هيئة الصحة بدبي
DUBAI HEALTH AUTHORITY

إجادة
EJADA

EJADA Program

Obesity and metabolic syndrome

KPIs and Recommendations

2024

Content

Introduction

Obesity has become an alarmingly prevalent condition worldwide. It is closely linked to metabolic syndrome, a cluster of health-related issues including insulin resistance, hypertension, dyslipidemia, and abdominal obesity. This synergy of conditions substantially elevates the risk of developing life-threatening disorders, such as type 2 diabetes, cardiovascular disease, and non-alcoholic fatty liver disease. The etiology of obesity and metabolic syndrome is multifaceted. Sedentary lifestyles, a high-calorie diet, and genetic predisposition contribute to obesity. On the other hand, metabolic syndrome risk factors include a constellation of factors like genetic inheritance, lack of physical activity, and the consumption of a diet high in refined sugars and saturated fats. Aging also increases the susceptibility to these conditions .

Pharmacological interventions have been developed to mitigate the effects of obesity and metabolic syndrome. Medications, including appetite suppressants, lipid-lowering agents, and antidiabetic drugs, have been employed with varying degrees of success. Bariatric surgery is another option for severe cases. However, these treatments often come with side effects and may not address the root causes. One recent advancement in the treatment of obesity and metabolic syndrome is the development of GLP-1 receptor agonists. These medications have shown promising results in reducing body weight, improving insulin sensitivity, and lowering cardiovascular risk factors. By harnessing the body's natural gut hormones, GLP-1 agonists have provided a more effective and well-tolerated option for patients, significantly enhancing the management of these complex conditions.

Despite advancements in pharmacotherapy, significant unmet needs persist. These include the development of more effective and safer anti-obesity medications, a comprehensive understanding of the genetic and environmental factors driving these conditions, and personalized treatment strategies. Additionally, strategies for long-term weight management and improved patient compliance remain a challenge. Innovative approaches that integrate precision medicine and lifestyle modification are needed to tackle the multifaceted nature of obesity and metabolic syndrome effectively .

Scope

The Ejada KPIs are quality indicators and ratings for physicians, facilities and insurance companies based on information collected by DHA systems from providers, payers and patients.

The obesity and metabolic syndrome KPIs and Recommendations are based on UAE and International guidelines. The KPIs are designed for healthcare practitioners and providers to follow international best practices in the management of obesity and metabolic syndrome patients.

The obesity and metabolic syndrome KPIs cover the following aspects of obesity and metabolic syndrome management:

- Radiodiagnosis in assessment of obesity and metabolic syndrome
- Pharmacological management of obesity and metabolic syndrome.
- Use of new drugs and interventions designed to target specific metabolic pathways
- Referral to specialists, such as endocrinologists, nutritionists, and psychologists, necessary for multispeciality management of obesity

The KPIs and recommendations have been reviewed by leading obesity and metabolic syndrome expert in the country.

