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النشرة الوبائية السعودية

تصدرها وزارة الصحة

الوكالة المساعدة للطب الوقائي وبرنامج الوبائيات الحقلي

المجلد العاشر – العدد الثاني – إبريل – يونيه ٢٠٠٣

# Staphylococcus aureus Food Poisoning Outbreak in Al-Madinah Al-Monawarah, March 2003.

On Saturday 1st March 2003, a large number of Iranian Hajjis presented to several hospitals in Al Madinah Al Monawarah; King Fahad hospital, Al Ansar, Al Miqat, Ahud hospital, other private hospitals in addition to the Iranian Medical mission. They were complaining of vomiting, nausea, abdominal pain and diarrhea after eating food prepared in the kitchen of their Hamla's food supplier. All the patients gave history of eating food prepared by "Al-Dakheel Catering" in Al-Madinah. A team from the Field Epidemiology Training program (FETP) was assigned to investigate this outbreak. The aim of this study was to determine the size, severity and extent of the outbreak, to determine its source, and to place recommendations that may prevent similar outbreaks in future.

Medical records of the affected individuals in the hospitals and the Iranian medical mission were reviewed. A questionnaire was developed and translated to Persian. It covered demographic information, signs and symptoms, time of symptom development, treatment, whether admitted into hospital and date of discharge if admitted, type of food eaten, date and time of eating the food, and amount. Laboratory results of samples collected from patients and kitchen workers including samples from vomitus, rectal, throat and nasal swabs, stool, and specimens from the remnant food were obtained. There were 492 cases identified.

A case control study was conducted. A case was defined as any person who ate lunch food supplied by "Al-Dakheel Catering" on Saturday March 1, 2003 and developed one or more of the following symptoms: nausea, vomiting, abdominal pain, and diarrhea. It was not possible to interview all the Iranian Hajjis who ate from that lunch food on Saturday, March 1, 2003, since many had already left back to their country. Therefore not all the cases reported were interviewed. It was possible to identify a number of Hajjis who had eaten from the same kitchen on the same day and had not complained of any symptoms, and these were considered controls. A case to control ratio of 1:1 was chosen.

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# Staphylococcus aureus Food Poisoning Outbreak in Al-Madinah Al-Monawarah, cont....

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A total of 414 persons were interviewed, 207 cases and 207 controls. All cases were Iranian, with ages ranging from 25-81 years; 122 (58.9%) were males. From the total number of the cases, 197 (95%) complained of vomiting, 163 (78.7%) abdominal pain, 156 (75.4%) nausea, and 56 (27%) diarrhea. Four food items were eaten: Rice (Attack rate (AR) 99.5%, Odd's Ratio (OR) 10506), Chicken (AR 99.5%, OR ∞), Bread (AR 2.4%, OR 0), and Yoghurt (AR 17.4%, OR 0). Only 13 (6.3%) cases were admitted to hospital. All remaining cases had received treatment at the accident and emergency departments, and recovered from symptoms within 24 hours.

It was not possible to interview the chefs or the assistants since they had already left. However, according to one of the kitchen administrators, preparation of the lunch food went through several steps. The kitchen workers took out the frozen chicken at 4:00 pm the previous afternoon and left it to thaw until 10:00 pm. After that, they cut it and kept in refrigerators. Actual cooking of the rice and chicken began at 1:00 am. The process of cooking ends at about 5:00 am. At 6:00 am the cooked food is placed in special heaters, each with a capacity of 290-300 meals, which are transported in special trucks to the hotels where the Hajjis are staying. The kitchen is about 4 km away from the hotels. Each Hamla leader receives one heater according to the number of Hajjis in his group. The heater is connected to the electricity to maintain a temperature of 80°C. The group leader and his assistants serve the lunch at 1:00 pm. The bread and yoghurt are supplied from the local market. That day, the kitchen prepared lunch for 9600 hajjis.

The outbreak started on the evening of Saturday March 1, 2003. The time interval between food consumption and appearance of symptoms ranged from 3 to 7 hours with a median of 4 hours. The rice and the chicken were the implicated food items (OR 10506 and ∞ respectively, P value < 0.005).

Staphylococcus aureus was isolated from the nasal and throat swabs of two workers and from the stool cultures of 13 of the workers responsible for food preparation. It was also isolated from the vomitus of 10 cases. The bacteria was also found in the food remnants specimens (23 specimens from the chicken and 9 from the rice) taken in the hotels when the outbreak started. Serotyping of the bacteria was not done.

*– Reported By: Dr. Yaqoub Salem AlMaghderi, Dr. Mohammed A. Al-Mazroa (Field Epidemiology Training Program).*

**Editorial notes:** Bacterial food poisoning results from consuming food contaminated with bacteria or its toxins. Two types of bacterial food poisoning are recognized; the infective type, which results from ingestion of food contaminated with large numbers of bacteria; and the toxic type, which results from ingestion of food contaminated with preformed toxins.[1]

Staphylococcal food poisoning is caused by ingestion of food that contains preformed toxins.[1] Staphylococcus aureus are gram-positive cocci, that grow in clusters, aerobically and anaerobically, at an optimum temperature of 37°C, and are readily killed by temperature above 55°C. People may harbor the organism either persistently or intermittently, and about 25% of populations are carriers. Foods are easily contaminated by staphylococci from infected skin and other septic lesions such as boils, cuts and burns. Cold foods, much handled during preparation, are the most common vehicles of infection.[2] The enterotoxin is produced in food before it is consumed, hence the incubation period is very short (30 minutes to 8 hours), usually 2-4 hours after consuming contaminated food.[3] Epidemics of food borne staphylococcal gastroenteritis occur worldwide. The highest incidence is in areas where personal hygiene is suboptimal and people are crowded.[3]

Epidemiological evidence in this investigation showed that chicken and rice was the most likely vehicle of transmission and staph. aureus caused this outbreak. The symptoms and their time of onset are consistent with staph. aureus outbreaks.[4] Improper food-handling practices contributed to the development of this outbreak.

