NATIONAL HAJJ EXTREME HEAT STRATEGY

Technical Supervisory Committee during Hajj
Ministry Of Health
Kingdom Of Saudi Arabia
1437 - 2016
NATIONAL HAJJ EXTREME HEAT STRATEGY

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Introduction

Hajj and Umrah are among the largest annual mass gatherings worldwide, by 2020, it is possible for over 15 million Muslims per year to perform Umrah, and around 4 million pilgrims gather annually within a few days to perform Hajj. Heat illnesses, including heat stroke and heat exhaustion contributed to 24% of hospital admissions during 2015 (1436) Hajj. This is attributed to the increasingly high atmospheric temperature during Hajj (Table 1), which is going to be between 45ºC and 55ºC in the next 11 years (Figure 1).

Saudi Arabia have been given the privilege to serve the two holy mosques, and honored to attend the needs of pilgrims, Umrah Visitors and visitors to the holy mosque in Madinah. This noble responsibility requires the ministry of health to devote all of its resources and efforts to provide a healthy pilgrims and visitors to the holy places.

In this context, the ministry of health introduced the National Hajj Extreme Heat Strategic plan to mitigate and manage the effect of high heat events, and reduce the huge preventable expenditure resulted from the heat related illnesses.

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum temp.</th>
<th>Minimum temp.</th>
<th>ADT</th>
<th>Humidity</th>
<th>Heat index</th>
<th>Pilgrims</th>
<th>Heat stroke</th>
<th>Heat exhaustion</th>
</tr>
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<tbody>
<tr>
<td>1432</td>
<td>38</td>
<td>21</td>
<td>29.5</td>
<td>47.5</td>
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<td>2927717</td>
<td>19</td>
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<tr>
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<td>47</td>
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<td>1452817</td>
<td>352</td>
<td>705</td>
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<tr>
<td>1438</td>
<td>49</td>
<td>36</td>
<td>42.5</td>
<td>45</td>
<td>59.1</td>
<td>1452817</td>
<td>352</td>
<td>705</td>
</tr>
</tbody>
</table>

Table 1: Heat stroke and exhaustion in relation to heat, from year 1432 to 1436 with expected temperature of next two years.
VISION

To have hajj season free of mortality and morbidity related to heat illnesses.

MISSION

The ministry of health is committed to provide strategies that enhance the standard and quality of health care services for patients with heat related illnesses during Hajj.
OBJECTIVES OF THE PLAN

The National Hajj Extreme Heat Strategic plan is intended to reduce risks of developing heat related illnesses during Hajj and associated workload increase (surge workload) through:

- Promoting a primary prevention and adaptation program for extreme heat conditions.
- Creating a command channel for a quick vertical decision and a fast horizontal response during heat disaster and crisis.
- Providing a plan to accommodate all heat related illnesses patients during disaster and crisis through bed expansion, manpower and medical supply and appropriate facilities.
- Providing evidence based management protocols for heat related illnesses to unify the practice and minimize variations.
- Providing a plan to educate target health care workers; and
- To include a plan for data collection of heat related illnesses patients to study the outcome measures of the strategic plan and its implementation.

ADMINISTRATIVE FRAMEWORK

The Leader for Extreme Heat events is the Heat Illnesses Command and Control Center (HICCC).

The HICCC has overall control and responsibility:

- To ensure that a perfect prevention and preparedness approach is adopted by all health agencies serving during Hajj.
- To monitor and supervise The National Hajj Extreme Heat Strategic plan implementation.
- To revise and audit the strategic plan annually through current evidence based medicine and, data collection and analysis.
• To conduct researches designed to study new measures for prevention and management of heat related illnesses annually.
• To ensure that all response actions focus on the protection of life of pilgrims and all of the workers serving them.
• To have a situational awareness of the capability of all government agencies during extreme heat events.

**Figure 2: Heat Illnesses Command and Control Center (HICCC)**

Command system

Health sectors working during Hajj have an established hierarchical command and control structure when dealing with Extreme Heat incidents (table2).

