient with bariatric care needs. Bariatric lifts (that accommodate weight up to 500kg) are often shared between units. Bariatric lifts should be readily available on units where there tend to be a higher proportion of patients who may have bariatric care needs (i.e. bariatric surgical units). It is important to also have slings available for use with all lifts available that are compatible with the lifting device and can support the weight and width of the patient.

AHS published Ceiling and Mobile Client Lift Guidelines for AHS Facilities in October 2018. These were developed through collaboration by Alberta Health Services (AHS), Alberta Infrastructure and Alberta Health. These are listed on the AHS intranet on the It's Your Move – Safe Client Handling Program page, and the Ergonomics Resource Library page.

Note: Prior to moving a patient to or from another furnishing (i.e. recliner chair, stretcher, bed) to another with a mobile mechanical lift, it is important to check that the base of the lift is compatible with the furnishing (eg. able to be positioned properly around the furniture). It is also important to ensure that there is appropriate clearance for the patient's body both at where you are moving them from, as well as where you are moving them to (if these are different heights).

### Walker

A generic bariatric walker should be available on every patient care unit. If the patient is being assessed for a walker, it is important to let the rehabilitation specialist (eg. Occupational Therapist or Physiotherapist) know that the patient has bariatric care needs. Patients admitted

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to hospital who have their own walker should have their walker with them while in hospital. If a patient is being assessed for a walker on discharge, the vendor should be notified that the patient has bariatric care needs.

### Stretcher

When using a stretcher it is important to ensure that it has the proper weight limit and width to support the patient. Some stretchers have a weigh scale built into them, which may be beneficial in obtaining and recording the patient's weight.

### Bariatric Lift Chair

A bariatric reclining / lift chair is a recommended option to have in a patient's room for when they need a comfortable, supportive place to rest during the day. Note: most bariatric lift chairs cannot accommodate the base of a portable, floor based lift. Therefore only patients who are able to transfer with minimal assistance or have access to a ceiling lift may be able to use a bariatric lift chair.

## Injury Prevention: Safe Patient Handling

Patient and provider safety is another key objective of these guidelines. It is recommended that all staff involved with lifting and transferring of patients be knowledgeable and competent to safely transfer patients with bariatric care needs.

Alberta Health Services utilizes the **It's Your Move** education program as their proactive musculoskeletal injury prevention and safe patient handling program for staff. This program is designed to prevent staff and patient injury. There are many resources available on the *It's Your Move* website. AHS staff can access this website by searching 'It's Your Move'.

Many safe patient handling experts recommend not manually lifting any weight greater than **35 pounds** (24). There is also consensus among patient handling professionals that the goal of safe patient handling programs should be to eliminate all manual lifting whenever possible.

### Functional Assessments and Precautions

Patients with obesity experience a higher fall rate than the rest of the population (25). Factors contributing to increased risk of falls include body weight distribution, gait disturbance and overestimation of functional status by the patient.

It is important to assess the patient's ambulation status at least once per day or more often as needed. The ability of a patient to move in bed, get up and out of bed, walk about within the room and outside of the room can vary. Using AHS' functional assessment protocol (functional transfer record) for a mobility assessment is important to determine the level of independence the client has and to what extent assistance via human support and/or assistive devices is needed.

The Functional Transfer Record (FTR) can be found on the **It's Your Move** website.

See [Appendix 5](#) for a sample of AHS form 09661

### ***It's Your Move* Safe Patient Handling Bariatric Specific Resources**

Included in the standard AHS *It's Your Move* training program are bariatric specific online modules. Please see the links below:

[AHS Workplace Health and Safety: Bariatric Considerations Presentation](#)

[Lift Supported Ambulation Using a Walking Sling](#)

[Lift Supported Repositioning and Log Rolling](#)

[Bed to Wheelchair Transfer Using Total Lift](#)

[Panniculus and Limb Lifting](#)

The above online modules can also be found on the AHS internal It's Your Move website.

These modules are also available on MyLearningLink for AHS employees under WHS - It's your Move! Toolbox Module: Bariatric Considerations – 10002.

## When a Patient with Bariatric Care Needs Falls

Using tactics to prevent the patient from falling, including attempting to create an environment that is free from hazards and obstacles, is essential. However, if a fall is impending, it is important that the healthcare provider does not try to slow the fall, lower the patient to the floor, or stop the fall in any way. If the patient is falling or does fall; objects or furniture should be moved out of their way (if possible) to help decrease the chance of serious injury.

After a fall, provided the patient is not injured, the following are general recommendations:

1. If the patient is able to get up on their own, stand by to offer encouragement but no assistance should be given.
2. If the patient is not able to get up on their own, a bariatric mechanical lift is to be used. It is important to ensure the correct size sling is used.
3. If the sling is not the correct size to support the patient, or if the patient is injured, an inflatable type of lifting device can be used (example: HoverJack® and HoverMatt®). This will allow for the patient to be lifted and transferred to a bed or stretcher.

If a fall is impending and unavoidable, it is acceptable to let a patient fall.

Do not try to catch the patient.

See It's Your Move Safe Client Handling (Bariatrics/Falls) - [A Fall in Acute Care](#)

## Care Considerations for Patients with Bariatric Care Needs / Co-morbid Conditions

By understanding the complex clinical needs of patients with obesity, health care providers are able to provide the best care. An interdisciplinary team approach is essential for identifying clinical concerns in a timely and appropriate manner, with the goal of preventing the common, predictable, and preventable complications associated with hospitalization. (i.e. pressure injury, wound infection, pneumonia, thrombosis)

A summary of the care requirements for patients with bariatric care needs can be found in [Appendix 2](#).

### Maintaining Privacy

Many patients living with obesity have a story where they have experienced a humiliating event while in hospital such as having to use a bedside commode in a 4 bed ward or being weighed in a very public area. These experiences can be traumatic, and can cause the patient to be more reluctant to seek healthcare in the future. It is important for healthcare providers to ensure that every attempt is made to maintain the privacy and dignity of all patients, including those with obesity.

It is essential that those managing the care needs of the hospitalized patient are aware of the patient's home treatment practices, so they can be continued in hospital.

### Appropriate Sized Supplies / Personal Items

Appropriate sized personal items such as gowns, robes, blood pressure cuffs, anti-embolus stocking, sequential compression devices, and gait and transfer belts need to be available for patients with bariatric care needs, so they can be cared for with dignity and safety.

### Appropriate Sized Gown

An appropriate sized gown should be provided for the patient in all areas of the hospital. Patients with obesity report that wearing a hospital gown that is too small or too big is embarrassing, and makes them stand out more than they already do. This leads to feelings of discrimination, and further perpetuates weight bias towards the patient.

### Additional care items

Other items that should be (readily) available are:

- Appropriate sized blood pressure cuff
- Bariatric bedpan
- Limb sling for dressing changes
- Bariatric incontinence pads

## Assessment

### Weight

The patient's weight is a necessary measurement required for medication dosing, as well as measurement for safely caring for the patient with obesity. All patient care areas should have a weigh scale that can accommodate patients with obesity. The patient's weight should be measured as close to registration to hospital as possible. Weight measurement should be obtained in a discrete private location. The weight should be recorded in the electronic medical record where it can be accessed by all providers, and conveyed in advance to receiving departments. This will allow for adequate preparation by the receiving department.

Weight should be taken as close to admission as possible, and recorded in electronic medical record.

### Blood Pressure

A proper sized blood pressure (BP) cuff is essential for obtaining an accurate BP measurement. A BP cuff that is too small can give a falsely high reading, or not stay on the patient's arm. Taping or holding a BP cuff to prevent it from coming apart will also provide an inaccurate reading.

If the largest upper arm BP cuff available, that is compatible with the equipment that you are using, does not fit the patient's upper arm; a thigh cuff on the upper arm can be used as an alternative.

A blood pressure cuff that is too small can give a falsely high reading.

Forearm blood pressure are not recommended, unless it is the last option.

The research on the accuracy of forearm blood pressures compared to upper arm blood pressures is mixed. Several studies have shown that there can be a difference between the two with forearm blood pressure less accurate than an upper arm blood pressure. If a patient has a larger upper arm circumference or cone shaped upper arm, it may be difficult to achieve a proper blood pressure cuff fit, and therefore the best option may be a forearm blood pressure. Technique is important to ensure the most accurate reading. First select the appropriate cuff size for the forearm. The hoses from the cuff should exit over the radial artery. The arm should be supported and at the level of the heart (26) (27).

### Pain

Patients with obesity may be more prone to pain (28) (29). Obesity causes mechanical issues, including joint compression and alignment changes that can lead to pain. Patients with obesity have a higher incidence of arthritis and gout. Additionally, low back pain is common due to the forward lean from the weight of the abdomen. Pain assessment is especially important for this population. Pain management is essential, including that it will support the patient to ambulate. Checking with the patient to see what strategies they use to manage their pain at home is important. The patient may require consultation to optimize pain management, such as from a pain management team.



## Co-morbid Conditions and Care Considerations

Obesity is associated with a number of weight related diseases and risks (30). It is important to have knowledge about obesity related co-morbidities and understand their potential impact on care. Obesity places physiological demands on nearly every body system. This can make caring for the patient with obesity complex and challenging. The ability to successfully address these challenges can be rewarding. This section will briefly go over the body systems affected, and provide considerations for caregivers when assessing and monitoring the patient. In addition to the routine assessment for all patients admitted to hospital that typically includes a complete medical and social history, physical exam, mobility and functional capacity assessment, it may be important to also complete a nutritional assessment and pressure injury risk assessment.

## Cardiovascular System

Some patients with obesity may experience a higher workload on the heart resulting from the demands associated with supplying oxygen to a larger volume of tissue. When the patient is lying flat, the weight of the pannus may decrease or impair circulation to the lower extremities (30). Some of the cardiovascular related concerns include deep vein thrombosis (DVT), hypertension, coronary artery disease, pulmonary embolism (PE), congestive heart failure (CHF), and stroke. (31) Monitoring the patient with obesity's cardiac status is critical, with consistent and accurate vital signs. As mentioned previously under assessment; an appropriate sized blood pressure (BP) cuff is essential or the BP reading may be inaccurate, or falsely high (with a cuff that is too small). Additionally, the assessment should include accurate weights, monitoring of edema if present, and the capillary refill time of finger and toes.

## Thrombosis

Patients with obesity have over twice the risk of developing both PE and DVT than patients without obesity. The risk is even higher in younger patients (less than 40 years) (32). Therefore, monitoring the patient for signs of DVT is extremely important. Assess for redness, tenderness and or warmth of the patient's calf or lower extremities.

DVT and PE prophylaxis / Preventing blood clots:

- For patients that are able to ambulate independently or with assistance; it is recommended that they walk as tolerated regularly throughout the day. Walking promotes circulation and reduces venous stasis.
- In addition to ambulation, or for patients who are not able to be as mobile, the use of lower extremity compression (graduated compression stockings, intermittent pneumatic compression or sequential compression devices) is recommended to reduce the risk of DVT by decreasing venous stasis.
- The fit of compression stockings is extremely important, as those that are too small can actually create a tourniquet effect and cut off circulation to the patient's lower extremities.
- Patients with obesity may also be started on prophylactic anticoagulation therapy while in hospital.

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AHS has Low Molecular Weight Heparin (LMWH) streamlining guidelines. There are Venous Thromboembolism (VTE) prophylaxis recommendations based on weight, and recommendations for LMWH dosing after bariatric surgery. The guidelines can be found using the search function on Insite, by entering: Low Molecular Weight Heparin.



## Respiratory System and Airway Management

The respiratory system can be challenged in the patient with obesity due to decreased pulmonary function, along with increased oxygen consumption (30) (33). The chest wall's ability to expand may be severely limited due to enlarged size of chest and abdomen. As well, the build-up and weight of adipose tissue in the abdomen decreases movement of the diaphragm and diminishes lung expansion during inspiration. Many patients with obesity have breathlessness or shortness of breath, especially on exertion. Weight gain and increased BMI are associated with decreased lung volumes. Excess weight on the anterior chest wall due to obesity lowers the chest wall ability to expand and respiratory muscle endurance, which results in an increase in work of breathing and airway resistance.

Patients with obesity are especially prone to respiratory complications.

Encourage deep breathing and coughing hourly while your patient is awake, and teach him how to use an incentive spirometer to expand their lungs and prevent pneumonia. Maintaining the head of the bed at 30 degrees can facilitate lung expansion. Many bariatric patients may prefer sleeping or resting in a recliner. If this is the case, caution must be taken to prevent pressure related skin issues.

