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# DHA TELEHEALTH CLINICAL GUIDELINES

## FOR VIRTUAL MANAGEMENT OF

### MOTION SICKNESS - 23

**Issue date:** 27/07/2021

**Effective date:** 27/07/2021

Health Policies and Standards Department  
Health Regulation Sector (2021)

## INTRODUCTION

Dubai Health Authority (DHA) is the responsible entity for regulating, licensing and monitoring health facilities and healthcare professionals in the Emirate of Dubai. The Health Regulation Sector (HRS) is an integral part of DHA and was founded to fulfil the following overarching strategic objectives:

Objective #1: Regulate the Health Sector and assure appropriate controls are in place for safe, effective and high-quality care.

Objective #2: Position Dubai as a global medical destination by introducing a value-based, comprehensive, integrated and high-quality service delivery system.

Objective #3: Direct resources to ensure happy, healthy and safe environment for Dubai population.

## ACKNOWLEDGMENT

This document was developed for the Virtual Management of Motion Sickness in collaboration with Subject Matter Experts. The Health Policy and Standards Department would like to acknowledge and thank these professionals for their dedication toward improving the quality and safety of healthcare services.

### The Health Regulation Sector

### Dubai Health Authority

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## EXECUTIVE SUMMARY

Telehealth is based on Evidence Based Practice (EBP) which is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient.

It means integrating individual clinical expertise with the best available external clinical evidence and guidelines from systematic research.

EBP is important because it aims to provide the most effective care virtually, with the aim of improving patient outcomes. As health professionals, part of providing a professional service is ensuring that practice is informed by the best available evidence.

This clinical guideline for the virtual management of Motion Sickness is presented in the format comprising of clinical history/symptoms, differential diagnosis, investigations and management.

Identification of 'Red Flags' or serious conditions associated with the disease is an essential part of this telehealth guideline as it aids the physician to manage patients safely and appropriately by referrals, if indicated during virtual telehealth assessment, to ER, family physicians or specialists for a face to face management.

## DEFINITIONS/ABBREVIATIONS

**Virtual Clinical Assessment:** Is the evaluation of the patient's medical condition virtually via telephone or video call consultations, which may include one or more of the following: patient medical history, physical examination and diagnostic investigations.

**Patient:** The person who receives the healthcare services or the medical investigation or treatment provided by a DHA licensed healthcare professional.

## ABBREVIATIONS

<b>DHA</b>	:	Dubai Health Authority
<b>EBP</b>	:	Evidence Based Practice
<b>ER</b>	:	Emergency Room
<b>HRS</b>	:	Health Regulation Sector

## 1. BACKGROUND

- 1.1. Motion sickness is a syndrome that occurs in response to real or perceived motion, which can include gastrointestinal, central nervous system, and autonomic symptoms.
- 1.2. Motion sickness is considered a physiologic form of dizziness, since it is not indicative of a disease process and can be induced in nearly all normal human subjects. There is enormous variability in susceptibility to motion sickness, as it may be produced with minimal provocation in some individuals but can be very difficult to elicit in others.

## 2. SCOPE

- 2.1. Telehealth services in DHA licensed Health Facilities.

## 3. PURPOSE

- 3.1. To support the implementation of Telehealth services for patients with complaints of Motion Sickness in Dubai Health Authority (DHA) licensed Health Facilities

## 4. APPLICABILITY

- 4.1. DHA licensed physicians and health facilities providing Telehealth services.
- 4.2. Exclusion for Telehealth services are as follows
  - 4.2.1. Emergency cases where immediate intervention or referral is required.
  - 4.2.2. Prescribe Narcotics, Controlled or Semi-Controlled medications.

## 5. ETIOLOGY

The pathogenesis of motion sickness is not clearly understood, but it is thought to be related to conflict between the vestibular, visual, and other proprioceptive systems. Rotary, vertical, and low-frequency motions produce more symptoms than linear, horizontal, and high-frequency motions

### 5.1. Vehicle motions

5.1.1. Motion sickness occurs when riding in a wide range of vehicles and even on animals.

### 5.2. Environmental motions

5.2.1. Experiences of simulated visual motion can cause dizziness, nausea, and vomiting.

5.2.2. Nauseogenic visual experiences include virtual reality displays, cinemas, computer animations, and even television.

### 5.3. Behavioural context

5.3.1. The development of motion sickness and intensity of symptoms may be exacerbated by activities such as reading

## 6. RISK FACTORS

### 6.1. Patient factors

- 6.1.1. Gender – Women are generally more susceptible to motion sickness than men.
- 6.1.2. Age – Children less than two years old are typically resistant to motion sickness; the incidence peaks at approximately nine years of age and then decreases throughout adulthood.
- 6.1.3. Genetic factors – Genetic variants have been associated with increased susceptibility to motion sickness.
- 6.1.4. Migraine – Migraine sufferers are more susceptible to motion sickness.
- 6.1.5. Hormonal factors – Pregnant women are particularly susceptible to motion sickness; susceptibility may also be affected by the menstrual cycle and by use of oral contraceptives.
- 6.1.6. Expectations – The risk of motion sickness may be affected by an individual's expectations of whether they will become ill.
- 6.2. Environmental factors
  - 6.2.1. Type of motion – Low-frequency motion and certain directions of motion are more likely to induce motion sickness. In a study of air travelers, the magnitude of low-frequency lateral and vertical motion was associated with motion sickness.