List of Abbreviations

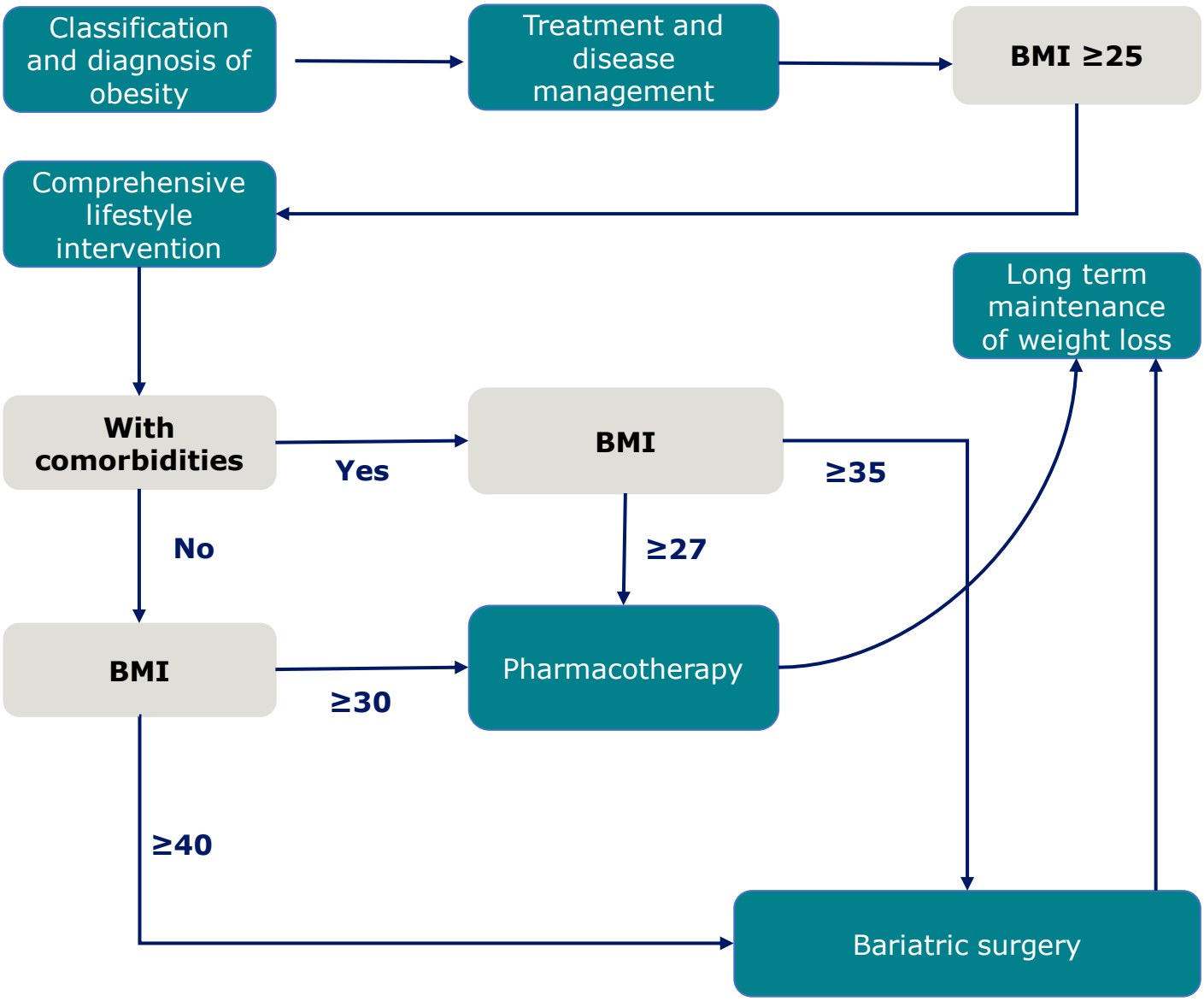
S.No.	Abbreviation	Full form
1	AACE	American Association of Clinical Endocrinologists
2	ACE-I	Angiotensin-Converting-Enzyme Inhibitors
3	ARB	Angiotensin Receptor Blockers
4	AED	United Arab Emirates Dirham
5	BP	Blood Pressure
6	BMI	Body Mass Index
7	CV	Cardiovascular
8	CCB	Calcium Channel Blockers
9	DDC	Dubai Drug Code
10	DHA	Dubai Health Authority
11	ECG	Electrocardiogram
12	ECHO	Echocardiogram
13	FBG	Fasting Blood Glucose
14	GERD	Gastroesophageal Reflux Disease
15	GLP-1	Glucagon Like Peptide 1
16	GLP-1RA	Glucagon-Like Peptide-1 Receptor Agonists
17	HbA1C	Glycated Hemoglobin
18	HDL	High-Density Lipoprotein
19	HDL-c	High-Density Lipoprotein Cholesterol
20	KOL	Key Opinion Leader
21	KPI	Key Performance Indicators
22	LDL	Low-Density Lipoprotein
23	MetS	Metabolic Syndrome
24	SGLT2	Sodium-Glucose Cotransporter-2 inhibitor
25	TD	Thiazide Diuretics
26	UAE	United Arab Emirates