The patient with obesity should be observed, particularly at night, for decreased oxygenation with pulse oximetry. Respiratory status should be monitored by regular assessment of rate and depth, as well as monitoring the nail beds for pallor or cyanosis. Lung sounds should be auscultated regularly.

### Respiratory Complications

Patients with obesity are especially prone to respiratory complications. The most common are:

- Obesity Related Atelectasis or Pneumonia
- Obstructive Sleep Apnea
- Obesity Hypoventilation Syndrome

### Obesity Related Atelectasis or Pneumonia

Basilar atelectasis can occur secondary to the lack of periodic deep breathing due to the mechanical work of having to move the abdomen and chest wall. Therefore the patient should be encouraged to mobilize, and to do deep breathing in a sitting or upright position if possible.

### Obstructive Sleep Apnea

Sleep Apnea is very common in the patient with obesity. Obesity seems to increase the passive mechanical pressures, which contributes to upper airway obstruction.

Obstructive Sleep Apnea (OSA) is characterized by repeated obstructive apneas due to a collapsible upper airway while asleep. This results in repetitive nocturnal oxygen desaturations, fragmented sleep, and excessive daytime somnolence. Sleep is characterized by snoring episodes, episodes of apnea, and 'noisy snoring' as the apneic episode is broken. OSA is common, but often under-diagnosed and under-treated.

If the patient uses CPAP at home, they will likely require CPAP during their hospital stay.

OSA is commonly treated with the application of continuous positive airway pressure (CPAP) via an oronasal face mask or nasal mask while the patient is resting or sleeping. A number of patients with obesity use a CPAP machine at home. If the patient uses CPAP at home, they will likely require CPAP during their hospital stay. Hospitals do not generally carry CPAP equipment, therefore it is recommended that the patient be asked to bring their machine with them (or have someone bring it in for them). CPAP machines require distilled water for humidification, and hospitals generally do not stock distilled water, so ask the patient to bring their own or inform them that it's better to use their machine without water than not at all.

The patient should be supported to manage their own CPAP therapy, unless they are not capable of doing so independently. They know their pressure settings and routine.

Some patients with OSA present with insomnia rather than hypersomnolence. Treatment with hypnotic or narcotic medications, regardless of the presence of insomnia or hypersomnolence, is risky for patients with OSA, including an increased risk for falls. Hypnotic or narcotic medications should not be routinely administered, but if required, patients with OSA need to be monitored very closely.

It is recommended that all patients in hospital who have bariatric care needs and haven't brought CPAP machine with them should be screened for OSA using the 7 point STOP-BANG questionnaire. Screening can be done by nursing on admission. It is also recommended on discharge that patient's primary care physician be made aware if they have a high pre-test probability for OSA, and recommend that primary care physician refer their patient for diagnostic testing. (34) (35) (36) (37) (38) (39) (40)

Some patients can have both OSA and Obesity Hypoventilation Syndrome (OHS). Cardio-respiratory failure is a real risk for these patients, and therefore screening is even more vital. (41) (38) (35)

Other considerations regarding CPAP therapy:

- If the patient has been prescribed CPAP therapy and you suspect they are not adherent to their recommended CPAP therapy, or need assistance with their therapy, flag for follow-up with the family physician.
- If the patient's equipment is dirty, encourage the family or their CPAP equipment vendor to restore equipment to healthy state.

### Obesity Hypoventilation Syndrome

Obesity Hypoventilation Syndrome (OHS) is a condition found in people with obesity and is characterized by inadequate daytime and/or nighttime ventilation, resulting in oxygen desaturation (low blood oxygen levels) and elevated carbon dioxide (CO<sub>2</sub>) levels. Many people with this condition also have OSA. The most effective acute treatment is bi-level mask ventilation or Bilevel Positive Airway Pressure (BPAP). (38) (41) (35)

Acute illness or medications (e.g. narcotics, antihistamines) can exacerbate OHS. In hospital OHS often presents as decreased level of consciousness (due to the hypercapnia).

If the patient uses a BPAP machine at home, they will require BPAP therapy during their hospital stay.

Chronic OHS can lead to chronic hypercapnia. Positive airway pressure therapy remains the main treatment and is effective in controlling sleep-disordered breathing and improving awake blood gases in the majority of

individuals. Patients with OHS often develop heart failure characterized by leg swelling and various other related symptoms.

Patients with OHS should bring their own BPAP machine to hospital, along with any documentation they have from their BPAP vendor - especially details about their machine's pressure settings. Patients with OHS need their CPAP or BPAP therapy while in hospital, whereas it's not generally acutely life-threatening for most patients with mild-moderate OSA to go without CPAP treatment while in hospital. (38)

If OSA and/or OHS is not treated in hospital, every other body system and treatment is affected.

### Gastrointestinal (GI) Considerations

The patient living with obesity may have an increased incidence of both gastroesophageal reflux (GERD) and hiatal hernia, both of which put the patient at risk for aspiration (30). Attention to positioning during and after meals is important. The patient should either be assisted to sit in a chair or if this is not possible, have the head of the bed elevated.

The patient with obesity may experience constipation or fecal incontinence. Incontinence may be due to the pressure of an enlarged abdomen on the bowel, especially when the patient lies on their back. Assessment of the GI system should include auscultation of bowel sounds and monitoring of the bowel movements. If constipation is a problem, a daily stool softener may be helpful.

### Genitourinary Considerations

It is not uncommon for patients with obesity to experience urinary incontinence. This can be caused by the pressure on the bladder from a large abdomen, or skin folds in the perineal area that may impede the voiding process. Incontinence may also result from using the standard, or wrong sized bedpan/commode/ toilet, or from the time it takes to move the patient onto the bedpan or commode.

Convenience to void is important to reduce the incidence of incontinence. It is recommended that the patient adhere to a toileting schedule that will increase opportunities for voiding, have clear access to a washroom that has an appropriate size and floor mounted toilet, or have an appropriate size bedpan or commode chair in close proximity.

A raised toilet seat may also be considered to ease the burden of voiding in this population. It can usually be placed over the current toilet (as long as the toilet has an acceptable weight capacity). Men may prefer to sit at the edge of the bed or stand when using a urinal.

Obesity is also linked to the risk of developing kidney stones (30).

### Catheterization

For patients who have female genitalia, the insertion of a urinary catheter is complicated by the ability to position the patient, as well as the decreased visualization of the urethral opening. Additional assistance may be required to handle the skin folds, while the catheterization is being done. For patients who have male genitalia, the penis may be retracted, making catheterization challenging (and additional assistance may be required).

Explaining the procedure, and the need for additional assistance, to the patient ahead of time is essential, and will help decrease the anxiety with this invasive procedure.

## Lymphatic System

The lymphatic system can be compromised in a patient with obesity (30). The weight of the body's excess tissue may constrict the drainage or flow of the lymphatic fluid, which results in reduced immunity, and the patient can be at high risk for infection. Lymphedema is a condition that results from obstruction of the lymph system. Swelling may occur in the arms or legs. Chronic lymphedema and repeated inflammation of the tissue may lead to elephantiasis nostra, a non-pitting edema with plaque, nodules, papules, and lichenification (or thickening of the skin).

## Musculoskeletal System

Obesity hastens cumulative damage to the skeletal system (30). The force on one's knees is estimated to be 3 to 6 times the body weight with walking, and can reach 8 times the body weight with climbing. Walking, even short distances, may be difficult and painful. Not using muscles can lead to muscle atrophy and weakness, joint instability, decreased balance, loss of joint range of motion, and overall decreased bone and joint health, making the patient prone to fractures. Low back pain is a common complaint of patients with obesity. The presence of a pannus may cause anterior bending and compression on the spinal column, leading to disc issues and back pain.

## Osteoarthritis

Many people with obesity suffer from osteoarthritis (42). Osteoarthritis is a degenerative skeletal condition that progresses over time. Functional impairment and pain interferes with activities of daily living and movement of the affected joints, leading to reduced strength, range of motion and balance. Be aware that many tasks can be extremely painful for the patient with obesity with osteoarthritis. Include the patient when dealing with pain management, and utilize strategies that have worked in the past. Movement is often helpful in relieving pain in arthritic joints, and that pain can actually increase when joints are immobilized.

## Endocrine System

Patients with obesity may also have co-morbid conditions related to the endocrine system.

Obesity  
leads to  
increased  
insulin  
resistance.

Type 2 diabetes mellitus (T2DM) is more common in adults with obesity. Diabetes Canada estimates that 80-90% of people living with T2DM are living with overweight or obesity (43). T2DM is a progressive chronic disease, with varying degrees of insulin resistance and insulin deficiency. The pancreas produces some insulin, but the cells in the body fail to respond to the insulin properly (insulin resistance). Obesity leads to increased insulin resistance. Additionally, some medications used to treat diabetes may promote weight gain. Patients may require blood glucose monitoring, especially when in hospital.

Hypothyroidism and Polycystic Ovary Syndrome (PCOS) may be contributing factors for obesity. Hypothyroidism is a disorder in which the thyroid gland does not produce enough thyroid hormone. It can cause a number of symptoms, such as poor ability to tolerate cold, a feeling of tiredness, constipation, depression, and weight gain.

Polycystic Ovary Syndrome (PCOS) is a hormonal disorder that causes the ovaries to produce higher than normal amounts of androgens (male hormones). This interferes with egg production. The eggs that the ovaries normally produce develop into cysts, little sacs filled with liquid. The cysts build up in the ovaries and can become enlarged. PCOS is also linked to insulin

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resistance (like diabetes) and can affect many systems in the body and have long-term health consequences. Diabetes or pre-diabetes (impaired glucose tolerance) tends to start at an earlier age. PCOS may cause infrequent or irregular periods (oligomenorrhea), or no periods at all (amenorrhea). (44)

## Skin and Skin Integrity

The patient with obesity may be at greater risk for developing problems with their skin (45). Factors that contribute to this include:

- Difficulty with assessment due to the practical challenge of moving and turning, and examining folds
- Co-morbid conditions such as diabetes, peripheral vascular disease, hypertension, malnutrition and lymphedema.

They may also be at higher risk for skin breakdown related to increase sweating and moisture, possible impaired mobility, increased pressure from their weight, and increased shearing during movement.

Adipose tissue has poor blood supply, leading to inadequate circulation and decreased oxygenation making the skin vulnerable to break down, slower healing and susceptible to infections. Potential venous insufficiency can further impair tissue oxygenation.

Increased body size generates more heat. To maintain normal temperature – the body sweats. Excessive sweating increases skin moisture and therefore increases risk for bacterial and fungal infections, especially under breasts and in groin areas, and other skin folds.

Adipose tissue has poor blood supply, making the skin vulnerable to break down, slower healing and susceptible to infections.

Routine examination of all skin surfaces, including thorough assessment of areas of all skin folds is needed. Daily skin inspections should be increased to every shift if skin is at high risk for breakdown.

Patients with obesity may have considerable experience in dealing with their skin issues and are often willing to share their tips on how to best manage their care.

Using validated tools for skin assessment is recommended. The Braden Scale is used in AHS for skin risk assessments.

Consider consultation to skin and wound specialist to assist with skin care.

### Skin Fold Management

Patients with bariatric care needs will often have increased skin folds and larger abdomens that may hang at or below the pubis area. Skin excoriation, rashes and ulcers in the deep tissue folds of the perineum, breast, legs and or abdominal area are not uncommon in patients with

Focus in hospital should be on elimination of skin to skin contact.

severe obesity (46). The challenge with skin folds is the skin to skin contact. One layer of skin resting on another layer of skin creates a warm, moist, and dark environment that can become a potential area for skin breakdown, skin to skin friction and shear, irritation, rashes, candidiasis, viral or bacterial infection, and potential pressure ulcer areas. Candidiasis (yeast) love moist warm and dark environments.

Focus in hospital should be on elimination of skin to skin contact without causing harm to fragile tissue, and keeping skin folds dry. The most problematic area is the abdominal pannus. While this area requires focus, attention must also be given to other areas such as the neck, upper back, upper inside of thighs, and back of legs and ankles.

Skin folds should be assessed at least every 12 hours, and more frequently if their condition indicates.

1. Seek patient's input. They have the most experience in dealing with their skin fold challenges, and can likely make suggestions on how to care for their skin.
2. Ensure adequate staff to assist to avoid both patient and provider injury.
3. Use moisturizers to keep skin supple; if there is risk of cracking due to excessive dryness.
4. Use absorptive fabric to manage moisture issues.
5. Use towels, draw sheets, or manufactured sling if needed to lift large areas of adipose tissue, legs, arms etc. in order to minimize discomfort, tissue friction or pain.

Cornstarch powder should not be used as it predisposes the skin to yeast infections, and antimicrobial powders are encouraged versus creams to address yeast and fungal infection in skin folds.

