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النشرة الوبائية السعودية
تصدرها وزارة الصحة
الوكالة المساعدة للطب الوقائي وبرنامج الوبائيات الحقلي
المجلد الثاني عشر – العدد الأول – يناير – مارس ٢٠٠٥

Serotypes of influenza during Hajj season, 1424 (2004).

Each year around 1.2 million Muslims from all over the world assemble for at least two weeks in Makkah to perform Hajj, the fifth pillars of Islam. They are joined by about 0.7 million hajjis from Saudi Arabia and 0.3 million local residents of Makkah. In such crowded situations potential for transmission of respiratory infections like influenza is quite high. But as the information about its serotypes circulating in Hajj is lacking, no evidence based recommendations can be made for the contents of influenza vaccine to be used in Hajj.

A cross sectional study was conducted to identify circulating serotypes of influenza virus and collect other baseline epidemiological information to help in development of routine influenza surveillance system in Saudi Arabia.

The study was conducted at both Makkah and Mina health care facilities during Hajj season 1424 H. Health care facilities were selected on the basis of the high number of Acute Respiratory Tract infection cases presenting there during previous hajj season, and also proximity to the Haram in case of Makkah health facilities. In Makkah, it included three hospitals: Ajyad Hospital, King Abdul Aziz Hospital and King Faisal Hospital; and in Mina it included Mina General Hospital, Mina Al-Wadi Hospital and Primary Health Care centre number 13.

For the purpose of this study a suspected case of influenza was defined as any patient, aged one year or above, presenting with fever of at least 38°C, started within 72 hours of presentation; along with history of cough and/or sore throat.

During the study period 5th to 14th Dhul Hijja, 1424 H (27/01/2004 to 05/02/2004), all patients fulfilling the criteria of case definition of suspected influenza at the participating health facilities were identified in screening clinics established at OPD and ER of participating facilities and invited to participate in the study, irrespective of their nationality, residential or hajj status. All participants were interviewed using a structured questionnaire and a throat swab was taken for viral isolation. The swabs were later analyzed at King Abdul Aziz University virology laboratory in Jeddah.

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A total of 415 suspected influenza cases were identified and interviewed in participating health facilities during the study period, among whom 44.6% were recruited from Ajyad hospital.

The ages of the suspected cases ranged between 1-86 years (mean 39.3, SD ± 15.65). The majority of participating suspected cases were Hajjis 360 (86.7%); and 135 (32.5%) suspected cases were domestic i.e. residents of Saudi Arabia whether Saudi nationals or not (Table 1). The suspected cases belonged to 36 different nationalities. Only 26.4% had been in the hajj area for 3 days or less (maximum usual incubation period of influenza) before onset of illness, while 73.6% had been staying in the hajj area for more than 3 days.

The clinical features reported by the suspected cases were fever (100%), sore throat (80.2%), cough (79.5%), headache (77.1%), runny nose (58.1%), myalgia (56.4%), expectoration (26.3%) and blocked nose (21.1%). Only 2.2% of the suspected influenza cases were vaccinated against influenza and 16.1% had used antibiotics before being recruited in the study.

Among suspected influenza cases, 55 cases (13.3%) were confirmed by the laboratory by isolation of the Influenza virus: 27.3% had influenza type A viruses, and 72.7% had influenza type B viruses. The most predominant serotype among the confirmed influenza isolates was Flu B Sichuan which accounted for 70.9%, followed by Flu A not typed (14.6%), Flu A H1N1 (7.3%), Flu A H3N2 (5.5%) and Flu B Hong Kong (1.8%). Influenza B Sichuan serotype was the predominant strain from all the countries, except Ethiopia and Djibouti where all the three isolates were Influenza A not typed.

The ages of the confirmed cases ranged from 1-70 years (mean 37.13, SD ± 14.96). Among them, 46 cases (83.6%) were Hajjis, while 18 cases (32.7%) were domestic (Table 1). Clinical features of confirmed influenza cases were fever (100%), cough (85.5%), headache (81.8%), sore throat (76.4%), myalgia (67.3%), runny nose (58.2%), expectoration (25.5%) and blocked nose (16.4%). In none of the 8 suspected influenza cases who were vaccinated against influenza was the virus isolated. Among confirmed cases, 16.4% had used antibiotics, 78.2% had not, and 5.4% did not know.