KPIs and their Measuring Parameters

Data Collection Frequency: Monthly

S.No.	KPIs	Measuring Parameters
1	Screening for Cardiovascular Comorbidities in Patients with Overweight/Obesity	Blood tests (lipid panel, blood glucose), ECG, ECHO, Exercise stress test
2	Screening for Fatty Liver Disease in Patients with Overweight or Obesity	Liver function testing, ultrasound/computed tomography/magnetic resonance imaging
3	Screening for Metabolic Syndrome in Patients with Obesity	Fasting glucose, HbA1c, lipid panel
4	Screening for Asthma or Reactive Airway Disease in Patients with Overweight or Obesity	Spirometry, pulmonary function tests
5	Pharmacotherapy of patients with obesity	DDC List of Drugs
6	Pharmacotherapy for Patients with Obesity and Comorbid Conditions	DDC List of Drugs
7	Pharmacotherapy for the Treatment of Type 2 Diabetes in Patients with Metabolic Syndrome (MetS)	DDC List of Drugs
8	Pharmacotherapy for the Treatment of Dyslipidaemia in Patients with Metabolic Syndrome (MetS)	DDC List of Drugs
9	Pharmacotherapy for the Treatment of Hypertension in Patients with Metabolic Syndrome (MetS)	DDC List of Drugs
10	Bariatric Surgery for Patients with Obesity	DDC List of Drugs
11	BMI Measurement for Assessment of Obesity	BMI measurement
12	Avoidable Hospitalization of Patients with Obesity	Hospital admission
13	Referral of Patients with Overweight/Obesity (BMI ≥ 25 kg/m2) to Nutritionist	Referral to nutritionist
14	Referral of Patients with Overweight/Obesity (BMI ≥ 25 kg/m2) to Psychiatrist	Referral to psychiatrist
15	Referral of Patients with Metabolic Syndrome to Dietician	Referral to dietician
16	Cost of Bariatric Surgery in Management of Patients with Obesity	Cost of bariatric surgery

UAE Clinical Practice Recommendations
Algorithm for the management of overweight and obesity



Adapted and modified from;
Clinical Practice Recommendations for the Management of Obesity in the United Arab Emirates
https://pubmed.ncbi.nlm.nih.gov/30372696/

Recommended medications for obesity management in the UAE

Goals of therapy

- Weight loss
- Weight maintenance
- Cravings control
- Quality of life improvement

When considering a drug

- efficacy, adverse side effects, safety and tolerability
- cost as well as mode (oral versus subcutaneous) and frequency of administration and concomitant medications.

Individualized goals

- adequacy of dosing, challenges in adherence, barriers to health-behaviour change
- there is considerable heterogeneity in the response to any pharmacotherapeutic agent

Drugs approved for the management of obesity:

- Orlistat
- Liraglutide
- Naltrexone
- Bupropion
- Semaglutide
- Tirzepatide

Medications and emerging therapies for obesity management

Tirzepatide (Mounjaro)

GIP/GLP-1 agonist approved by FDA and registered for obesity pharmacotherapy in UAE

Simeglutide (Wegovy)

contains semaglutide and should not be used with other semaglutide-containing products or other GLP-1 receptor agonist medicine Approved by FDA and registered for obesity pharmacotherapy in UAE

Adapted and modified from;
Clinical Practice Recommendations for the Management of Obesity in the United Arab Emirates
https://pubmed.ncbi.nlm.nih.gov/30372696/

Clinical Practice Recommendations for Managing Co-morbidities Associated with Obesity

Comorbidities Associated With Obesity						
S.No	**Metabolic**	**Gastrointestinal**	**Cardio vascular**	**Musculo skeletal**	**Psychological**	**Respiratory**
1	Measurement of waist circumference	GERD examination by endoscopy (in case of medical treatment failure)	Measurement of BP	Analysis of symptoms related to osteoarthritis	Screening for depression	Spirometry and other pulmonary function tests for high-risk patients
2	Measurement of FBG, HbA1C, BP and lipid profile	Screening for fatty liver disease by liver function tests, ultrasound or other imaging techniques (in case of elevated transaminases)	Cardiac profile tests/expert referral	Physical examination of knee and other weight-bearing joints		Assessment of sleep disorders through polysomnography or other techniques

BP: blood pressure; FBG: fasting blood glucose; GERD: gastroesophageal reflux disease; HbA1C: glycated hemoglobin.