Skin fold yeast/fungal infections should be treated by using absorbent materials to separate skin folds. Using a textile product that contains ionic silver (eg. InterDry, Coloplast), provides broad-spectrum antibacterial and antifungal action for up to 5 days.

They are designed to wick away moisture and reduce skin-to-skin friction, as well as keep skin dry.

Also of note is that if a skin fold is moved forcefully, it can lead to skin tears, lacerations or abrasions. These injuries can become painful wounds. Skin folds should be handled cautiously.

Skin folds should be handled cautiously.

If the patient is transitioning to the community; skin inspection education for patient, family and caregiver should be reinforced.



## Hygiene

General hygiene is essential to maintaining skin integrity and odour control with attention to general bathing and cleansing of areas susceptible to breakdown including skin folds, genital, and perineal area. More frequent bathing will be required by patients who are prone to heavy perspiration. Patients with obesity need to have access to bathing facilities where the skin can be cleansed and rinsed. No-step entry or walk in showers are ideal for patients with obesity in a hospital setting. The shower should be equipped with a hand held shower head, and shower chair for patients with limited endurance. For patients with limited mobility, two or more staff members may be required to effectively clean and dry the skin.

## Odour Control

Hygiene can be difficult, which can lead to odour problems. Odour may be caused by a number of factors including incontinence, skin infections, wounds, as well as skin on skin contact and perspiration. When odour is present, it can cause embarrassment and humiliation for the patient. The direct skin surface contact creates moisture, increases the growth of bacteria or yeast resulting in odour because of the bacteria / fungus. Products to manage moisture and odour can be placed in skin folds. Consultation to a skin and wound specialist, if available, may be appropriate.

## Pressure Injury Prevention

The patient with obesity is at high risk for pressure injury related to the decreased blood supply (and oxygen) of the adipose tissue.

Patients with obesity are at higher risk for pressure injury. With decreased blood supply (and oxygen) in adipose tissue, the patient with obesity is at high risk for pressure ulcers. Encourage your patient to ambulate if they are safe to do so. Turn and reposition frequently while in bed based on individual need, and include repositioning when the patient is up in a chair. The goal of repositioning is to off-load pressure on bony prominences. Identify any equipment needs such as trapeze to assist with position changes.

Turning and repositioning is a basic prevention intervention to reduce and relieve pressure. (Adipose tissue does not equate to padding and prevention of pressure injury.)

The patient with obesity is also prone to atypical pressure injury, such as that between skin folds or under the pannus, and assessment in these areas is also essential.

Inspect the skin at least daily for signs of pressure injury, especially nonblanchable erythema (redness that does not blanch when light pressure is applied). When inspecting darkly pigmented skin, look for changes in skin tone, skin temperature and tissue consistency compared to skin in other areas of the body.

Assess pressure areas: sacrum, coccyx, buttocks, heels, ischium, trochanters, elbows, beneath medical devices (eg. tubes and catheters burrowed in skin folds).

Offloading and pressure redistribution are often required as part of routine care to decrease the risk of pressure injury.

Mobilize or ensure patient is repositioned (and pressure off-loaded) at least every 2 hours



The Braden Scale is a validated tool used in AHS for skin risk assessments. See [Appendix 6](#) for sample of AHS form 10144.

Alberta Health Services has adopted the acronym [SSKIN+](#) to describe a bundle of strategies to protect patients who are at risk from developing pressure injuries.

## Wound Considerations

Wound healing is dependent on the circulatory system providing oxygen and nutrients to damaged tissue. For patients with obesity, the workload of the heart is often increased by the requirement to provide oxygenated blood to a large amount of tissue. Additionally, adipose tissue is poorly vascularized. Delivery of oxygen to the cells is also dependent on the respiratory system. A common respiratory pattern for patients with obesity is hyperventilation, as the diaphragm is unable to fully descend because of the excess abdominal adipose tissue. Chest expansion is therefore impaired, resulting in potential poor oxygenation, which can further impair wound healing. The presence of diabetes will further contribute to delayed healing and infections.

All phases of wound healing are dependent on adequate supplies of protein, carbohydrates, vitamins, and minerals. Proteins are the building blocks of the cells. Poor nutritional intake can lead to impaired wound healing. *See Nutrition section below*

The Bates Jensen Wound Assessment Tool (BWAT) is a validated tool for assessing wounds.

## Complications

### Infection

Patients with obesity are prone to wound infections.

There is an increased incidence of infection among patients with obesity. This is related to the poor vascularity of adipose tissue. Insufficient oxygen decreases the ability to fight infection as there are insufficient neutrophils to ingest the bacteria. All wounds should be assessed regularly for redness and discharge.

### Dehiscence

Patients with obesity are at higher risk for wound dehiscence related to the poor vascularity of the adipose tissue. Retention sutures may be used to support large abdominal incisions. Abdominal wounds should be monitored for dehiscence.

### Hematoma and Seroma Formation

Collection of pooled blood or serous fluid is an additional risk for patients with obesity post-operatively.

## Nutrition

Some health care providers may think because the patient has obesity, the diet needs to be restricted. Size does not equal well nourished. In fact, patients with obesity can be malnourished (47) (48).

Nutrition and hydration play an important role in maintaining skin integrity and supporting tissue repair processes. Hospitalized patients with obesity and wounds have increased nutrient needs. Consider consultation to Registered Dietitian to assist with nutritional needs, or if patient is requesting information for discharge.

It is important for the patients with wounds to consume sufficient calories, protein, and micro-nutrients for wound healing.

## Intravenous (IV) Access

IV access can be very challenging in patients with obesity. If it takes more than two attempts to start a peripheral IV; a peripherally inserted central catheter (PICC) or midline catheter could be considered. Both can stay in place for weeks to months, thereby eliminating frequent attempts at restarting IV lines.

## Intramuscular Injections

If the needle is not long enough, the injection will be given into the subcutaneous tissue instead of the intended intramuscular tissue.

It is important to consider the length of needles used for intramuscular injections as standard needles (1-1.5 inches) may not be able to penetrate past adipose tissue in a patient with a thick layer of fatty tissue. If this is the case, the injection would be given into the subcutaneous tissue instead of the intended intramuscular tissue.

Plasma concentration of the injected drug varies depending on whether the drug reached muscle or adipose tissue. Muscles have rich vascular supply in comparison to subcutaneous adipose tissue which is relatively less vascular. The bioavailability of the subcutaneous injections is different from that of drugs injected intramuscularly. This is because the intramuscularly injected drugs are absorbed better. Subcutaneous route of injection is preferred only when slow and sustained action is desired. (49)

In addition to the amount of absorption of the medication, potential risks of administering medication subcutaneously instead of intramuscularly, may include: increased discomfort to patients, inflammation or infection of subcutaneous tissue, and tissue necrosis.

## Medication Absorption and Other Pharmacological Considerations

Excess body fat may alter drug absorption, depending on the medication. Additionally, the dosage of some medication is calculated using the patient's actual body weight, while the dosage of other medications is based on ideal body weight. Highly lipophilic drugs (those that are primarily absorbed in adipose tissue) require dose calculation based on actual weight, while minimally lipophilic drugs (those absorbed mainly in lean tissue) require dose calculation based on patient ideal weight.

Additionally, after bariatric surgery, changes to the gastrointestinal tract and changes in pH may affect the absorption and metabolism of medications. As well, some medications needed prebariatric surgery may no longer be needed after surgery (such as diabetes medications or antihypertensives) (50) (51) (52).

After bariatric surgery, slow release medications (those with XR, CR, SR and LA following their names) may not be absorbed properly. Dosage forms may need to be altered. Use of immediate release formulations or liquids may be considered (50) (51) (52).

Medications administered via a cutaneous patch may be absorbed differently in patients with obesity due to changes in the skin related to obesity, and higher doses may be required (53). Titration should be completed based on effect. The differences in absorption may be due more to the action of the drug as opposed to the cutaneous delivery system.

A clinical pharmacist can be an essential resource in ensuring the accurate drug dose.

### Importance of Mobilizing

Most patients with obesity are at risk for certain complications from immobility. Common immobility related complications include: skin breakdown, cardiac deconditioning, DVT, muscle atrophy, constipation, and urinary stasis. Immobility also contributes to pulmonary complications such as atelectasis and pneumonia. The patient is more at risk of developing these complications during a long hospitalization. Specific tasks such as moving and lifting immobile patients can seem overwhelming without proper education and equipment. Ceiling lifts with proper fitting slings; portable lifts to aid in standing and walking an unstable patient; a sliding board, transfer sheet, or inflatable transfer device; are all invaluable in safely transferring a patient with bariatric care needs.

Pain  
management  
is essential to  
promote  
mobility.

Pain management is essential to promote mobility.

A summary of the above care requirements for patients with bariatric care needs can be found in [Appendix 2](#).

## Transitions between Care Areas within the Hospital

When requesting transfer of care within the hospital, ensure receiving patient care area has bariatric supplies and equipment with appropriate weight capacity.

The following steps are recommended to facilitate a safe and effective transfer of a patient with bariatric care needs between departments or services.

1. Inform the receiving department about the impending transfer and agree upon safety measures/resources needed.
2. Consider the following service providers that will require advance notice that a patient with bariatric care needs is being transported in their direction: ICU; diagnostic imaging; operating room; casting room; ECG; physiotherapy; occupational therapy; patient transport; ambulance services; care of the deceased (mortuary and funeral director).
3. Inform portering if patient has bariatric care needs, so they can bring appropriate sized wheelchair or stretcher if required.
4. Ensure the appropriate equipment (bed, stretcher, lift, slings, sliders, etc.), sufficient staff and clear access routes are available for the transfer.

5. Ensure that all patient handling risks and safe patient-handling plans have been communicated.
6. iDRAW / SBAR are common communication tools used in AHS when reporting between units in hospital. More information for AHS staff about these tools can be found on the AHS intranet.

[Brief video explaining iDRAW / SBAR](#)

## Discharge Planning or Transition to a Different Program

Planning well in advance is important to promote an efficient and successful discharge.

Planning well in advance is important to promote an efficient and successful discharge from acute care settings for patients with bariatric care needs. Poor preparation for discharge can be devastating for the patient and their family members, as well as delay discharge from the hospital. Post-acute options may include home with support from the outpatient clinics, homecare, or primary care, or discharge to long term care, assisted living, etc.

The patient's healthcare team will communicate to ensure continuity of care in transitions from one site/program to another. The team will consult with appropriate and available healthcare team resources as they relate to ongoing care, discharge planning and transitions in care including but not limited to:

- Nursing
- Nutrition Services
- Pharmacy
- Diagnostic Imaging
- Portering
- Administration
- Spiritual Health
- Home Care
- Physiotherapy
- Indigenous Health
- Occupational Therapy
- Speech Language Pathology
- Physicians
- Primary Care Providers
- Respiratory Therapy
- Social Work
- Dental Services
- Emergency Medical Services for interfacility transport

The team will consult with other disciplines as indicated to address the patient's needs and to acquire equipment and services. If a patient is a candidate for rehabilitation, a referral may be made to the appropriate service provider or community resource. If a referral is made to a facility that does not have bariatric equipment, the accepting service provider will need enough time to obtain the equipment required. If a referral is made to the community, the patient and the family may require time to obtain equipment or be connected to relevant resources. Ensure that these community facilities are accessible for the patient and that transportation has been considered for outpatient follow-up. If a patient is being assessed for a walker or other mobility equipment on discharge, be sure to let the equipment vendor know that the patient has bariatric care needs.

Time may be required to obtain equipment to meet patient's needs.

Maintaining patient mobility once they are discharged from hospital is a necessity and must be organized in a way that is safe for both care providers and patients. Lack of planning for mobility could result in poor recovery or a worsening of condition, which could lead to re-admission.

Clear communication to the patient's primary provider (medical home), is essential during discharge planning and transitions in care.

Skin care education, and information regarding skin fold management to patient, family, or receiving care area may be required.

## Inter-facility Transfers via Emergency Medical Services

Alberta Health Services Emergency Medical Services (EMS) has both a policy and a procedure that support the safe and dignified transfer of patients with obesity, including inter-facility transfers. These guidance documents can also help mitigate delays in inter-facility transfers. They focus on proper equipment and technique. It is important to convey the patient's weight, and any bariatric care needs, to EMS when arranging transport for the patient. These can be found using the search function on Insite, by entering the policy number or policy/procedure title:

- Policy PS-EMS-06: Provincial Bariatric Response for Ground and Air Ambulance
- Procedure PS-EMS-06-01: Provincial Bariatric Response for Ground and Air Ambulance

EMS also uses abdominal girth in determining appropriate stretcher size and other equipment required to safely transport patients with bariatric care needs. Please see [Appendix 7](#) for guidance on measuring abdominal girth for communication to EMS.