It was recommended that workers who handle food must be trained on safe food preparation practices before issuance of the health certificate from the concerned authorities, supervisory personnel should be educated on the need to monitor food handlers for skin lesions and sources of contamination.

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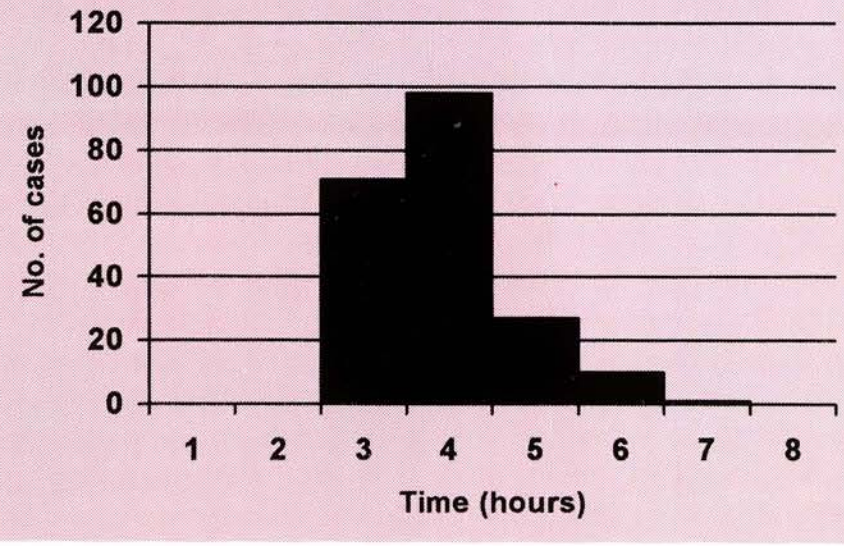
Fig. 1: Epidemic curve of food Poisoning outbreak among Iranian Hajjis



# Evaluation of Mobile Health Education Program of MOH-KSA in Makkah and Arafat during Hajj 1423 H (2003 G)

During Hajj season the Ministry of Health (MOH) adopts a number of measures for health education (HE) of hajjis. One of the important HE methods used to deliver information to hajjis is through mobile health teams; specially equipped vehicles that move around the Holy sites delivering HE messages in multiple languages to hajjis in crowded locations and at places where they gather. This program was started in 1406 H. The objectives of this study were to evaluate the Mobile HE Program of MOH operating in Makkah and Arafat during Hajj 1423, and to determine the factors that affect reception of HE messages by hajjis through this system.

This was a cross sectional study of the mobile HE teams working in Makkah and Arafat during 1423 Hajj season, and hajjis in the vicinity of these teams. All mobile HE sessions conducted in Makkah and Arafat from 4-9th of Dhul-Hijjah were included in the study. A questionnaire was designed to collect information from the HE team and another to collect information from hajjees. A team from the FETP joined the mobile team.

As a rule, four cars that include four teams (of two members each) are designated for the mobile HE campaign. However, due to certain administrative reasons, only two teams had been operating during 4-6/12/1423 H and one team from 7-9/12/1423 H. A car was designated for each team; equipped with two speakers, one cassette player and flashing lights. The MOH emblem was present on both cars, which were provided with cassettes that had recorded messages in 13 languages: Arabic, English, French, Urdu, Persian, Indonesian, Malaysian, Turkish, Chinese, Russian, Swahili, Hausa, and Uzbek. The recorder and speakers and the quality of the broadcasted sound was excellent in both teams. However, there were no maps of Makkah or Arafat available with either team. All of the team members were males of Saudi nationality, and their education level was secondary school except for one university graduate.

Thirteen mobile HE sessions were observed. The duration of each session was over 1 hour; 8 (61.5%) sessions took place in the morning and 5 (38.5%) in the evening. Access to the location of sessions was difficult in 4 (30.8%) sessions, medium in 6 (46.1%) and easy in 3 (23.1%). Noise level was very high in 1 (7.7%) session, medium in 5 (38.5%) and low in 7 (53.9%). Attention of hajjis towards the broadcasted messages was good in 8 (61.5%) sessions, fair in 2 (15.4%) and poor in 3 (23.1%). The team distributed brochures and leaflets in 5 (38.5%) sessions. The number of hajjis in a 50-meter radius around the site of the session was < 100 in 2 (15.4%), 100-500 in 10 (76.9%), and 500-1000 in 1 (7.7%). During each session HE messages were broadcast in several languages; Arabic in 11, English 6, French 2, Urdu 8, Persian 10, Indonesian 6, Malaysian 5, Turkish 7, Chinese 1, Russian 2, Swahili 1, Hausa 1 and Uzbek 1. Despite the teams' efforts to access different locations, it was somewhat difficult to reach all desired areas, due to the large number of traffic diversions during Hajj, and unavailability of a map of the region.