<table>
<thead>
<tr>
<th>COMMANDER</th>
<th>Task</th>
<th>Level</th>
<th>Focus</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRATEGIC COMMANDER</td>
<td>Sets the Strategy for the response</td>
<td>National level</td>
<td>Strategic support and planning</td>
<td>1 for Hajj season</td>
</tr>
<tr>
<td>TACTICAL COMMANDER</td>
<td>Takes the Strategy and develops action plans</td>
<td>Regional level</td>
<td>Tactical support and planning</td>
<td>1 per Makkah, 1 per Mena and Arafat hospitals, 1 per PHCs of Mena and Arafat and 1 per field.</td>
</tr>
<tr>
<td>OPERATIONAL COMMANDER</td>
<td>Takes the action plans and implements a response</td>
<td>Local level</td>
<td>Operational support and incident response</td>
<td>1 per Hospital, 1 per PHC and 1 per each Pre-hospital team.</td>
</tr>
</tbody>
</table>

Table 2: Hierarchical command and control structure
Strategic level of the Command (incident management team) is appointed by the chairman of Hajj preparatory committees, which is composed of:

- Heat events strategic commander (the leader of HICCC) representative of the executive committee.
- Assistant of Heat events strategic commander from the executive committee.
- Advisor from technical supervisory committee.
- Representative of emergency committee.
- Representative of medical supply.
- Representative of health education and promotion committee.
- Coordinator from the executive committee.

This incident management team is responsible for the coordination of the overall Health sectors response to an extreme heat event. This team may be convened prior to or when an actual extreme heat event occurs.

Strategic Command actions and responsibilities include (but not limited to):

- Liaison with the higher authorities - in the event of a declaration.
- Coordination of Health sectors resources.
- Coordinating the preparation and dissemination of heat health information and warnings to the public.
- Coordination of information collection, analysis and dissemination of heat event information to the relevant stakeholders.
- Oversight of bed management status across the governmental and non-governmental hospitals.
- Coordination of health media messages.
- Any other action deemed necessary by the Strategic Commander.

Strategic Command will be responsible for the whole Hajj season strategic response to an extreme heat event.
MITIGATION

The heat illnesses during hajj in summer are inevitable; especially in the high risk pilgrims performing the activities of hajj under the circumstances of a maximum temperature between 45°C and 55°C, and high Humidity, associated with physical exertion and exposed spaces to the sun, in crowded limited areas. However, it is possible to Adapt with the problem or reduce its Severity (See attachment # 1 and 2).

PREPAREDNESS

Temperature threshold, Codes and Alert levels
Extreme heat temperature threshold, Codes and ‘alert levels’ have been developed by the HICCC. The alerts are issued by the HICCC in advance of an extreme heat event. They are based on the anticipated forecasts of the Maximum seasonal temperature (MST) for Makkah, Mena and Arafat for the following Hajj season, provided by the General commission for Meteorology and Environmental Protection.

The alert levels were based on the Maximum seasonal temperature (MST) because the calculated heat index is not valid for extreme temperature beyond 43°C. and most of the pilgrims prefer to do the Hajj activities during the afternoon time.

Temperature Triggers for Alert Levels for Extreme heat event in Makkah, Mena and Arafat area:

The anticipated Maximum seasonal temperature (MST) of ≥38°C.
Alert levels:
There are three alert levels:

**Extreme Heat WATCH:**
- Issued at a maximum seasonal temperature of $\geq 37^\circ C$. (Which is one degree less than the temperature at which the heat stroke and heat exhaustion recorded during Hajj).
- Public Alerts will not be issued by the HICCC or the General commission for Meteorology and Environmental Protection at this alert level.

**Extreme Heat WARNING for people coming from cold areas:**
- Issued at a maximum seasonal temperature of $\geq 38^\circ C$; ($38^\circ C$ was the temperature threshold of starting recording heat stroke and heat exhaustion during Hajj among the people coming from cold areas).
- Public Alerts will be issued by the HICCC or the General commission for Meteorology and Environmental Protection at this alert level to Ministry of hajj to forward it to the campuses of pilgrims from cold areas.

**Extreme Heat WARNING for people coming from non-cold areas:**
- Issued at a maximum seasonal temperature of $\geq 40^\circ C$; ($40^\circ C$ was the temperature threshold of starting recording heat stroke and heat exhaustion during Hajj among the pilgrims from non-cold areas).
- Public Alerts will be issued by the HICCC or the General commission for Meteorology and Environmental Protection at this alert level through media and SMS.

**National Hajj extreme Heat Communications Plan**
A National Hajj extreme Heat Communications Plan has been developed by the HICCC to ensure that all agencies serving during Hajj are able to effectively respond to extreme heat events. Particular emphasis has been placed on developing strong and consistent key messages across all Functional Services.
The National Hajj extreme Heat Communication Plan supports Health sector’s preparedness and response by providing heat health advice to the community on mitigating actions to reduce the impact of potential heat risks, this role will be carried by the Health education and promotion committee in collaboration with the technical supervisory committee of hospitals and primary care centers during Hajj.