## Special Populations or Circumstances

### Radiology / Diagnostic Imaging

Radiology / Diagnostic Imaging department should be notified of patient's weight and any mobility issues, as close as possible to the order being received, so accommodations can be made (if necessary) for the patient's specific diagnostic needs and equipment. Consider the length of time required for the imaging with regards to the patient's tolerance for lying flat in a supine position, with respect to their respiratory risk.

Diagnostic Imaging department should be notified of patient's weight and any mobility issues.

### Radiology Equipment

- The manufacturer technical specifications for equipment (eg. weight capacity and girth restrictions) need to be considered and noted.
- A radiologist or nuclear medicine physician should be consulted if the patient's weight or dimensions exceed the capacity of the site's equipment. (Another site with weight / girth appropriate equipment may need to be considered.)
- Each diagnostic imaging area should:
  - List manufacturer's weight restriction for specific equipment
  - Have readily available a list indicating alternate locations, if they are not able to accommodate.

### Space

Consideration needs to be given to the size of the examination room, and the mobility and equipment needs of the patient. Adequate space around the exam table is also required for staff to assist the patient, and to be able to move freely and easily. In addition, for ambulatory patients sufficient space and appropriate seating is necessary to allow for patients area to change clothing if required.

### Surgery and Peri-operative Considerations

It is important for perioperative team members to understand the pathophysiology of obesity and its impact on the circulatory and respiratory systems. Patients with obesity may have increased cardiac output, increased pulmonary artery pressure and are at risk of inferior vena cava compression.

Patients with obesity may also have a short, thick neck, large tongue, and significantly increased amounts of soft tissue surrounding the uvula, tonsils, tongue, and lateral aspects of their throat. This can contribute to the development of airway obstruction and also increase the probability that it will be more difficult to keep the airway open during mask ventilation. This can also cause difficulty placing an airway tube at the beginning of general anesthesia. (54)

When supine, the patient's abdomen pushes up on their diaphragm, and prevents the lungs from inflating fully. Once the patient is anesthetized breathing is impaired by the anesthetic

drugs and muscle relaxation allows the abdomen to sink further into the chest. Patients may need to be positioned into reverse Trendelenburg, sitting or a lateral position (55) (56).

Use opiate narcotics for analgesia with caution as there is an increased risk of respiratory depression in patients with high BMI.

### Anesthesia

The patient may require an anesthesia consult prior to surgery. For patients having epidural medications; extra –long epidural needles may be required. Medication dosages may need to be adjusted based on body weight. The patient may require invasive monitoring lines. Difficult intubation cart should be available.

Other important considerations include:

- Procedure table should be capable of supporting a patient weight between 363 – 454 kg (800 -1000 lbs)
- Mattresses and padding should provide sufficient support and not bottom out
- Potential for pressure injury during long procedures therefore patient will need to be repositioned to prevent same
- Extra wide, and extra-long safety straps should be used for patients who exceed the length limits for regular sized straps
- The size and weight of the abdomen needs to be taken into account when positioning the patient on the OR table. In the supine position the abdomen may cause vena cava compression. Trendelenburg position should be avoided as the weight of the abdomen and its contents may press against the diaphragm causing respiratory compromise.
- When patient is in supine position a roll or wedge should be placed under the patient's right flank to relieve compression of the vena cava.
- Patients with Obstructive Sleep Apnea or Obesity Hypoventilation Syndrome should be put onto their CPAP / BPAP therapy as quickly as possible following surgery, keeping in mind contraindications such as ENT surgery, compression of skin, or aspiration. Patients with contraindications should be assessed for ICU, where their needs for CPAP / BPAP can best be managed.

## Emergency Situations / Cardiac Arrest

### Basic Life Support (BLS) and Advanced Cardiovascular Life Support (ACLS) Modifications

No modifications to standard BLS or ACLS care have been proven effective, although techniques may need to be adjusted due to the physical attributes of individual patients.

When in the supine position, abdominal weight may compress the inferior vena cava and aorta, impeding normal blood flow. Consider a lateral tilt position of 30 degrees or greater.

A 'RAMPED UP' position may be required for intubation for some patients with obesity. In patients with obesity, the anterior-posterior width of their chest wall and breast tissue can interfere with laryngoscopy and visualization. Building a shallow ramp by placing folded linen under the shoulders, with the goal of aligning the ear canal with the sternal chest, often improves your ability to open the mouth and see the larynx. (57)



## Perinatal

Postpartum women with obesity are at greater risk of developing venous thromboembolism (VTE), and require assessment for VTE prophylaxis, and may need LMWH and heparin dose adjustment. (58) The Society of Obstetricians and Gynecologists does not have a firm opinion on VTE prophylaxis; and suggests evaluating each patient individually. However the Royal College of Obstetricians and Gynaecologists (in the UK) recommends VTE prophylaxis for all women with pre pregnancy BMI of greater than 30.

The following information has been adopted from: Edmonton Zone Women's Health "Bariatric Perinatal Care During Hospitalization" Guideline May 2017

Bariatric Perinatal Care Guidelines

Edmonton Zone Women's Health Program Clinical Practice Guidelines

## Antepartum Care Throughout Hospitalization

### 1. Fetal Health Surveillance -

- Able to Obtain Fetal Heart Rate (FHR)
  - Follow antepartum monitoring guidelines for non-stress test frequency and/or Primary Care Providers (PCP) orders
  - Initiate fetal movement count
  - Fetal Heart Rate (FHR) monitoring may require a second nurse to hold the woman's abdominal pannus. When conducting Electronic Fetal Monitoring (EFM), use bariatric monitor belt
  - Document any difficulty in accurately assessing FHR and notify Primary Care Provider (PCP)
  - Difficulty determining symphysis-fundal measurements and determining fetal lie by abdominal palpation may occur and more frequent use of ultrasound may be needed
  - Consider woman's perception about uterine activity as tocodynamometer and abdominal palpation may not provide an accurate assessment
- If unable to obtain FHR; verify fetal movement is present and notify PCP, and request FHR assessment by Ultrasound

These perinatal guidelines aim to highlight special considerations when caring for mothers with obesity and their infants.

### 2. Nutrition - Meet maternal and fetal nutritional needs and support appropriate weight gain

- Offer women nutritional counseling and support
- Refer to Dietitian to assist with meal planning and education
- Weekly weights to monitor weight gain, Society of Obstetricians and Gynecologists guidelines recommend a weight gain of approximately 7 kg during pregnancy for patients with obesity
- Consider 3<sup>rd</sup> trimester gastric acidity suppression drugs

## Intrapartum Care

### 1. Anesthesia - Anesthetic Consultation

- Extra-long epidural needles may be required in Operating Room and Labour and Delivery supply areas
- Medication dosages may need to be adjusted based on body weight

- May need to insert invasive monitoring lines
- Use opiate narcotics for analgesia with caution as there is an increased risk of respiratory depression in women with high BMI

## **2. Fetal Health Surveillance**

- See antenatal fetal health surveillance (above) and follow the Society of Obstetrician and Gynecologists of Canada standards of practice for fetal health assessment
- Consider having ultrasound available in the room
- When membranes ruptured (ROM), consider spiral electrode and Intrauterine Pressure Catheter (IUPC)

## **3. Fluid Balance**

- Woman may require arterial line for accurate Blood Pressure monitoring
- Maintain accurate record of intake and output fluid balance

## **4. General Care Considerations**

- The laboring patient with obesity should be encouraged to ambulate and move independently, as any other labouring patient.
- If unable to independently ambulate to washroom, consider using a bariatric commode, bed pan, or Foley catheter (if clinically indicated)
- If minimal assistance is required, a manual 4-person turn may be used to turn the woman in preparation to receive the bedpan.
- If a ceiling lift is available, a repositioning sling may be used to turn the woman

## **5. Vaginal Birth**

- Position for pushing will vary with body shape and woman's mobility
- If foley catheter is in place, may deflate balloon and attempt to keep in place
- Use Safe Patient Handling Procedure and extra staff members for McRobert's Maneuver and moving the woman's legs into the thigh-to-abdomen position
- Consider leg supports or draw sheets to help position legs, do not attempt to hold legs
- Determine need for 2<sup>nd</sup> stage of labor to occur in Operating Room due to potential for intervention (e.g. due to increased risk of shoulder dystocia)
- Facilitate immediate skin-to-skin contact

## **6. Cesarean Birth Care - Equipment and Instruments**

- For adult patients with total body weight greater than or equal to 120 kg, cefazolin 3 g IV is recommended by Infectious Disease Society of America guidelines but is based on expert opinion. Alberta Health Services Antimicrobial Stewardship suggests 3g is not necessary regardless of body mass index (BMI) and timely administration, within 60 minutes before initial skin incision, of 2g cefazolin can significantly decrease the incidence of postoperative infections (59). An alternate regimen for cephalosporin allergy or severe penicillin allergy/anaphylaxis is gentamycin 1.5mg/kg IV + clindamycin 600 mg IV x 1 dose (59)
- To ensure that the height of the Obstetrician/Surgeon is appropriate for the height of the mother's abdomen, obtain a stepping stool. The goal is to minimize trunk flexion (mother's abdomen should be slightly below level of Obstetrician/Surgeon's elbows)
- Have appropriate Operating Room equipment and instruments available, for example- deep Balfour, large sponges, retractors, O ring available, waterproof pink tape, extra drape bar on each side in case the pannus needs to be taped out of the way
- Consider having difficult intubation cart in the Operating Room

- Have extra blankets, towels to facilitate positioning of head and neck if general anesthetic
- Consider use of Troop Elevation pillow
- Consider transfer from OR table directly to postpartum bed
- Facilitate immediate skin-to-skin contact

## **7. Recovery Care**

- Minimize number of transfers-perform all lateral transfers using Safe Patient Handling Procedures (some sites use Samarit Bariatric Patient Transfer Boards)
- Routine monitoring, keep foley catheter in place until able to mobilize
- Pain management is as coordinated by anesthesiologist
- Ongoing postpartum care in delivery suite or postpartum unit as determined by woman's condition and care needs
- Facilitate early skin-to-skin contact

## **Postpartum and Newborn Care**

### **1. Hemostasis**

- Monitor vital signs per guidelines
- Due to body size and shape, it may be difficult to monitor uterine tone and location, monitor vaginal bleeding closely
- If birth occurred via Cesarean Section, internal bleeding may not immediately saturate the wound dressing if excessive abdominal tissue is present
- Review postpartum hemorrhage (PPH) clinical knowledge topic and order set. This can be found on the AHS internal website by searching 'Clinical Knowledge Topics.'

### **2. Cardio- Respiratory Status**

- Position woman to maximize respiratory effort and comfort
- Assess woman frequently due to potential sleep apnea
- Monitor oxygen saturation with vital signs
- Monitor for signs of fluid overload/pulmonary embolus
- Maintain foley catheter for 24 hours unless woman able to independently mobilize
- Due to potential for circulatory overload, document intake and output totals every 2 hours in first 12 hours, then every 4 hours until 24 hours postpartum

### **3. Pain Management**

- Managed by anesthesiologist initially
- Medication dosage should be calculated based on body weight
- Monitor respiratory status closely when narcotics are used

### **4. Special Circumstances Baby**

- Consider requesting Neonatal Intensive Care Unit to place newborn in a bed area that is easily accessible for bariatric wheelchairs
- Ensure bed or crib is height adjustable

### **5. Postpartum Infection**

- Due to increased risk for delayed healing; monitor episiotomy or skin incision for signs of infection

- Monitor drainage from wounds
- Do daily chest assessment, respiratory rate, rhythm, and auscultation
- Assess pressure areas for excoriation or tissue breakdown

#### **6. Breastfeeding**

- Determine infant feeding practices-Lactation Consult as needed
- Provide extra support with breastfeeding (e.g. positioning)

#### **Transfer of Care of Perinatal Patient**

- When requesting inter-facility transfers (IFTs), clinical and non-clinical staff will be asked to provide the patient's weight and abdominal width.
- If patient requires EMS transport, please refer to AHS EMS policy (PS-EMS-06) and procedure (PS-EMS-06-01) that supports safe and dignified transports of patients with bariatric care needs.

For more information regarding perinatal care; please refer to Edmonton Zone Bariatric Perinatal Care During Hospitalization Guideline available to AHS employees on insite.

### **Pediatric Population**

#### ***In Development***

The above principles with relation to care and weight bias apply to the pediatric population, as well as ensuring proper equipment and supplies are available.