The most common nationality of hajjis present around the HE session locations was Egyptians in 2 (15.4%), Pakistanis 7 (53.8%), Turkish 2 (15.4%) and Iranians 2 (15.4%).

Information on Hajjis and their perception of the mobile HE messages was abstracted from 1252 valid questionnaires; 1052 (84%) from Makkah and 200 (16%) from Arafat. The mean age of respondents was 40.9 years (range 9-90), and 1126 (89.9%) of them were males. They were from 51 countries, classified into seven groups; 43 (3.4%) from Gulf Countries, 526 (42%) other Arab countries, 327 (26.1%) Indian Subcontinent, 108 (8.6%) South East Asians, 60 (4.8%) Iranians, 24 (1.9%) from Sub-Saharan Africa and 110 (8.8%) from Europe, Australia and USA. Their first language was Arabic in 574 (45.8%), Urdu 216 (17.3%), Indonesian 102 (8.1%), Turkish 76 (6.1%), Persian 62

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Table 1: Observer assessment of the mobile HE session, hajj1423 H

| Session properties | | Sessions (N=13) | % | Hajjis (N=1252) | % |
|---|---|---|---|---|---|
| Time | Morning | 8 | 61.5 | 748 | 59.8 |
| | Evening | 5 | 38.5 | 504 | 40.3 |
| Location access | Difficult | 4 | 30.8 | 256 | 20.4 |
| | Medium | 6 | 46.2 | 754 | 60.2 |
| | Easy | 3 | 23.1 | 242 | 19.3 |
| Noise level | High | 1 | 7.7 | 76 | 6.1 |
| | Medium | 5 | 38.5 | 531 | 42.4 |
| | Low | 7 | 53.9 | 645 | 51.5 |
| Attention of hajjis | Good | 8 | 61.5 | 745 | 59.5 |
| | Fair | 2 | 15.4 | 341 | 27.2 |
| | Poor | 3 | 23.1 | 166 | 13.3 |
| Brochures | Yes | 5 | 38.5 | 514 | 41.1 |
| | No | 8 | 61.5 | 738 | 58.9 |
| No. of hajjis in 50 m radius | > 100 | 2 | 15.4 | 63 | 5 |
| | 100- 500 | 10 | 76.9 | 1143 | 91.3 |
| | > 500 | 1 | 7.7 | 46 | 3.7 |
| Observer impression | Excellent | 7 | 53.9 | 639 | 51 |
| | Good | 3 | 23.1 | 447 | 35.7 |
| | Satisfactory | 2 | 15.4 | 90 | 7.2 |
| | Poor | 1 | 7.7 | 76 | 6.1 |

# Severe Acute Respiratory Syndrome (SARS): Is the threat really over?

On 15th of March, 2003, the World Health Organization (WHO) issued a rare travel advisory on a new disease named as "Severe Acute Respiratory Syndrome (SARS)", declaring it "a worldwide health threat", advising airlines that if a passenger or crew member met the SARS criteria, the aircraft should alert the destination airport, and on arrival the sick passenger should be referred to airport health authorities for assessment and management.[1] Although the main focus of illness was China and other Far-Eastern countries, however, cases were reported from all over the world, legitimizing such a global warning. After the recommendations, all countries with local transmission or imported cases were able to either prevent further transmission or keep the number of additional cases low through immediate isolation, strict infection control, and vigorous contact tracing. On the 5th of July 2003, WHO announced that all known chains of person-to-person transmission of the SARS virus had been broken and the world could have a sigh of relief, at least for the timebeing.[2] However, the question remains whether this is really the end of SARS? Or is there a possibility for the disease to resurface?

SARS is caused by a new coronavirus, SARS-CoV, of the Coronaviridae family, an enveloped positive stranded RNA virus, with a high rate of genetic mutation.[3] In the absence of any specific evidence for the existence of animal or other environmental reservoir, the sole transmission of SARS is attributed to human to human.[4] The primary mode of transmission appears to be droplet infection through close person-to-person contact or direct contact with infectious material of a SARS patient. Its incubation period ranges between 2 to 10 days (average 2-7 days).[4]

Keeping in view the seriousness of illness, a highly sensitive case definition was adopted for surveillance. A suspect case was defined as a person presenting after 1 November 2002, with history of high fever (>38°C) and cough or breathing difficulty and one or more of the following exposures during the 10 days prior to onset of symptoms (a) close contact with a person who is a suspect or probable case; (b) history of travel to an area with recent local transmission; (c) residing in an area with recent local transmission. A probable case was defined as a suspect case with one or more of following (a) radiographic evidence of infiltrates consistent with pneumonia or respiratory distress syndrome on chest X-ray; (b) positive for SARS coronavirus by one or more assays; (c) have autopsy findings consistent with the pathology of RDS without an identifiable cause.[5] In May 2003, WHO declared an overall estimate of case fatality of 14-15%. The case fatality ratio was estimated to be under 1% in persons aged 24 years or younger, 6% in persons aged 25-44 years, 15% in persons aged 45-64 years, and over 50% in persons aged 65 years and older. However, on the basis of all the cases reported by the end of June 2003, an overall case fatality ratio of 9.6% was calculated.[6]