Communications Triggers for Extreme Heat

HICCC, in conjunction with the General commission for Meteorology and Environmental Protection will communicate the Extreme Heat Watch messages or Warning for the following season, prior to a likely heat event and will continue to monitor weather for the proceeding days to ensure accurate and timely information is supplied to all agencies serving during Hajj and to the community.

**Extreme Heat Watch:**

HICCC will usually provide Extreme Heat Watch messages to agencies, approximately one year in advance (Watch messages will not be released to the public / community).

**Extreme Heat Warning:**

HICCC will usually provide Extreme Heat Warning messages to agencies and the public, approximately two months in advance.

**Executive Committee preparedness**

It is important to have that ongoing preparedness arrangements are undertaken to protect the pilgrims, workers, infrastructure and service delivery during extreme heat events. The preparedness considerations include (but not limited to);

- Coordinate with the other committees to ensure readiness of hospitals and PHCs to operate with best infrastructure status including (but not limited to);
  - Improving heat stroke units.
  - Availability of cooling resources.
  - Adequately equipped emergency departments.
  - Maintenance of air conditioning and climate control.
  - Maintenance of back-up power, including UPS devices and generators.
  - Maintenance of cold chain storage and transport devices (medication /blood etc.)
  - Maintenance of gas supply systems.
Adequate Storage spaces.
- Adequate medical equipment and supply.
- Review and exercise existing emergency plan.
- Develop and review ‘service level agreements’ with relevant suppliers.

- Improvement of information technology in collaboration with the information technology committee.
- Improving quantity and quality of medical and nursing staff based on standards in collaboration with the Work force committee.
- Extreme Heat watch considerations include (but not limited to);
  - Incident management and command alerting and notification.
  - Review of clinical and non-clinical service delivery to maintain adequate capability and capacity.
  - Protocol for bed expansion to accommodate all heat related illnesses during disaster and crisis.
  - Risk management approach for staff movements, and workers in the field.

Technical Supervisory Committee preparedness
The technical supervisory committee of hospitals and primary care centers during Hajj play a major role:

- To provide strategies that deliver the highest and safest quality measures of care for patients with heat related illnesses during Hajj.

- Provide Hajj extreme Heat booklets, Fact Sheets and Educational materials:
  - Update in Heat illnesses, separately either as a booklet (See attachment # 3) or part of the printed pocket guide for clinicians during hajj, which is distributed widely in Hajj for doctors, or can be downloaded from the MOH website. www.moh.gov.sa
  - A Fully developed evidence based guidelines (See attachment # 4), policy and procedures for heat illnesses, tested, updated and widely disseminated among all health providers to unify the practice and minimize variations (See attachment# 5).
  - Additional information has been developed in the form of fact sheets as a guide to cope and stay healthy in the Heat, has been produced for the pilgrims in deferent languages, these fact sheets are continuously distributed widely in Hajj season to ensure a large audience. The fact sheets are available for download from www.moh.gov.sa
Providing a plan to educate target health care workers through Preparing trainers to act as Hand on trainers for:
- Healthcare providers
- Paramedics of Saudi Red Crescent and civil defense.
- Medical field teams.
- Medical missions.
- Pilgrims facilitator (Mutaweefeen).

Health education and promotion committee preparedness
The Health education and promotion committee coordinate with the technical supervisory committee of hospitals and primary care centers during Hajj to:
- Produce printed fact sheets and additional educational information for the pilgrims in deferent languages.
- Upload the booklets, fact sheets and additional educational information in the website of the MOH. http://www.moh.gov.sa/hajj
- Liaise with Media public and SMS to provide health information during Hajj.

Field management and transportation preparedness
Red Crescent and field medical facilities have an Extreme Heat Event Arrangements procedure to ensure an effective, efficient and sustained emergency response to predictable increase in demand during Hajj. The principles of preparedness include:
- Fully developed guidelines for heat illnesses (pre-hospital management, cooling and transportation) tested, updated and widely disseminated among Red Crescent and field medical staff (See attachment # 4).
- Effective protection from heat illnesses for all Red Crescent staff and medical staff working in the field during these extreme weather conditions.
- Maximum use and effectiveness of field medical staff.
- Maximum effectiveness of the small vehicles of field medicine with appropriate air conditioning, equipment and cooling facilities.
- Maximum use and effectiveness of Red Crescent staff.
- Maximum effectiveness of vehicles and equipment of Red Crescent with cooling facilities.
• Reduction in non-essential patient transport by cooling of mild cases in previously allocated places.
• Maximum use and effectiveness of Helipads and Medevac.
• Liaison with other governmental and non-governmental agencies.

