Day 3 AGENDA

Meeting Chairs:

Klaus Riedmann, Federal Ministry of Health, Germany
Bill Hall, Department of Health and Human Services, United States

Thursday, March 4

Review of Day 1 and 2
Review and discussion of strategic work plan for 2010 and beyond
GHSI 2010 Calendar
Next Meeting – Date/Location

9:30 a.m.	Review of Day 1 and 2
	Discussion of Communicators' Network work plan for 2010-2012
10:45 a.m.	*Break*
11:00 a.m.	Discussion of Communicators' Network work plan for 2010-2012
	Review of GHSI 2010 Calendar, Planning for Next Face-to-Face meeting
1:00 p.m.	*Lunch and Adjourn*

SUMMARY

Co-Chair (US): I would like to make sure that we all have the latest membership list. We will resend the updated version after the meeting. The internet page I introduced yesterday is as follows:
www.hhs.gov/disasters/press/newsroom.html
Please see the "Communicating in a Crisis" section and let us have your comments.

Co-Chair (Germany): I contacted an official of the European Commission yesterday, but it seems that the autumn is already quite busy. The option for us is to append our meeting to a GHSAG Radio Nuclear Working Group exercise with the European Commission, which will include a communication element. This meeting is set for October 12 and 13. My feeling is that we should have a two-day meeting in addition to the exercise. I do not know yet whether it will be necessary for communicators to be present for the two days of the exercise. I suggest that we keep October 14 and 15 tentatively free for our meeting. The location of the meeting is not yet decided, but will be either Brussels or Luxembourg.

Review of GHSI 2010 Calendar, Planning for Next Face-to-Face meeting

Co-Chair (Germany): GHSAG has been requested to compile a work plan for a three-year period. There have been complaints that high-level meetings tend to be concentrated in a short space of time, usually at the end of the year, with working groups having to work very hard to provide documentation and deliverables to these meetings. GHSAG usually tries to complete its work six weeks ahead of the ministerial. We have a situation in which working groups are very busy for one half of the year and quiet for the other half. The Working Group Chairs and Delegation Liaison Group was established to address this imbalance. I think that this is a good platform from which to work. However, in order to get away from the obligation to provide "deliverables" each year there are efforts underway to create a long-term work plan. I think that the Communicators Group is already on its way to creating such a long-term plan, particularly in the compilation of a generic plan, as directed by ministers. The work we are starting now should be continued but on a reasonable working level.

Co-Chair (US): The calendar for GHSAG meetings is as follows:
The Risk management group will have its next teleconference on March 10.

March 18-19: Pandemic Work Group face-to-face meeting in Rome, which will discuss the response to H1N1. We have some information to share with that group and I am planning to attend that meeting.
June 14-18: A series of meetings in Ottawa (Senior Officials, Working Group Chairs and Delegation Liaison Group, Pandemic Working Group)
October 12-13: Table-top exercise with European Commission
October 14-15: Communicators Group Face-to-Face Meeting
Early November: Planning for a Senior Officials Meetings
Early December: Ministerial Meeting in Mexico.

We will submit the updated dates and let you have the latest version.

Co-Chair (Germany): We are going to write a report to on the results of our discussions at this meeting and submit it to the Pandemic Work Group meeting in Rome.

Co-Chair (US): I could speak about the results of our discussions and provide verbal explanations, rather than submit a written report to the Pandemic Work Group. I have had a number of discussions with the Pandemic Work Group and they are eager for us to provide inputs into their meeting.

US (Dr. Rutz): I think the evaluation of the response to the pandemic should be compiled into one document by the Pandemic and Communicators groups. It makes sense to synthesize a single document. Is there a way for us to see their draft documents? In that way we could inform each other.

Co-Chair (US): They would very much want us to look at their draft.

Co-Chair (Germany): I went through our 2009 work plan to see what issues are still open. One action item outstanding is:
- identifying members within the working group who could liaise with other working groups.
However, this action item was compiled prior to the establishment of the Working Group Chairs and Delegation Liaison Group.

US (Dr. Rutz): I think it is important to maintain strong relationships with other working groups.

Co-Chair (Germany): In Germany different ministries are responsible for the different working groups and it is important to maintain contact with the people concerned. The Secretariat in Ottawa is working to redesign and revamp the GHSAG website. I think we should give our updated members list to the Secretariat in Ottawa and ask them to check the data and see that everyone on the list can receive access to the GHSAG website. The Secretariat recently asked all member states to do an update and once the update is complete we could ask the Secretariat for full member lists of all working groups.