– Reported by: Dr. Essa AlSaleh, Dr. Mohammed Al Mazroua, Dr. Abdul Jamil Choudhry, Dr. Adel Turkistani, Dr. Nasser Al Hamdan (Field Epidemiology Training Program), Dr. Essam Azhar (King AbdulAziz University), Dr. Diaa Olyan (WHO).

Editorial notes: Influenza is an acute, usually self-limiting, febrile, contagious respiratory illness caused by influenza viruses. The attack rates during outbreaks may be as high as 10-40% over a 5 to 6 week period. Influenza continues to be an important cause of morbidity and mortality in hospitalized and long-term care patients, particularly among the elderly and those with chronic underlying cardiac and pulmonary diseases.[1] It spreads very quickly among the population especially in crowded circumstances. Influenza A and B are the two types of influenza viruses that cause epidemic human disease. Influenza A viruses are further categorized into subtypes on the basis of two surface antigens: hemagglutinin (H) and neuraminidase (N). Since 1977, influenza A (H1N1) viruses, influenza A (H3N2) viruses, and influenza B viruses have been in global circulation. In 2001, influenza A (H1N2) viruses probably emerged after genetic reassortment between human A (H3N2) and A (H1N1) viruses began circulating widely.[2]

Influenza activity in Saudi Arabia begins in September and peaks in November, which may contribute to the occurrence of influenza during coming Hajj seasons and at the same time help in having a higher yield in throat swabs.[3] The type of influenza

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Table 1: Differences between suspected and confirmed influenza cases; Hajj, 1424H

	Suspected influenza cases			Confirmed influenza cases		
Age						
Range	1 - 86 yeas			1 - 70 yeas		
Mean	39.3 ± 15.65 yrs			37.13 ± 14.96 yrs		
Type	**No.**	**%**	**95% CI**	**No.**	**%**	**95% CI**
Hajji	360	86.7%	83 - 89.8	46	83.6%	71.2 - 92.2
Non-Hajji	55	13.3%	10.2 - 17	9	16.4%	7.8 - 28.8
Country						
Domestic	135	32.5%	28.1 - 37.3	18	32.7%	20.7 - 46.7
International	280	67.5%	62.7 - 71.9	37	67.3%	53.3 - 79.3

Hepatitis "A" outbreak at Al-Berk, Asir region, 2004.

On 08/03/1425H (28/4/2004), the General Health Directorate of Asir region reported to the Communicable Disease Department, Ministry of Health, that an unusually large number of hepatitis A (HAV) cases were being diagnosed from different villages of Alberk area, in Alberk Hospital and primary health care centers. Alberk area is located in Asir region, south of Saudi Arabia, about 200 kilometers away from Abha, with total population of 15000. An investigative team from the Field Epidemiology training program (FETP) visited Asir region to investigate the outbreak. However, by the time the team had arrived to Asir region, a mass vaccination campaign with IG had already been carried out.

The team conducted a case-control study to identify the risk factors associated with the occurrence of the disease. A case was defined as any person living in the catchments areas (Alberk governorate) and presented to any of the health facilities with jaundice, and/or diagnosed as suffering from hepatitis A clinically and/or confirmed by laboratory tests, during the period of 30/11/1424 (1st January 2004) to 30/3/1425 (19 May 2004). A control was defined as any person who lived in the same area who never had jaundice symptoms (did not suffer from hepatitis A clinically) before 30/03/1425 (19 May 2004). One control was selected for each case. The controls were divided into two major groups according to school attendance. For those cases attending school, one classmate control was selected giving priority to those who sat to the right, left, front, then back of the case respectively. For cases not attending school, controls were selected from the nearest neighbor of the case, and if not available the next neighbor.

We were able to identify and interview 110 cases and 110 controls. All were Saudis. The ages of the cases ranged from 2 to 35 years with mean (±SD) of 9.1 (±6.5) years. There were 54 males (49.1%), and 56 females (50.9%). The symptoms reported by the cases were yellowish discoloration of eyes (jaundice) (99.1%), dark urine (92.7%), abdominal pain (87.3%), anorexia (87.3%), fever (77.3%), vomiting (74%), malaise (68.2%), nausea (59.1%), headache (58.2%), arthralgia (42.7%), diarrhea (33.6%), and itching (15.5%).

