

النشرة الوبائية السعودية

تصدرها وزارة الصحة

الوكالة المساعدة للطب الوقائي وبرنامج الوبائيات الحلقى
المجلد السادس - العدد الرابع - أكتوبر - ديسمبر ١٩٩٩م

Indirect Cantharidin Food Poisoning Caused By Eating Wild Birds, Al- Majmaa, 1999.

On 15 of April 1999, eight Saudi men presented to the emergency department of King Khalid Hospital in Al-Majmaa region complaining of haematuria and dysuria after eating hunted wild birds. Those patients were spring camping in the north eastern part of KSA, about 150 km from Al-Majmaa province, this area is a spring time spot for Saudis particularly for hunting activities.

We initiated an epidemiological investigation and a retrospective cohort study was conducted to determine the extent and the source of this outbreak. A case was defined as any person who developed haematuria and dysuria within three hours after eating a meal of wild birds on 15/4/1999.

Patients were interviewed directly and questioned about date, time of eating the meal, any food items eaten before or after it and symptoms. Medical records were reviewed. The hospital staff was interviewed, they were asked if they had seen any similar cases before, and if so what was their diagnosis.

Experienced citizen and hunters were questioned about previously persons who had the same complications. Blood, urine and stool samples were taken to determine the presence of any microorganisms or toxic materials and to check the kidney function, those samples were sent to the toxicology department at Riyadh Medical Complex (RMC). A sample of the birds and insects was sent to the department of Entomology and Ornithology at King Saud University for classification. We visited Tomer city in Al-Qassim Region, that have a history of the similar cases. We reviewed articles and reports written about cantharidin in literature between 1950 and 1999.

We found that: These men went to this remote area to hunt migrating birds, They cooked 20 birds in one pot immediately after killing them, removing the

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Indirect Cantharidin Food Poisoning

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heads and feathers only, keeping the guts as part of typical hunter rituals. After three hours, five of the eight men reported symptoms of dysuria and hematuria; they had eaten meat, rice, and drank a lot of the soup while cooking before adding rice. The other 3 men who ate meat only had no complaint.

Three of the five men who suffered from cystitis were admitted to the hospital for three days. The severity of the symptoms differed from person to person according to the amount of rice or soup consumed those who drank a lot of soup had severe pain and difficulty urinating. Four patients who ate rice and had small amount of soup had less pain. One of the patients noticed insect parts in the gut of birds. There were no cases seen before in that hospital having same symptoms, the kidney function test and blood test were normal for all, the RBC count were detected microscopically in the urine.

These birds were the size of pigeons, and were known to feed on insects and beetles.

We found crushed parts of the blister beetles in the bird stomach after dissection.

The College of science identified the birds, the zoological name is *Gloriol barricade*, the common name is *Barricade*, and the family name is *Glareolinidae*. They also identified the insect and classified as: *Insecta (Hexapoda)* order, *Coleoptera* and family, *Meloidae*.

—Reported by: *Dr. Ali s. Al-Rumikan, Dr. Nasser A. Al-Hamdan (Saudi Arabian Field Epidemiology Training Program)*

Editorial Note: This documented indirect cantharidin food poisoning caused by eating wild birds has happened for the first time in the Kingdom of Saudi Arabia (KSA). Crushed blister beetles yield cantharidin (3:6 epoxy-1:2-dimethylcyclohexane -1:2-dicarboxylic anhydride), an anhydrate of the simple aromatic acid, cantharidic acid, which was first isolated in 1810 (1). The substance is an odorless and colorless crystal, poorly soluble in water, and slightly soluble in

alcohol, acetone, ether, and fats. Cantharidine is an extreme irritant and vesicant long falsely but much smaller amounts can be life-threatening. Cantharidin circulates bound to albumin and is eliminated slowly by the kidneys.

The lethal dose in adults has been estimated to be anywhere from 10 to 80 mg but most commonly is reported to be less than 60mg (2).