The other point on our work plan in 2009 was "engagement with other working groups." As far as I can see we already have one issue to work on with the Radio Nuclear Working Group.

US (Dr. Rutz): I think that information is cross-cutting, across all GHSAG interests. We need to be proactive in asking other groups about the degree of input and exchange they would be comfortable with. We have something to add to all working groups and communication is related to all issues. It is important to build relations of trust.

Co-Chair (Germany): I think we should consider whether to return to the action item of 2009 about designating single members to act as a liaison with the other groups.

Co-Chair (US): In the US we routinely have a conference call of all US representatives within GHSAG. Do other countries do that on a regular basis? I think that is a useful means of maintaining contact with other GHSAG groups.

France: We have a similar meeting every two months.

Co-Chair (Germany): The same is the case in Germany, however the fact that the working groups are under the jurisdiction of different ministries makes it slightly more complicated and it would be preferable for Germany to designate a person to be the liaison with a particular working group. I join various teleconferences and take part in discussions and this provides regular updates. In the case of the Radio Nuclear Working Group table-top exercise in October, I think we need some information in advance. I would like to ask Patrick to contact the Radio Nuclear Working Group chair in France, and I will approach the Working Group Chairs Meeting about the provision of information.

UK (Dr. Graham): I am happy to be a liaison for one of the other working groups, once I have looked at group memberships.

Co-Chair (Germany): In terms of priority setting, liaison with the Radio Nuclear Working Group is more important to us at the moment, given the joint GHSAG exercise in October with the European Commission. My experience with the radio-nuclear topic was the case of Chernobyl, where although the health ministry was not directly involved, questions were being directed to the health ministry regarding safety.

Co-Chair (US): In the United States nuclear power plants are required to have emergency plans and they are required to provide people living within 20 miles of the plant with nuclear antidote medicine. These policies are all implemented and monitored through the Department of Energy. In the case of an emergency although the Department of Energy would be in charge, the involvement of the Department of Health would also be required.

Break

Discussion of Communicators' Network work plan for 2010-2012

Co-Chair (Germany): I suggest that I recap the items we have agreed to do over the coming months. The first part is for me to create the first draft of "Lessons Learned." I would aim to have a draft version by the middle of the week that could be distributed to the rest of the group. The deliverables are:
- We want to develop communications strategies for Ricin and anthrax and we have agreed to check the materials available on the CDC side, provided by the US.
- I will do a first draft of the matrix for response measures and provide it sometime in April.
- We must review Patrick's paper on uncertainty and send comments to him by March 19. Based on those comments and the new version of the paper we can move forward with the compilation of a generic plan and maybe develop ideas through a teleconference. Our work on Ricin, anthrax and the generic plan is ongoing.

As I look back on previous papers, I note that in the past we also discussed an "all hazards approach." We should bear this in mind when making comments on Patrick's paper.

France: Do we have to create plans for Ricin and anthrax?

Co-Chair (US): The key request was for communication messages to be prepared in the event of Ricin or anthrax incidents.

UK (Dr. Graham): This is a big piece of work that should be broken down into various scenarios. I would like to request that we do a stock take of what information the various countries possess on Ricin and anthrax, like the information provided to us by the US.

Co-Chair (Germany): I think that is a realistic activity. We can provide each other with an overview of the information that is available in each country.

Co-Chair (US): I will volunteer to collect the information from each country.

Co-Chair (Germany): Once we have gathered the information we can then discuss further steps at our meeting in October. The same is true for the generic plan or "all hazards approach." In the autumn we will be able to identify and determine further steps in the autumn.

I would ask you if there are further issues that you would like to see included in the work plan.

France: I think that it will be important for each country to identify one or two people involved with overall crisis management and share information with them. In addition, I am concerned about the cost of the workshop we are planning on uncertainty and wonder if the WHO or European Commission could be asked for funding.

Co-Chair (Germany): With regard to the involvement of other ministries and departments, we must first check back with our senior officials. This is because the network was established as a health-led initiative. The European Commission has already contributed to GHSAG work, but the WHO in general views that it could have competing interests with GHSAG. We could bring this issue back to the Risk Management Group and the meeting to be held in London in April and seek support for the workshop to be held in France.

UK (Dr. Graham): Do you have specific objectives for the workshop?

France: We would have to confirm the content with Nigel.