Among the 110 cases, 74 (67.3%) reported having contact with a known case of jaundice. Contact with a known case of HAV was identified to have a three times risk to acquire infection (OR= 3.2, 95% CI=1.8 - 5.56) and this was statistically significant. The risk of acquiring HAV was much higher when the cases lived in the same household (OR=11.70, 95% CI= 4.47 - 31.85), which was also statistically significant. There was no difference between those who attended school and those who did not, regarding acquiring HAV (OR=0.74, 95%CI=0.42-1.31), and this was not statistically significant. Washing hands with water and soap before eating and after going to toilet gave protection against acquiring HAV (OR= 0.20, 95% CI= 0.05 - 0.74; and OR= 0.26, 95% CI= 0.1 - 0.68 respectively), and both were statistically significant.

The majority of controls (90%) had received the vaccine, and 82 of the cases (74.5%) had also been vaccinated but had received the vaccine after acquiring the infection, therefore those controls who received the vaccine were protected against infection (OR= 0.39, 95% CI = 0.14 - 0.73).

There was no community water supply to all the 19 villages where the cases were reported. People depended on tank vehicle for their water supply, brought from either desalinated water pump or from wells There was no general sewage system in these villages; each house had its own sewage system like: bayara or dug-well, and the type of sewage disposal were not a risk factor for acquiring the infection (OR= 0.99, 95% CI = 0.7- 1.41) for those who used bayara, and (OR= 1.07, 95% CI = 0.65- 1.65) for those who used well-hole.

Leaking sewage outside houses was reported by 14 cases (12.7%) compared to 7 controls (6.4%), giving a clue that this may play a role in acquiring infection (OR = 2.14, 95% CI = 0.83 - 5.54).

– Reported by: Dr. Essa AlSaleh, Dr. Adel Turkistani, Dr. Randa Nooh (Field Epidemiology Training Program).

Editorial note: Hepatitis A, one of the oldest diseases known to mankind, is a self-limited disease which results in fulminant hepatitis and death in a proportion of patients. It is a significant cause of morbidity and socio-economic losses in many parts of world.[1] HAV has a worldwide distribution and like other enteric infectious diseases, it is classically an infection of childhood and is related to conditions of sanitation and hygiene.[2]

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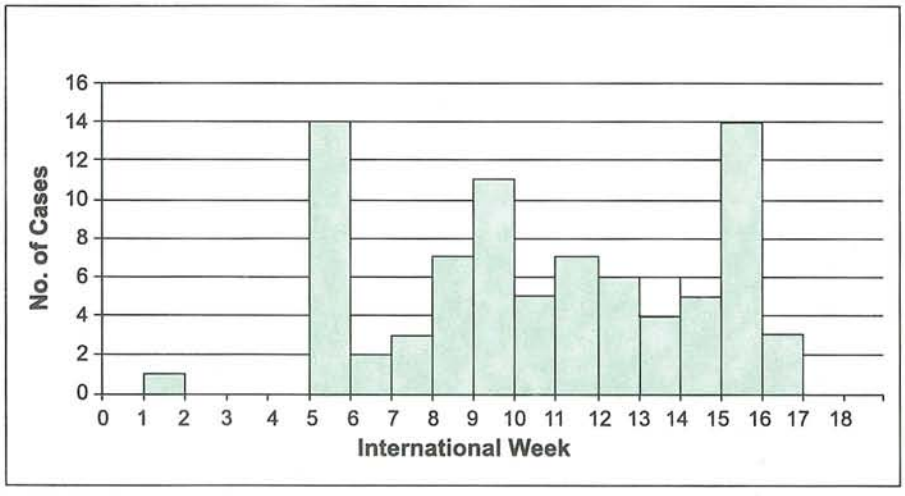
Figure 1: Date of onset for 110 Hepatitis A cases, Alberk, Asir Region, 2004.



Water Contamination in Al-Farhaneih, Hail 1424 H.

On 1/5/1424 (1/7/2003) the General Health directorate of Hail reported to the Communicable disease department, Ministry of Health, an unusually large number of citizens from AlFarhaneih village suffering from vomiting, fever, abdominal pain, diarrhea and headache. A team from FETP traveled to Hail to investigate this outbreak. AlFarhaneih village is a rural community about 70 km west of Hail city, which is 700 km north of Riyadh. It contains several farms with a population of 600. There is no general water net and no general sewage net. There is one primary health care center that serves AlFarhaneih village and the villages close by. The investigative team visited AlFarhaneih primary health care center and reviewed the records of the cases. They also visited the main source of water supplied to AlFarhaneih in the last two months located in AlMurma village, 35 km west. The team reviewed the results of laboratory tests of some cases and the results of drinking water analysis.

