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نشرة الوبائية السعودية ile It

نشرة فصلية متخصصة في مجال الوبائيات تصدر عن وزارة الصحة ● الوكالة المساعدة للطب الوقائي ● برنامج الوبائيات الحقلي المجلد السابع عشر • العدد الثاني • أبريل / يونيو ٢٠١٠ **Epidemiology Training Program** 

# **Foodborne Salmonella outbreak** in a college, Riyadh, Saudi Arabia, October 2009 (1430 H).

On Tuesday 27th October 2009 at 11 a.m., many students from a college in Riyadh presented to the college polyclinic with symptoms of gastroenteritis, including diarrhoea, abdominal pain, nausea, vomiting and fever. Out of them, 77 were referred to different hospitals in Riyadh where they were admitted, received the proper management and discharged without any complications. Following this incident, concerned authorities at the college restricted the served meals to yoghurt and white cooked rice for the following two days. Cases continued to appear over the following three days to reach 200 reported cases. A line listing of all affected students was made. The directorate of health affairs in Riyadh received notifications from the corresponding hospitals and the polyclinic of the college. In response to these notifications, a team from Field Epidemiology Training Program was assigned to investigate this outbreak on Saturday 31st October 2009.

The team visited the concerned hospitals, where all affected students had already been discharged. Their medical records were reviewed for demographic data, clinical presentation, lab investigations, and duration of hospital stay. The team visited the college polyclinic and some of the affected students were interviewed about their symptoms and signs, what they ate in the last 2 days and what they think about the implicated food item(s). This was done in order to confirm the diagnosis and decide on the case definition. They all gave history of eating food from the restaurant of the college, which is the only place for dining in the college.

A case control study was conducted to identify the implicated food item(s). A case was defined as any student who ate from the college restaurant between 26/10/2009 to 29/10/2009 and developed diarrheal illness within three days of food consumption. A control was defined as any student who ate from the same restaurant at the same time period and did not develop diarrheal illness. Self administered questionnaires were distributed to study subjects to collect information about food items, symptoms, and admission history.

A total of 140 cases and 140 controls were enrolled in the study. Out of 140 cases, 95.7% presented with diarrhea. Fever was reported by 87.9%, abdominal pain by 87.1%, nausea by 51% and vomiting by 36.4%. Among food and

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# Foodborne Salmonella outbreak in a college, Riyadh, Saudi Arabia, October 2009 (1430 H), cont....

No leftover food was available for

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drink items served on the three meals of Monday 26th of October and Tuesday's breakfast on 27th of October, there was a strong association between illness and eating Umm Ali Sweet, which was served on Monday's dinner (OR= 10.5, with 95% C.I 6.0 - 18.2).

The first case had onset of symptoms at 07:00 am on Tuesday 27th October 2009, while the last case had onset at 10:00 am on Thursday 29th October. Considering the dinner served on Monday 26th October 2009 as the incriminating meal, the mean incubation period was 19.95 hours (range 10-61 hours). The epidemic curve was typical of a point source outbreak (Figure 1).

On further enquiry, the implicated Umm Ali sweet was prepared from "puff pastry", milk powder and sugar. Puff pastry dough was prepared at the college restaurant at 9:00 from raw eggs, water and flour. Then it was cut into slices and placed in the oven for a few minutes. After that, these slices were kept at room temperature, till around 4:00 pm, when they were mixed with milk and sugar and placed again in the oven for another few minutes. Then it was kept at room temperature for 2 hours to be served at 7:00 pm, while the students started arriving for dinner at 9:00 p.m. The maximum temperature on Monday 26th October 2009 was 33°C and minimum 25°C, providing favorable conditions for microorganism growth.

The college restaurant was a double storey building. The first floor comprised the dining hall and the ground floor was used for food preparation (Kitchen), food storage and cleaning of cooking utensils. The dining hall had a total area of approximately 1200 and consisted of 200 tables that m2 can accommodate 1600 students at one single time. All students took their three meals at this dining hall at fixed times. On inspection of the dining hall, it was clean, well organized, ventilated and illuminated. Food preparation was done in different sections; one for preparation of salads, another for desert and the third for hot meals. Each section had its own employees and appliances.

laboratory examination. There was no history of recent diarrhea or isolation of Salmonella from the food handlers before the outbreak, and all of them possessed a valid health certificate. Cultures taken from 104 food handlers grew Salmonella enteritidis group D among 3 (2.9%) food handlers who had developed gastrointestinal symptoms. In addition, five (2.5%) students who agreed to give stool or rectal swab specimens were also positive for Salmonella enteritidis group D. The same organism was also grown from a swab taken from one food utensil.