The three men who only ate the meat of the bird were free of any symptoms, this can be explained that: This toxin dissolved and mixed with the food with the highest concentration in the soup and less in the rice and does not affect the meat of the birds. The migrating birds ingested insects which secrete a toxic chemical (cantharidine) as a defense mechanism which does not affect the bird's urinary system since some birds have no bladder (Cloaca).

The results of this study showed that: people are not aware of the dangerous health problems caused by unsafe handling of hunted birds. One of the most important prevention measures from cantharidin poisoning is removing the internal gut of birds before preparing them for cooking, because of the presence of insects in the gut and stomach. Hunters of birds should minimize hunting towards end of spring because of the increasing number of poisonous insects at that time. People who use traditional medicine in which these insects are combined should stop using them, because the doses and poison in that combination is not well assembled and may result in renal failure or death.

References:

1. PrestoAJ, Muecke EC: A dose of Spanish fly. *JAMA* 1970; 214:591-592
2. Poletini A, Crippa O, Ravagli A, Saragoni A: A fatal case of poisoning with cantharidin, *Forensic Sci Int* 1992;56:37-43
3. Nickolls LC, Teare D: Poisoning by cantharidin. *BMJ* 1954;2:1384-1388

Figure 1: Wild bird similar to those eaten by the victims .Note the poisonous insect beside the bird



Infection Control Practices In The Private Dental Sector Riyadh, 1999

Currently no standard instruction or protocols for infection control practicing in dental private clinics in Riyadh City. We assume that dentists are practicing the infection control according to their training and knowledge.

Dentists working in private dental clinics in Saudi Arabia come from different countries and faculty with different standards of infection control.

Although there were many studies on infection control practices conducted in King Saud University, Dental College and in dental clinics at Primary Health Care Centers (PHCC) in Riyadh City, we did not find any single study conducted to assess the infection control practice of the dental units in the private sector.

A cross sectional survey confined to private dental units was conducted in March and April 1999. A total sample size amounted to 130 dental units was chosen using the proportional allocation method. Three hospitals, 45 clinics and 39 centers were selected randomly. A self-administered questionnaire was completed. Odd Ratio (OR) and 95% Confidence Interval (95%CI) were used to calculate the likelihood of compliance among the studied dentists.

Of the 206 questionnaire, 203 (98.5%) were completed. The mean age of the responding dentists was 36.8 ± 6.7 years. Dentists working in the private dental clinics were from different nationalities mostly non-Saudi. About two thirds 139(68.5%) of dentists were general practitioners and 64(31.5%) were specialists in different dental subjects.

The experience of around two thirds of the studied dentists ranged from 6 to 15 years with mean of 13.2 ± 6.1 years. More than one half of the studied dentists examined 6 to 10 patients daily. A total of 137 (67.5%) reported that they had a history of a needlestick during treatment of patients. A total of 144 (70.9%) of den-

tists stated that they had been vaccinated against hepatitis B virus. A total of 189 (93.1%) of dentists mentioned that they always took a medical history of each patient before treatment. All the studied dentists stated that they always use gloves for each patient during dental treatment.

More than 90% of dentists always wear a facemask during dental treatment. More than half of those wear facemask change it after each patient. Protective glasses (eye glasses or eye protector or single face shield) were always worn by more than 70% of

Tables 1. The studied variables and compliance among dentists in dental private sector, Riyadh, 1999