It was decided to conduct a case control study to identify the source and impact of water contamination. A case was defined as any person who complained of fever, headache, vomiting, abdominal pain or diarrhea from 25/6-12/7, 2003, in AlFarhaneih village. A control was defined as any person who lived in AlFarhaneih village and was free of disease at the time of the outbreak. One control was selected for each case living in the same dwelling or neighbor. A questionnaire was designed inquiring on demographic information, symptoms, history of hospital admission, sources of water to the houses, presence of water tanks, water storage and any change in water properties color, taste or odor.

From June 25 to July 12, 2003, there were 108 cases; giving an attack rate of 18 per 100 people in AlFarhaneih village. The epidemic curve is shown in figure 1. Symptoms included fever 52 (81.3%), headache 48 (75%), vomiting 26 (40.6%), abdominal pain 20 (31.3%), and diarrhea 11 (17.2%). The age distribution of the cases ranged from 6 months to 65 years (mean 16.2, SD ±16.14). The highest age group among cases was 5-9 years (21.6%). A large number of cases were males (62.5%). Five cases (4.6%) were admitted into hospital, all were cured, there were no deaths nor complications. The geographical distribution of the cases was homogenous with the distribution of the citizens in the village, and the people had not been exposed to a common food or chemical poisoning or contact with infected patients or had visited an endemic area.

In the absence of any tap water, the community of AlFarhaneih relied totally on the water tank for both drinking and non drinking purposes. Laboratory analysis of water from houses demonstrated *Escherichia coli* in the specimens of four houses of cases.

There were no cases in houses that did not have a ground water tank or had a tank above the ground surface exposed to the sunlight. Having a ground water tank was statistically significantly associated with development of disease (Odds Ratio (OR) 4.07, 95% Confidence Interval (CI) 1.84-9.03).

Those people who received their water supply from AlMurma well were at higher risk of developing disease than those who depended on water from other sources (OR 1.5, 95% CI 0.09-24.9). It was found that Al Murma well did not have permission from the Ministry of water to be used as a drinking water source. A water sample from the well found it contaminated by E. coli, Salmonella and Pseudomonas.

– Reported by : Dr. Majed A. Al-Mohaimeed, Dr. Mohammed A. Al-Mazroa (Field Epidemiology Training Program).

Editorial notes: Contamination of ground water is a serious environmental problem throughout the world. According to the guidelines of the World Health Organization, a European commission directive states that drinking water should not contain pathogenic microorganisms in a quantity or at a concentration able to adversely affect human health.[1]

One child in the world dies about every eight seconds of water related diseases. In USA, contaminated water has been responsible for 35,000 cases of Salmonella infections, 150,000 cases of infection with pathogenic E. coli, and 320,000 cases of Campylobacter infections.[1]

Waterborne disease is caused by ingestion of water contaminated by bacteria, viruses, parasites or others.

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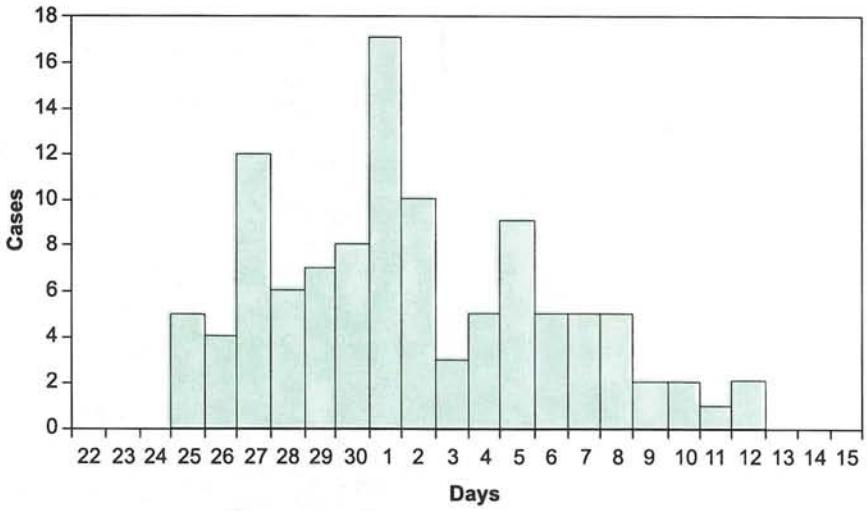
Figure 1. Epidemic curve of water borne disease in AlFurhaneih, Hail. (from 22 June to 15 July 2003)



Hepatitis "A" outbreak at Al-Berk, Asir, 2004, cont...