UK (Dr. Graham): Nigel will consult with me about what support we can provide.

Co-Chair (US): I will talk to our senior official and discuss the need for support for the workshop and whether this could be provided in the form of money or people.

US (Dr. Rutz): I think that the work plan that we have is ambitious and comprehensive. We need to be flexible enough to put these issues on the back burner if another emergency situation like a new pandemic emerges. If there is not an emergency situation then we can work towards providing specific results. I would suggest that we do not add further work so that we can deal effectively with the issues already on the table.

Co-Chair (Germany): I agree that we should leave some space for emerging issues.

Japan: Yesterday Nigel spoke about inviting media people to a workshop.

Co-Chair (US): I think Nigel was referring to the US table-top exercises where a facilitator engaged an entire group of media persons, providing specific emergency scenarios to work on. When we first proposed engaging with the media there was initially some resistance, but now it has become accepted as a useful tool for gauging what media responses would be in the event of a real emergency. For the third table-top exercise we were able to engage in constructive criticism between media and government. These exercises have worked well in the US and the ground rules are clearly delineated. I know that Canada tried a similar exercise in their pandemic planning exercise, which also proved to be successful. One option would be to hold an exercise with all countries' officials and media representatives involved. Another option would be to hold an exercise involving only government officials, but this would lose the benefit of media participation.

US (Dr. Rutz): The US table-top exercise was a brilliant idea. The first reaction of the government was not to engage in such an exercise, due to suspicions of the media. Once you get past initial suspicions it is important to recognize that many journalists and media representatives are responsible and dedicated and it is useful to view them as allies in information provision. By engaging with the media we help them to understand what our dilemmas are and by being honest with journalists it serves to improve relations and build trust.

Dr. Nozaki: A WHO-WPRO Risk Communicator Workshop will be held in the summer and I will share the results with you.

Co-Chair (Germany): Do you think we should bring this issue to the table for 2011 or 2012 and seek to gain Senior Officials' approval?

Co-Chair (US): The benefit of implementing a table-top exercise on anthrax would be very useful as it would be educational for the media and would provide them with a better

understanding of the complexities that would be faced in an emergency situation. I think anthrax would be a very good candidate for a table-top exercise.

Co-Chair (Germany): The only problem I see is the language, because some people do not feel comfortable working in English. We implemented an exercise called "Atlantic Storm" which did prove to be successful. I think we could leave open the theme of such an exercise.

US (Dr. Rutz): One of the things that make this group valuable is that we are honest with each other. I think that such exercises are valuable as single country exercises, given the unique characteristics of each national media. We could provide advice on the experiences of the exercise in the US.

Co-Chair (US): I think that simply from logistical stand point it would be difficult to replicate what we have done in the US on the GHSAG level. One alternative would be to identify a few key reporters who could agree to participate from each country. This could be valuable to officials as an exercise in coordinating an international response.

UK (Dr. Graham): A GHSAG-level exercise would be very valuable for officials, testing reactions to a global problem.

Co-Chair (US): If you can find the right facilitator it can be very useful.

Co-Chair (Germany): HPA organized a one-day workshop in London where we specifically dealt with vaccination issues for H1N1. Such a scenario-based exercise could be included in the long-term GHSAG agenda, looking to 2011 or 2012.

US (Dr. Rutz): Maybe one way to broach it with Senior Officials is state that the Communicators Group is seeking to engage with the media.

Co-Chair (US): At the 2007 ministerial in Washington DC I was asked to brief ministers on the exercises we had implemented. It became a very active dialogue and was highly appraised by GHSAG ministers. We need to be ready to propose a model or a concept for an exercise.

Co-Chair (Germany): I will therefore incorporate this is a long-term item on the agenda.

Co-Chair (US): There has been a request from the GHSAG Secretariat to us, asking about what internal investigations or reviews are being implemented of the H1N1 in addition to individual government investigations (e.g. the Council of Europe internal investigation).

Co-Chair (Germany): I think that concludes our business. I would like to express our appreciation to our Japanese hosts. We are happy that we finally made it to Japan.

Co-Chair (US): I would echo these sentiments. I think we have made significant progress in this meeting. Thank you very much.