Variable	Infection control practices		OR*	95%CI**
	Complaint (%)	Non complaint(%)		
Setting				
CLINIC	10 (14.9)	57 (85.1)	3.23	1.07 - 10
Other	7 (5.1)	129 (94.9)		
Age group				
<40	6 (3.8)	154 (96.3)	0.11	0.03 - 0.36
>40	11 (25.6)	32 (74.4)		
Sex				
Male	13 (11.5)	100 (88.5)	2.79	0.81 - 10.59
Female	4 (4.4)	86 (95.6)		
Nationality				
Arab	11 (6.3)	163 (93.7)	0.26	0.08 - 0.88
Non Arab	6 (20.7)	23 (79.3)		
Degree				
General practice	10 (7.2)	129 (92.8)	0.63	0.21 - 1.95
Specialist	7 (10.9)	57 (89.1)		
Daily load of work				
<=10 patients	9 (6.4)	131 (93.6)	0.47	0.16 - 1.43
>10 patients	8 (12.7)	55 (87.3)		
Source of knowledge				
College	15 (9.4)	144 (90.6)	2.19	0.45 - 14.45
Other	2 (4.2)	42 (95.5)		
Experience (years)				
<=15	6 (4.2)	136 (95.8)	0.2	0.06 - 0.63
>15	11 (18)	50 (82)		

*OR=Odd ratio.

**95%CI=95% confidence interval.

Infection Control Practices In The Private Dental Sector

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dentists. Only 13 (6.4%) of dentists in this study were always using rubber dam during dental treatment. More than 96% of dentists said that the Hepatitis virus and AIDS are the more important infectious diseases in dental clinic. The primary source of infection control information for the studied dentists were collages 78%.

Of the studied dentists, 166 (82%) said that they refused to treat AIDS patients and 68 (33%) to treat hepatitis patients. Only 37.9% of the dentists sterilize handpieces by autoclaving, other 53.7% wipe it with disinfectant. About 44% of dentists disposed the used needle and sharp instruments in a special safety container.

Dentists working in clinics were more than three times likely to be compliant, to infection control practice, than others working in other places, and this was found statistically significant (OR=3.23, CI= 1.07 – 10).

The probability of compliance among dentists of age ≤ 40 years was one tenth of those dentists > 40 years of age, and this difference was also found to be statistically significant (OR=0.11, CI= 0.03 – 0.36).

Arabs were one fourth likely to be compliant than non-Arab, and this found statistically significant (OR=0.26, CI= 0.08 – 0.88). Dentist with ≤ 15 years experience were one fifth likely to be compliant than those with more than 15 years experience, and this found statistically significant (OR=0.2, CI= 0.06 – 0.63). (table 1).

—Reported by: Dr. Abdullah M. Al Rabeah (Field Epidemiology Training Program) and Dr. Ashry G. Mohammed (King Saud University).

Editorial Note: Infection control has become one of the most discussed topics in dentistry. Cross infection control is an integral part of dentistry and many dental health workers no longer question its necessity. The observation that very few respondents

have followed the full requirements of infection control practice developed by ADA and CDC is significant. The compliance with internationally recommended procedures was weak for a number of procedures.

Universal cross infection control procedures are to be implemented when treating each patient. Most hospital in developing countries has no infection control programs due to the lack of awareness of the problem or absence of trained personnel in infection control (1).

Dental care professionals are at an increased risk of cross infection while treating patients. This occupational potential for disease transmission becomes evident initially when one realizes that most human microbial pathogens have been isolated from oral secretion (2).

Oral health care workers are known to be at increased risk of Hepatitis and Human Immunodeficiency Virus (HIV) infection. HBV is the most important infectious occupational hazard in the dental profession (3) and many studies have shown that dental personnel have five to ten fold greater chance of acquiring this infection than the general population.(4)

The most practical method of avoiding Hepatitis B infection for all dental personnel to receive the Hepatitis B vaccine, Vaccination against infectious diseases is essential for both dentists and their assistants. The CDC theorizes that "the limited number of reports of HBV transmission from health care workers to patients in recent years may reflect the adoption of universal precautions and increased use of HBV vaccine (5).

Protection for operator and patient can be gained by the use of both sterile instruments and a sterile mechanical barrier worn on the operator's hand and face (6).