- Prepared by: Dr. Adel S. Al-Ghamdi, Dr. Mahmoud H. Al-Sekaiti. Dr. Mohammad Al-Mazroa (Field Epidemiology Training Program).

Editorial notes: Foodborne diseases are a group of illnesses resulting from consumption of contaminated foods or beverages. Most of these diseases are infections, caused by a variety of bacteria, viruses, and parasites. Other Foodborne diseases are poisonings, caused by harmful toxins or chemicals that have contaminated the food.1

In the present outbreak, dinner on 26th October 2009 was the common meal responsible for the outbreak and the restaurant-made "Umm Ali" sweet, prepared from infected eggs was the incriminating food item on the basis of the highest statistically significant odds ratio. Moreover, unsafe storage of

"Umm Ali" sweet at room temperature and the long interval between its preparation and the time dinner was served made it possible for bacterial multiplication. Unfortunately, there was no direct evidence since no samples of food served at the dinner were available for microbiological analysis.

The clinical and epidemiological features give important clues to etiology. Nausea and vomiting occurring within 1-6 hours of food ingestion point to either Staphylococcus aureus or Bacillus cereus. However, fever is a relatively uncommon symptoms with these two microorganisms.2 In this outbreak, the median incubation period was 27 hours and 87.9% of the cases had fever; making Staphylococcal and Bacillus cereus food poisoning unlikely.

Abdominal cramps and diarrhoea within 8-16 hours can occur in Clostridium perfringens food poisoning. However, although nausea can occur, vomiting and fever are uncommon.3 In the present outbreak, 36.4% had vomiting and the majority had fever (87.9%), therefore Cl. perfringens food poisoning was also excluded.

Fever, abdominal cramps, and diarrhoea within 6 to 48 hours, as in the present outbreak, are usually due to Salmonella, Shigella, and Campylobacter jejuni.4 Shigella can be excluded, as there was no blood in the stools in the majority of the cases. Campylobacter jejuni is characterized by vomiting in (Continued on page 15)



Figure 1: Epidemic Curve of Foodborne Outbreak in a college, Riyadh, Saudi Arabia, October 2009.

# Foodborne Salmonella Outbreak in Khaiber City, Saudi Arabia, 2009.

By Tuesday 21/7/1430 H (14/7/2009), health authorities of Khaiber city had noticed an increase of gastroenteritis cases that were reported in the previous day by Khaiber governmental hospital and primary care health center. All patients complained of gastroenteritis symptoms including diarrhea, fever, vomiting, nausea, and abdominal pain. Cases continue to be reported over the next 2 days, reaching 55. All patients had a recent history of eating at one restaurant in Khaiber city.

A team from the FETP was assigned to investigate this outbreak. They met with the director of Khaiber preventive medicine office and his team. After that, they visited the restaurant which had been closed by the authorities since 11 am of Tuesday 21/7/1430 H. It appeared clean and in good hygienic condition. The team also visited Khaiber hospital, where most of the patients' neords and investigation results. A list of patients' names and telephone numbers and the active surveillance done by the hospital was obtained.

A case-control study was conducted to identify severity, extent, source, and the cause of this outbreak. A case was defined as any person who had eaten from the restaurant between 13 to 14/7/2009, before 11:00 am (the day and time that the authorities closed the restaurant), and who had developed diarrhea and one or more of the following symptoms (vomiting, abdominal pain and fever) within three days of food consumption. The diarrheal illness was defined as three or more loose motions per 24 hours. A control was defined as any person who had eaten from the same restaurant between 13/7/2009 to 14/7/2009 before 11:00 am and had not developed diarrheal illness during the period of the outbreak.

We interviewed a few cases who were still at the hospital. We were also able to visit a few of the patients who had been discharged from the hospital at their homes and collect data by face to face interview. Data of the rest of the patients was collected by telephone. One control was chosen for each patient from his/ her relative or friends. Rectal, under nail, throat and nasal swabs were taken from all the restaurant workers and cultured for pathogens. Also specimens from food items from the restaurant were taken at the 1rd day of the start of the outbreak and sent to the reference laboratory of the primary health care in Al-Madinah Al-Monawarrah city for investigation. Patient stool or rectal swab for cultures was done.

A total of 100 people were interviewed (50 cases and 50 controls). Among the cases, 23 were males (46%) and 27 were females (54%). Among the control, 34 were males (68%) and 16 were females (32%). Age of cases ranged between 3 - 60 years (mean 21.20). All the identified cases were Saudi nationals. All cases had developed gastroenteritis manifested by diarrhea (100%), fever (94%), (62%) abdominal pain, 6 (12%) nausea, and 44 (88%) vomiting. The time elapsed between food consumption and appearance of symptoms ranged between 3.5 to 25 hours (mean of 9.6 hours). The epidemic curve is suggestive of a common source outbreak. (Figure 1).