RESPONSE

Command system activation

Whilst there is no specific trigger for when a Strategic Command is activated, however during an Extreme Heat Watch and/ or Warning period, there is a heightened situational awareness and ongoing information gathering by the supervisor of the Emergency medical field team, the Chairman of the Emergency committee and potentially by the Strategic Commander.

A decision to activate Strategic Command may be underpinned by the following factors (but not limited to):

• Maximum seasonal temperature ≥ 37°C (trigger for Extreme Heat Watch).
• Request from (HICCC) or the General commission for Meteorology and Environmental Protection.
• Request from Health Tactical Commander(s).
• Impact of extreme heat event on the overall health system.
• Other significant events / incidents that are occurring.

Room for Heat Illnesses Command and Control Center (HICCC)

The (HICCC) Room:

• Provides Strategic Command with an environment to support information gathering and to monitor and research the situation across Health sectors during a potential or actual heat event.
• Allows Strategic Command to be pre-emptive, to collate data, and update current Health statuses.
Where incident management team meet and discuss ongoing planning and response options and be in the forefront, if an actual incident and/or workload to Health sectors escalates to a point that requires additional Strategic Command support.

- Provides a physical location for the execution of overall Strategic level command and coordination for Health sectors and Medical Functional Service
- Activated during Hajj in the event of a maximum seasonal temperatures ≥ 37°C.

Emergency committee response

During an extreme heat event, the Emergency committee is responsible for:

- Coordination with the General commission for Meteorology and Environmental Protection for the duration of the extreme heat event.
- Production of reports about heat events situation in the field and forwarding it to Heat Illnesses Command and Control Center (HICCC).
- Continuous coordination with (HICCC).
- Ongoing liaison with other emergency services and government agencies.
- Attendance at the (HICCC) Room as required.

Response to Extreme Heat WATCH:

- When the Emergency committee or HICCC receive an Extreme Heat Watch message from the General commission for Meteorology and Environmental Protection, HICCC shall distribute this message to Health sectors stakeholders via the Tactical Command distribution list.
- Nil formal response actions are required to be undertaken, unless outlined in local policy or guideline documents.
- Situational awareness and ongoing information gathering shall occur during this period.

Response to Extreme Heat WARNING:

- When the Emergency committee or HICCC receive an Extreme Heat WARNING message from the General commission for Meteorology and Environmental Protection, HICCC shall distribute this message to Health sectors stakeholders via the Tactical Command distribution list.
- Pre-defined key actions can be adopted in the Health sectors - Extreme Heat Action Plan (see Attachment # 6).
Executive committee response

Executive committee need to ensure that they have satisfactory response and relevant arrangements to ensure that both a potential and/or actual loss of essential services as well as a surge in workload is considered.

Executive committee need to consider the following (but not limited to):

- Allocate Tactical and operational Commanders as represented in the table of the command system.
- Alerting and notification to key personnel of Extreme Heat Watch and/or warnings when issued by the General commission for Meteorology and Environmental Protection.
- Manage requests for relevant capacity and capability queries from HICCC.
- Provide a representative in HICCC.
- Executive committee chairman or co-chairman are to advise Strategic Command of any significant, noteworthy heat related events or occurrences that cause either an acute surge in workload or where an unplanned loss of service delivery occurs.

PHCs, field teams and Regional governmental and non-governmental hospitals:

Upon being advised of an Extreme Heat Warning from Strategic Command, all regional governmental and non-governmental hospitals, PHCs and field teams shall undertake the following actions (but not limited to):

- Populate a current bed state summary using the pre-agreed reporting template as determined by HICCC. This report shall be supplied to the HICCC by 08:00, 11:00, 14:00, 17:00 and 20:00 daily (see Attachment #7).
- The agreed bed state summary reporting template shall be initiated for the first 08:00 slot post a Warning being issued and shall cease at the first 08:00 slot post an issuance of a revocation of a Warning, unless specifically directed by HICCC.
- Provide HICCC with any relevant information.
- Any hospital experiences period of peak demand or high workload shall inform HICCC as part of situational awareness reporting of the capacity and capability.
- Pre-determined key actions for both an Extreme Heat Watch as well as an Extreme Heat Warning event.
Social support considerations:
Social workers are responsible for ensuring that arrangements to support affected pilgrims and their families are developed during extreme heat events.