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It is acquired primarily by the fecal-oral route by either person to person contact or ingestion of contaminated food or water. It may also be acquired from faecally contaminated food or water and from wastewater- contaminated drills or water supplies.[1,3] Hepatitis A occurs sporadically and epidemically worldwide, with a tendency to cyclic recurrences.[3] Several countries around the world have reported cyclic communitywide outbreaks of hepatitis A every 5 to 10 years, such as the United States, where from 1980 through 2001, an average of 25,000 cases have been reported to the Centers for Disease Control and Prevention (CDC) each year.

Hepatitis A is endemic in many parts of the world, including Saudi Arabia,[4,5] where it is a major cause of morbidity. In 1997, the overall seroprevalence of HAV was determined in the Riyadh area to be 30.2% (range 12.5% - 48.6%) among children aged 6 months to 15 years. The seroprevalence was found to be higher (39%) among rural children than urban (28%) or Bedouin (26%) children.[6]

General measures for hepatitis A prevention include hygienic and sanitary measures. In household settings, good personal hygiene, including good hand-washing practices and attention to proper food preparation are important in reducing the risk of transmission. At the community level, provision of safe drinking water and proper disposal of sanitary waste will reduce the incidence of hepatitis A. Passive immunization with immunoglobulin is the first choice in prevention and control of HAV epidemics and as post exposure prophylaxis.[7]

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Water Contamination in Al-Farhaneih, Hail 1424 H, cont...

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However, an etiologic agent was determined in only 50% of all waterborne outbreaks. In outbreaks of ground water systems, an agent was identified in 38%, while in surface water systems, an agent was identified in 62% of outbreaks. These agents have included: Salmonella, Shigella, Campylobacter, Yersinia, Giardiasis, Cryptosporidiosis, Rotavirus, or E. coli.[2] The major reasons behind waterborne disease outbreaks include: untreated or inadequately disinfected groundwater, untreated or inadequate disinfection of filtered surface water, distribution or storage deficiencies, untreated ground water, inadequate disinfection of ground water and cross-contamination.[2]

Escherichia coli is gram-negative rod-shaped bacteria. It causes infection of variable severity characterized by diarrhea, vomiting and abdominal cramps. It is transmitted by drinking unchlorinated or unboiled water.[3]

The major finding in this study is the association between having ground water tanks and development of disease. Also, the people of Alfurhaneih did not employ any protective measures to sterilize the water, such as chlorination or boiling.

A previous study carried out in Dareen, a semi rural area in the Eastern province of Saudi Arabia, the gastrointestinal problem was attributed to consumption of highly saline and very hard water, and infrequent cleaning of water storage vessels.[4] Another study in Afif region revealed a similar association between ground water tanks and the development of water borne disease.[5]

The main source of drinking water of the village for the two months prior to the outbreak was AlMurma well, which was contaminated by the waste of animals that had settled nearby. We concluded that this outbreak occurred due to using contaminated water brought from an unauthorized well. The main contaminating organism was thought to be E. coli.

It was recommended that Municipalities should monitor tankers to be filled from authorized wells, health education to improve personal practices including disinfection of water by chlorination, and providing piped water supply accompanied with establishment of proper sewage system.

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ملخص باللغة العربية

دراسة أنماط فيروس الانفلونزا بين الحجاج لعام ١٤٢٤هـ.

تعتبر الانفلونزا مرض شديد العدوى وسريع الانتشار وهي تصيب الجهاز التنفسي ويسببها فيروسات الانفلونزا " أ" و " ب" بأنماطها المختلفة. اهتمام العالم بهذا المرض أخذ في الازدياد نظرا لما يسببه من أضرار صحية واقتصادية والعمل على إيجاد لقاح واقي من المرض.
وحيث أن موسم الحج ملتقى لمختلف جنسيات العالم بما فيها البلدان الموبوءة بهذا المرض ونظرا للازدحام الذي يحدث فيه مما يوجد البيئة المناسبة لانتشار هذا المرض بين الحجاج وخاصة أن موسم الحج أصبح خلال السنوات الأخيرة يقع في فصل الشتاء الذي يعتبر موسم الإصابة بالانفلونزا في العالم.