Ⅲ. 研究成果の刊行に関する一覧表

別紙４

研究成果の刊行に関する一覧表

雑誌

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
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Ⅳ. 研究成果の刊行物・別刷

Evidence-based Tool for Triggering School Closures during Influenza Outbreaks, Japan

Asami Sasaki, Anne Gatewood Hoen, Al Ozonoff, Hiroshi Suzuki, Naohito Tanabe, Nao Seki, Reiko Saito, and John S. Brownstein

Guidelines available to school administrators to support school closure decisions during influenza outbreaks are usually not evidence based. Using empirical data on absentee rates of elementary school students in Japan, we developed a simple and practical algorithm for determining the optimal timing of school closures for control of influenza outbreaks.

Influenza pandemic preparedness and seasonal influenza control programs have focused on vaccine development and antiviral drugs, which are only partially effective and not always available to all persons at risk (*1–3*). Nonpharmaceutical interventions, such as social distancing, represent additional key tools for mitigating the impact of outbreaks. Because children are a major factor in the transmission of influenza within communities and among households, school closure may be a valuable social distancing method (*4,5*).

Japan has a unique system of monitoring school absenteeism and of instituting school closures during influenza outbreaks. Individual classes, specific grade levels, or the entire school may be closed; final decision-making authority is given to school principals. However, as in the United States and other countries, there are no regulations to support these decisions (*6*). Our study suggests a simple system to help determine when schools should be closed; daily influenza-related absentee thresholds are measured to predict outbreaks.

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The Study

We used data on absenteeism caused by influenza from the 54 elementary schools in Joetsu City, Niigata Prefecture, Japan during the 4 influenza seasons during 2005–2008. Data was obtained between the second week of January to the third week of March for each influenza season. Average school size was 221 students. Current public health policy prevents influenza-infected children from attending school until 2 days after fever has disappeared. An illness requires 2 physician visits: 1 for the initial diagnosis and 1 to obtain written permission from the treating physician to return to school. Diagnoses are usually made by using a rapid antigen test and patients are treated with the antiviral drugs, oseltamivir or zanamivir.

Based on elementary school daily influenza-related absentee surveillance, the most intense influenza seasons were 2005 and 2007 (Figure 1). The number of schools reporting outbreaks during the 4 influenza seasons was 34 (63%, 2005), 13 (24%, 2006), 35 (65%, 2007) and 18 (33%, 2008), respectively. Rates of absenteeism caused by confirmed influenza infection in the 54 elementary schools in Joetsu City were well correlated with national reports of influenza-like illness by 5,000 sentinel physicians, who reported 322, 205, 226, and 142 cumulative cases of infection per sentinel in each season (online Technical Appendix, available from www.cdc.gov/EID/content/15/11/1841-Techapp.pdf).

We evaluated the optimal influenza-related absentee rate for predicting outbreaks of influenza. For this study, we defined an influenza outbreak in a school as a daily influenza-related absentee rate of >10%, on the basis of the 95th percentile of daily absentee rates (10.7%) in 54 elementary schools during 4 influenza seasons (online Technical Appendix).

Next, we considered 9 different daily influenza-related absentee threshold levels for initiating early school closures: 1%, 2%, 3%, … , 9%. In addition, for each threshold level, we considered 3 scenarios: 1) a single-day scenario, in which daily influenza-related absentee rates are observed for the first time above a given threshold for 1 day; 2) a double-day scenario, in which rates reached a given threshold for the first time for 2 consecutive days; the rate for the second day was the same or higher than for the first day; and 3) a triple-day scenario, in which rates reached a given threshold for the first time for 3 consecutive days; rates for the second and third days were the same or higher than the rate for the first day. The double-day and triple-day scenarios did not include weekends. To evaluate the performance of prediction for each threshold, we determined the school's outbreak status in the 7-day period starting on the first day of each scenario (online Technical Appendix) JMP7.0.1 (SAS Institute, Inc., Cary, NC, USA) was used for statistical analysis.

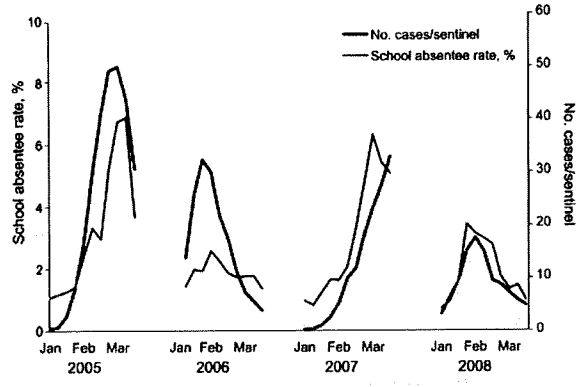

Figure 1. Four-year surveillance of influenza-related absentee rates in 54 elementary schools in Joetsu City and national surveillance of influenza-like illness (ILI) reported by sentinel physicians in Japan. Data were collected from the second week of January (after the winter holiday) to the third week of March (before the spring holiday). The average of the daily absentee rates for 54 elementary schools during 4 influenza seasons (2005–2008) were 3.29%, 1.77%, 2.97%, and 1.92%, respectively.