Even though high cure rates have been demonstrated with a treatment regimen including antibacterials (levofloxacin/clarithromycin), antivirals (ribavarin) and methylprednisolone in a small group of patients, the mainstay of treatment is non-specific supportive management as a case of atypical pneumonia.[7]

It is now known that the first cases of SARS appeared in Guangdong province of China in mid-November 2002. However, the first report by the Government of China to WHO was on 11-2-2003, with 305 cases of atypical pneumonia, negative for Influenza virus, and 5 deaths. Around 30% of cases had occurred in health care workers.[8] Initially, the outbreak was confused with Influenza A (H5N1). By the time disease was recognized as SARS, it had already spread from Guangdong to Hong Kong and from there to Canada, Vietnam, Singapore and Germany. The main international transmission was along air travel routes, which instigated the WHO to issue the global travel advisory. On the 2nd of April 2003, the WHO recommended that persons traveling to Hong Kong and Guangdong province consider postponing all but essential travel until further notice, the most stringent

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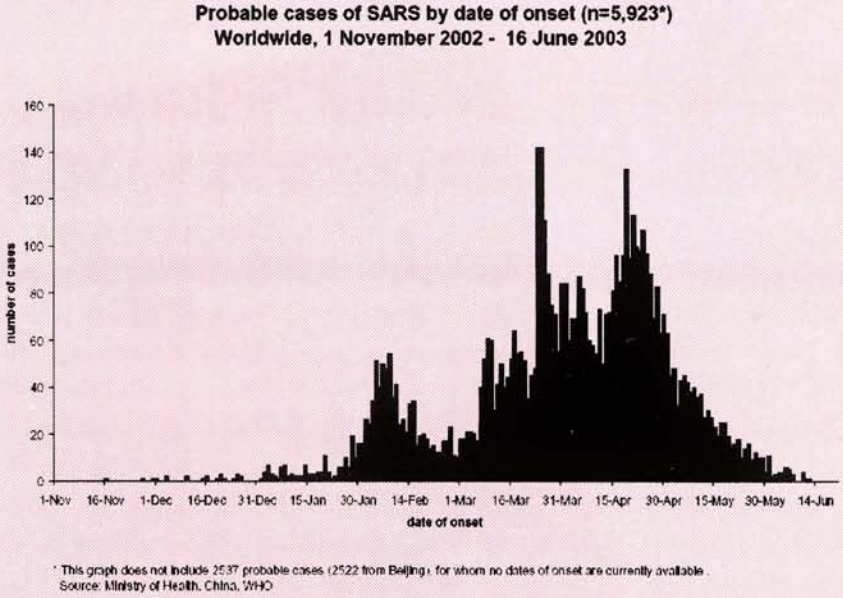
Fig. 1: Epidemic Curve of Probable cases of SARS




Downloaded from WHO internet site http://www.who.int/csr/sars/epicurve/en/epicurves2003_06_17.pdf (Accessed on July 6, 2003)

# Severe Acute Respiratory Syndrome (SARS): Is the threat really over?, cont ....

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travel advisory by WHO in its 55-year history. Later it was expanded to other countries, depending on the evidence of local transmission.[8] Initially, China was slow to report cases, but later on developed an efficient system of reporting and response, with high political commitment and community involvement.

After the global alert, only 1 major outbreak occurred despite initial exported cases to a total of 32 countries.[8] The outbreak which started in Mid November, 2002, has apparently terminated with the last case occurring on 12th June, 2003 (Fig. 1). As of the 4th of July, a total of 8439 cases of SARS had been reported from these 32 countries. The highest numbers were reported from China Mainland (5327), Hong Kong special administrative area (1755), Taiwan (674), Canada (251), Singapore (206), USA (73) and Vietnam (63). Outside China and the Far East, Canada was the only country with local transmission of the disease. The last probable case was reported from Canada on 27th of June, which had a date of onset of 12th June.[7] In the GCC countries only one probable case was reported from Kuwait on 9th of April, while no probable case was reported in the Kingdom of Saudi Arabia despite active surveillance in all its airports.[7]

SARS has adversely affected the economies of East Asian countries and Canada through effects on tourism, travel, health and trade. Despite certain uncertainties, the World Bank has estimated a direct impact effect of 0.4-0.5% of GDP, with multiplier effects on employment and consumer and investment confidence bringing the estimated cost of SARS in the range of $20-25 billion in East Asian countries, with the maximum cost for China and Hong Kong.[8]

Regarding disease etiology and transmission, a lot of epidemiological work needs to be done. However, we should learn a few lessons from the SARS epidemic ;[4,8]

- Infectious diseases do not respect international borders and an infectious disease in one country is a threat to all
- Health information and travel guidance can contain the international spread of an infectious disease
- Experts in laboratory, epidemiology and patient care can work together, as the world's public health systems have demonstrated their capacity to move quickly into a phase of high alert to achieve disease containment and control
- Emerging infections can be contained with high level government commitment and international cooperation through adoption of old time-honored methods of isolation, contact tracing and follow-up, quarantine and restriction.
- Emerging infectious disease outbreaks often have an unnecessary negative economic impact on tourism, travel and trade
- Infectious disease outbreaks reveal weaknesses in public health infrastructure, which if positively responded to should help in strengthening the system
- Finally and perhaps most importantly, SARS has underscored the importance of immediate and full disclosure of cases of any disease with the potential for international spread.