Control of cross infection is the responsibility of the dentist, and all members of the dental team have a duty to ensure that necessary steps are taken to prevent cross infection

This study indicates an overall compliance with the infection control procedures only 17 (8.4%) among dental practitioners in private dental clinic. Continuous follow up for private dental sector is very important, to evaluate and check the facilities for sterilization, disinfection and universal precautions.

The Ministry of Health have to be provide formal infection control courses manual to the dental professionals with mandatory attendance for continued licensing, all staff should carry out internationally recommended infection control procedures.

Specific educational effort should be carried out to increase the information of the oral health care workers on the risks and concerns of treating HIV and Hepatitis patients and to increase the confidence of the practitioner to treat these patients.

References:

1. Sobayo EI. Nursing aspects of infection control in developing countries. *Journal of Hospital Infection* 1991 June; 18 Suppl A: 388-91.
2. Cottone JA, Terezhalmay GT, Molinari JA. Practical infection control in dentistry. Second edition. Baltimore: Williams and Wilkins 1996
3. Martin MV. New concepts in cross infection control in dentistry. *Postgraduate dentist* 1990 June : 8-11.
4. Kane MA, Lettau LA. Transmission of HBV from dental personnel to patients. *JADA* 1985;110: 634-6.
5. Runnells RR. Countering the concerns: how to reinforce dental practice safety. *JADA* 1993;124 Jan: 65-73.
6. Shalhoub SY, Al Bagieh NH. Cross infection in the dental profession, dental instruments sterilization: assessment part –1. *Odonto-Stomatologie Tropicale* 1991(June): 13-4.

Pre-Hajj Health-Related Advice, Makkah, 1999

During Hajj (The Islamic pilgrimage to Makkah) of 1999 (1419 H), the Saudi Arabian Field Epidemiology training Program (FETP) conducted a major survey to study knowledge and practice of Hajjees concerning Hajj related Health problems.

At Mina (a holy place near Makkah) where more than 2 million Hajjees spend at least 3 days, a map was used to divide Mina into four equal zones and the whole area was subdivided into 476 equal areas. Of those 476 equal areas, 66 clusters were randomly selected proportionate to the number of areas in each zone using a two-stage cluster sampling, 20-35 Hajjees per cluster.

A total of 1707 Hajjees from 53 nationalities were interviewed by using a self-administered questionnaire that was translated into 16 languages. Hajjees were grouped according to their nationalities as determined by the ministry of Hajj: Gulf Cooperation Council countries (GCC), Other Arab countries (ARB), South Asia (Indian subcontinent, ISC), Southeast Asia (SEA), Sub-Saharan Africa (SSA), Iran, the Former Soviet Union (FSU), the Americas, Europe and Australia.

Out of 1707 Hajjees, 79% were performing Hajj for the first time and 97% joined organized Hajj groups. Two percent were residents of Saudi Arabia, while 57% wore identifying wristbands (44% of Hajjees were advised to do so). Of the total, 24% used face masks (28% of Hajjees were advised to do so), 46% applied lubricants (34.1% of Hajjees were advised to do so), and 67.2% washed their hands frequently (54.3% of Hajjees were advised to do so). Eighty-seven percent received the acquired vaccination against meningococcal meningitis (84% of Hajjees were advised to do so). Risky behaviors for food poisoning included: bringing food from home country 35% (23.4% of Hajjees were advised to do so), and eating food from street vendors 43% (31% of Hajjees were advised to do so). Heat stroke prevention included 73% who used an umbrella (67% of Hajjees were advised to do so), 90% who drank plenty of water (72% of Hajjees were advised to do so), and 76.3%