The link below is to an article that describes implementation of a Pediatric Obesity Care guideline in a Freestanding Children's Hospital. This article includes a [Pediatric Obesity Care Algorithm](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3607510/) that describes the considerations for pediatric patients with obesity.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3607510/>

## Ideal Hospital Design and Room Set Up

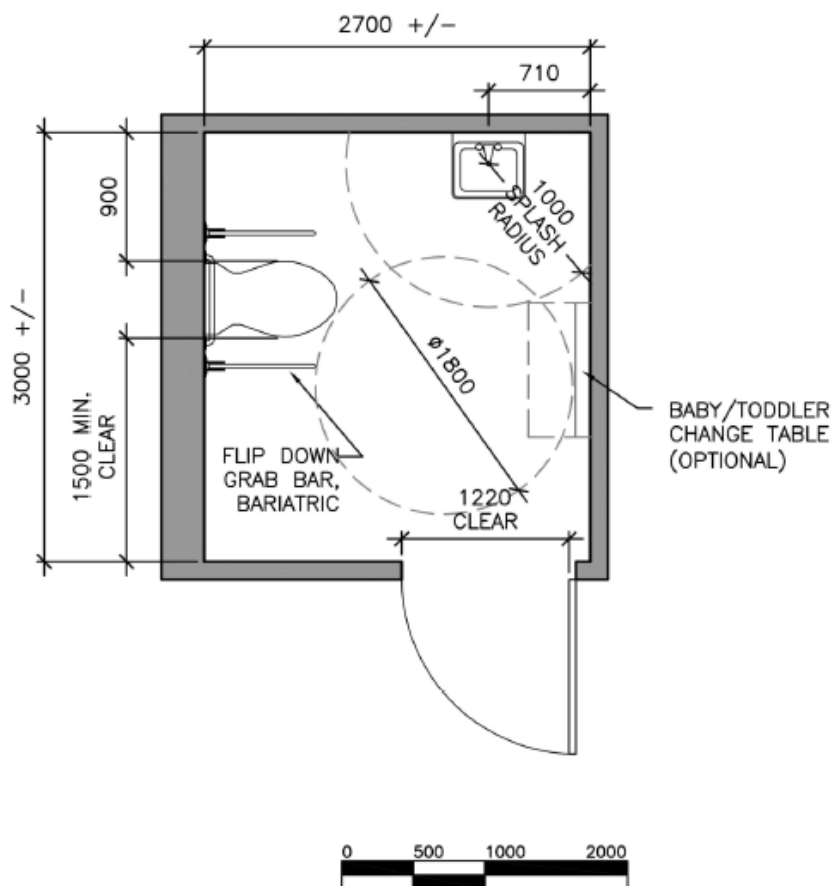
Room set up and design is an important aspect to providing safe care for patients living with obesity. These adaptations (or design considerations) will help accommodate patients with bariatric care needs. The following turning radius and load (or weight) capacity recommendations are from the Canadian Standards Association (CSA) – Canadian Health Care Facilities Z8000 2018 guidelines. The CSA Z8000 sets out requirements and addresses concerns specific to healthcare facilities, beyond what is contained in building codes and guidelines.

The CSA Z8000 has specific recommendations for accommodating patients with bariatric care needs. Some of their key recommendations are:

- A bariatric path of travel for the public shall be provided from the building entry(s) to all rooms and spaces used by bariatric patients. Within that path of travel, doors (including elevators) shall have a minimum width of 1220 mm. This width shall be increased as needed if any of the patient stretcher, bed, or equipment widths are greater than 1220 mm.
- A door width of 1220 mm, in addition to a 305 mm side leaf, should be used in bariatric inpatient bedrooms, shower rooms, tub rooms, or similar to allow adequate clearance and maneuverability for staff when transferring bariatric patients in stretchers or beds.
- Swing doors for bariatric patients shall have a clear floor area beside the latch edge that extends the full height of the door of 940 mm on the pull side and 640 mm on the push side. A clear dimension behind or in front of the door of 2440 mm on the pull side and 1725 mm on the push side for inpatient rooms and 1830 mm on the pull side and 1725 mm on the push side for other bariatric doors shall be provided.
- Lounges and waiting areas shall include furnishings that are designed to accommodate bariatric persons.

See full CSA – Canadian Health Care Facilities Z8000 2018 guidelines for more detailed information.

## Washroom



Patient Washroom (Bariatric) (60)

### Door

As above, the door to toilet should be at least 1220 mm (approximately 48 inches) wide. It should have the ability to swing to the outside the washroom.

### Toilet

Most wall-mounted toilets have a weight capacity of 250lbs. Bariatric toilets are floor mounted and have a weight capacity of up to 453 kg (1000lbs). Toilet seats should be extra wide with a 453kg (1000lbs) rating. Toilet tissue dispenser should be mounted sufficiently to allow ease of access and not interfere with grab bar use. There should be a clear space on each side of the toilet to accommodate a staff member on each side of the patient. There should be a minimum of 1500 mm (approximately 59 inches) of clearance on at least one side of toilet for transfer use.

### Commode

If not using a bariatric toilet, a bariatric commode with a 360kg (800lbs) weight capacity and an adjustable height is an alternative option. This can be used alone or over a toilet. A floor-mounted toilet with an unattached flush tank is more flexible to use with various bariatric commodes.

### Sink

A floor mounted, wheelchair accessible sink or surface mounted wheelchair accessible sink with extra support rated for 453 kg (1000 lbs) of downward force as patients may lean on it for support is recommended.

### Grab Bars

Ideally, there shall be two drop down grab bars each able to withstand 453 kg (1000 lbs) of downward force. Walls should have extra reinforcing to allow for mounting grab bars in multiple locations around the toilet and shower area.

### Bathing / Shower Space

Wheelchair accessible open showers should be available. Flooring should have flush transition and no lips on floor entering the shower. Enclosing walls should be avoided and use shower curtains to allow for ease of access for the patient, and assistance by caregivers when needed. A turning radius of 1800 mm (approximately 71 inches) is required for individuals with obesity using a bariatric wheelchair or bariatric wheeled shower chair. Shower controls should be mounted on the side wall of the shower.

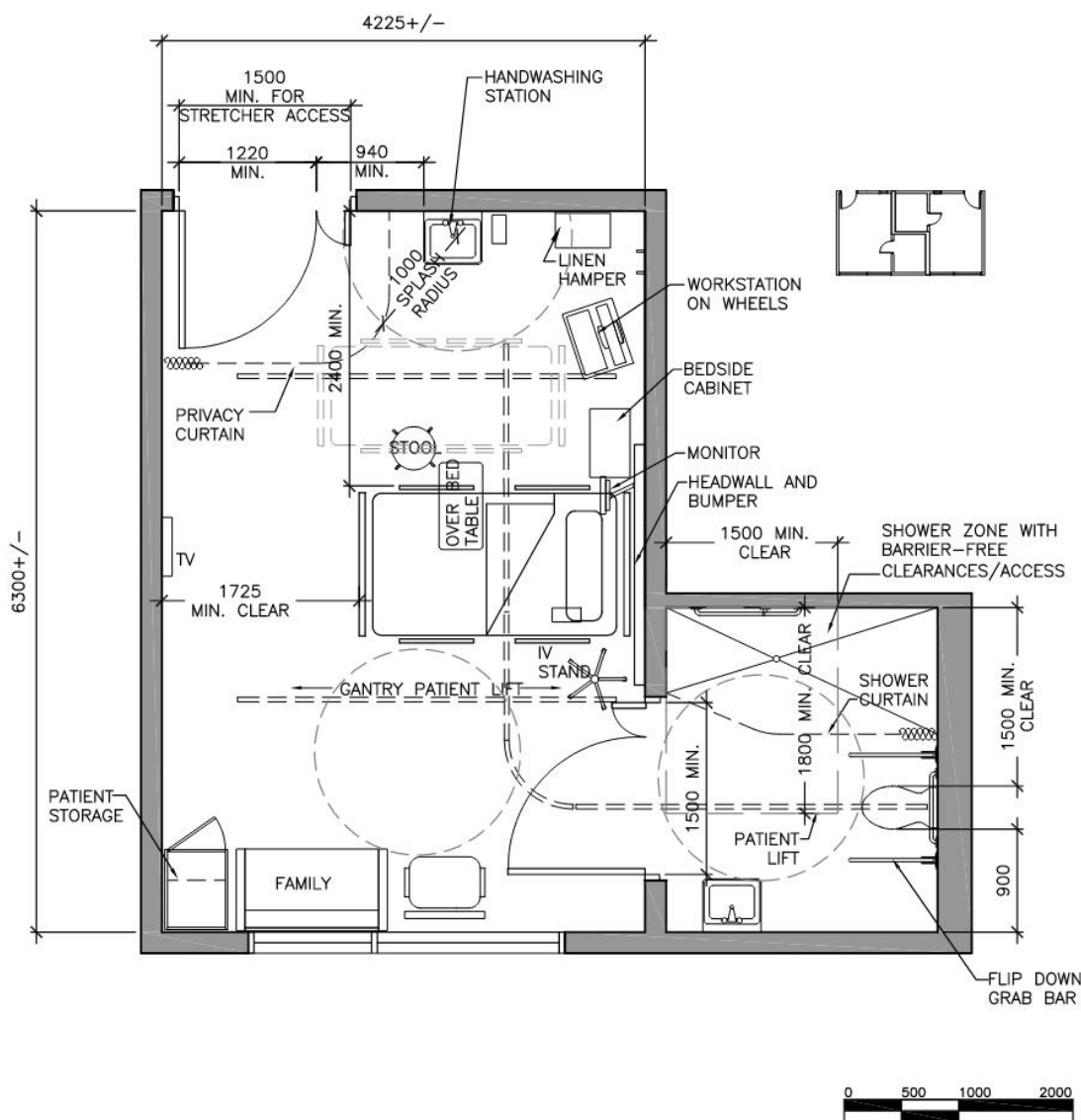
Shower shall have a weight appropriate grab bars, hand held spray nozzle, and movable portable shower chair. A portable chair should be used versus a wall mounted seat (which has less load tolerance).

### Patient Room

Patients with bariatric care needs may require a room that has more space than that provided for patients without bariatric care needs. Rooms should have the necessary additional space and equipment for safe, efficient, and effective management. A single patient room is ideal, or a double room with the second bed removed is an alternative option. The entry door opening shall be at least 1500 mm (60 inches) wide. The entry doorway may include a second panel to provide this opening width. A minimum 1800 mm (approximately 71 inches) wheelchair turning radius should be provided. Floor mounted rails, placed strategically from bed to toilet should be considered as they facilitate increased independence while toileting.



**E-8  
Inpatient Medical/Surgical  
PATIENT BEDROOM, BARIATRIC**



Inpatient Medical/Surgical Patient Bedroom (60)

### Bed and Mattress

Many standard hospital beds have a weight capacity that generally provide adequate support for a patient up to 159 kilograms (350lbs). However it is important to determine if a standard bed will provide adequate support of the patient's entire body therefore the width and length of the bed are important considerations. A bariatric bed will typically hold up to 341 kilograms (750 lbs) or more, be wider and longer. A low air loss mattress is recommended that provides adequate air flow to reduce the risk of skin irritation.

### Mechanical Lifts

Ceiling lifts are considered superior to mobile lifts, as they do not take up space in the room, and do not require the care provider to move the lift (including the patient's weight). The ceiling in a room designed for use by a patient with bariatric care needs should be high enough and structurally capable of supporting a ceiling lift and floor to ceiling transfer poles if required by the patient (Standards and Guidelines Committee, Design Guidelines for Continuing Care Facilities in Alberta, Draft 2014).

AHS published *Ceiling and Mobile Client Lift Guidelines for AHS Facilities in October 2018*. These were developed through collaboration by Alberta Health Services (AHS), Alberta Infrastructure and Alberta Health. They assist in ensuring a consistent approach for the consideration and incorporation of client lifts in new construction and large-scale renovations at AHS facilities. The following recommendations are based on the Ceiling and Mobile Client Lift Guidelines for AHS Facilities.

Ceiling lifts in rooms designated as safe care spaces for patients with bariatric care needs should have a capacity of a minimum of 453 kg (1000 lbs). For patients who require maximum support for their care it is recommended that there be a room with a ceiling lift that provides lift and transfer coverage for the entire patient room including the washroom. Ceiling lift coverage in the washroom should also include access to the sink, shower and central floor area as much as possible.

### Waiting Rooms

Seating in waiting rooms and dining areas should include options for patients with bariatric care needs. It is recommended that seats be available that are rated to 270kg (550lbs). These seats will have adequate width and depth to support a patient with bariatric care needs. Options with and without armrests are recommended. It is recommended that in waiting rooms and dining area that 20% of seating be classified as bariatric seating. Wheelchair spaces should be included that accommodate the width and depth of bariatric wheelchairs.