Technical Supervisory Committee response
Technical Supervisory Committee need to ensure that they have satisfactory response and relevant arrangements to:
- Monitor The National Hajj Extreme Heat Strategic plan implementation.
- Revise and audit the strategic plan annually through current evidence based medicine and, data collection and analysis.
- Help in conducting researches designed to study new measures for prevention and management of heat related illnesses annually.

Health education and promotion committee response
Advertising in the media will increase awareness of the availability of information and of the importance of looking after self and others during periods of extreme heat.
- The primary objectives of the National Hajj extreme Heat Health education and promotion committee plan are:
  - To raise awareness among the pilgrims of the effects of an extreme heat event can have on their health and who is at risk of being affected.
  - To educate the pilgrims about how they can prepare for and keep themselves, safe during extreme heat.
- Secondary objectives are:
  - To encourage Health and non-Health sectors staff to protect themselves from the effects of prolonged heat.
  - To enable Health sectors to meet its obligations in supporting the HICCC as the Leader for extreme heat events.

Media Unit:
During an extreme heat event, Health education and promotion committee staff will liaise with HICCC to ensure consistency of messages and information across press agencies television and radio stations.
Public Awareness:
Advertisements may be created for print press, radio and TV. The decision to advertise in the media will be made by the Strategic Commander and will be coordinated by the Health education and promotion committee staff.

SMS Release:
The Health education and promotion committee shall:
- Deliver Extreme Heat Warning messages to agencies and the public via SMS.
- Provide information to employees of all government agencies serving during Hajj.

Response of Ambulance Service
The role of Field Medical Teams and Red Crescent during an extreme heat event is to ensure effective, efficient and sustained emergency response to the increased demand for their services during a very hot Hajj season.
The principles of the Field Medical Teams and Red Crescent Extreme Heat Event arrangements procedure are:
- Maximize the use and effectiveness of personnel.
- Maximize effectiveness of vehicles and equipment.
- Maximum effectiveness of cooling facilities.
- Maximum utilization of previously allocated places.
- Reduction in non-essential patient transport.
- Effective protection from heat illnesses for all Red Crescent staff and medical staff working in the field during these extreme weather conditions.
- Maximum effectiveness of the small vehicles of field medicine.
The level of response from Ambulance Service (Field Medical Teams and Red Crescent) to an extreme heat event will largely be determined by advice it receives from the General commission for Meteorology and Environmental Protection and by service delivery demand at the time.
Field Medical Teams and Red Crescent staff will follow the pre-hospital guidelines, and policy and procedures outlined in (Attachment 4 & 5).
National Hajj extreme Heat Action Plan

The National Hajj extreme Heat Action Plan reflects the level of response relative to the alert phases issued by HICCC. These actions are dependent on advice received from the HICCC and the General commission for Meteorology and Environmental Protection in relation to extreme heat alert triggers and are thus subject to change. This document will continue for the 1437/1438 period, however it is anticipated that Health Services will develop their own ‘contextualized’ Action Plans to reflect their Extreme Heat Plan. Refer to (Attachment # 6) for Health sectors actions which will be implemented at each stage of extreme heat alerts issued by HICCC. This Action Plan is available as a standalone document on the website of MOH www.moh.gov.sa

**RECOVERY**

Recovery strategies

Hospitals, PHCs, ambulances and other Health sectors are to ensure that recovery strategies are considered and documented in their respective Extreme Heat Plans. Considerations may include, (but not limited to):

- Ensuring that infrastructure is inspected maintained and repaired post extreme heat event use.
- Restoring medical and non-medical reduced supply.
- Assessments to relevant staff to ensure post event recovery.
- Evaluation strategy to assess capacity of government and non-government sectors.
- Developing a database for heat related illnesses patients to study the outcome measures of the strategic plan and its implementation.
ATTACHMENT # 1 – PEOPLE AT RISK – EXTREME HEAT EVENTS

Predisposing factors to heat illnesses

- Extremes of Age
- Obesity
- Low fitness level
- Physical disability
- Lack of heat acclimatization
- Dehydration