Inquiry from the restaurant workers about the way of food storage, handling, preparation, and serving of food, they admitted that the mayonnaise was prepared locally at the restaurant by blending fresh egg yolks, oil and garlic. During food serving the mayonnaise was distributed in small containers to be sold with meals. The unused mayonnaise was kept in the refrigerator to be used the following day. Some of the mayonnaise was kept in a container outside the refrigerator to be served with shawarma sandwich. Eggs are stored at room temperature.

Cultures taken from the restaurant food handlers showed growth of Staphylococcus aureus in throat swabs of 5; two of whom showed the same organism in the nail swab. Cultures taken from the restaurant food items showed growth of Salmonella enteritidis group D1 in the mayonnaise salad and muttabal. Furthermore, the same serotype of Salmonella was isolated from 6 patients.

Using simple univariate analysis of the food items consumed by cases and controls during the outbreak period, the result showed a strong association with eating both mayonnaise salad (odds ratio (OR)=18.2, 95% C.I=6.70-49.55) and muttabal (OR=16.62, 95% C.I= 6.13-45.03). Other food items showed no association.

## - Reported by: Dr. Hasan M. Alotaibi, Dr. Mohammed A. AlMazroa (Field Epidemiology Training Program).

**Editorial notes:** Salmonella enteritidis is a microorganism that is pathogenic for both animals and people. It is generally transmitted to humans through consumption of food derived from infected animals or contaminated by feces of an infected animal or person. Food items responsible for Salmonellosis

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Figure 1: Epidemic curve of foodborne Salmonella outbreak, Khaibar city, Saudi Arabia 2009.

# Hepatitis "A" Outbreak in Alhysoniah Village, Eqlat Sqoor, AlQassiem Region, 2010.

During the period 5-24/2/1431 H (20 January to 8 February, 2010), 41 cases of Hepatitis A were reported form Alhysoniah village in Eqlat-Sqoor, Al-Qassiem Region. All the cases had appeared in Alhysoniah village, and 27 (90%) were attending Alhysoniah school at different grades, elementary, intermediate and secondary.

A case control study was conducted to describe this outbreak, identify possible risk factors associated with its occurrence and provide recommendations for disease control and prevention. A case was defined as any person living in Alhysoniah village and presenting at one of the health institutes with jaundice and/ or confirmed by laboratory tests during the period between 5 to 24/2/1431. A control was defined as any person living in the same area who never had jaundice symptoms (had not suffered from hepatitis A clinically) before 24/2/1431 H. One control was selected for each case. Data was collected by face to face interviews and documented on a structured data collection instrument. Odds ratios and 95% confidence intervals were calculated to investigate associated risk factors.

We were able to identify and interview 30 cases that fulfilled the criteria of the case definition. All cases were Saudis. There were 25 (83.3%) males and 5 (16.7%) females (Female: Male ratio 1:4.99). Their ages ranged from 3-19 years, with a mean ( $\pm$  SD) age of 13.6 ( $\pm$  4.1) years.

All the cases reported yellowish discoloration of the eyes (Jaundice), dark urine (96.7%), Fever (93.3%), gastrointestinal symptoms such as nausea, vomiting, abdominal pain and diarrhea (83.3%), general weakness (83.3%), headache (46.7%) and itching (4.6%).

The epidemic curve showed the occurrence of a single peak, suggesting a point source epidemic (Figure 1).

Risk factors identified were attending Alhysoniah School (Odds Ratio (OR) = 6.88, 95% CI=1.71 - 27.75), drinking water from the school cooler (OR = 3.60, 95% CI=1.22 - 10.64) and contact with a jaundice case (OR=3.50, 95% CI=1.2-10.19). Samples obtained from the water tank in Alhysoniah school was positive for Escherichia coli.

Only 8 (26.7%) cases were tested for IgM and all showed positive results.

Regarding vaccination status, none of the cases or controls had ever received vaccine against HAV.

- Reported by: Dr. Suhair S. AlSaleh, Dr. Mohammed A. AlMazroa (Field Epidemiology Training Program).

**Editorial Notes:** Hepatitis A is endemic in many parts of the world, including Saudi Arabia, where viral hepatitis A is a major cause of morbidity.<sup>1,2</sup> In a study investigating the age related prevalence of antibody to HAV (Anti-HAV) among 4375 Saudi children, 1-10 years of age, a prevalence rate of 52% was reported.<sup>3</sup> This relatively high prevalence rate among Saudi children is met by an overall prevalence rate of >90% among Saudi adults,<sup>4</sup> confirming the high endemicity pattern of HAV in the Kingdom.