### Doorways

(Reference: Government of Alberta, Alberta Health Services, Design Guidelines for Continuing Care Facilities in Alberta, August 2018)

Doorways throughout the facility should allow for a barrier free pathway for patients with obesity to move through and for easy throughway access for bariatric size equipment.

Doorways should have a minimum clearance of 1100mm (44inches). A larger door width can be accomplished by the use of unequal-leaf swing doors. Other ways to maximize door clearance include the use of folding doors and off-set hinges.

Elevator door clearances should be as large as possible (minimum of 1100mm). The interior dimensions should allow for a larger turning radius of wheelchairs and the transportation of a stretcher with two caregivers.

### Entrance and Ramps

(Reference: Government of Alberta, Alberta Health Services, Design Guidelines for Continuing Care Facilities in Alberta, August 2018)

Ramps should have a minimum, unobstructed width of 1100mm (44inches) to allow for bariatric wheelchairs and sufficient clearance space for individuals to propel their wheelchairs.

A maximum gradient of 1 to 20 should be provided due to the increased weight of the individuals with obesity and the impact on self-propulsion and caregiver effort when pushing the wheelchair.

A minimum 1524mm x 1524mm (60inches x 60inches) level area should be provided where a ramp makes a 90 degree or 180 degree turn and at intermediate levels as required in longer ramps.

Curb cut outs and openings should be at least 1100mm (44 inches) wide to accommodate larger wheelchair widths.

If the door swings open towards the wheelchair user, increasing the clear space on the latch side of the door to a minimum 760mm (30inches) should be considered to allow for an increased turning radius of a wheelchair.

Load values for handrails should be increased to withstand the increased weight of individual with bariatric care needs. Handrails should withstand a minimum uniform load of 363kg (800lbs) applied in any direction to handrails.

Other considerations:

#### Morgue

The morgue should have sufficient clearance is required for maneuvering cadavers on bariatric stretchers, and space for bariatric body holding.

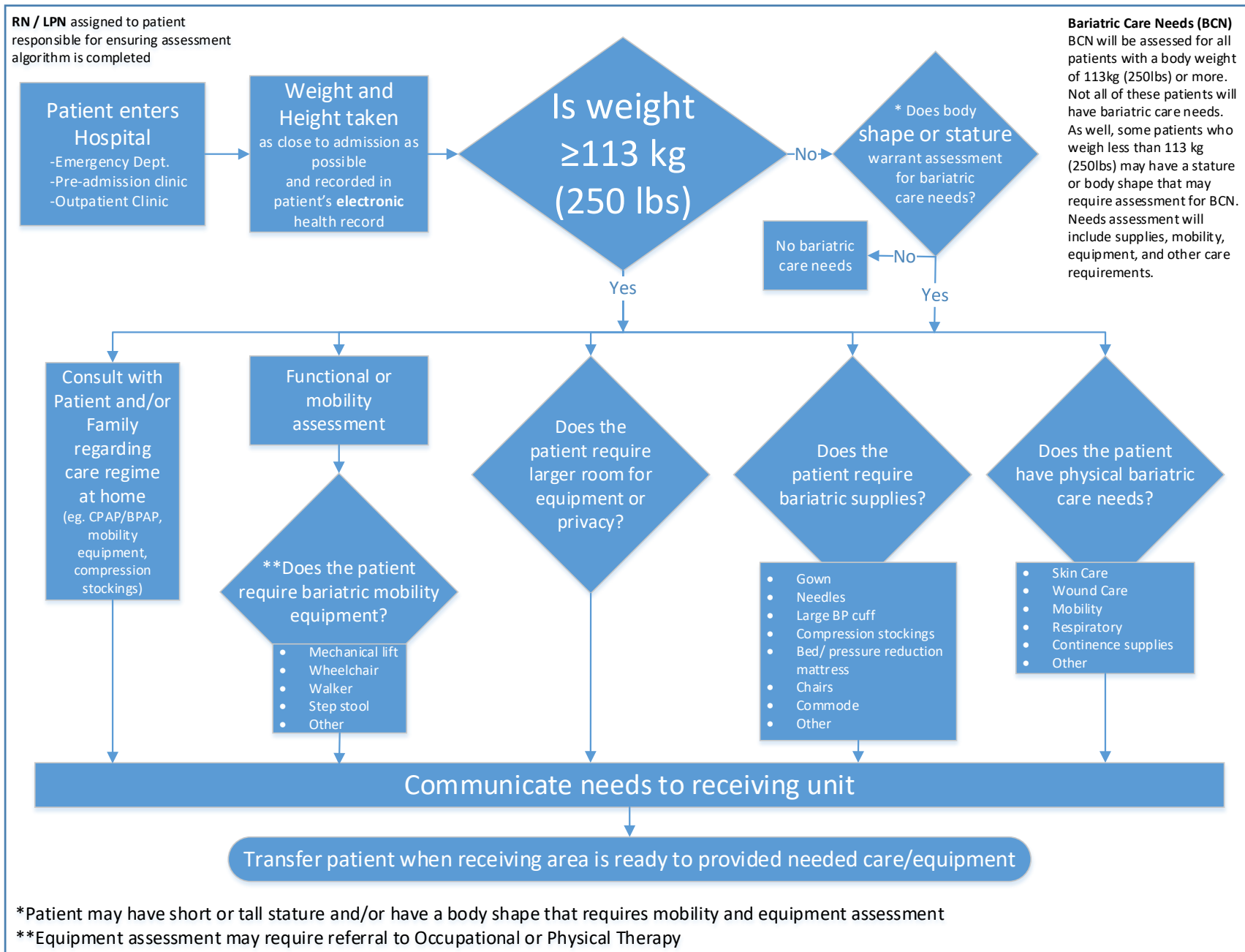
#### Patient Registration Area

The patient registration area needs to be wide and deep enough to support a bariatric wheelchair. A bariatric chair should also be available.

#### Parking

Some patients with obesity require handicap parking, and this needs to be taken into consideration when planning the number of handicap parking stalls at a hospital.

# Appendix 1: Bariatric Care Needs Assessment Algorithm



## Appendix 2: Summary of Care Requirements

Need	Care Requirement
<b>Patient's Home Regime</b>	<ul style="list-style-type: none"> <li>Consult with patient and / or family regarding home regime (eg. CPAP, mobility equipment, compression stockings, pain management)</li> </ul>
<b>Equipment for Mobility and Care</b>	<ul style="list-style-type: none"> <li>Bariatric Bed --When selecting a bed it is important to consider: the weight limit of the bed, the width of the patient, and the type of surface (eg. pressure reduction). Does it lower to floor?</li> <li>Bariatric Commode (bedside or bathroom-depending on dimensions of bathroom)- <i>consider weight rating, width and depth of seat</i></li> <li>Mechanical lifts / slings (including limb slings)- appropriate weight and size rated</li> <li>Scale to weigh patient (specialty bed / standing scale / other)</li> <li>Bed trapeze appropriate for patient's weight</li> <li>Bariatric wheelchair- weight rated, seat width/depth/height appropriate</li> <li>Grab bars in the bathroom around the toilet and shower to support patient to mobilize</li> <li>Other equipment: emergency department stretcher, transport stretcher, bariatric walkers (28-40+ inches wide), bariatric room chairs</li> <li>Consult Occupational Therapy or Physiotherapy to assist with equipment needs, mobilization planning, activities of daily living planning, and pain management advice.</li> <li>Does the patient require a larger or private room for equipment or care needs?</li> </ul>
<b>Supplies</b>	<ul style="list-style-type: none"> <li>Gown and pants of appropriate size (plus robe)</li> <li>Appropriate sized blood pressure cuff</li> <li>Other supplies: bariatric bedpan, abdominal binders, limb sling (for dressing changes), bariatric incontinent pads, etc.</li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Blood Pressure cuff---appropriate size (acuff that is too small will result in false high)</li> <li>Weight-taken in a discrete area, and recorded in electronic health record, and conveyed to receiving department(s) ahead of time</li> <li>Pain- patients with obesity may be more prone to pain <ul style="list-style-type: none"> <li>Higher incidence of arthritis and gout. Low back pain is a common due to the forward lean from the weight of the abdomen.</li> <li>Pain management is important to promote ambulation</li> </ul> </li> </ul>
<b>Respiratory</b>	<ul style="list-style-type: none"> <li>May have difficulty breathing when lying flat due to increased pressure on the diaphragm from the abdomen.</li> <li>Head of the bed at 30 degrees can facilitate lung expansion.</li> <li>At higher risk for Atelectasis / Pneumonia <ul style="list-style-type: none"> <li>Elevate head of bed</li> <li>Mobilize</li> </ul> </li> <li>High incidence of Obstructive Sleep Apnea <ul style="list-style-type: none"> <li>Patients that use CPAP at home should use in hospital</li> </ul> </li> </ul>

Need	Care Requirement
	<ul style="list-style-type: none"> <li>○ Assess oxygen saturation using oximetry, especially when patient is asleep.</li> <li>○ Hypnotic or narcotic medications should not be routinely administered, but if required, patients with OSA need to be monitored very closely.</li> <li>• Obesity Hypoventilation Syndrome               <ul style="list-style-type: none"> <li>○ Patients have decreased O<sub>2</sub> and increased CO<sub>2</sub></li> <li>○ Patients with OHS should be on BPAP when in hospital</li> <li>○ Assess respiratory status frequently</li> <li>○ Patients with OHS often develop heart failure characterized by leg swelling and various other related symptoms</li> <li>○ Assess the need for higher level of care</li> </ul> </li> <li>• Consult pulmonary medicine and/or respiratory therapy as needed to assist with respiratory needs / challenges</li> </ul>
<b>Cardiovascular</b>	<ul style="list-style-type: none"> <li>• At higher risk for DVT and PE               <ul style="list-style-type: none"> <li>○ Ambulate or frequent position changes in bed</li> <li>○ Lower extremity compression (graduated compression or intermittent sequential stockings), in correct size, are recommended to reduce risk</li> <li>○ Prophylactic anticoagulation therapy may be considered. There are weight-based recommendations.</li> </ul> </li> </ul>
<b>Skin</b>	<ul style="list-style-type: none"> <li>• Adipose tissue has poor blood supply, leading to inadequate circulation and decreased oxygenation making the skin vulnerable to break down, slower healing and susceptible to infections. Potential venous insufficiency can further impair tissue oxygenation.</li> <li>• Increased body size generates more heat. To maintain normal temperature – the body sweats. Excessive sweating impacts skin integrity and increases risk for bacterial or fungal infection, especially under breasts and in groin areas, and other skin folds</li> <li>• At risk of <b>pressure injury</b> both typical over bony prominence and atypical - between skin folds.               <ul style="list-style-type: none"> <li>○ Assess pressure injury risk</li> <li>○ The Braden Scale is a validated tool used in AHS for skin risk assessments.</li> <li>○ Mobilize or ensure patient is repositioned and pressure is off-loaded from bony prominences at least every 2 hours. Protect from devices that may apply pressure to skin and mucosal membranes. Check for</li> </ul> </li> <li>• At risk of <b>skin breakdown</b>. (Excess adipose tissue does not protect from the forces of pressure and shear.)               <ul style="list-style-type: none"> <li>○ Assess skin folds (pannus, under breasts, under the arms, inner thighs, perineum)</li> <li>○ Protect the skin from incontinence and other moisture by keeping dry, using barriers, avoiding incontinence products when possible</li> </ul> </li> </ul>