Today we can not be sure whether SARS will reemerge, but we can be confident that if it does we will be better prepared to handle it more efficiently with minimal damage, provided we do not lower our guards.

*– Author: Dr. Abdul Jamil Choudhry (Field Epidemiology Training Program).*

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# Staphylococcus aureus in Al-Madinah, cont..

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# ملخص باللغة العربية

## دراسة ميدانية عن تقييم التوعية الصوتية المتنقلة التابعة لوزارة الصحة السعودية خلال موسم حج ١٤٢٣هـ .

تقوم وزارة الصحة بالتعاون مع القطاعات الصحية ذات العلاقة بتقديم الرعاية الصحية اللازمة للحجاج، و تشمل كل من الخدمات العلاجية و الوقائية. و قد تم استحداث عدد من الأساليب والطرق لإيصال رسائل التوعية الصحية للحجاج، من ضمنها تكوين عدد من الفرق المتنقلة لإيصال الرسائل التوعوية بعدة لغات في الأماكن التي يتجمع بها الحجاج. وقد بدأ هذا البرنامج عام ١٤٠٦هـ. كان الهدف من هذه الدراسة تقييم آليات التوعية الصحية بواسطة الفرق المتنقلة التابعة لوزارة الصحة خلال حج عام ١٤٢٣هـ للحصول على المعلومات والتوصيات لتحسين هذه الطريقة من طرق التوعية الصحية.

شملت منطقة الدراسة الأماكن التي تعمل بها فرق التوعية الصوتية المتنقلة بمكة وعرفات، و شمل الجمهور المستهدف بهذه الدراسة كلاً من فرق التوعية الصوتية المتنقلة وفئات الحجاج. خلال العشرة الأيام الأولى من شهر ذي الحجة قام فريق البحث بزيارة فرق التوعية الصوتية المتنقلة وتغطية أكبر عدد ممكن من الأماكن والأوقات المختلفة. خلال الزيارة قام الفريق بملاحظة الإجراءات المتبعة من فريق التوعية الصوتية وكذلك تعبئة الاستبيان المعد من الفئات المستهدفة من الحجاج.

توجد أربع سيارات جنباً إلى جنب مع الفرق الأربعة مع عضوين لكل فريق ولكن لأسباب إدارية معينة عمل فريقان فقط خلال لأيام من ٤ الى ٦ وفريق واحد خلال لأيام من ٧ إلى ٩ من ذي الحجة. كان في كل سيارة مسجل وأنوار وامضة، و رسائل صحية على أشرطة كاسيت بـ (١٣) لغة تشمل اللغة العربية والإنجليزية والفرنسية والأردية والفارسية والإندونيسية والمالاوية والتركية والصينية والروسية والسواحيلي والهوسا والأوزبكية . كانت جودة الصوت المذاع ممتازة ولكن لم تكن هناك خرائط لمكة أو عرفات متوفرة لأي من الفريقين. أعضاء الفريق كانوا رجالاً سعوديين، مستوى تعليمهم المرحلة الثانوية عدا واحد جامعي.

تمت مراقبة ١٣ جلسة توعية صحية. كانت كل الجلسات أطول من ساعة واحدة، عقدت ٨ منها (٦١,٥%) صباحاً و٥ (٣٨,٥%) في المساء. وكان اهتمام الحجاج بالرسائل المذاعة جيداً في ٨ (٦١,٩%) جلسات ومقبولاً في ٢ (١٥,٤%) وضعيفاً في ٣ (٢٣,١%). وزعت الفرق نشرات ومنشورات صحية في ٥ (٣٨,٥%) جلسات فقط. وكانت لغة الرسائل المذاعة هي اللغة العربية في (١١) جلسة والإنجليزية في (٦) والفرنسية في (٢) والأردية في (٨) والفارسية في (١٠) والإندونيسية في (٦) والملاوية في (٥) والتركية في (٧) والصينية في (١) والروسية في (٢) والسواحيلية في (١) والهوسا في (١) والأوزبكية في (١). أكثر جنسية موجودة حول موقع الجلسات هي الجنسية المصرية في ٢ (١٥,٤%) والباكستانية ٧ (٥٣,٨%) والأتراك ٢ (١٥,٤%) والإيرانيون ١ (٧,٧%) والهنود ١ (٧,٧%) والجزائريون ١ (٧,٧%) والنيجيريون ١ (٧,٧%). وكان انطباع المراقب عن الجلسات ممتازاً في ٧ (٥٣,٩%) وجيداً في ٣ (٢٣,١%) ومقبولاً في ٢ (١٥,٣%) وضعيفاً في جلسة واحدة (٧,٧%).