The clinical presentation of the majority of cases in this outbreak points to hepatitis A infection, with typical textbook symptoms.<sup>5</sup>

In this study, an environmental factor (water supply) played a major role in disease causation. It is common behavior among children to drink directly from home taps and school coolers. Drinking water from the school coolers increased the risk of acquiring HAV infection almost three and half times (OR = 3.60, 95% CI = 1.22-10.64), which represents the most likely possible common source of this epidemic.

shallow wells which represent the only source of water supply to Alhysoniah village had been infected, the number of cases would have been much more widespread among family members who were not attending school.

All people in Alhysoniah village received free government water which is brought to the households by tank vehicles. Drinking water from tap at the houses or in streets was not associated with acquiring the disease. This proves that the main water supply to the village is unlikely to be the cause of this epidemic.

Close contact between students in school environment, particularly in the male section, low socioeconomic status, increased risk of infection among those in contact with a jaundiced patient, all are supportive of person-to-person transmission.

This outbreak is different from an outbreak of hepatitis A that occurred in 2001 at a rural community in Jazan, in which person-to person transmission was implicated. This outbreak is example of HAV outbreak at community level which is the water tank supply in Alhysoniah school.

General measure for hepatitis A prevention include hygienic and sanitary measures to prevent transmission of any enteric illness. In household settings, good personal hygiene, hand-washing

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It needs to be stated that, if the

Figure 1: Epidemic curve of Hepatitis "A" Cases, Alhysoniah Village, Eqlat Sqoor, Al-Qassiem Region, 2010.



# Hepatitis "A" Outbreak in Alhysoniah Village, cont...

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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. Good hand washing practices and personal hygiene among food handlers and school cleaners are vital.

Immunoglobulin (IG) mass immunization applied by the preventive department of AlQassiem health Directorate was efficient in controlling the outbreak. This was able to reduce the incidence of HAV cases but could not stop new cases from appearing. Many studies consider passive immunization with immunoglobulin as the first choice in prevention and control of HAV epidemics and as a post exposure prophylaxis.6

Although IG is effective to control and prevent HAV infection, it is not recommended in areas where HAV infection is endemic. The effectiveness of the immunization lasts only for a few months, so it is required to be readministered every three to six months. Many studies agree on not using IG immunization for several reasons including the cost, pain at the injection site, need for re-administration and risks of blood derived infection.7

The best methods of control and prevention in endemic areas depend on elimination of the source of infection and identification of the mode of transmission. Community and school health education for hygienic practices may be able to cease and prevent HAV transmission in this area.

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# Foodborne Salmonella Outbreak in Khaiber City, cont....

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infection are mainly meat, poultry, eggs, milk and water. Clinical features of Salmonellosis appear within 6–72 hours of infection, and are characterized by fever, abdominal cramps, diarrhea, nausea, and sometimes vomiting. In children and very old people, dehydration may become severe and life-threatening.1 It is more common in the summer, since high temperatures, in the presence of unhygienic practices, provide an opportunity for the microbes to multiply and produce toxins.<sup>1</sup>

In this outbreak, isolation of Salmonella from 6 patients and 2 food items (mayonnaise salad and muttabal) providesufficientevidencethatSalmonella enteritidis was the causative organism. However, their absence from samples taken from food handlers raises the question about the source of Salmonella infection, whether it came from raw materials used in food preparation, or the food handlers themselves.

Mayonnaise salad was locally prepared at the restaurant, using eggs as the main ingredient. It is well known that normal appearing eggs can contain Salmonella bacterium and can cause illness if eaten raw or undercooked. The CDC estimates that 75% of all Salmonella outbreaks are due to raw or inadequately cooked shell eggs.<sup>2</sup>

In Saudi Arabia, many food borne outbreaks have been associated with restaurant prepared mayonnaise.<sup>3-5</sup>

During data analysis two food items were identified that may be labeled as the source of the outbreak, the mayonnaise salad and the muttabal. However, since eggs are not used in muttabal preparation, this points to the role of food handlers in dessimination of infection, whether by acting as a reservoir of the bacteria, or being responsible for cross-contamination between the two food items.

It was recommended to stop the practice of local mayonnaise preparation at the restaurant and to use packed commercial pasteurized mayonnaise to avoid such outbreaks. The restaurant supplies of raw food items should be stored in refrigerators immediately after purchasing.