We calculated the sensitivity and specificity of each scenario at all 9 threshold levels, and presented these data as a plot in Figure 2. The area under the curve for the single-, double-, and triple-day scenarios was 0.80 (95% confidence interval [CI] 0.77–0.83), 0.85 (95% CI 0.82–0.89) and 0.87 (95% CI 0.83–0.91), respectively.

We used the Youden index for calculating optimal thresholds (*7*). The Youden index = (sensitivity) + (specificity) – 1. A perfect test result would have a Youden index of 1. For the single-day scenario, the optimal threshold was 5%, with a sensitivity of 0.77 and specificity of 0.73. For the double-day scenario, the optimal threshold was 4%, with a sensitivity of 0.84 and specificity of 0.77. For the triple-day scenario, the optimal threshold was 3%, with a sensitivity of 0.90 and specificity of 0.72.

Conclusions

We have demonstrated the predictive value of a simple and practical detection method for triggering school closures early after influenza outbreaks. Our analysis suggests that a single-day at a threshold influenza-related absentee rate of 5%, double-days ≥4%, or triple-days ≥3% are optimal levels for alerting school administrators to consider school closure. The double- and triple-day scenarios performed similarly, and gave better results than the single-day. Thus, the double-day scenario might be the preferred early warning trigger.

Our study had the advantage of reliable empirical data on influenza-related absenteeism in schools. Data were based on physician and laboratory diagnosis and a strong absentee surveillance program. However, there are limitations to our approach. We did not have available vaccination or medication histories of patients. Also, our results are based on data from only 1 city's school district; validation in a broader area will be required. Although separate analyses may be required for other geographic regions, we present a simple approach that can be easily reapplied.

Influenza outbreak detection from surveillance data typically relies on relatively complex time series analysis or smoothing (*8,9*). The noisiness of school surveillance data makes detection of outbreaks difficult (*10*). However, complex statistical analyses are not practical to use in the context of daily decision-making in schools. Despite the limitations of our study, we have presented a method that provides a basis for empirical data-supported decision-making by school administrators that is intuitive and practical.

School closure could be an effective method of social distancing, although evidence supporting its effectiveness is incomplete. Some studies suggest that though child-to-child transmission might decrease, transmission might increase in other age groups (*11,12*). During school closures, children may need to forgo participation in external activities that could increase contact rates. Additionally, working parents staying home to care for their children (*13*) could result in a decrease in household income, causing loss of productivity and economic losses (*14*). Decision-makers will need to consider these factors when considering school closures.

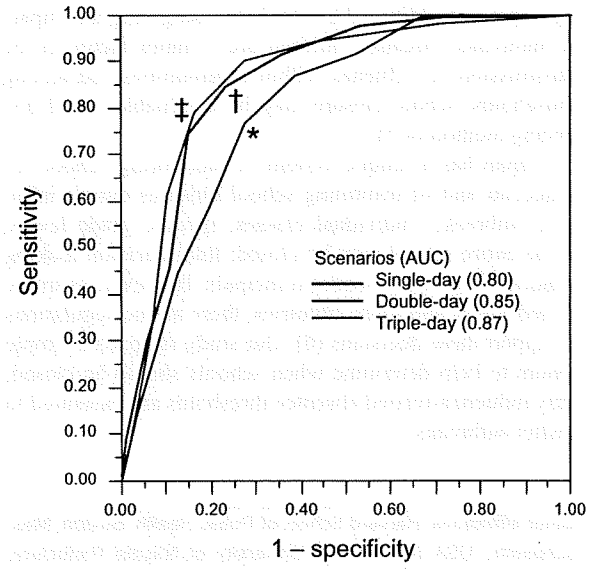

Figure 2. The receiver operating characteristic (ROC) curve for detection of influenza outbreak by 1%–9% thresholds under single-day, double-day, triple-day scenarios. ROC space is defined on the x axis as specificity and on the y axis as sensitivity. The area under the curve (AUC) is an indicator of the quality of a model; larger AUC values corresponded to better performance. Optimal thresholds for the 3 scenarios are *single-day, 5%; †double-day, 4%; and ‡triple-day, 3%.