- 6.2.2. Body position – Lying supine, at least on a ship, may decrease susceptibility to motion sickness.

## 7. CLINICAL HISTORY

### 7.1. Red Flags

- 7.1.1. Vomiting blood or bile
- 7.1.2. Severe abdominal pain
- 7.1.3. High grade fever, neck stiffness, rash, photophobia
- 7.1.4. Increasing weakness/loss of consciousness
- 7.1.5. Incapacitation
- 7.1.6. Loss of postural stability
- 7.1.7. Inability to walk
- 7.1.8. Persistent retching
- 7.1.9. Continuous or worsening vomiting after 48 hours

### 7.2. Clinical Assessment:

- 7.2.1. The syndrome of motion sickness is easily recognized, since it includes stereotypic symptoms in the setting of passive motion or in the setting of visual perception of motion without actual movement.

- 7.2.2. The most characteristic symptom of motion sickness is nausea. This can begin subtly; it is often described as a sense of being aware of one's stomach.
- 7.2.3. Other common features include a feeling of warmth and malaise. Nausea can progress to vomiting, which is occasionally severe.
- 7.2.4. Some patients may experience headache with their motion sickness.
- 7.2.5. Other symptoms may include non vertiginous dizziness, belching, increased salivation, diaphoresis, and a general feeling of malaise.
- 7.2.6. Hyperventilation is a common associated feature and can induce dyspnea, paresthesia's, and feelings of impending doom.
- 7.2.7. Symptoms typically subside after 36 to 72 hours of continuous exposure, but they can recur upon returning to the pre-exposure environment (e.g., returning to land after a sea voyage)
- 7.3. Physical signs
  - 7.3.1. Which can be seen through video call
  - 7.3.2. Usually cannot be detected, although pallor may be present.
  - 7.3.3. Subtle autonomic changes can include increased perspiration
- 7.4. Refer to APPENDIX 1 for Signs and Symptoms of Motion Sickness

## 8. DIFFERENTIAL DIAGNOSIS

- 8.1. Migraine attack
- 8.2. Food Poisoning
- 8.3. Acute vestibular disorder

## 9. DIAGNOSIS

- 9.1. The diagnosis of motion sickness is clinical, based upon the presence of typical symptoms (e.g., nausea, sweating, malaise) in response to externally imposed motion or another stimulus. If a patient has a previous history of motion sickness and a typical presentation, then no further evaluation is needed.
- 9.2. However, if a patient with no prior motion sickness suddenly becomes prone to motion sickness, then evaluation for migraine, which is associated with increased susceptibility to motion sickness, is warranted. There is evidence that better control of migraine can reduce motion sickness susceptibility.

## 10. MANAGEMENT AND TREATMENT

- 10.1. Refer to APPENDIX 2 for the Virtual Management of Motion Sickness Algorithm
- 10.2. Treatment of acute motion sickness is often ineffective, and therefore an emphasis should be placed on prevention.

10.3. In general, interventions that are useful in preventing motion sickness can be divided into environmental modifications, complementary and alternative treatments, and medications.

10.3.1. Environmental modification

- a. Looking at the horizon or a distant, stationary object.
- b. Avoidance of reading or looking at a screen while in a moving environment, as this can increase conflict between vestibular and visual cues.
- c. Selecting seats where motion is the least. In a boat, lower deck and midship cabins are recommended. In a car, the front seat is recommended. In a plane, a seat over the front edge of the wing is recommended. If travelling by train or bus, forward facing seats are recommended.
- d. Driving the car is better than being the passenger, presumably because visual information is consistent with vestibular motion detection. When a passenger, it is preferable to be in the front seat with one's eyes on the road, as if driving the car.

10.3.2. Complementary and alternative treatments

- a. Specifically, advise patients to suck on hard ginger candies if they experience or anticipate experiencing symptoms of motion sickness.
- b. Acupressure bands are typically applied to both wrists prophylactically but can also be worn after symptoms have begun. Acupressure for motion sickness applies pressure at the P6 acupressure point on the anterior wrist (three fingerbreadths proximal to the proximal wrist fold, between the palmaris longus and flexor carpi radialis tendons) either by manual pressure or with a wrist band.