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# ملخص باللغة العربية

## تقرير حول فاشية تسمم غذائي في كلية بالرياض ١٤٣٠هـ (٢٠٠٩ م).

في يوم الاثنين //١١/ معاده تم إبلاغ مديرية الشئون الصحية بمنطقة الرياض عن وقوع حادثة تسمم غذائي لعدد ٢٠٠ طالب من طلاب كلية بالرياض اثر تناولهم وجبات غذائية من مركز إعداد الطعام بالكلية، و تم إسعاف ونقل المصابين إلى عدة مستشفيات بالرياض. تم تكليف فريق من برنامج الوبائيات الحقلي لعمل دراسة وبائية عن أسباب وقوع الحادثة. هدفت الدراسة إلى التأكد من حادثة التسمم الغذائي ومعرفة حجم انتشارها، مصدر التسمم الغذائي، و وضع التوصيات الوقائية اللناسبة لتلافي حدوث متلها مستقبلاً

تمت مراجعة ملفات المصابين في المستشفيات و البحث عن حالات إصابة جديدة بهدف حصر عدد الحالات، و مراجعة الفحوصات المأخوذة من المصابين. كما تم التقصى عن مكان تحضير الطعام ونظافته، وطريقة إعداده وحفظه و تقديمه، و مقابلة العاملين بالمطعم. تم عمل دراسة ضابطة وذلك بملء إستبيان يتضمن البيانات الشخصية والأعراض ووقت ظهورها وقائمة الطعام للوجبات الأربع قبل ظهور الأعراض. شملت الدراسة ١٤٠ حالة مصابة و ١٤٠ حالة ضابطة. تم تعريف الحالة المصابة بأي طالب من الكلية تناول إحدى الوجبات الأربع يومى الاثنين والثلاثاء ٧-٨ / ١١ / ١٤٣٠هـ وظهرت عليه أحد الأعراض التالية: إسهال أو حرارة مع ألم في البطن أو قيء، و تعريف الحالة الضابطة بأى طالب من الكلية قد تناول إحدى الوجبات الأربع ولم تظهر عليه أيا من هذه الأعراض. بلغ عدد المصابين ٢٠٠ حالة جميعهم من طلاب الكلية وتراوحت أعمارهم بين ٢٢-٢٩ سنة، جميعهم من الذكور السعوديين. تم تنويم

سنة، جميعهم من الذكور استعوديين. لم تلويم ٧٧ حالة في عدد من المستشفيات جميعها خرجت من المستشفى خلال ٢٤ – ٧٢ ساعة وهم بحالة جيدة وباقي المصابين تم علاجهم داخل الكلية.

بين المنحنى الوبائي أن الأعراض ظهرت على معظم الحالات ما بين الساعة ٢:٠ صباحا الى الساعة ٢:٠ مساء يوم الثلاثاء ٨/ ١١ / ١٤٣٠ هـ، وتراوحت فترة حضانة المرض مابين ١٠ – ٢٦ ساعة. الأعراض كانت إسهال (٥٩٠٪)، آلم إرتفاع في درجة الحرارة (٥٩٠٪)، آلم في البطن (٥٩٠٪)، غثيان (٥٠٪)، قيء (٤٦.٤٪)، وإسهال مدمم (٢٩.٪).

أظهرت نتائج المسحات التي أخذت من العاملين وجود بكتيريا السالمونيلا نوع (د) بين ٣ عمال والذين ظهرت عليهم أعراض إسهال وحرارة. كما أظهرت نتائج مسحات الأواني وأماكن إعداد الطعام عن وجود بكتيريا السالمونيلا نوع (د) في عينة واحدة. أظهرت نتائج العينات

التي أخذت من المصابين إيجابية • عينات للسالمونيلا من نوع (د).

تحليل بيانات الدراسة الضابطة أوضح ان معدل التأرجح (OR) لحلوى أم علي والتي كانت ضمن قائمة طعام العشاء يوم الإثنين= ٢،٥ ممدن قائمة طعام العشاء يوم الإثنين= ٢،٥ الحلوى تحتوي على حليب ومكسرات وجوز في الصباح الباكر من الدقيق والماء والبيض، في تقديم هذه الحلوى في وجبة العشاء الساعة الذي يعتبر من أحد مصادر السالمونيلا. وقد تم تقديم هذه الحلوى في وجبة العشاء الساعة الغرفة فترة طويلة قبل تقديمها مماجعلها بيئة جيدة لتكاثر الميكروب. ويرجح أن تكون هذه الحامي م السرير، في منه شريا الفاش.

الحلوى هي السبب في حدوث هذه الفاشية . من خلال الأعراض التي ظهرت على غالبية المصابين والصورة الإكلينيكية وفترة الحضانة الفرضحة بالمنحنى الوبائي فإن هذا التسمم الغذائي يرجح أن يكون بسبب ميكروب السالمونيلا. و يؤكد ذلك نتيجة المسحات على ضرورة إستخدام البيض المستر للتأكد من عدم إحتوائه على ميكروب السالمونيلا، حفظ الطعام بطريقة سليمة، الإهتمام بتوعية لإعداد الطعام والإهتمام بالنظافة الشخصية، والإهتمام الدوري من قبل أخصائي التغذية والراقب الصحي بنظافة الأجهزة المستخدمة في الطبخ والتسخين.