جمعت ١٢٥٢ استبانة من الحجاج من بينها ١٠٥٢ (٨٤%) في مكة المكرمة و(٢٠٠) في عرفات . كان متوسط عمر المشاركين ٤٠,٩ سنة (S.D ١٣,٥)، منهم ١١٢٦ (٨٩,٩%) رجالاً. و كانوا من ٥١ بلداً صنفت إلى سبع مجموعات، دول الخليج ٤٣ (٣,٤%)، البلدان العربية الأخرى ٥٢٦ (٤٢%)، شبه القارة الهندية ٣٢٧ (٢٦,١%)، جنوب شرق آسيا ١٠٨ (٨,٦%)، إيران ٦٠ (٤,٨%)، شبه الصحراء الأفريقية ٢٤ (١,٩%)، أوروبا واستراليا والولايات المتحدة الأمريكية ١١٠ (٨,٨%). كانت لغة الحجاج الأولى هي اللغة العربية ٥٧٤ (٤٥,٨%)، الأردية ٢٦٦ (١٧,٣%)، الإندونيسية ١٠٢ (٨,١%)، التركية ٧٦ (٦,١%)، الفارسية ٦٢ (٥%)، الإنجليزية ١٧ (١,٤%)، واللغات الأخرى ١٢٦ (١٠,١%).

صرح ١١٣٦ (٩٠,٧%) من الحجاج المشاركين أنهم يرغبون في الاستماع إلى الرسائل الصحية، و٥٢ (٤,٢%) أرادوا نوعاً ما سماعها و ١٧ (١,٤%) لم يرغبوا في سماعها. والحجاج الذين اعتبروا هذه الطريقة مفيدة نوعاً ما للتوعية الصحية ١٠٧١ (٨٥,٥%) و آخرون اعتبروها مفيدة إلى حد ما ٨٦ (٦,٩%) أوغير مفيدة ٣١ (٢,٥%) .

توصي الدراسة بأن يغطي البرنامج لغات أكثر، و أن تزاد كمية المنشورات الموزعة، مع تدعيم تدريب العاملين في هذا البرنامج و توفير خرائط للمناطق المختلفة في مكة المكرمة وعرفات، توفير الوسائل البصرية إضافة إلى الوسائل السمعية التي تجذب اهتمام الحجاج.

إعداد: د . محسن أحمد إبراهيم، د. عبدالجميل شودري (برنامج الوبائيات الحقلي).

## تقرير عن حالات التسمم الغذائي بين الحجاج الإيرانيين في المدينة المنورة – ذو الحجة ١٤٢٣هـ

في يوم السبت الموافق ١٤٢٣/١٢/٢٨ هـ بدأ عدد من الحجاج الإيرانيين بالتوافد على بعض مستشفيات المدينة المنورة وهم يشتكون من قيء وآلام في البطن بعد تناولهم وجبة الغداء المعدة من قبل متعهد التغذية الخاص بالحملة. تم تكليف برنامج الوبائيات الحقلي بعمل التقصي الوبائي لهذه الحادثة.

عندما وصل فريق التقصي الوبائي صباح يوم ١٤٢٣/١٢/٣٠هـ كان جميع المصابين قد خرجوا من المستشفيات وغادر الكثير منهم المملكة. تمت مراجعة الملفات الصحية للمرضى المصابين في المستشفيات الحكومية وبعثة الحج الإيرانية بهدف حصر عدد الحالات . تم وضع استبيان للحالات يتضمن البيانات الشخصية ووقت تناول الطعام وقائمة الأطعمة التي تناولوها والأعراض ووقت ظهورها وترجمته للغة الفارسية. بلغ عدد المصابين ٤٩٢ حالة (٦٢,٥% ذكور و٣٧,٥% إناث) جميعهم من الجنسية الإيرانية ومتوسط أعمارهم ٥٥ سنة. تناول الحجاج طعامهم بين الساعة الواحدة والواحدة والنصف ظهراً و بدأت الأعراض في الظهور عند الساعة الرابعة عصراً من نفس اليوم، وقد كان متوسط فترة الحضانة للمرض ٤ ساعات. أخذت عينات من المرضى(مسحات شرجية ، عينات قيء وغسيل معدة) و من العاملين بالمطبخ (مسحات أنف و حلق وأظافر وعينات براز) وكذلك من بقايا طعام الغذاء لذلك اليوم. أظهرت النتائج وجود بكتيريا المكورة الذهبية العنقودية ( Staphylococcus aureus).

تمت مقابلة ٤١٦ شخصاً ، منهم ٢٠٨حالة و ٢٠٨حالة ضابطة وتعذر مقابلة بقية المرضى لمغادرتهم المملكة. أما الأعراض فكانت آلام البطن ٧٨,٧%، قيء ٩٥,٢%، إسهال ٢٧,١%، غثيان ٧٥,٤%، حمى ٢,٩%، وصداع ٠,٥%. وقد تبين أن جميع المصابين أكلوا من الأرز والدجاج بنسبة ٩٩,٥%.

تمت معاينة المطبخ الذي تم فيه إعداد الوجبات والتعرف على طريقة إعداد الطعام و حفظه و نقله. و قد لاحظنا عدم وجود مشرف تغذية متخصص، كما أن الطباخين لم يكن لديهم تصاريح صحية سعودية حسبما أفاد صاحب المطبخ. أما عن طريقة إعداد طعام الغداء، فهي كالآتي: يخرج الدجاج من البراد الساعة الرابعة عصراً لاذابة الثلج و يقطع عند الساعة العاشرة مساءاً، و يوضع بعد ذلك في الثلاجة. يبدأ طبخ الأرز والدجاج عند الساعة الواحدة صباحاً. يوضع الطعام عند السادسة صباحاً في حافظات حرارية و يتم نقله من المطبخ الذي يبعد حوالي ٤ كم إلى الفنادق في سيارات مخصصة عند الساعة العاشرة صباحاً ويوزع على رؤساء الحملات وتوصل الحافظات بالكهرباء للحفاظ على درجة الحرارة ٨٠°مئوية. تقدم وجبة الغداء عند الساعة الواحدة بعد الظهر. وكان المطبخ قد أعد وجبة الغداء في ذلك اليوم لـ ٩٦٠٠حاج.