During the early days of the outbreak of influenza A pandemic (H1N1) 2009 virus, the US Centers for Disease Control and Prevention (Atlanta, GA, USA) released 2 different recommendations for school dismissal after the appearance of the first suspected case: dismiss for 7 days (as of April 26) and then for 14 days (as of May 1). Later, to reflect new knowledge about the extent of community spread and disease severity, the recommendation was revised to advise against school closure unless absentee rates interfered with school function (*15*). The pandemic (H1N1) 2009 influenza outbreak highlights the need for a flexible national policy that can be quickly adapted to reflect current situations. The evidence-based strategy for predicting outbreaks based on influenza-related absentee rates that we present here provides local administrators, who may need to consider school closure, with a simple and practical tool to aid in their decisions.

Acknowledgments

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Dr Sasaki is an associate professor at the Department of Health and Nutrition, University of Niigata Prefecture. Her research focuses on the epidemiology of infectious diseases and health surveillance systems.

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Short Communication

Influenza Virus Infections in Lebanese Children in the 2007-2008 Season

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SUMMARY: We conducted the first epidemiological study of influenza in Lebanon, a temperate country in the Middle East. Between January to May 2008, 39 patients with influenza-like illness were tested. Of these, 51% contracted influenza in January alone, while no influenza cases were detected in May. Among the 39 patients, 11 influenza A and 4 influenza B cases were detected by rapid kit in addition to 10 respiratory syncytial virus cases by real-time PCR. The influenza viruses were genetically divergent from the 2007/2008 season's vaccine strains, but resembled strains circulating in other countries during the same season.

The influenza virus causes substantial morbidity and mortality worldwide each year. Annual influenza epidemics are characterized by regular seasonality and occur during winter months in temperate regions; in the tropics, influenza activity can occur year-round with a peak in the rainy season (1). During recent years, influenza surveillance has improved to cover many geographic areas (2). However, there are still no surveillance programs in most Middle Eastern countries. As of January 2008, we started the first epidemiological study of influenza in Lebanon. Lebanon, a Middle Eastern country located on the Mediterranean Sea, has a moderate temperate climate with 13-16°C average winter temperatures.

An outpatient pediatric clinic at the American University Hospital in Beirut, the capital of Lebanon, was selected as the site for the study. The study was approved by the hospital's Ethics Committee. Nasopharyngeal swabs were collected from patients with influenza-like symptoms, including fever ≥38°C and at least one respiratory symptom such as cough, rhinorrhea, or sore throat, after they had signed an informed consent. The swabs were tested using an influenza A and B virus antigen rapid diagnostic kit (QUICK-EX FLU A&B; Denka Seiken Co. Ltd, Tokyo, Japan). Swab suspensions of the rapid kit were transferred to the Division of Public Heath at Niigata University, Japan for genetic analysis. Following viral RNA extraction and complementary DNA synthesis, nested-PCR was performed to detect influenza A using M2 specific primers, and B using HA specific primers (3,4). The M2 PCR product was sequenced and analyzed for subtypes, using BLAST search (5), and for signature amino acid mutations conferring amantadine-resistance (6). The HA1 subdomain specific nested-PCR and sequencing were performed using specific primers (7) (primers for the H1 subtype and B are available upon request). Phylogenetic tree analysis was performed along with the corresponding sequences, downloaded from the Influenza Virus Resource (5), of vaccine strains and influenza viruses collected from the Middle East and other countries. The accession numbers of nucleotide sequences for this study are AB470354-7 in the DDBJ/EMBL/GenBank databases. Influenza-negative samples were tested for respiratory syncytial virus (RSV) and human metapneumovirus (hMPV) with SYBR Green real-time PCR (SYBR® Premix Ex Taq™ II, Perfect Real time; Takara Bio Inc., Shiga, Japan) using primers described elsewhere (8,9).