إعداد: د. عادل الغامدي، د. محمود السكيتي، د. محمد المزروع (برنامج الوبائيات الحقلي).

# فاشية تسمم غذائي ببكتريا السالمونيلا في مطعم، خيبر ١٤٣٠ هـ.

في صباح يوم الثلاثاء ١٤٣٠/٧/٢١ هـ لاحظت إدارة الشؤن الصحية بخيبر ازدياد عدد الحالات المصابة بنزلات معوية والمبلغة من مستشفى خيبر ومركز صحي خيبر على إثر تناولهم وجبات غذائية من أحد المطاعم بخيبر. تم تكليف فريق من برنامج الوبائيات الحقلي لعمل دراسة استقصائية لمعرفة سبب ومصدر هذه الفاشية ومدى انتشارها واقتراح التوصيات لمنع تكرار مثلها مستقبلا.

قام فريق الدراسة بزيارة موقع المطعم حيث كان مقفل من قبل البلدية ويبدو نظيفا ظاهريا، وتمت مناقشة العاملين حول طريقة إعداد بعض الوجبات، وأفادوا بأن سلطة المايونيز يتم تحضيرها بالمطعم. ومن ثم قام الفريق بزيارة بعض المرضى المنومين في المستشفى والاطلاع على سجلاتهم وعلى نتائج الفحوصات المخبرية، ثم عمل دراسة ضابطة لمعرفة نوع

الطعام المسبب للفاشية. عرفت الحالة المصابة بأي شخص أكل من المطعم المشتبه فيه يوم الإثنين ٢٠/٧/٢٢ هـ الى ما قبل الساعة وعانى من إسهال مع إحدى الاعراض التالية: ألم في البطن، قيئ، إرتفاع في درجة الحرارة، خلال ثلاثة أيام من تناول الطعام. تم تعريف الحالة الضابطة بأي فرد تناول من نفس المطعم خلال نفس الفترة ولم يعان من هذه الأعراض. تم أخد عينة مكونة من ٥٠ حالة مصابة و ٥٠ حالة ضابطة، و سؤالهم عن أصناف الطعام الذي تناولوه وتاريخ تناولها، بالإضافة إلى تواريخ ونوع الأعراض.

كان ٢٣ (٢3.٪) من بين المصابين من الذكور و٢٧ (٥٤.٪) من الاناث، تراوحت أعمارهم ما بين ٣ – ٦٠ سنة (متوسط ٢١،٢٠) ، وكان جميعهم من السعوديين. الأعراض كانت الإسهال (٢٠٠٪)، إرتفاع في درجة الحرارة (٤٣٪)، قئ(٨٨.٪) ، ألم بالبطن (٢٢.٪)، و الأعراض كان بين ٥،٣ و ٢٥ ساعة (متوسط مات (٢٠٠). الوقت بين تناول الطعام وظهور مات راد. و تم عزل جرثومة المالونيلا من عينات براز ٦ من المصابين. كما أظهرت الفحوصات التي أجريت على عينات الماليونيز والمتبل.

بينت الدراسة الضابطة أن سلطة المايونيز والمتبل قد يكونا السببان الرئيسيان لهذه الفاشية، حيث كانت نسبة الأرجحية لسلطة ٦،٧٠ )-المايونيز ١٨،٢ (معامل ثقة ٥٩،٥٩ -ولسلطة المتبل ١٦،٦٢ (معامل ثقة = ٥،٠٣٢).

فاشيات التسمم الغذائي ببكتريا السالمونيلا اكثر شيوعا في فصل الصيف، حيث أن إرتفاع درجة الحرارة يوفر فرصة جيدة لتكاثر الميكروبات خاصة في وجود ممارسات غير صحية. لوحظ أن سلطة المايونيز يتم إعدادها في المطعم ويدخل البيض في مكوناتها، ومن العروف أن البيض قد يحتوي على السالمونيلا وقد ينقل العدوى بها إذا أكل نيئا أو غير مطبوخ جيدا. أما بالنسبة لسلطة المتبل و التي لايدخل البيض في مكوناتها، فقد يكون عمال المطعم مصدراً العدوى أو أن العدوى وصلت لسلطة المتبل عن طريق أوانى التحضير.

تمت التوصية على منّع إعداد المايونيز بالمطاعم واستخدام المايونيز المعلب و حفظ المواد الغذائية في البرادات بعد الشراء مباشرة. كما يجب عمل دورات تثقيفية للعمال بالمطاعم و التنسيق مع الجهات الحكومية الاخرى لتكثيف الرقابة على المطاعم مع رفع مستوى وعي العامة بشأن فاشيات السالمونيلا خاصة في فصل الصيف. Foodborne Salmonella outbreak in a college, Riyadh, Saudi Arabia, October 2009 (1430 H), cont....