Table 1. Percentage of healthy practice by nationality groups, Hajj 1999

Nationality groups	GCC	Other Arab	ISC	SEA	SSA	A&E	Iran	FSU
Healthy practice								
Meningitis vaccine	93%	87%	92%	86%	93%	90%	84%	87%
H.Influenza vaccine	21%	17%	18%	46%	13%	21%	14%	40%
Bringing food	39%	33%	30%	46%	15%	33%	42%	100%
Buying food from vendors	41%	27%	61%	34%	82%	20%	12%	27%
Riding bus between rites	80%	81%	76%	70%	93%	64%	78%	40%
using umbrella	88%	81%	80%	61%	82%	76%	73%	13%
Drinking plenty of fluids	91%	92%	91%	93%	97%	91%	84%	40%
Wearing wristband	64%	66%	46%	61%	24%	49%	73%	0%
Using previously used blade	4%	7%	5%	10%	3%	8%	3%	0%
Applying lubricant	67%	44%	42%	58%	24%	41%	57%	26%
Wearing face mask	14%	16%	23%	45%	12%	17%	17%	20%
Washing hands frequently	54%	74%	64%	65%	85%	70%	50%	60%
Wearing good fitting shoes	23%	19%	19%	34%	20%	21%	15%	0%

who used transportation on moving between the holy places (41.3% of Hajjees were advised to do so).

After completing the Hajj rites, 99.7% had their heads shaved with razor blades and 7% put themselves at risk of bloodborne disease by using a previously-used razor blade. Pamphlets and lectures were very effective sources of advice. There were significant associations between practice and advice regarding healthy behaviors. The percentages of healthy practice among Hajjees according to their group nationality are summarized in Table 1.

—Reported by: Dr. Ahmed M. Al-Shihry, Dr. Abd-Alrahman A. Al-Khan (Saudi Arabian Field Epidemiology Training Program), and Dr. Ashry G. Mohammed (King Saud University).

Editorial note: Hajjees come to Saudi Arabia from more than 140 countries around the world with varying disease profile (1). During Hajj health education is conducted in more than ten languages (2).

The results of this study were consistent with previous reports. The incomplete meningococcal vaccine

(MCV) coverage rate indicates loose application of laws that many Hajjees may be were not asked to show vaccination certificate to verify their vaccination status. It demonstrates the need for continuous effort to maintain high coverage, through the constant release of reminders emphasizing strict adherence to the visa issuance policy for religious policy.

Hajjees brought food with them probably because they wanted to save some money or enjoy their favorite food items during Hajj. The reasons for buying food from street vendors were due to low percentage of advise and difficulty of adequate supervision by local health authorities during busy and crowded Hajj days.

The unhygienic head-shaving practice during Hajj of reusing razor blades is a potential mode of transmission of bloodborne diseases among Hajjees; especially viral infectious diseases such as Hepatitis B and C, and Acquired Immunodeficiency Syndrome (AIDS) (3). The results of this study show that most of Hajjees did not use previously used razors. This probably due to increased awareness toward the hazards of such un-

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٣٦,٨ ± ٦,٧ سنة بخبرة تتراوح بين ٦ إلى ١٥ سنة. تعرض ١٣٧ (٦٨٪) منهم للإصابة خطأً بالإبرة أثناء علاج المرضى. أخذ ١٤٤ (٧١٪) من الأطباء لقاح الكبد الوبائي (ب) بينما حرص ١٨٩ (٩٣٪) منهم على أخذ تاريخ المريض الطبي قبل العلاج. صرح جميع الأطباء بارتدائهم القفازات بينما حرص أكثر من ٩٠٪ على لبس الكمامة. رفض ١٦٦ (٨٢٪) علاج أي مريض بالإيدز ورفض ٦٨ (٣٣٪) علاج أي مريض بفيروس الكبد. يقوم ٣٨٪ فقط من الأطباء بتعقيم مثقاب الأسنان بجهاز التعقيم الحراري بينما يكتفي ٥٤٪ بمسحه بأي مطهر. بينما يقوم ٤٤٪ فقط برمي الإبر المستخدمة والآلات الحادة في علب خاصة آمنة. تبين هذه الدراسة أن فئة قليلة من الأطباء يطبقون وسائل مكافحة العدوى لذا نوصي بتوفير وسائل علمية وفق التوصيات الدولية عن كيفية تطبيقها وتنظيم دورات تدريبية لزيادة وعي الأطباء عن الأمراض المعدية مثل التهاب الكبد والإيدز وكيفية علاج المرضى المصابين مع أخذ التطعيم ضد التهاب الكبد (ب). كما أن متابعة القطاع الصحي الخاص لتقييم وسائل مكافحة العدوى اللازمة مطلب ضروري.