Adapted and modified from;
Clinical Practice Recommendations for the Management of Obesity in the United Arab Emirates
https://pubmed.ncbi.nlm.nih.gov/30372696/

Health Outcomes Indicators

Screening for Cardiovascular Comorbidities in Patients with Overweight/Obesity

Description Title	Screening for Cardiovascular Risk factors/Comorbidities in Overweight/obese Patients
Definition	Percentage of overweight/obese patients who underwent screening for cardiovascular comorbidities(blood pressure measurement, lipid panel, electrocardiography/echocardiogram) during the measurement year
Numerator	Number of overweight/obese patients who underwent screening for cardiovascular comorbidities (blood pressure measurement, cardiac profile tests)during the measurement year
Denominator	Total number of overweight/obesity patients (BMI ≥ 25 kg/m^2) during the measurement year
Range of Measure	Once in a year or as advised by the healthcare practitioner
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	The cardiovascular comorbidities associated with obesity include atherosclerotic heart disease, peripheral vascular disease, myocardial infarction, cerebral vascular accidents, peripheral venous insufficiency, pulmonary embolism. Risk assessment for CVD in a person with overweight or obesity of class I to III includes history; physical examination; and clinical and laboratory assessments, including BP, fasting blood glucose, and fasting lipid panel. A waist circumference measurement is recommended for individuals with BMI 25-34.9 kg/m2 to provide additional information on risk.

Screening for Fatty Liver Disease in Patients with Overweight or Obesity

Description Title	Screening for Fatty Liver Disease in Patients with Overweight or Obesity
Definition	Percentage of overweight/obese patients who underwent screening for fatty liver disease(liver function testing, ultrasound/computed tomography/magnetic resonance imaging) during the measurement year
Numerator	Number of overweight/obese patients who underwent screening for fatty liver disease(liver function testing, ultrasound/computed tomography/magnetic resonance imaging) during the measurement year
Denominator	Total number of overweight/obesity patients (BMI ≥ 25 kg/m^2) during the measurement year
Range of Measure	Once in a year or as advised by the healthcare practitioner
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	Obesity is associated with increased risk of nonalcoholic fatty liver disease. Clinical practice guidelines from the European Association for the Study of the Liver (EASL) and from the Asian Pacific Association for the Study of the Liver (APASL) recommend or suggest considering screening for patients who are obese or who have type 2 diabetes mellitus (T2DM). The Clinical Practice Recommendations for the Management of Obesity in the United Arab Emirates, also recommends for the screening of fatty liver disease in patients with obesity.

Screening for Metabolic Syndrome in Patients with Obesity

Description Title	Screening for Metabolic Syndrome (MetS) in Obese Patients
Definition	Percentage of obese patients (BMI ≥ 30 kg/m^2 or abdominal obesity with waist circumference of ≥ 88 cm in women/≥ 102 cm in men) who underwent screening for metabolic syndrome (type 2 diabetes mellitus, impaired glucose tolerance, hyperlipidemia through laboratory tests (fasting glucose, HbA1c, lipid panel) during the measurement year
Numerator	Number of obese patients (BMI ≥ 30 kg/m^2 or abdominal obesity with waist circumference of ≥ 88 cm in women/≥ 102 cm in men) who underwent screening for metabolic syndrome (type 2 diabetes mellitus, impaired glucose tolerance, hyperlipidemia0 through laboratory tests (fasting glucose, HbA1c, lipid panel) during the measurement year
Denominator	Total number of obese patients during the measurement year
Range of Measure	Once in a year or as advised by the healthcare practitioner
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	Metabolic syndrome (MetS), a multifactorial condition that is characterized by a cluster of comorbid conditions including obesity, hypertension, and disordered carbohydrate and lipid metabolism. The diagnosis of MetS in obese patients is based on two of the following three criteria: (i) prediabetes or diabetes: fasting glucose ≥ 100 mg/dl or ≥ 140 mg/dl after 120 min in oral glucose tolerance test or HbA1C ≥ 5.7% or on glucose-lowering drug treatment; (ii) elevated non-HDL cholesterol level: non-HDL cholesterol level ≥ 130 mg/dl or on lipid-lowering drug treatment; and (iii) High normal blood pressure or hypertension: systolic blood pressure ≥ 130 and/or diastolic blood pressure ≥ 85 mm Hg (in-office measurement)