تبين أن التلوث ببكتيريا المكورة الذهبية العنقودية مصدره الأشخاص القائمين على إعداد الطعام و كان الطعام الملوث الأرز والدجاج.

تمت التوصية بمراقبة إعداد الطعام ومراقبة الطباخين و مساعديهم من قبل فني تغذية متخصص، والتشديد على أن يكون جميع من يتعامل مع الأغذية يحمل شهادة صحية سارية المفعول صادرة من الجهات المختصة في المملكة.

إعداد: د. يعقوب سالم المغدري، د. محمد عبد العزيز المزروع، د. عبدالله سرور الجودي (برنامج الوبائيات الحقلي).

# Evaluation of Mobile HE Program of MOH, cont ....

*(Continued from page 11)*

(5%), French 31 (2.5%), English 17 (1.4%) and other languages 126 (10.1%). Among 1205 respondents who answered the question on whether they wanted to hear the HE messages 1136 (90.7%) declared they wanted to hear them, 52 (4.2%) were not interested in hearing them, and 17 (1.4%) did not want to hear them. 669 (53.4%) had heard the HE messages previously, 468 (37.4%) had not, and 56 (4.5%) did not remember. Regarding their opinion on this method of delivering HE 1071 (85.5%) of 1188 respondents thought it was good, 86 (6.9%) somewhat useful, and 31 (2.5%) not useful.

There was no difference between males and females in their willingness to hear the health messages (P=NS). 86.2% of males and 82.5% of females considered the program effective, but the difference between genders was not statistically significant. 86.2% of hajjis who attended the sessions in Makkah considered the method was good compared to 91.5% of those attending them in Arafat (P=NS). The distribution of brochures did not have an effect on hajjis perception of the usefulness of the program (P=NS).

*– Reported by: Dr. Mohsin Ibraheem, Dr. Abdul Jamil Choudhry (Field Epidemiology Training Program)*

**Editorial notes:** Health education through mobile teams is one of the innovative and effective methods in reaching hajjis in their locations. The mobile HE program is useful in delivering messages to hajjis, despite some administrative and resource limitations. To enhance the effectiveness of this program, there should be enough resources allocated, trained teams and to increase the distribution of brochures and leaflets. It was clear that the hajjis liked this method and the majority wanted it continued. More resource allocation to preventive activities, including health education, will be reflected in decreased expenditures in the therapeutic field.[1,2]

It was recommended that the teams working in the mobile HE program should only be used for the objectives of the program and not assigned to other activities. It was also recommended to increase the number of current languages, and the quantity of distributed leaflets. Training of the program staff should be strengthened and maps of different areas of Makkah and Arafat should be provided.

**References:**

1. Cawsey AJ, Webber BL, Jones RB. Natural Language Generation in Health Care. *J Am Med Inform Assoc* 1997; 4 (6): 473–482.
2. Aldana SG, Jacobson BH, Harris CJ, Kelley PL, Stone WJ. Influence of a mobile worksite health promotion program on health care costs. *Am J Prev Med* 1993;9(6):378-83.

## Mark your calendar . . .

### Inside the Kingdom

**September 13-17, 2003: Saudi Board Preparatory Course in Family Medicine**
Location: Riyadh, Saudi Arabia.
Contact: King Fahad National Guard Hospital, Postgraduate Training Center.
Tel: 966(1)2520252 ext. 5446, Fax. 966(1)2520252 ext. 5447.
E-mail: ptc@ngha.me Website: www.ngha.med.sa

### Outside the Kingdom

**June 19, 2003: Royal Society of Tropical Medicine & Hygiene (RSTMH) Annual General Meeting**
Location: London, England, United Kingdom.
Contact: RSTMH, Manson House, 26 Portland Place, London, W1B 1EY, United Kingdom. Phone: 44-2-075-802-127, Fax: 44-2-074-361-389.
E-Mail: mail@rstmh.org

**July 27-30, 2003: Congress of the International Society for STD Research: Stemming the Tide of STDs and HIV**
Location: Ottawa, Ontario, Canada
Contact: Chuck Schouwerwou CMP. Phone: 613-232-4414, Fax: 613-232-0120
E-Mail: information@confersense.ca

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# Selected notifiable diseases by region, Apr – Jun 2002