إعداد:

د. عبدالله بن محمد الربيعة

برنامج الوبائيات الحقلية

والاستقصاء وتشريح حوصلة أحد الطيور لوحظ أنها تتغذى على نوع من الخنافس يقال لها ذرنوح وهي تفرز مادة سامة لا تتأثر بالحرارة تسمى الكانثريدين التي تُسبب تآكل سطحي في جدران الكلية والمثانة البولية مما يسبب عسر شديد ودم عند التبول. ذكر أحد العاملين في مستشفى المجمع أن هناك حادثة قبل سنتين كما حصلت حوادث مشابهة لآخرين في مناطق مختلفة من المملكة. مما سبق ننصح المواطنين ومحبي الصيد وأكل لحم الطيور بعدم تناولها إلا بعد تنظيف أحشائها الداخلية لكي لا تتكرر المشاكل الصحية السابقة.

إعداد:

د. علي الرميخان

برنامج الوبائيات الحقلية

مكافحة العدوى في عيادات

الأسنان الخاصة، ١٩٩٩

أصبحت مكافحة العدوى من أهم الأمور المطروحة للنقاش في مجال طب الأسنان اليوم ولقلة الدراسات التي عملت لتقييمها في القطاع الخاص، لذا قمنا بمسح عشوائي لـ ١٣٠ عينة (٣) مستشفيات، ٤٥ عيادة، ٣٩ مركز.

بلغت العينة ٢٠٦ طبيب من جنسيات مختلفة، بلغ متوسط عمرهم

حالات تسمم غذائي بعد تناول
طيور برية، المجمع، ١٩٩٩

في يوم الخميس ١٤١٩/١٢/٢٩ هـ حضر إلى إسعاف مستشفى الملك خالد في المجمع ثلاثة أشخاص يعانون من عسر شديد ودم عند التبول مع آلام في أسفل البطن. أفاد الثلاثة بتناولهم مع خمسة من زملائهم طيوراً برية يُسمونها (بط الماء أو جهادية).

تمت زيارة المستشفى ومقابلة الأطباء والمصابين وإجراء فحوصات مخبرية للمرضى وأخذ عينات من الطيور والحشرة المشتبه بهما للتعرف على تصنيفها والبحث عن حوادث مشابهة. تم إصطياد عشرون طائراً ثم أعدت بإزالة ريشها وطبخت مع أحشائها الداخلية (الحواصل). وقد أفاد أحد المصابين بأنه أثناء تقطيع رؤوس الطيور شاهد جزءاً من حشرة في حوصلة أحدها. بعد ثلاث ساعات من تناول الطعام أصيب خمسة بعسر ودم مع التبول. نُوم ثلاثة منهم وأخران لم يراجعا المستشفى وأكتفيا بأخذ علاجات خاصة. كانت الأعراض شديدة في الشخص الذي شرب من المرق علماً بأن من أكل لحم الطير فقط لم يعاني من شيء. بعد البحث

Pre-Hajj-Health Related Advice

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hygienic head-shaving practice.

Heat exhaustion during Hajj is the leading cause of morbidity among Hajjees and accounts for 70% of all hospital admissions (4). The low percentage of Hajjees who used umbrella may be due to the inclusion of Iranian Hajjees among the sample of the study and these Hajjees have some religious belief that the head should not be covered either directly or indirectly. The low percentage of Hajjees who wore wristbands is probably due to low percentage of advice or that some Hajjees may have believed that it might have contradicted their religious beliefs.