Need	Care Requirement
	<ul style="list-style-type: none"> <li>• Keep <b>skin folds dry</b> <ul style="list-style-type: none"> <li>○ Avoid skin-on-skin contact especially in skin folds</li> <li>○ Candidiasis (yeast) love moist warm and dark environments</li> <li>○ Antimicrobial powders are encouraged vs creams to address yeast and fungal infection in skin folds</li> <li>○ Cornstarch powder should not be used between skin folds as it predisposes the skin to yeast infections</li> </ul> </li> <li>• Patients with obesity are <b>prone to skin infections</b> and wound infections. Excessive sweating, incontinence, friction and shear can all increase risk of skin infections. The presence of diabetes will further contribute to delayed healing and infections.</li> <li>• Hygiene may be difficult, which can lead to <b>odour problems</b>. Unpleasant smells can also arise from incontinence, skin infections, and wounds. Odour can be embarrassing and humiliating. Skin care products are available that can be placed in skin folds to manage odour.</li> <li>• Patients with obesity need to have access to bathing facilities where the skin, including deep skin folds and crevices, can be cleansed and rinsed. Long brushes, hand-held showerheads, and shower chairs can assist.</li> <li>• Patients who are prone to heavy perspiration require more frequent bathing</li> <li>• Care may require 2 or more staff to effectively clean and dry the skin</li> <li>• Using a textile product (eg. InterDry, Coloplast) that contains ionic silver which provides broad-spectrum antibacterial and antifungal action for up to 5 day is designed to wick away moisture and reduce skin-to-skin friction and keep skin dry.</li> <li>• Consider consultation to skin and wound specialist to assist with skin care.</li> <li>• Patients with obesity may have considerable experience in dealing with their skin issues and are often willing to share their tips on how to best manage their care</li> </ul>
<b>Wounds</b>	<ul style="list-style-type: none"> <li>• Adipose tissue has poor blood supply, leading to inadequate circulation and decreased oxygenation</li> <li>• At risk of delayed wound healing</li> <li>• Higher risk for wound dehiscence <ul style="list-style-type: none"> <li>○ Abdominal binder to support wound</li> <li>○ Retention sutures may be used</li> </ul> </li> <li>• Higher risk for infection</li> <li>• Adequate hydration and nutrition is important to promote wound healing</li> <li>• Consider consultation to skin and wound specialist early on and assess wounds frequently</li> <li>• The Bates Jensen Wound Assessment Tool (BWAT) is a validated tool currently in use in some zones.</li> </ul>



Need	Care Requirement
<b>Gastrointestinal</b>	<ul style="list-style-type: none"> <li>At higher risk for gastroesophageal reflux (GERD), which can lead to aspiration (30)               <ul style="list-style-type: none"> <li>Elevate head of bed, or assist to sit up for at least 30 minutes post meals</li> </ul> </li> </ul>
<b>Genitourinary</b>	<ul style="list-style-type: none"> <li>Higher incidence of stress incontinence in patients with obesity related to pressure of the abdomen on the bladder.</li> <li>Incontinence may result from using the wrong sized bedpan, commode seat or toilet, or not being able to mobilize to the bathroom quick enough.</li> <li>Bedside commode might be necessary for ease of use and convenience</li> <li>Raised toilet seat may be required to increase safety for the patient</li> <li>Catheterization will require additional assistance</li> </ul>
<b>Nutrition</b>	<ul style="list-style-type: none"> <li>Myth - It is acceptable to place patients with obesity on lower calorie diets as they have a reserve. Size does not equal well nourished</li> <li>Patients with obesity can be malnourished.</li> <li>Weight reduction diet may be suggested, but important for patients to consume sufficient calories for wound healing</li> <li>Poor nutrition can lead to inadequate protein, vitamins, and minerals essential to wound repair.</li> <li>Consider consultation to Registered Dietitian to assist with nutritional needs, or if patient is requesting information for discharge.</li> </ul>
<b>Mobility</b>	<ul style="list-style-type: none"> <li>Important to prevent complications such as pressure ulcers, blood clots, pneumonia</li> <li>Mechanical lifts are important in preventing injury to patient and provider, when patient cannot mobilize independently</li> <li>General rule of thumb is that staff not manually lift any weight over 35 pounds.</li> <li>Ceiling lift is the best option for transferring a patient with obesity, if they require assistance.</li> <li>Mechanical lifts can also assist with limb holding during such procedures as dressing change or catheter insertion.</li> </ul>
<b>Medication Management</b>	<ul style="list-style-type: none"> <li>Excess adipose tissue may alter drug absorption, depending on the medication.</li> <li>The dosage of some medication is calculated using the patient's actual body weight, while the dosage of other medications is based on ideal body weight. Highly lipophilic drugs (those that are primarily absorbed in adipose tissue) require dose calculation based on actual weight, while minimally lipophilic drugs (those absorbed mainly in lean tissue) require dose calculation based on patient ideal weight.</li> </ul>

Need	Care Requirement
<b>IM injections</b>	<ul style="list-style-type: none"> <li>• May need longer needle to ensure medication is being injected into muscle and not adipose tissue (muscle is more vascular and more rapidly absorbed).</li> <li>• Certain medications administered into subcutaneous tissue may also create adverse effects and patient complications.</li> </ul>

## Appendix 3: Causes and Contributing Factors for Obesity

The causes and contributing factors of obesity are many and it is not just as simple as eating too much and not exercising enough. The causes and contributing factors can be divided into 3 major categories:

- increased energy (calories) in,
- decreased energy (calories) out and
- metabolism.

### 1. Increased Energy In

Causes and contributing factors that result in an increased intake of energy (calories):

#### Mental health

Mental health conditions, such as depression and anxiety, can be associated with increased appetite. As well, some medications used to treat mental illness can cause increased hunger. Emotional eating is using food as comfort, eating to satisfy emotional needs such as feeling sad, angry, stressed or lonely and not to satisfy a physical hunger. Binge eating disorder (BED) is eating a large amount of food over a short period of time at least once a week for 3 months. Individuals who have BED feel they cannot control what or how much they eat during a binge. After a binge individuals usually feel guilt or shame.

#### Socio-cultural factors

Social-cultural factors are cultural attitudes, beliefs and behaviours. Where someone lives, their cultural and economic background can impact what and how much they eat. Many families have cultural traditions that include food as part of the occasion or celebration. It is easy to have increased energy in during these times. If you live in an area that has a lot of fast food outlets but not many grocery stores your chances of eating out may increase. Individuals with lower income may find it difficult to purchase healthy foods and may rely on social programs such as the food bank.

Where a person lives, how walkable their neighborhood is, and access to public transportation can have an impact on energy out. If you live in an area where there is not good public transportation, you may have to drive more. If you live in an area with a high crime rate, you may be less inclined to engage in outdoor activities. Individuals on a limited income may not have the financial means to participate in physical activity programs. In addition, individuals who work many hours in a day may not have the time or energy to incorporate physical activity.

#### Biomedical

There are several medical conditions that can cause increased appetite. When a patient has an increased appetite and they are consuming more calories (energy in). This can cause

weight gain which can lead to overweight or obesity. Medical conditions that cause an increase in appetite include:

- Hyperthyroidism (With hyperthyroidism metabolism increases so the patient may not experience weight gain with increased appetite and may in fact experience weight loss).
- Certain genetic conditions such as Prader-Willi Syndrome, Bardet Biedl Syndrome
- Kleine-Levin Syndrome (A rare brain disorder characterized by periods of excessive sleeping, eating and hypersexuality)
- Obstructive sleep apnea

### Hormones

There are many hormones in the body that impact weight. These include, but are not limited to, thyroid hormones, stress hormones such as cortisol and the appetite-regulating hormones ghrelin and leptin. Ghrelin is a hormone that stimulates hunger. Leptin works to inhibit hunger. The balance of Leptin and Ghrelin can be altered for a person living with obesity. With obesity, the body can become less sensitive to Leptin (leptin resistance), and therefore causing an individual to continue to feel hungry and have difficulty feeling full.

### Medication

Certain medications can cause an increase in appetite and put individuals at greater risk for weight gain. Medications such as corticosteroids, insulin, some medications used to treat certain mental health conditions as well as marijuana may increase appetite.

It is important for prescribing practitioners to determine risk/benefit when prescribing medications that may increase risk of weight gain. If it is determined that the benefit of the medication is greater than the risk, patient education should include strategies to minimize weight gain.

## 2. Decreased Energy Out

Causes and contributing factors that result in decreased energy (calories) out:

### Medication

The side effects of certain medications can decrease an individual's ability to participate in physical activity. Side effects such as: drowsiness, nausea, and dizziness.

### Biomedical

Medical conditions that cause pain, decreased energy, fatigue, shortness of breath or impair mobility can cause a decrease in an individual's ability to participate in physical activity.

Pain is a common cause of decreased activity. Pain can occur anywhere and can be from numerous causes including arthritis, fibromyalgia, gout or an injury. Fatigue is also a common factor that can lead to decreased physical activity, causes include sleep apnea and chronic fatigue syndrome.

### Mental Health

Certain mental health conditions such as depression or anxiety may decrease the amount of energy and motivation an individual has to participate in physical activity. Individuals may find that completing even the most basic tasks such as getting out of bed or getting dressed exhausting.

Social phobias can cause individuals to become very nervous and uncomfortable in social situations limit an individual's ability to participate in physical activity.

### 3. Metabolism

Causes and contributing factors that affect the body's ability to convert food to energy:

#### Age

As we get older our metabolism slows down. There are multiple reasons for this including a decrease in muscle mass and participation in physical activity as we age.

#### Genetics

A person's genetics plays a role in obesity. Children of parents with obesity are more likely to be overweight.

#### Previous Weight loss

When an individual loses weight the body will work hard to return to that weight. There are many mechanisms in place to help that happen. Leptin is a hormone that is stored in fat cells. It signals the brain that we are full. With weight loss there is decreased Leptin and therefore decreased signal that you are full and hunger will increase. The body will also decrease metabolism and burn less calories during exercise.

#### Medications

Medication can have an effect on metabolism. Certain medications can decrease metabolism, as well stopping certain medications that increase thermogenesis (the heat produced in response to a meal) can cause weight gain.

## Appendix 4: Terminology/ Glossary

Adverse Childhood Experiences (ACE)	Stressful or traumatic events, including abuse and neglect. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorder.
Atelectasis	The collapse or closure of a lung resulting in reduced or absent gas exchange. It prevents normal oxygen absorption to healthy tissues and may affect part or all of a lung.
Bariatric Care Needs	The considerations needed to provide safe and sensitive in-hospital care for persons who have a body size for which standard size hospital equipment and clinical procedures may not be appropriate.
Body Shapes (weight distribution)	<p>Body shape (weight distribution) may play an important role in a patient's ability to assist with personal care, mobilize, and in the selection of appropriate equipment. Weight distribution is sometimes described as:</p> <p><b>Android Shape:</b> Refers to central obesity where excessive adipose tissue is located in the viscera or abdominal area. Patients carry their weight high (i.e. in chest and abdominal area). Legs may be relatively average-sized and the patient may have normal hip and knee flexion.</p> <p><b>Gynoid Shape:</b> Excessive adipose tissue is primarily located in the gluteal-femoral region of the body. Patients carry their weight in the thighs and buttocks.</p>
Bariatric Surgery	A treatment used to help individuals with obesity manage their health and weight. Surgery can be restrictive (feel full after small amount of food) or malabsorptive (decreased amount of nutrients absorbed by body) or both.
Behaviour Modification	Changing habits and maintain these changes. This may include: working with an interdisciplinary team, keeping a food and activity journal, getting quality sleep, managing stress and emotions.
Body Mass Index (BMI)	BMI is a screening tool used to classify normal, overweight and obesity in adults. It is calculated by dividing a person's weight in kilograms by their height in meters squared (kg/m <sup>2</sup> ).
Ceiling lift	A motorized device that lifts and transfers a person from point to point along an overhead track. A sling is used for the patient to be transferred in.
Deep Vein Thrombosis (DVT)	The formation of a blood clot in a deep vein, most commonly the legs. Symptoms may include pain, swelling, redness, or warmth of the affected area. Complications may include pulmonary embolism.

Dehiscence	Separation of the layers of a surgical wound; it may be partial, superficial or complete with separation of all layers.
Elephantiasis nostra	A non-pitting edema with plague, nodules, papules, and lichenification (or thickening of the skin).
Friction	The resistance to motion between two materials in contact (e.g., bed sheet and skin tissue).
Gastric Esophageal Reflux Disease (GERD)	GERD is regurgitation of the contents of the stomach into the esophagus, possibly into the pharynx where they can be aspirated between the vocal cords and down into the trachea; symptoms of burning pain and acid taste result; pulmonary complications of aspiration depend on the amount, content, and acidity of the aspirate.
Insulin Resistance	Insulin Resistance is a condition in which a person's body tissues have a lowered level of response to insulin, a hormone secreted by the pancreas that helps to regulate the level of glucose (sugar) in the body. As a result, the person's body produces larger quantities of insulin to maintain normal levels of glucose in the blood.
It's Your Move (IYM)	The <i>It's Your Move</i> (IYM) program is Alberta Health Services Safe Client Handling Program.
Lipophilic drugs	Medication that is capable of dissolving, of being dissolved in, or absorbing lipids.
Mechanical Lift	A motorized device that assists with mobilizing patients. Options for bariatric mechanical lifts include: stand assist lifts; sit-stand lifts; mechanical passive floor lifts and ceiling lifts.
Obesity	Abnormal or excessive adipose tissue that impairs health and wellbeing. Class I obesity---- BMI 30-34.9 Class II obesity ---- BMI 35-39.9 Class III obesity ---- BMI $\geq 40$
Obesity Stigma	Actions against people with obesity that can cause exclusion and marginalization, and lead to inequities.
Obesity Hypoventilation Syndrome (OHS)	Obesity Hypoventilation Syndrome (OHS) is a condition found in people with obesity and is characterized by inadequate daytime and/or nighttime ventilation, resulting in oxygen desaturation (low blood oxygen levels) and elevated carbon dioxide (CO <sub>2</sub> ) levels. Many people with this condition also have Obstructive Sleep Apnea.