هدفت الدراسة الى معرفة أنماط فيروس الانفلونزا بين الحجاج. كان مكان الدراسة العاصمة المقدسة حيث شملت كل من: مستشفى أجياد، مستشفى الملك عبد العزيز، ومستشفى الملك فيصل، ومنى: مستشفى منى العام، مستشفى منى الوادي ومركز صحي رقم ١٣. امتدت فترة الدراسة من ٥ الى ١٤/ ١٢/ ١٤٢٤هـ.

تم تدريب فريق من الأطباء والممرضات على أخذ المسحة الحلقية للمريض وملء الاستبيان، وتم التعميم على جميع الأطباء في العيادات الخارجية بالمستشفيات المختارة لتحويل المرضى الذين تنطبق عليهم تعريف حالة الانفلونزا (أي شخص يعاني من ارتفاع في درجة الحرارة ٣٨ م أو أكثر مصحوبا بكحة أو التهاب بالحلق) إلى عيادة خاصة أعدت لهذا الغرض.

تم خلال فترة الدراسة جمع ٤١٥ عينة، أرسلت إلى مختبر الفيروسات بجامعة الملك عبد العزيز بجدة. نتائج التحليل المخبري أوضحت أن ٥٥ عينة بها فيروسات انفلونزا "أ" أو "ب". شكلت الانفلونزا "أ" حوالي ٢٧،٣% من مجموع العينات، بينما شكلت الانفلونزا "ب" ٧٢،٧%. بالنسبة الى أنماط فيروسات الانفلونزا فقد شكلت الانفلونزا "ب" (B Sichuan) ٧٠،٩%، و (B Hong Kong) ١،٨%، بينما شكلت الانفلونزا "أ" (H1N1) ٧،٣%، (H3N2) ٥،٥%، و(Not typed) ١٤،٦%.

أوضحت الدراسة أهمية تأسيس برنامج وطني لمسح و مكافحة الانفلونزا، مع الاهتمام الخاص بموسم الحج. كما انه يجب حث الحجاج على التطعيم بلقاح الانفلونزا لما له من فائدة، خاصة لدى المسنين.

اعداد: د. عيسى الصالح، د. محمد المزروع، د. عبدالجميل شودري، د. عادل تركستاني، د. ناصر الحمدان (برنامج الوبائيات الحقلي)، د. عصام أزهر (جامعة الملك عبدالعزيز)، د. ضياء عليان (منظمة الصحة العالمية).

تسمم المياه بقرية الفرحانية بمنطقة حائل، ١٤٢٤ هـ.

في يوم ١٤٢٤/٥/١ هـ الموافق ٢٠٠٣/٧/١ م، رفعت المديرية العامة للصحة بحائل تقريراً إلى قسم الأمراض السارية بوزارة الصحة متضمنة وجود عدد غير عادي من مواطني قرية الفرحانية يشكون من القيء و الحمى و آلام البطن والإسهال والصداع.

قام فريق من برنامج الوبائيات الحقلي بالسفر إلى منطقة حائل في ١٤٢٤/٥/١١ هـ ، حيث قاموا بزيارة مديرية الشئون الصحية بالمنطقة و مركز الرعاية الأولية بقرية الفرحانية ومراجعة سجلات الحالات الطبية. كما قام الفريق بزيارة المصدر الرئيسي لمياه قرية الفرحانية خلال الشهرين الأخيرين الذي يقع في قرية المرمى التي تبعد بحوالي ٣٥ كيلومتر من الفرحانية. راجع الفريق نتائج الفحوصات المخبرية لبعض الحالات راجع أيضا نتائج تحاليل مياه الشرب.

أجريت دراسة ضابطة بهدف تحديد مجال انتشار الفاشية، إكتشاف مصادر انتشارها، و تقديم توصيات لمنع انتشار مثل هذه الفاشية مستقبلاً.

خلال الفترة من ٢٥ يونيه حتى ١٢ يوليو ٢٠٠٣ م، بلغ عدد المرضى المبلغ عنهم ١٠٨ حالات ، ٥٦,٥% منهم من الذكور ، جميعها في قرية الفرحانية. متوسط عمر الحالات ١٦,٢ سنة.