#### 10.3.3. P6 acupressure point

Pressure or massage at the P6 acupressure point is reported in some studies to relieve motion sickness. The point is found three of the patient's



fingerbreadths proximal to the proximal wrist fold, between the palmaris longus and flexor carpi radialis tendons, as shown in this picture by the tip of the pen

#### 10.3.4. Medications

a. Scopolamine (transdermal) – Scopolamine is usually prescribed as a 1 mg transdermal patch, applied behind the ear at least four hours (preferably 12 hours) before exposure to motion. Patches should be replaced every 72 hours if needed. Transdermal scopolamine is generally well tolerated. Potential side effects of scopolamine include sedation, blurred vision, dry mouth and, in older adults, confusion and urinary retention. Some patients develop dermatitis from the scopolamine patch. Scopolamine is contraindicated in people at risk for angle-closure glaucoma.

b. Antihistamines

Several antihistamines can be given to prevent motion sickness.

Dimenhydrinate 50 mg orally every six to eight hours as needed.

Other antihistamines used for motion sickness include diphenhydramine, chlorpheniramine, cyclizine and cinnarizine.

Non-sedating antihistamines (e.g. cetirizine, loratadine, fexofenadine) do not appear to be effective for the treatment of motion sickness.

Side effects are mainly related to anticholinergic effects and include sedation, blurred vision, dry mouth and, in older adults, confusion and urinary retention.

Antihistamines are effective for the prevention of motion sickness but may cause more sedation than scopolamine.

- c. Patients who have failed transdermal scopolamine and antihistamines

Promethazine is a reasonable choice if transdermal scopolamine and antihistamines are not effective. It may be more sedating than antihistamines. In addition to sedation, side effects of promethazine include anticholinergic and extrapyramidal effects.

Scopolamine – transdermal patches - apply 1 patch to hairless area of skin behind ear 5–6 hours before journey; replace if necessary, after 72 hours.

Other medications that have been shown to be effective for prevention include diazepam, phenytoin, and rizatriptan, which need referral for face to face consultation.

- d. No significant motion sickness

Other patients do not report a prior history of motion sickness or have had mild symptoms that do not interfere with their ability to function.

For such patients, we provide information about environmental modification measures and complementary and alternative treatments. We generally do not recommend medications to patients who are not prone to significant motion sickness because of the potential for sedation and other anticholinergic side effects.

e. Pregnant women

May be particularly susceptible to motion sickness. Medications that are felt to be safe for the treatment of morning sickness can also be used for motion sickness. These include the antihistamines meclizine and dimenhydrinate.

10.3.5. Follow up calls – Within 24 to 48 hours based on severity of symptoms

## 11. REFERRAL CRITERIA

For moderate to severe symptoms and signs of motion sickness

11.1. Refer to Emergency Department:

11.1.1. Vomiting blood or bile

11.1.2. Severe abdominal pain



- 11.1.3. High grade fever, neck stiffness, rash, photophobia
- 11.1.4. Increasing weakness/loss of consciousness
- 11.1.5. Incapacitation
- 11.1.6. Loss of postural stability
- 11.1.7. Inability to walk
- 11.2. Refer to Family Medicine Clinic
  - 11.2.1. Persistent retching
  - 11.2.2. Continuous or worsening vomiting after 48 hours

## REFERENCES

1. Brainard, A. and Chip Gresham (2014). Prevention and Treatment of Motion Sickness. *American Family Physician*, [online] 90(1), pp.41–46. Available at: <https://www.aafp.org/afp/2014/0701/p41.html> [Accessed 7 Jun. 2019].
2. Priesol, A. (2019). *Motion sickness*. [online] Uptodate.com. Available at: <https://www.uptodate.com/contents/motion-sickness> [Accessed 7 Jun. 2019].

## APPENDICES

### APPENDIX 1 – SIGNS AND SYMPTOMS OF MOTION SICKNESS

Severity	Symptoms and signs	
Mild	Stomach awareness and heartburn Malaise and fatigue Headache Irritability Drowsiness	Belching Yawning Facial and perioral pallor Hypersalivation Urine frequency
Moderate	Nausea and vomiting Cold diaphoresis Flushing Increased body warmth Hyperventilation Non-vertiginous dizziness Apathy	Depression Disinterest in social activities Disinclination for work Decreased cognitive performance Exaggerated sense of motion Increased postural sway
Severe	Inability to walk Incapacitation Loss of postural stability	Persistent retching Social isolation

## APPENDIX 2 – VIRTUAL MANAGEMENT OF MOTION SICKNESS ALGORITHM

### Virtual Management of Motion Sickness Algorithm

#### Rule Red Flags

- Vomiting blood or bile
- Severe abdominal pain
- High grade fever, neck stiffness, rash, photophobia
- Increasing weakness/loss of consciousness
- Incapacitation
- Loss of postural stability
- Inability to walk



Refer to ER for  
face-to-face  
consultation



- Persistent retching
- Continuous or worsening vomiting after 48 hours



Refer to GP for  
face-to-face  
consultation



Mild symptoms of Motion Sickness



#### Management/Treatment

- Patient education about environmental modifications
- P6 Acupressure point
- Medications
  - Scopolamine Transdermal patch
  - Antihistamine Dimenhydrinate 50 mg orally every six to eight hours as needed
- Follow up calls within 24 to 48 hours