#### (Continued from page 11)

only 15-25% of the cases.5 Its incubation period is also longer, 1-7 days.6 Therefore Campylobacter jejuni also can be excluded.

On the basis of this investigation, this foodborne outbreak was caused by Salmonella enteritidis. Umm Ali sweet was the implicated food item. Raw eggs were the most likely source of infection, while time-temperature abuse during preparation and storage of Umm Ali sweet was the most important contributing factor.

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- 6. Tauxe RV. Epidemiology of Campylobacter jejuni infections in the United States and other industrialized nations. Washington DC: American Society of Microbiology; 1992; 9-19.

## Mark your calendar . . .

## Inside the Kingdom

April 6- 8, 2010: Saudi International Medical Education Conference (SIMEC2010). Venue: Jazan University conference Auditorium. Jazan, Saudi Arabia Contact: Tel. +966 7321 7540 email: simec2010-info@jazanu.edu.sa http://www.jazanu.edu.sa/simec2010/

June 8-10, 2010: 4th Taif National Diabetes Conference. Venue: Massarrah InterContinental Taif Hotel, Taif, Makkah Region. Contact: Tel. 0096627310907, fax 0096627310801 http://www.taifhealth.gov.sa/taifhealth

July 25-26, 2010: Medical Nutrition Therapy Conference 2010 Venue & location: Jeddah Hilton Hotel, Jeddah, Saudi Arabia Contact: King Faisal Specialist Hospital and Research Center – Jeddah Tel: 0096626677777, Fax: 0096626677777 Email: oamari@kfshrc.edu.sa http://www.kfshrcj.org/KFSHRCJ

# **Outside the Kingdom**

June 28-30, 2010: Communication, Medicine & Ethics (COMET) 2010. Location & venue: Boston University School of Public Health, Boston, MA, USA. Contact: Shannon O'Halloran, COMET Conference Organizer, School of Public Health, Boston University. 715 Albany St Talbot 3 WestBoston, MA 02118-2526. Phone: 617-414-1472 Email comet@bu.edu

http://www.bu.edu/comet/comet-2010-conference

#### July 11–15, 2010: 20th IUHPE World Conference on Health Promotion.

Location: Centre International de Conférences Genève, Switzerland. Contact: International Union for Health Promotion and Education c/o MCI Geneva, PCO, Rue de Lyon 75-1211 Geneva, Switzerland. Phone: +41 22 33 99 599 -Fax:+41 22 33 99 631 Email: juhpe2010@mci-group.com

http://www.iuhpeconference.net/

## July 11–15, 2010: 11th International Congress on Obesity.

Location: Stockholm International Fairs & Congress Centre, Sweden. Contact: ICO2010 Secretariat, 28 Portland Place, London W1B 1LY, United Kingdom. Tel: +44 20 7467 9610, Fax:+44 20 7636 9258 Email: ico2010@iaso.org

http://www.ico2010.org/index.htm

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- Dr. Ibrahim Kabbash Consultant Epidemiologist