Screening for Asthma or Reactive Airway Disease in Patients with Overweight or Obesity

Description Title	Screening for Asthma or Reactive Airway Disease in Patients with Overweight or Obesity
Definition	Percentage of overweight/obese patients who underwent screening for asthma or reactive airway disease using spirometry or pulmonary function tests during the measurement year
Numerator	Number of overweight/obese patients who underwent screening for asthma or reactive airway disease using spirometry or pulmonary function tests during the measurement year
Denominator	Total number of overweight/obesity patients (BMI ≥ 25 kg/m^2) during the measurement year
Range of Measure	Once in a year or as advised by the healthcare practitioner
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	Population studies conducted over the past few years have shown an increase in the incidence of asthma in obese people compared to people with normal body weight. Data obtained during the last epidemiological studies confirmed the association between obesity and asthma, with the latter found to be a risk factor for incident asthma and affecting its severity, treatment response and control. The Clinical Practice Recommendations for the Management of Obesity in the United Arab Emirates, recommends for the screening of asthma or reactive airway disease in patients with obesity.

Pharmacotherapy for Patients with Obesity

Description Title	Pharmacotherapy for Obese Patients with BMI > 30 kg/m2 with no co-morbidities or BMI ≥ 27 kg/m2 with co-morbidities
Definition	Percentage of obese patients (BMI > 30 kg/m^2 with no co-morbidities or BMI ≥ 27 kg/m^2 with co-morbidities) who were prescribed orlistat or liraglutide during the measurement year
Numerator	Number of obese patients (BMI > 30 kg/m^2 with no co-morbidities or BMI ≥ 27 kg/m^2 with co-morbidities) who were prescribed orlistat or liraglutide during the measurement year
Denominator	Total number of obese patients during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	Weight loss medication should be prescribed in the long term as for treatment of any chronic condition as an adjunct to lifestyle modification. Orlistat is a lipase inhibitor which inhibits the breakdown of triglycerides in the gut into free fatty acids and monoglycerides, thus reducing their absorption into the blood stream. Liraglutide is an acylated human glucagon-like peptide-1 (GLP-1) analogue which stimulates insulin secretion. It lowers body weight through loss of fat mass, with greater reductions in visceral fat compared to subcutaneous fat. It increases feelings of fullness and satiety, while lowering feelings of hunger and prospective food consumption, thereby reducing food intake.

Pharmacotherapy for Patients with Obesity and Comorbid Conditions

Description Title	Pharmacotherapy for Patients with Obesity and Comorbid Conditions (Cardiovascular disease/Chronic kidney disease/Hepatic impairment)
Definition	Percentage of patients with obesity and comorbid conditions (Cardiovascular disease/Chronic kidney disease/Hepatic impairment)who were prescribed orlistat during the measurement year
Numerator	Number of patients with obesity and comorbid conditions (Cardiovascular disease/Chronic kidney disease/Hepatic impairment)who were prescribed orlistat during the measurement ye
Denominator	Total number of obese patients during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	The AACE guidelines recommends use of orlistat as first line therapy in patients with obesity and comorbid cardiovascular disease and to use liraglutide with caution Liraglutide should be used with caution in patients at high risk of chronic kidney disease and should be discontinued if patient develops volume depletion (nausea, vomiting, diarrhea). Weight loss medication should not be used in end stage renal failure with exception to orlistat. Orlistat can be used in patients with mild, moderate and severe renal impairment. Weight loss medications including liraglutide and orlistat should be avoided in patients with severe hepatic impairment (Child-Pugh Score >9). Orlistat and liraglutide can be used only in patients with mild liver diseases.