| | Riyadh | Makkah | Jeddah | Taif | Madinah | Qassim | Eastern | Hasa | Hafr AlBatin | Asir | Bisha | Tabuk | Hail | Al Shamal | Jizan | Najran | Baha | Al Jouf | Goriat | Gonfuda | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measles | 9 | 80 | 23 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 14 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 137 |
| Mumps | 40 | 15 | 45 | 11 | 20 | 31 | 25 | 14 | 46 | 10 | 1 | 7 | 4 | 6 | 7 | 4 | 1 | 0 | 3 | 0 | 290 |
| Rubella | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Varicella | 3545 | 438 | 1919 | 398 | 507 | 2096 | 2442 | 1364 | 1400 | 1170 | 425 | 1260 | 254 | 309 | 137 | 219 | 95 | 92 | 87 | 80 | 18237 |
| Brucellosis | 135 | 11 | 8 | 62 | 25 | 293 | 68 | 10 | 68 | 320 | 75 | 8 | 215 | 31 | 26 | 52 | 16 | 26 | 1 | 12 | 1462 |
| Meningitis mening. | 2 | 2 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 14 |
| Meningitis othr. | 56 | 11 | 23 | 27 | 12 | 14 | 5 | 16 | 9 | 0 | 0 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 180 |
| Diphtheria | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Hepatitis A | 166 | 27 | 38 | 5 | 80 | 134 | 28 | 12 | 66 | 66 | 29 | 55 | 74 | 15 | 13 | 97 | 16 | 20 | 5 | 0 | 946 |
| Hepatitis B | 306 | 104 | 289 | 29 | 62 | 40 | 146 | 6 | 5 | 69 | 11 | 11 | 4 | 7 | 22 | 2 | 23 | 1 | 1 | 3 | 1141 |
| Hepatitis C | 166 | 111 | 257 | 23 | 48 | 20 | 101 | 10 | 3 | 3 | 14 | 12 | 5 | 3 | 3 | 6 | 10 | 0 | 0 | 0 | 795 |
| Hepatitis, unspecified | 79 | 13 | 17 | 0 | 1 | 0 | 0 | 7 | 0 | 67 | 0 | 29 | 8 | 0 | 198 | 1 | 0 | 0 | 0 | 0 | 420 |
| Typhoid & paratyphoid | 16 | 21 | 0 | 0 | 4 | 16 | 10 | 12 | 3 | 18 | 4 | 0 | 18 | 15 | 1 | 3 | 0 | 0 | 0 | 1 | 142 |
| Amoebic dysentery | 18 | 2 | 433 | 27 | 25 | 22 | 24 | 21 | 10 | 94 | 29 | 0 | 7 | 0 | 22 | 17 | 9 | 0 | 3 | 0 | 763 |
| Shigellosis | 34 | 0 | 4 | 0 | 5 | 4 | 17 | 5 | 2 | 0 | 2 | 7 | 0 | 3 | 1 | 32 | 0 | 0 | 0 | 0 | 116 |
| Salmonellosis | 212 | 3 | 42 | 12 | 16 | 7 | 257 | 20 | 14 | 6 | 21 | 42 | 0 | 0 | 1 | 14 | 2 | 0 | 0 | 0 | 669 |
| Syphilis | 2 | 0 | 14 | 0 | 0 | 0 | 3 | 10 | 0 | 1 | 3 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 39 |
| VD, other | 9 | 0 | 10 | 0 | 0 | 0 | 13 | 12 | 0 | 5 | 1 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 58 |

# Comparisons of selected notifiable diseases, Apr–Jun 2001-2002

| DISEASE | Apr-Jun 2002 | Apr-Jun 2001 | Change % | Jan-Jun 2002 | Jan-Dec 2001 | DISEASE | Apr-Jun 2002 | Apr-Jun 2001 | Change % | Jan-Jun 2002 | Jan-Dec 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diphtheria | 3 | 0 | 8 | 6 | 0 | Meningitis, other | 180 | 137 | 31 | 356 | 604 |
| Pertussis | 13 | 15 | -13 | 17 | 35 | Hepatitis A | 946 | 1044 | -9 | 1748 | 3069 |
| Tetanus, neonatal | 5 | 4 | 25 | 12 | 27 | Hepatitis B | 1141 | 1055 | 8 | 2231 | 3864 |
| Tetanus, other | 4 | 1 | 300 | 7 | 8 | Hepatitis C | 795 | 643 | 24 | 1552 | 2608 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | Hepatitis, Unspec. | 420 | 435 | -3 | 665 | 1414 |
| Measles | 137 | 67 | 211 | 237 | 155 | Typhoid/paratyph | 142 | 87 | 63 | 219 | 367 |
| Mumps | 290 | 216 | 34 | 454 | 941 | Amebic dysentery | 763 | 716 | 7 | 1382 | 2772 |
| Rubella | 4 | 11 | -64 | 5 | 16 | Shigellosis | 116 | 164 | -29 | 222 | 589 |
| Varicella | 18237 | 11283 | 62 | 29155 | 32642 | Salmonellosis | 669 | 512 | 31 | 1046 | 1927 |
| Brucellosis | 1462 | 1706 | -14 | 2442 | 4865 | Syphilis | 39 | 43 | -9 | 67 | 136 |
| Meningitis, Men. | 14 | 78 | -82 | 47 | 316 | VD, other | 58 | 120 | -52 | 148 | 395 |

# Diseases of low frequency, Apr – Jun 2002

Yellow fever, Plague, Poliomyelitis, Rabies, Hemolytic Uremic Syndrome: No cases
Puerperal sepsis: One case (Riyadh)
Pertussis: 13 (Riyadh 8, Hail 3, Makkah 1, Eastern 1)
Neonatal Tetanus: 5 (Jeddah 3, Makkah 1, Riyadh 1)
Echinococcosis: 2 cases (Riyadh)
Guillain-Barre syndrome: 21 (Riyadh 8, Assir 3, Eastern 2, Qassim 1, Jeddah 1, Taif 1, Tabuk 1, Najran 1, Bisha 1, Makkah 1, Jouf 1).