Environmental Factors

- High ambient temperature
- High humidity
- Lack of air flow
- Lack of shade

Individual Factors

- Anticholinergics
- Antidepressants
- Antihistamines
- Antipsychotics
- Benzodiazepines
- β-Blockers
- Calcium channel blockers
- Diuretics
- Laxatives
- Neuroleptics
- Phenothiazines
- Thyroid agonists
- Alcohol
- Amphetamines

Medication and Drug Use

- Febrile illness
- Viral infection
- Skin disorders
- Anhidrosis
- Cardiovascular disease
- Sickle cell trait
- Diabetes mellitus
- Liver diseases
- Kidney diseases
- Neurologic disorders
- Psychiatric disorders
**ATTACHMENT # 2 – MITIGATION**

<table>
<thead>
<tr>
<th><strong>Adapting to the problem</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>التكيف مع المشكلة</td>
</tr>
<tr>
<td>اقتراح يوجه إلى وزارة الحج والعمرة</td>
</tr>
<tr>
<td>دراسة تعديل نسب الحجاج من البلاد لتنوفق نسب الحجاج لكل بلد حسب فصول السنة مع البلد في بلد الحجاج بحسب طبيعة مناخها، بحيث تقل نسبة القادمين من بلد باردة في فصول الصيف وتزداد في فصول الشتاء.</td>
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<th>اقتراح تعدة وزارة الصحة ووجه إلى وزارة الحج والعمرة</th>
</tr>
</thead>
<tbody>
<tr>
<td>التوصية بقيام المقبولين على الحج والقادمين على خدمتهم بمسارحة تدريبات رياضية قبل قدمهم لأداء مناسك الحج بفترة كافية بهدف زيادة التكيف الجسماني مع بيئة الحج.</td>
</tr>
</tbody>
</table>

**Acclimatization**

- Observational studies have found that the first week of athletic practice in high heat and humidity is the period of greatest risk for developing exertional heat illnesses.
- Full acclimatization requires at least 10 to 14 days of exercise at an intensity that raises body temperature to at least 38.5°C for at least 60 minutes. This can be accomplished in either hot environmental conditions or cooler conditions if clothing or equipment is worn and exercise intensity is high. However, any improved tolerance of heat stress generally dissipates within 2 to 3 weeks of returning to a more temperate environment.

<table>
<thead>
<tr>
<th><strong>Reducing the severity of the problem</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>التخفيف من وطأة المشكلة</td>
</tr>
<tr>
<td>اقتراحات تعدة وزارة الصحة</td>
</tr>
<tr>
<td>إعداد أفلام توعوية شاملة حول الحج بلغات مختلفة ليتم نشرها وثلى بشكل مكثف قبل موسم الحج.</td>
</tr>
<tr>
<td>توعية الحجاج بضرورة تجنب التعرض للشمس لفترات طويلة وتجنب أماكن التراحم والتدافع وذلك عن طريق توزيع ملصقات وتوزيع أفلام توعوية على شاشات علامة في مكة المكرمة والمدينة المنورة والمشاعر المقدسة.</td>
</tr>
</tbody>
</table>
اقتراحات توجه إلى وزارة الحج والعمرة

- استخدام طرق حديثة لتكييف المخيمات وتهويتها بدلاً من أجهزة التكييف القديمة.
- تنظيم لقاءات مع بعثات الحج وممثلين من وزارات الصحة في مختلف البلدان لتعزيز خطة وقائية وتشجيع
  للحجاج.
- توعية الحاج أثناء تواجده في بلده وذلك من خلال توزيع وسائل الإعلام المرئية والصوتية في مختلف البلدان بمواد
  توعوية وإرشادية لتعريفهم بالمناخ السائد في المنطقة المشاعر والاستعداد لذلك.
- زيادة عدد مراكز إرشاد الحجاج الشبان وتحسين طريقة أدائها وعمل على قياس أداء هذه المراكز.

اقتراحات توجه إلى وزارة الثقافة والإعلام

- عرض أفلام توعوية شاملة حول الحج بلغات مختلفة يتم تبنيها ونها بشكل مكثف قبل موسم الحج.
- العمل على إرشاد الحاج لاختيار أفضل الأوقات لأداء المساءك التي تتطلب الجروج من المخيمات.