Pharmacotherapy for the Treatment of Type 2 Diabetes in Patients with Metabolic Syndrome (MetS)

Description Title	Pharmacotherapy for the Treatment of Type 2 Diabetes in MetS Patients
Definition	Percentage of MetS patients with type 2 diabetes who were prescribed with appropriate treatment (first-line: metformin; second-line: GLP-1RA; third-line: add on with sodium-glucose cotransporter-2 inhibitor [SGLT2]) during the measurement year
Numerator	Number of MetS patients with type 2 diabetes who were prescribed with appropriate treatment (first-line: metformin; second-line: GLP-1RA; third-line: add on with sodium-glucose cotransporter-2 inhibitor [SGLT2]) during the measurement year
Denominator	Total number of MetS patients during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Data collection frequency	Monthly
Measure target and/or threshold	Higher is better
Rationale	Diabetes therapy aims to lower the risk of long-term consequences, including cardiovascular risk. This can be achieved by striving to attain goal levels of glycemia, blood pressure, low-density lipoprotein (LDL), non-HDL cholesterol, and body weight as well as by taking medications having beneficial effects on body weight and cardiovascular risk that have been scientifically demonstrated to work.

Pharmacotherapy for the Treatment of Dyslipidaemia in Patients with Metabolic Syndrome (MetS)

Description Title	Pharmacotherapy for the Treatment of Dyslipidaemia in MetS Patients
Definition	Percentage of MetS patients diagnosed with dyslipidaemia who were prescribed with appropriate treatment (first-line: high-potency atorvastatin/rosuvastatin; second-line: add on with ezetimibe; third-line: add on with fenofibrate/omega-3 fatty acids) during the measurement year
Numerator	Number of MetS patients diagnosed with dyslipidaemia who were prescribed with appropriate treatment (first-line: high-potency atorvastatin/rosuvastatin; second-line: add on with ezetimibe; third-line: add on with fenofibrate/omega-3 fatty acids) during the measurement year
Denominator	Total number of MetS patients during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	MetS patients are at a high CV risk. The non-HDL cholesterol level is a crucial factor in determining the cardiovascular risk and the therapeutic goals for lipid-lowering medication. Achieving the desired LDL cholesterol levels and, secondly, the target non-HDL cholesterol levels are the therapy goals for dyslipidaemia.

Pharmacotherapy for the Treatment of Hypertension in Patients with Metabolic Syndrome (MetS)

Description Title	Pharmacotherapy for the Treatment of Hypertension in MetS Patients
Definition	Percentage of MetS patients with hypertension who were prescribed with appropriate treatment (first-line: ACE-I/ARB + CCB or TD; second-line: ACE-I/ARB + CCB + TD; third-line: add on with aldosterone antagonist + β-blocker) during the measurement year
Numerator	Number of MetS patients with hypertension who were prescribed with appropriate treatment (first-line: ACE-I/ARB + CCB or TD; second-line: ACE-I/ARB + CCB + TD; third-line: add on with aldosterone antagonist + β-blocker) during the measurement year
Denominator	Total number of MetS patients during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	Individuals with blood pressure readings of 135/85 mm Hg or higher (or the mean of the 24-hour ambulatory blood pressure monitoring) or 140/90 mm Hg or above (as determined by in-office measures) should begin anti-hypertensive medication to have improved

Bariatric Surgery for Patients with Obesity

Description Title	Bariatric Surgery for Obese Patients with BMI ≥ 40 kg/m2 and no co-morbidities; or ≥ 35 kg/m2 with one or more co-morbidities
Definition	Percentage of obese patients (BMI ≥ 40 kg/m^2 and no co-morbidities; or ≥ 35 kg/m^2 with one or more co-morbidities) who underwent bariatric surgery during the measurement year
Numerator	Number of obese patients (BMI ≥ 40 kg/m^2 and no co-morbidities; or ≥ 35 kg/m^2 with one or more co-morbidities) who underwent bariatric surgery during the measurement year
Denominator	Total number of obese patients during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Lower is better
Rationale	Bariatric surgery should only be performed in individuals with BMI ≥ 40 kg/m^2 and no co-morbidities; or ≥ 35 kg/m^2 with one or more co-morbidities and failed drug therapy. It should be ensured that patients undergoing bariatric surgery would not be associated with excessive risk from the procedure. Patients should undergo a pre-operative assessment of obesity-related complications, and the choice of bariatric surgery should be discussed with the surgeon, including the advantages and disadvantages of each procedure. Patients should be followed-up life-long for nutritional surveillance.