The low percentages of practices regarding wearing comfortable shoes, applying lubricants, and washing hands frequently might be due to the low percentages of those advised and the lack of effective health education being promoted.

There was inadequate advice regarding healthy behaviors among Hajjees, accordingly, high-risk behaviors were widely prevalent. Well-designed health education programs are probably the best tools that could be used to rectify undesirable behaviors among Hajjees (5).

In this study Health education significantly affects the practices of Hajjees. Exposure of Hajjees to intensified sessions in health education regarding different aspects of Hajj-related illness could start even before Hajjees depart from their home countries.

References:

1. Ministry of Health Annual Health Report. 1996 (1416 H);269-79.
2. pilgrims to Makkah. Ministry of Health annual reports 1992-1994. Ministry of health. Saudi Arabia.
3. Centers for Disease Control and Prevention. Update: Universal precautions for prevention of transmission of Human Immunodeficiency Virus, Hepatitis B Virus, and other bloodborne pathogens in health-care setting. MMWR

Mark your calendar . . .

Inside the Kingdom Outside the Kingdom

Oct 2-4, 2000: Diabetes in the Arab World Diabetes-Epidemiology and control, Bahrain. Contact: Gold Mark Public Relations & Marketing, PO Box 2046, Bahrain. Phone: (973)712512/15288, fax (973)715299, E-mail: goldmark@batelco.com.bh.

Oct 3-6, 2000: 3rd Asian Conference on Food Safety and Nutrition, Bahrain. Contact: Gold Mark Public Relations & Marketing, PO Box 2046, Washington, DC, USA. Contact: Ms Lili C. Merrit, International Life Science Institute, 1126 Sixteenth Street, NW, Washington, DC 20036-4810 USA. Phone: (202) 659-0074, Fax: (202) 659-0074, E-mail: branch@ilsi.org.

Oct.19-26, 2000: Innovation in Health Professions Education and Community Orientation, Bahrain. Contact: Dr. Hafiz Al-Shazali. Phone: (973) 239999, fax (973)230730, <http://www.the-network.org/bahrain/registration>

Oct.23-25, 2000: 5th IEA Eastern Mediterranean Regional scientific Meeting, Bahrain. Contact: Conference Sec., PO Box 22118, Bahrain. Phone: (+973)246341, fax (+973)258221, E-mail: faaameen@batelco.com.bh, Web site: <http://zurba.com/conf/iea5>.

Oct.29-Nov.2,2000: 49th Annual Meeting, American Society of Tropical Medicine and Hygiene, Washington, DC, USA. Contact: ASTMH, 60 Revere Dr., Suite 500, Northbrook, IL 60062 USA. Phone: (847) 480-9592, Fax: (847) 480-9282, E-mail: astmh@astmh.org or www.astmh.org. Online submission: <http://abstract.cornetser.com/>.

Nov 6-8, 2000: The International Hospital Federation Pan Regional Conference 2000, Bahrain. PO Box 12, State of Bahrain, Arabian Gulf, fax (0973)252001, E-mail: plntrn@batelco.com.bh.

1988;37: 377-88.

4. Ministry of Health Annual Health Reports. Health services for pilgrims to Makkah 1985-1996. 87;33:559.
5. Ghaznawi HI, Khalil MH. Health hazards and factors in the 1406H Hajj Season. Saudi Med J 1988;9(3):274-82.

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Selected notifiable diseases by region, Oct - Dec 1999