اقتراحات توجه إلى وزارة الشؤون البلدية والقرصية

- استخدام مواد بناء مناسبة للمسطحات الواقعة بمساحات من عليها تتم تصميمها بحيث تواكب الرطوبة والحرارة.
- واستطاعة ما تم اتصالهم.
- إعادة تخطيط وتضيير شبكة الشاقة.
- إيجاد حلول شاملة لمشكلة الأطراف.
- استمرار رش الزئاد ليلًا، مما يجعل المسطحات دائمةالبرودة في فصل الصيف وهذا يساعد على تلطيف الجو
  وتقليل الحرارة بهذه المناطق.
- العمل على جعل الرذاذ يلامس الجسم لأن رفعه كثيراً يزيد الاحتياط الحراري.
- وضع حلول مناسبة لمناطق الزجاج للتبديل من حدة.

اقتراح بوجه إلى وزارة الشؤون الإسلامية والدعوة والإرشاد

- حث الدعاء والمرشد على استخدام الرخص الشرعية لتجنب الحج والعمرة وأوقات التوقف.

اقتراح بوجه إلى وزارة الطاقة والصناعة والثروة المعدنية

- زيادة الطاقة الكهربائية داخل المنشآت بما أنباع مع زيادة الحجاج لضمان عدم انقطاع التيار الكهربائي.

اقتراح بوجه إلى وزارة البيئة والمياه والزراعة

- زيادة ضخ المياه إلى منطقة المشاعر بما يناسب مع ارتفاع درجات الحرارة.

اقتراحات توجه إلى وزارة التجارة والاستثمار

- تشجيع الشركات التجارية للقيام بتوزيع المطبات البديلة.
- زيادة كميات المياه المجانية الموزعة على الحجاج عن طريق تشجيع شركات المياه على المشاركة في توزيع المياه مجانًا
  على الحاج.

اقتراح بوجه إلى المديرية العامة للدفاع المدني

- تجهيز المخيمات بعد اعتداء كافٍ من الأجواء المقاومة للحرير.
اقتراحات توجه إلى المديرة العامة للأمن العام

- تخصيص طرق ومسارات مخصصة لخدمات الطوارئ، لضمان سرعة وصول هذه الخدمات للحالات المصابية.
- تقليل الأماكن التي تشبع على الافتراس في طرق المشاية والمناطق الحيوية.
- فصل مسار حركة المركبات عن مسار حركة المشاة عبر طريق تخصيص ممر جانبي للمشاة وتأمينها بحواجز
- مرة، تمنع دخول المركبات إلى مسارات المشاة. وتحدد من تجاوز المشاة لها وذلك لتفاعل تسرب المشاة للجراحة
- الناتجة عن المركبات واللوث الناتج عن عواصمها.

افتراض يوجه إلى معيد خادم الحرمين لأبحاث الحج

- تطوير جاكيت وقبعة مزودة بمروحة فتربة عاملهم التواجد بالميدان نهاراً.

اقتراحات توجه إلى مؤسسات الطوارئ

- الاستفادة من الوقت الذي يقضيه الحجاج في الحافلات للتنقل من مكان إلى آخر بحيث يتم عرض مواد سمعية
- توعوية وإرشادية باللغة التي تتحدثها الحجاج في كل حافلة.
- تجهيز غرفة إسعافات أولية في كل مخيم على أن يتوفر بها وسائل تبريد للمصابين بجروحات الحرارة.

ATTACHMENT # 3 – (SEE; THE ATTACHED COPY OF HEAT ILLNESSES)

ATTACHMENT # 4 (SEE; THE ATTACHED COPY OF THE GUIDELINES FOR HEAT RELATED ILLNESSES)

ATTACHMENT # 5 (SEE; THE ATTACHED COPY OF HEAT RELATED ILLNESSES POLICIES AND PROCEDURES)

ATTACHMENT # 6 – HEALTH EXTREME HEAT ACTION PLAN
PREPAREDNESS

Actions to be taken by the 7th Hijri month:

PREPARATION:

- **HICCC:**
  - Prepare for and maintain a state of increased readiness.
  - Conduct any training of staff and test/exercise activation of plans and procedures.
  - Revise and update as required:
    - The ‘Extreme Heat Guidelines’ booklet.
    - Topic specific fact sheets.
    - Arrange distribution of the booklet ‘Extreme Heat: Guide to coping and staying healthy in the heat’ to government and non-government agencies/organizations and community groups as per requests received.
    - Develop other topic specific fact sheets according to need.