كانت الأعراض الرئيسية للحالات حمى مصحوبة بصداع.

في غياب شبكة مياه عامة يعتمد أهل قرية الفرحانية على وايتات لنقل مياه الشرب وغير الشرب. أظهر تحليل مياه منازل المرضى وجود E.Coli في ٤ عينات. كما أظهرت الأدلة أن المنازل التي تحتوي على خزانات تحت الأرض كانت أكثر عرضة للإصابة بالمرض وكان معدل OR ٤,٠٧ و ٩٥% فترة ثقة ١,٨٤ – ٩,٠٣. علاوة على وجود علاقة بين الحالات و استخدام المياه من البئر في قرية المرمىOR= ١,٥ و ٩٥% فترة ثقة ٠,٠٩ إلى ٢٤,٨٩ . بفحص عينة المياه من بئر المرمى تبين أنها ملوثة بـ E.coli ، السلمونلا و بكتريا السيدومونوس، كما ولم تصرح وزارة المياه باستخدام هذا البئر كمصدر لمياه الشرب.

و بذلك فتعود انتشار الفاشية في قرية الفرحانية إلى استخدام وشرب مياه ملوثه من بئر غير مصرح به للشرب.

تم التوصية على ان تقوم البلدية أو مصلحة المياه بمراقبة سيارات المياه وتوجيه أصحابها بأخذ المياه من الآبار المصرح بها فقط، اضافة الى تكثيف التثقيف الصحي لتحسين الممارسة الشخصية بما فيه تعقيم المياه بالغلي أو استخدام الكلور.

اعداد د. ماجد المحيميد، د. محمد المزروع (برنامج الوبائيات الحقلي).

Serotypes of influenza during Hajj season, 1424 H (2004), cont...

(Continued from page 2)

virus in circulation during hajj is important with its potential for outbreak in such crowded conditions. However, except for the study conducted by Kholeidi et al in 1421 H hajj season, no information was available about the influenza viral etiology during the hajj, and even in that study viral typing was done on the basis of serological examination of patient's blood.[4]

This study found five serotypes of influenza viruses, the most predominant type being Flu B Sichuan, which are the most common serotypes in Asian countries according to CDC and WHO reports, from where most of these patients arrived. [2,5]

Although in this type of study, where information about the denominators is not distinctly available, it is difficult to comment about the etiological relationship of disease pattern with the exposure factors; however, absence of any confirmed cases among known vaccinated patients indicate the protective effect of the vaccine. The assumption is quite reasonable as the serotypes identified in this study are already part of vaccine used in 2004-2005 influenza vaccine.[2]

This study indicates the need of establishment of a National program on influenza surveillance and control in the Kingdom, with special emphasis on Hajj. Its findings also recommend the encouragement of pilgrims to take influenza vaccine especially among the elderly.

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5. Hilleman MR. Realities and enigmas of human viral influenza: pathogenesis, epidemiology and control. Vaccine. 2002; 20: 3068-3087.

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Inside the Kingdom

September 20-21, 2005: Recent Advances in Infection Control Symposium.
Location: Riyadh, Saudi Arabia.
Contact: Academic & Training Affairs, King Fahad Medical City. P.O.Box 59046 Riyadh 11252. Tel: 00966-1-4656666 ext 4123. Fax 00966-1-4656666 ext 4292. E-mail: CME@kfmc.med.sa

Outside the Kingdom

August 21-25, 2005: The XVII IEA World Congress of Epidemiology (WCE 2005): Epidemiology & Equity in Health: Methodological Challenges & Strategies for the 21st century.
Location: Imperial Queen's Park Hotel, Bangkok, Thailand.
Contact: Professor Chitr Sitthi-amorn <email: schitr@chula.ac.th> Institute of Health Research/ The College of Public Health, Chulalongkorn University 4th Floor Institute Building #2 Phyathai Rd. Pathumwan Bangkok 10330 Thailand. Tel: 662-218-8141 Fax: 662-253-2395.
Website: www.wce2005.org , www.ieaweb.org

30 September - 4 October 2005: 4th Annual Scientific Conference of the International Society for the Prevention of Tobacco Induced Diseases.
Location: Athens, Greece.
Contact: Tel: +1-502-852-8905, Fax: +1-502-852-4052
Email: dascot07@louisville.edu