# Selected notifiable diseases by region, Apr - Jun 2010

|                       | 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               | 17     | 2      | 4      | 3       | 1    | 3      | 3       | 2    | 0             | 3    | 1     | 1     | 0    | 4         | 17    | 9      | 0    | 0       | 0      | 0       | 70    |
| Mumps                 | 2      | 0      | 0      | 0       | 1    | 3      | 0       | 0    | 0             | 0    | 0     | 0     | 0    | 0         | 3     | 1      | 0    | 0       | 0      | 0       | 10    |
| Rubella               | 10     | 0      | 1      | 2       | 0    | 0      | 1       | 0    | 0             | 3    | 0     | 0     | 0    | 0         | 0     | 3      | 0    | 0       | 0      | 0       | 20    |
| Varicella             | 807    | 247    | 576    | 463     | 326  | 1695   | 964     | 792  | 159           | 692  | 100   | 154   | 68   | 113       | 46    | 189    | 50   | 45      | 15     | 45      | 7546  |
| 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      | 31     | 0      | 6      | 3       | 12   | 10     | 4       | 5    | 0             | 2    | 2     | 0     | 2    | 0         | 0     | 0      | 0    | 0       | 1      | 0       | 78    |
| Hepatitis B           | 211    | 2      | 363    | 169     | 126  | 78     | 212     | 4    | 0             | 136  | 20    | 94    | 7    | 14        | 27    | 33     | 0    | 0       | 3      | 2       | 1501  |
| Hepatitis C           | 135    | 0      | 299    | 67      | 24   | 33     | 130     | 4    | 0             | 28   | 12    | 13    | 5    | 3         | 7     | 10     | 1    | 18      | 0      | 1       | 790   |
| Hepatitis unspecified | 2      | 0      | 2      | 3       | 0    | 0      | 0       | 0    | 0             | 4    | 0     | 0     | 0    | 0         | 11    | 0      | 0    | 0       | 0      | 0       | 22    |
| Hepatitis A           | 52     | 1      | 8      | 21      | 0    | 12     | 2       | 0    | 1             | 15   | 0     | 21    | 0    | 1         | 6     | 37     | 0    | 0       | 0      | 0       | 177   |
| Typhoid & paratyphoid | 0      | 0      | 25     | 7       | 5    | 1      | 10      | 10   | 4             | 11   | 2     | 1     | 11   | 1         | 1     | 0      | 0    | 1       | 0      | 3       | 93    |
| Amoebic dysentery     | 6      | 1      | 417    | 2       | 127  | 6      | 115     | 37   | 0             | 47   | 37    | 0     | 0    | 0         | 1     | 0      | 0    | 0       | 1      | 0       | 797   |
| Shigellosis           | 10     | 0      | 0      | 3       | 0    | 0      | 11      | 0    | 0             | 0    | 0     | 1     | 0    | 0         | 0     | 1      | 0    | 2       | 0      | 0       | 28    |
| Salmonelosis          | 120    | 2      | 46     | 5       | 2    | 3      | 157     | 19   | 2             | 3    | 7     | 8     | 0    | 0         | 0     | 21     | 0    | 1       | 4      | 4       | 404   |
| Brucellosis           | 97     | 7      | 18     | 104     | 135  | 367    | 85      | 13   | 124           | 212  | 74    | 33    | 118  | 22        | 18    | 43     | 0    | 9       | 0      | 1       | 1480  |
| Dengue Fever          | 0      | 634    | 1510   | 12      | 0    | 0      | 0       | 2    | 0             | 0    | 0     | 0     | 0    | 0         | 141   | 3      | 0    | 0       | 0      | 0       | 2302  |
| Khorma Fever          | 0      | 1      | 1      | 0       | 0    | 0      | 0       | 0    | 0             | 0    | 0     | 0     | 0    | 0         | 1     | 13     | 0    | 0       | 0      | 0       | 16    |

# Comparisons of selected notifiable diseases, Apr - Jun 2009 - 2010

| DISEASE         | Apr Jun 2010 | Apr Jun 2009 | Change % | Jan - Jun<br>2010 | Jan - Dec 9<br>2009 | DISEASE               | Apr Jun 2008 | Apr Jun<br>2007 | Change % | Jan - Jun 2009 | Jan - Dec 2008 |
|-----------------|--------------|--------------|----------|-------------------|---------------------|-----------------------|--------------|-----------------|----------|----------------|----------------|
| Cholera         | 1            | 1            | 0        | 1                 | 4                   | .Meningitis Mening    | 0            | 3               | -100     | 2              | 6              |
| Diphtheria      | 0            | 1            | -100     | 0                 | 1                   | Meningitis other      | 78           | 121             | -36      | 148            | 334            |
| Pertussis       | 0            | 15           | -100     | _0                | 26                  | Hepatitis B           | 1501         | 1449            | 4        | 1571           | 5020           |
| Tetanus, neonat | 0            | 1            | -100     | 1                 | 10                  | Hepatitis C           | 790          | 676             | 17       | 1994           | 2487           |
| Tetanus, other  | 2            | 1            | 100      | 4                 | 5                   | Hepatitis unspecified | 22           | 84              | -74      | 600            | 220            |
| Measles         | 70           | 21           | 233      | 92                | 81                  | Hepatitis A           | 177          | 373             | -53      | 197            | 1258           |
| Mumps           | 10           | 22           | -55      | 15                | 138                 | Typhoid & paratyphoid | 93           | 97              | -4       | 285            | 316            |
| Rubella         | 20           | 0            |          | 26                | 13                  | Amoebic dysentery     | 797          | 912             | -13      | 857            | 3064           |
| Varicella       | 7576         | 12807        | -41      | 11740             | 31402               | Shigellosis           | 28           | 28              | 0        | 748            | 121            |
| Dengue Fever    | 2302         | 2034         | 13       | 2943              | 3350                | Salmonelosis          | 404          | 352             | 15       | 432            | 1372           |
| Khorma Fever    | 16           | 23           | -30      | 32                | 59                  | Brucellosis           | 1480         | 1714            | -14      | 1756           | 4803           |

# **Diseases of low frequency, Apr – Jun 2010**

Yellow fever, Plaque, Poliomyelitis, Rabies, Cholera, Pertussis: No Cases Neonatal Tetanus: 1 Case ( Makkah) Ecchinoccocosis: 1 Cases (Baha )