BMI Measurement for Assessment of Obesity

Description Title	BMI Measurement for Assessment of Obesity
Definition	Percentage of adult patients who underwent assessment of overweight/obesity using BMI measurement during the measurement year
Numerator	Number of adult patients who underwent assessment of overweight/obesity using BMI measurement during the measurement year
Denominator	Total number of adult patients during the measurement year
Range of Measure	Once in a year
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	The BMI is a simple and widely used method for estimating body fat mass. In most populations, a cut-off point of ≥ 25 kg/m 2 is used to initiate further evaluation of overweight or Obesity(underweight - BMI <18.5; normal weight - BMI 18.5–24.9 ; overweight - BMI 25.0–29.9 ; obese class I - BMI 30.0–34.9; obese class II - BMI 35.0–39.9; obese class III - BMI ≥40). The BMI cut-offs vary in individuals of different ethnicities. BMI measurement aids in detection, diagnosis and classification of patients with obesity.

Referral of Patients with Overweight/Obesity (BMI ≥ 25 kg/m2) to Nutritionist

Description Title	Referral of Patients with Overweight/Obesity (BMI ≥ 25 kg/m2) to Nutritionist
Definition	Percentage of overweight/obesity patients (BMI ≥ 25 kg/m^2) who were referred to Nutritionist during the measurement year
Numerator	Number of overweight/obesity patients (BMI ≥ 25 kg/m^2) who were referred to Nutritionist during the measurement year
Denominator	Total number of overweight/obesity patients (BMI ≥ 25 kg/m^2) during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	A comprehensive lifestyle intervention programme, which combines three principal components which include reduced-calorie diet, increased physical activity and behavioural therapy produces greater weight loss. The individualised diet should be designed to induce an energy deficit of approximately 500–750 kcal/day from the current daily calorie intake which could be achieved by prescribing 1,200–1,500 kcal/day for women and 1,500–1,800 kcal/day for men.

Referral of Patients with Overweight/Obesity (BMI ≥ 25 kg/m2) to Psychiatrist

Description Title	Referral of Patients with Overweight/Obesity (BMI ≥ 25 kg/m2) to Psychiatrist
Definition	Percentage of overweight/obesity patients (BMI ≥ 25 kg/m^2) who were referred to Psychiatrist during the measurement year
Numerator	Number of overweight/obesity patients (BMI ≥ 25 kg/m^2) who were referred to psychiatrist during the measurement year
Denominator	Total number of overweight/obesity patients (BMI ≥ 25 kg/m^2) during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	The most common psychiatric disorders that may co-exist with obesity are: dysthymic disorder, major depressive disorder, generalized anxiety disorder and binge eating disorder. Patients with a history of such disorders experience poor weight loss due to the nature of their psychiatric illness . They are also susceptible to internalized weight bias and body shame Therefore, a thorough psychological assessment is crucial to identify factors that may hinder goals for weight loss. Cognitive behavioral therapy can help resolve psychological issues related to obesity and motivate patients to implement necessary behavioral and dietary changes for weight loss.

Referral of Patients with Metabolic Syndrome to Dietician

Description Title	Referral of Patients with Metabolic Syndrome to Dietician
Definition	Percentage of patients with metabolic syndrome who were referred to dietician during the measurement year
Numerator	Number of patients with metabolic syndrome who were referred to dietician during the measurement year
Denominator	Total number of patients diagnosed with metabolic syndrome during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Higher is better
Rationale	Metabolic syndrome is a cluster of metabolic risk factors, characterized by abdominal obesity, dyslipidemia, low levels of high-density lipoprotein cholesterol (HDL-c), hypertension, and insulin resistance. Lifestyle modifications, especially dietary habits, are the main therapeutic strategy for the treatment and management of metabolic syndrome. Nutrition therapy interventions for the metabolic syndrome include weight reduction or maintenance, physical activity, whole grains and fiber, and type and amount of food fats. The role of the dietitian is to assist persons with the metabolic syndrome to make lifestyle changes that modify the factors that increase risk of diabetes and cardiovascular disease.