- **Health education and promotion committee:**
  - Review and maintain information for the public on the web site.
  - Review the Health education and promotion committee Plan for Extreme Heat.
  - Review and prepare newspaper/press release, radio advertisements and social media messaging for use during periods of extreme heat.

- **Health Services (Hospitals / PHCs / Red Crescent / Field medicine):**
  - Review Health Service “Extreme Heat Event Plan”.
  - Conduct any training of staff and test/exercise activation of plans and procedures.
  - Check that air conditioners (AC) and fans are working.
  - Ensure adequate water supplies.
  - Ensure adequate supply of medications.
EXTREME HEAT – WATCH

Based on Makkah forecast temperatures (maximum seasonal temperature ≥ 37°C.).
Issued to MOH 12 months in advance of ‘Watch’ period.
Public Alerts WILL NOT be issued by the HICCC or the General commission for Meteorology and Environmental Protection at this Alert level.

PREPARATION AND RESPONSE:
• HICCC:
  o Advise Health Tactical Commanders of an EXTREME HEAT - WATCH.
  o Maintain a heightened situational awareness of event impacts across Health Sectors, Red Crescent and Field Medicine, in conjunction with stakeholders.
  o Brief the Strategic Commander of the situation.
  o Activate the Heat Illnesses Command and Control Center Room.
  o Advise Health Tactical Commanders of a cancellation/expiry of an EXTREME HEAT - WATCH.

• Health education and promotion committee:
  o Prepare heat health messages and release as appropriate.

• Health Services (Hospitals / PHCs / Red Crescent / Field medicine):
  o Maintain a heightened situational awareness of Health Service capacity and capability, in line with normal daily operations.
  o Ensure compliance with each other.
  o Prepare to action Extreme Heat plans in readiness for full activation if an ‘Extreme Heat Warning’ Alert level is issued.
**EXTREME HEAT – WARNING**

Based on Makkah forecast temperatures (average seasonal temperature ≥ 38°C. for pilgrims from cold areas and ≥ 40°C. for pilgrims from non-cold areas). Issued to MOH 12 months in advance of ‘Warning’ period.

Public Alerts WILL BE issued by the HICCC or the General commission for Meteorology and Environmental Protection at this level. Internal notification WILL be made during hajj season to health tactical commanders and governmental and non-governmental health sectors.

**RESPONSE**

- **HICCC:**
  - Advise Health Tactical Commanders of an EXTREME HEAT - WARNING.
  - Brief the Strategic Commander of the situation and activate Strategic Command.
  - Activate the HICCC Room.
  - Receive summary reports from governmental and non-governmental health sectors each day by 08:00, 11:00, 14:00, 17:00 and 20:00 daily and Compile it (see attachment #7).
  - Submit briefing to Health Media by 11:00 am daily.
  - Advise Health Tactical Commanders of a cancellation/revocation of an EXTREME HEAT - WARNING.
  - Convene a post event debrief with relevant stakeholders in a timely manner.

- **Health Services (Hospitals / PHCs):**
  - Maintain a heightened situational awareness of health system capacity and capability, in line with normal daily operations.
  - Undertake summary reporting from the 08:00, 11:00, 14:00, 17:00 and 20:00 daily and supply the reports to the HICCC Room (see attachment #7).

- **Health education and promotion committee:**
  - Activate ‘heat health warnings’ - With messages focusing on getting general public to look after themselves and look out for those around them.
Red Crescent and Field medicine:
- Activate Health Service Extreme Heat Plan.
- Maintain a heightened situational awareness of Health Service capacity and capability, in line with normal daily operations.
- Consider reduction of non-emergency service provision if extreme heat event considerably impacts on capability and capacity.
- Ensure compliance with the Health sectors.

ATTACHMENT # 7 – DATA COLLECTION FORM FOR HEAT RELATED ACTIVITY

HEAT RELATED HOSPITAL and PHC ACTIVITY – DATA COLLECTION

Date: ........................................ time ...................
To be collected by the coordinator in each hospital or PHC, and sent to Heat Illnesses control centre by 08:00, 11:00, 14:00, 17:00 and 20:00 each day.
Hospitals or PHCs should not forward collated data directly to any other agency or organization.
References

3. The risk assessment of hajj during summer and their proposed solutions, three workshops arranged by ministry of hajj and umrah Saudi Arabia, on 26 Sep. 2013, 4 Feb. 2014 and 8 May 2014.
4. The statistical data from general directorate of statistics, MOH, Saudi Arabia.