Obstructive Sleep Apnea (OSA)	Obstructive Sleep Apnea (OSA) is characterized by repeated obstructive apneas due to a collapsible upper airway while asleep. This results in repetitive nocturnal oxygen desaturations, fragmented sleep, and excessive daytime somnolence. Sleep is characterized by snoring episodes, episodes of apnea, and 'noisy snorting' as the apneic episode is broken.
Overweight	The classification of body weight that is greater than the normal range but less than the obese range; defined by the National Institutes of Health as a body mass index between 25 and 30 kg/m <sup>2</sup> .
Panniculus or Pannus	A panniculus, or pannus, is also referred to as an abdominal apron. This weight distribution manifests as excess skin and tissue at the bottom of the abdomen. A large abdominal panniculus can have SPHM, circulatory, pain, skin, center of gravity, respiratory, and falls implications.
Patient-First Language	A person is described a person first and the name of the chronic condition is used after person with obesity instead of obese person.
Pneumonia	An inflammatory condition of the lung affecting primarily the small air sacs known as alveoli. Symptoms include some combination of productive or dry cough, chest pain, fever, and trouble breathing.
Pressure Injury	Localized damage to the skin and underlying soft tissue, usually over a bony prominence or related to a medical or other device. It occurs as a result of intense or prolonged pressure or pressure in combination with shear.
Pulmonary Embolism (PE)	The blockage of an artery in the lungs by a substance that has moved from elsewhere in the body through the bloodstream.
Type 2 Diabetes Mellitus	A progressive chronic disease, with varying degrees of insulin resistance and insulin deficiency. The pancreas produces some insulin, but the cells in the body fail to respond to the insulin properly (insulin resistance).
Weight Bias	Negative attitudes, beliefs or assumption towards individuals who are living with overweight or obesity.
Weight Capacity	The amount of weight a support surface (grab bar, hand rail) or piece of equipment (lift) can safely carry based on the manufacturer's recommendations.



## Appendix 5: Functional Transfer Record



Affix patient label within this box

### Functional Transfer Record (FTR)

☐ Initial Assessment

☐ Re-assessment

**Start**

**Gather initial client information**

1. Review Falls Risk Management information
2. Review Mobilization Precautions/Contraindications
3. Determine bilateral strength of hands and arms
4. Evaluate ability to raise hips with knees bent and feet on bed while supine
5. Consider physical and mental performance

**Can the client roll side to side in bed?** **No** → Obtain assistance then continue

**Yes** → **Can the client get into a sitting position at the side of the bed and maintain sitting position for 15 seconds?**

**Yes** → **Can the client straighten at least one leg and hold for 3 seconds?**

**No** → Obtain assistance then continue

**Yes** → **Put transfer belt on client**

**Can the client get into a standing position?** **No** → Obtain assistance then continue

**Yes** → **Is the client able to bear body weight for 15 seconds? Is the client cooperative, predictable and reliable in physical and mental performance?**

**Yes to both** → **Can the client maintain balance when shifting weight side to side, walking/shuffling feet, and/or pivoting?**

**Yes** → **Does the client require hands-on assistance to move?**

**No** → **Independent Transfer**

**OR**

**Yes** → **One-person Transfer with Belt**

**No to either** → **Can the client follow directions?**

**Yes** → **Does the client have the ability to partially bear weight?**

**No** → Obtain assistance then continue

**Yes** → **Can the client keep at least one arm outside the harness?**

**No** → Obtain assistance then continue

**Yes** → **Sit/Stand Lift**

**No** → Obtain assistance then continue

**Yes** → **Total Lift**

**Two-person Transfer with Belt**

**Signature**

**Job title**

**Date (yyyy-Mon-dd)**

**Primary Logo**

**Secondary Logo (if required)**



## Functional Transfer Record (FTR) Supporting Information and Resources

### Important Note

- The Functional Transfer Record (FTR) is intended to support and guide best practice for client handling to maximize both worker and client safety. The professional discretion of our AHS clinical staff is essential to ensure this process is practical and effective.

### Steps for Using the Functional Transfer Record

1. Apply a patient label in the top right corner
2. Check a box in the top left to indicate if this is an Initial or Re-assessment for the client
3. Greet the client and explain what you are going to be doing with them, e.g. evaluate mobility to help them safely get up and go to the bathroom. Ask "May I proceed?"
4. Prepare the work environment; i.e. adjust the bed to appropriate height, clear clutter, etc.
5. Gather initial client information
  1. Review Functional Transfer Record information for the client. If needed contact your unit manager to confirm which procedure and tool(s) are used on your unit. Refer to "Falls Risk Management" on Insite.
  2. Review Mobilization Precautions/Contraindications for the client. e.g. required mobility aides, altered weight bearing status due to acute fracture, etc.
  3. Determine bilateral strength of hands and arms by evaluating grip, pull and push of hands
  4. Evaluate ability to raise hips with knees bent and feet on bed while supine
  5. Consider physical and mental performance throughout to determine if client is cooperative, predictable and reliable
6. Proceed through the Yes/No questions in the FTR to guide decision making for safe client transfers
  - For more information regarding the intent of each algorithm question refer to the *IYM Client Handling Guide User Reference Notes and Video available on Insite*
  - Add clarification notes beside decision points as needed, e.g. beside "Minimum Assistance Transfer" you may note "Client requires 2-wheeled walker"
  - \* Remember your professional discretion, i.e. if the client is already up, sitting in a chair, and appears to be doing well, you can quickly move through to the mid-point of this algorithm
7. Based on the FTR, write at the bottom what type of lift or transfer is needed beside "Primary Logo"
8. Use the "Secondary Logo" to identify if more/less assistance is required at some times e.g. at end of day when client is more fatigued
  - Remember based upon your assessment, you can always provide MORE assistance to a client, never LESS than the logo displayed
9. The completed FTR should be dated and signed by a healthcare provider trained in It's Your Move
10. Post the Primary Logo and Secondary Logo (if required) in proximity to the client where it will be visible for others to refer to (methods vary by unit/site; may include hanging laminated key ring by bed, applying sticker to wrist band, using a magnet, whiteboard, etc.)
11. File the completed Functional Transfer Record on the client's chart per unit/site processes

### For More Information on the It's Your Move—Safe Client Handling Program


- Refer to the It's Your Move Insite page for more information and resources
- For specific questions please email [safeclient.handlingprogram@ahs.ca](mailto:safeclient.handlingprogram@ahs.ca)

## Appendix 6: Braden Scale for Predicting Pressure Injury Risk



### Braden Scale for Predicting Pressure Sore (Ulcer) Risk

For Assessment and Reassessment of Pressure Ulcer Prevention

					Affix patient label within this box			
					Date of Assessment			
<b>Sensory Perception</b> ability to respond meaningfully to pressure-related discomfort	<b>1. Completely Limited</b> Unresponsive (does not moan, flinch or grasp) to painful stimuli, due to diminished level of consciousness or sedation <b>OR</b> limited ability to feel pain over most of body	<b>2. Very Limited</b> Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness <b>OR</b> has a sensory impairment which limits the ability to feel pain or discomfort over 1/2 of body	<b>3. Slightly Limited</b> Responds to verbal commands, but cannot always communicate discomfort or the need to be turned <b>OR</b> has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities	<b>4. No Impairment</b> Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort.				
<b>Moisture</b> degree to which skin is exposed to moisture	<b>1. Constantly Moist</b> Skin is kept moist almost constantly by perspiration, urine etc. Dampness is detected every time patient is moved or turned	<b>2. Very Moist</b> Skin is often, but not always, moist. Linen must be changed at least once a shift	<b>3. Occasionally Moist</b> Skin is occasionally moist, requiring extra linen change approximately once a day	<b>4. Rarely Moist</b> Skin is usually dry, linen only requires changing at routine intervals				
<b>Activity</b> degree of physical activity	<b>1. Bedfast</b> Confined to bed	<b>2. Chairfast</b> Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	<b>3. Walks Occasionally</b> Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair	<b>4. Walks Frequently</b> Walks outside room at least twice a day and inside room at least once every two hours during waking hours				
<b>Mobility</b> ability to change and control body position	<b>1. Completely Immobile</b> Does not make even slight changes in body or extremity position without assistance	<b>2. Very Limited</b> Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	<b>3. Slightly Limited</b> Makes frequent though slight changes in body or extremity position independently.	<b>4. No Limitation</b> Makes major and frequent changes in position without assistance.				
<b>Nutrition</b> usual food intake pattern	<b>1. Very Poor</b> Never eats a complete meal. Rarely eats more than 1/3 of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement <b>OR</b> is NPO and/or maintained on clear liquids or IV's for more than 5 days	<b>2. Probably Inadequate</b> Rarely eats a complete meal and generally eats only about 1/2 of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement <b>OR</b> receives less than optimum amount of liquid diet or tube feeding	<b>3. Adequate</b> Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) per day. Occasionally will refuse a meal, but will usually take a supplement when offered <b>OR</b> is on a tube feeding or TPN regimen which probably meets most of nutritional needs	<b>4. Excellent</b> Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.				
<b>Friction &amp; Shear</b>	<b>1. Problem</b> Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures or agitation leads to almost constant friction	<b>2. Potential Problem</b> Moves feebly or requires minimum assistance. During a move skin probably slides to some extent against sheets, chair, restraints or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	<b>3. No Apparent Problem</b> Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair.					
10144(Rev2016-07)					© Copyright Barbara Braden and Nancy Bergstrom, 1988. Reprinted with permission. All rights reserved			
					Total Score			
					Initials			

### Instructions for Completing the Braden Scale

The Braden Scale is used to assess the patient's level of risk for developing pressure ulcers. The assessment consists of six (6) indicators: sensory perception; moisture; activity; mobility; nutrition; and friction and shear.

### Scoring

Each row lists an indicator, as well as a corresponding scale of one (1) to four (4) with "1" representing the highest risk and "4" representing the lowest risk. **Exception:** Friction and Shear are ranked on a scale of one (1) to three (3).

For each row, select a score that best describes the patient. The score should consist of a whole number only and is documented clearly in the corresponding box in the same row. Add the six (6) sub scores together and enter the total score at the bottom.

### Who Should Complete the Braden Scale?

The Braden Scale should be completed by a health care professional.

Conduct initial assessments and re-assessments as per Appendix 1: *Conducting Pressure Ulcer Risk Assessment and Reassessment*. Place the completed form into the patient's chart.

The assessor must score, initial, and date where indicated.

### Implementing Pressure Ulcer Prevention Strategies

Based on the Braden Scale score, reassess the level of risk by repeating the Braden Scale (see Appendix 1) and determine and implement appropriate pressure ulcer prevention strategies (see Appendix 2).

Score	Risk	Repeat Braden Scale and Implement Prevention Interventions
9 or lower	Very High Risk	Yes, see Appendices 1 & 2
10-12	High Risk	
13 – 14	Moderate Risk	
15-18	Mild Risk	

## Appendix 7: AHS Emergency Medical Service Bariatric Patient Measurement Job Aid



Emergency Medical  
Services

### Bariatric Patient Measurement Job Aid

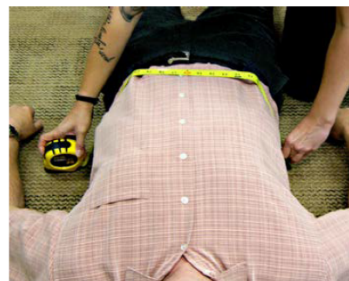
**Bariatric patient** means any patient weighing in excess of 150kg (330lbs) or has an abdominal width greater than 27 inches

Bariatric patients may require a specialized stretcher and/or ambulance for transferring to and from other facilities or transfers to their home (residence, nursing home, etc.). The following describes the process for capturing appropriate measurements to ensure an efficient and effective response for patient transports requiring a bariatric ambulance/aircraft.

**Measure the patient's width;** while the patient is supine, measure at the widest section of their midsection. Also, if available, a BROSELOW Pediatric Emergency Tape can be used as an aid. If the patient's width is less than the 6 KG identification line in the Pink section of the Broselow Tape, they would measure less than the 27 inches (68.58 cm.). Any patient's width above that would be considered bariatric.



Correct



Incorrect



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