Avoidable Hospitalization of Patients with Obesity

Description Title	Avoidable Hospitalization of Patients with Obesity
Definition	Percentage of patients with obesity who were hospitalized during the measurement year
Numerator	Number of patients with obesity who were hospitalized during the measurement year
Denominator	Total number of patients with obesity during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Lower is better
Rationale	Obese adults are at increased risk of several diseases, including cardiovascular diseases (CVDs), diseases of the musculoskeletal system, diabetes, depression, and some types of cancer. The economic and social cost implications of obesity are estimated to be considerable, particularly for inpatient care. Overall healthcare costs and rates of hospitalization are higher in patients with obesity compared with normal-weight individuals. Appropriate screening, secondary prevention programs to reduce occurrence of comorbidities are crucial to control hospitalization and associated costs.

Cost of Bariatric Surgery in Management of Patients with Obesity

Description Title	Average Cost of Bariatric Surgery in Management of Patients with Obesity
Definition	Average Cost Incurred for Bariatric surgery in management of obesity during the measurement year
Numerator	Total Cost Incurred for Bariatric surgery in management of obesity during the measurement year
Denominator	Total number patients with obesity during the measurement year
Range of Measure	NA
Exclusion criteria	Pregnant women, oncology patients
Unit of measure	Percentage (Numerator/Denominator x 100)
Measure target and/or threshold	Lower is better
Rationale	Bariatric surgery is associated with increased immediate and long-term healthcare costs, but are exceeded by expected health benefits to obese individuals with reduced onset of diabetes, remission of existing diabetes and lower mortality

References

1. Abusnana S, Fargaly M, Alfardan SH, Al Hammadi FH, Bashier A, Kaddaha G, McGowan B, Nawar R, Sadiya A. Clinical practice recommendations for the management of obesity in the United Arab Emirates. Obesity Facts. 2018 Oct 30;11(5):413-28. https://doi.org/10.1159/000491796

2. Alshaikh A, Aljedai A, Alfadda A, Alrobayan A, Bawahab A, Abou Ouf S, Sultan A, Alhozali A, Bawazeer M, Sheshah E, Alqahtani F. Clinical Practice Guideline for the Management of Overweight and Obesity in Adults in Saudi Arabia. International Journal of Clinical Medicine. 2022 Dec 2;13(12):590-649. https://doi.org/10.4236/ijcm.2022.1312045

3. Jensen MD, Ryan DH, Apovian CM, Ard JD, Comuzzie AG, Donato KA, Hu FB, Hubbard VS, Jakicic JM, Kushner RF, Loria CM. 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. Journal of the American college of cardiology. 2014 Jul 1;63(25 Part B):2985-3023. https://www.jacc.org/doi/epdf/10.1016/j.jacc.2013.11.004

4. Grundy SM, Cleeman JI, Daniels SR, Donato KA, Eckel RH, Franklin BA, Gordon DJ, Krauss RM, Savage PJ, Smith Jr SC, Spertus JA. Diagnosis and management of the metabolic syndrome: an American Heart Association/National Heart, Lung, and Blood Institute scientific statement. Circulation. 2005 Oct 25;112(17):2735-52. https://doi.org/10.1161/CIRCULATIONAHA.105.169405

5. Dobrowolski P, Prejbisz A, Kuryłowicz A, Baska A, Burchardt P, Chlebus K, Dzida G, Jankowski P, Jaroszewicz J, Jaworski P, Kamiński K. Metabolic syndrome—a new definition and management guidelines. Arterial Hypertension. 2022;26(3):99-121. https://doi.org/10.5114/aoms/152921

For any inquiries and additional information contact: EJADAH team on (Ejadah-DHIC@dha.gov.ae)