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Selected notifiable diseases by region, Jan — Mar 2005

	Riyadh	Makkah	Jeddah	Madinah	Taif	Qassim	Eastern	Hasa	Hafr Al-Batin	Asir	Bisha	Tabuk	Hail	Al-Shamal	Jizan	Najran	Baha	Al-Jouf	Goriat	Gonfuda	Total
Measles	10	19	24	4	0	0	0	0	0	0	0	7	0	1	8	2	0	0	0	0	75
Mumps	4	4	2	1	0	8	8	7	1	0	0	0	0	1	3	4	0	0	0	0	43
Rubella	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Varicella	2146	666	1637	626	367	973	1209	1196	322	1592	258	767	147	186	421	395	73	452	50	63	13546
Brucellosis	91	3	6	21	35	130	55	12	55	278	55	24	136	27	12	20	8	11	6	7	992
Meningitis mening.	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	1	0	7
Meningitis other	34	2	27	11	10	2	0	5	1	2	1	6	1	0	2	0	0	3	0	0	107
Hepatitis B	177	19	279	87	14	66	173	10	0	47	9	80	10	14	29	4	0	45	1	19	1083
Hepatitis C	142	9	197	49	7	24	62	14	0	13	6	34	11	0	9	3	0	13	0	1	594
Hepatitis unspecified	40	30	10	3	8	0	1	2	0	33	0	47	5	0	309	0	0	0	0	0	488
Hepatitis A	84	51	26	70	26	35	20	12	5	57	12	39	25	36	34	74	4	16	11	6	643
Typhoid & paratyphoi	1	3	0	12	0	0	2	7	0	7	5	1	15	3	10	0	0	2	0	0	68
Amoebic dysentery	9	0	537	3	6	4	20	17	7	53	34	0	10	0	6	2	0	0	0	0	708
Shigellosis	12	0	4	2	0	0	10	2	1	0	0	4	0	0	4	6	0	5	0	1	51
Salmonelosis	62	1	15	7	0	2	103	17	5	6	1	4	2	0	4	11	0	3	0	2	245
Syphilis	2	0	2	0	5	1	5	0	0	0	1	2	0	0	0	0	0	0	0	0	18
VD other	312	5	133	319	3	32	364	1163	0	0	62	39	169	6	20	475	0	90	2	0	3194

Comparisons of selected notifiable diseases, Jan - Mar 2004-2005

DISEASE	Jan-Mar 2005	Jan-Mar 2004	Change %	Jan-Mar 2005	Jan-Dec 2004	DISEASE	Jan-Mar 2005	Jan-Mar 2004	Change %	Jan-Mar 2005	Jan-Dec 2004
Diphtheria	4	0	400	4	0	Meningitis mening.	7	3	133	7	10
Pertussis	5	8	-38	5	64	Meningitis other	107	167	-36	107	508
Tetanus,neonat	6	17	-65	6	37	Hepatitis B	1083	1179	-8	1083	4594
Tetanus,other	3	3	0	3	11	Hepatitis C	594	757	-22	594	2981
Poliomyelitis	0	0	0	0	2	Hepatitis unspecified	488	330	48	488	1260
Measles	75	529	-86	75	1775	Hepatitis A	643	710	-9	643	2999
Mumps	43	198	-78	43	349	Typhoid & paratyphoid	68	105	-35	68	365
Rubella	1	5	-80	1	17	Amoebic dysentery	708	628	13	708	2696
Varicella	13546	19186	-29	13546	67451	Shigellosis	51	123	-59	51	310
Brucellosis	992	1257	-21	992	5169	Salmonellosis	245	358	-32	245	1829

Diseases of low frequency, Jan – Mar 2005

Yellow fever, Plaque, Poliomyelitis, Rabies, Haemolytic Uraemic Syndrome, Ecchinoccocosis: No Cases
Pertussis: 5 Cases (Qassim 2, Makkah 1, Asir 1, Najran 1)
Neonatal Tetanus: 6 Cases (Makkah)
Guillian Barre Syndrome : 36 Cases (Riyadh 12, Jeddah 9, Jazan 3, Makka 2, Tabuk 2, Baha 2, Madinah 1, Hasa 1, Asir 1, Hail 1, Northern 1, Jouf 1)