	Riyadh	Makkah	Jeddah	Taif	Madinah	Qassim	Eastern	Hasa	Hafr Al Batin	Asir	Bisha	Tabuk	Hail	Al Shamal	Jizan	Najran	Baha	Al Jouf	Goriat	Gonfuda	Total
Measles	63	5	24	4	22	26	7	3	16	8	17	4	17	3	4	0	3	17	6	1	250
Mumps	33	16	115	8	56	33	32	13	11	26	7	5	6	2	10	11	10	7	5	0	406
Rubella	5	9	5	1	2	9	5	0	1	2	1	1	0	0	4	0	0	0	1	0	46
Varicella	550	59	382	101	120	234	713	416	64	264	110	87	45	26	0	100	25	12	44	7	3359
Brucellosis	133	17	16	66	37	367	38	33	48	277	101	11	232	12	61	97	26	49	1	7	1629
Meningitis, mening.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningitis, other	45	13	16	8	5	12	3	8	2	10	0	0	1	2	12	1	4	0	0	0	142
Hepatitis A	52	37	30	0	54	42	45	23	33	86	4	9	9	2	39	67	3	22	43	1	601
Hepatitis B	128	75	197	0	48	27	189	5	0	31	19	6	17	1	5	9	50	2	0	0	809
Hepatitis C	52	63	200	0	16	11	84	8	2	6	6	2	3	0	2	4	48	0	0	1	508
Hepatitis, unspecified	9	14	31	0	0	0	2	8	0	45	0	17	29	0	52	7	0	0	0	0	214
Typhoid & paratyphoid	17	6	4	3	1	0	16	9	1	5	1	8	9	0	2	0	0	0	0	0	82
Amoebic dysentery	14	5	517	10	1	25	21	9	0	250	16	11	0	0	11	46	0	0	2	0	938
Shigellosis	5	0	14	0	7	2	24	1	7	0	1	21	0	0	0	35	0	0	0	0	117
Salmonellosis	134	4	68	40	6	2	365	27	25	11	0	120	0	0	0	27	3	0	0	0	832
Syphilis	20	4	18	0	0	0	17	5	0	0	1	0	0	0	10	0	0	0	1	0	76
VD, other	5	2	53	0	0	0	19	43	1	6	3	0	0	0	2	0	0	0	2	0	136

Comparisons of selected notifiable diseases, Oct- Dec 1998-1999

	Jul-sep 1999	Jul-sep 1998	Change %	Jan-sep 1999	Jan-Dec 1998		Jul-sep 1999	Jul-sep 1998	Change %	Jan-Sep 1999	Jan-Dec 1998
Diphtheria	0	0	0	0	0	Meningitis, other	142	148	-4	443	629
Pertussis	4	32	-88	10	85	Hepatitis A	601	756	-21	1867	3350
Tetanus, neonatal	3	1	200	6	10	Hepatitis B	809	866	-7	2277	3411
Tetanus, other	6	1	500	6	11	Hepatitis C	508	447	14	1253	1420
Poliomyelitis	0	0	0	0	1	Hepatitis, unspec.	214	237	-10	717	1253
Measles	250	1522	-84	2653	5519	Typhoid/paratyph.	82	87	-6	295	280
Mumps	406	732	-45	1804	3762	Amoebic dysentery	938	907	3	2729	3821
Rubella	46	81	-43	201	361	Shigellosis	117	87	34	412	628
Varicella	3359	3705	-9	18891	22473	Salmonellosis	832	738	13	1732	2383
Brucellosis	2244	2039	10	5896	7468	Syphilis	76	66	15	160	243
Meningitis, mening.	0	4	-100	21	42	VD, other	136	100	36	331	401

Diseases of low frequency, Oct- Dec 1999

Yellow fever, plague, diphtheria, poliomyelitis, viral encephalitis, rabies, haemolytic ureamic syndrome, , transverse mylitis:

No cases

Pertussis: 4 (Makkah 2, Jeddah 1, Asir 1)

Tetanus neonatal: 3 (Makkah 2, Jazan 1, Gonfuda 1)

Tetanus, other: 6 (Makkah 2, Jeddah 2, Jazan 1, Gonfuda 1)

Guillain-Barre syndrome: 12 (Riyadh 4, Goriat 1, Jeddah 3, Goriat 1)

Echinococcosis: 3 (Riyadh 1, H. Batin 2)

puerpural sepsis: 1(Riyadh 1)