Altogether, 39 patients with influenza-like symptoms (ILI) symptoms were tested from January to May 2008, with 51% (20/39) of the cases detected in January alone (Figure 1). The average age of the patients was 5.5 ± 4.6 years old. Eleven patients (28%) were positive for influenza A and 4 (10%) for B by rapid test kit. Nineteen (49%) out of 39 ILI cases had received the 2007-2008 northern hemisphere's influenza vaccine; of these, 7 (7/19; 37%) had influenza infections (4 had influenza A, and 3 had influenza B). RSV and hMPV-specific real-time PCR, performed on influenza rapid test kit-negative samples, detected 10 RSV cases but no hMPV (Figure 1). M2 sequences could be obtained for 6 influenza A samples; 2 were H3N2 possessing an S31N mutation, conferring resistance to amantadine (6), and the remaining 4 were H1N1 without mutations in the M2 gene. None of the influenza rapid test kit-negative samples gave influenza A-M2 or B-HA gene-specific PCR products. The HA1 gene sequences could be obtained for 4 samples: 1 influenza A/H1N1, 1 A/H3N2, and 2 influenza B. The phylogenetic analysis (Figure 2) revealed that the HA1 of the A/H1N1 sample (A/Lebanon/L19/2008) fell in the cluster of A/Brisbane/59/

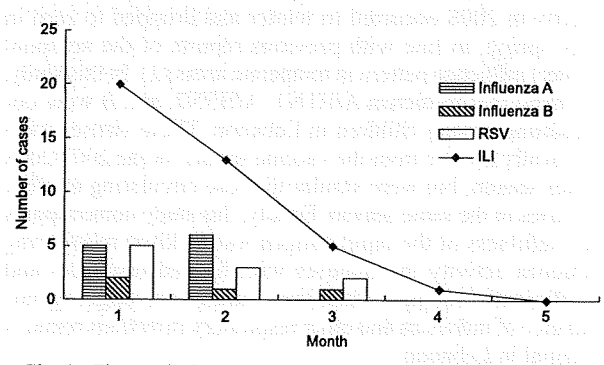

Fig. 1. The graph shows the number of influenza-like illness cases (ILI), influenza A and B, and respiratory syncytial virus (RSV) detected during the study period. No human metapneumovirus cases were detected.

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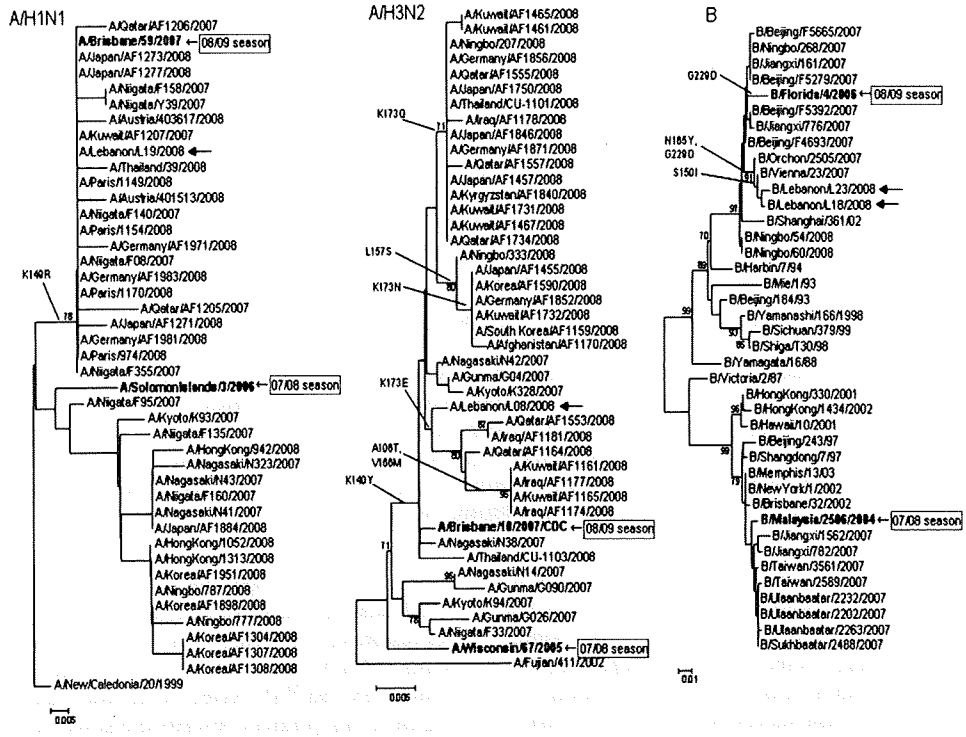

Fig. 2. Phylogenetic tree analysis of the HA1 fragments of influenza A/H1N1 (126 nt; amino acid residues 127-168), A/H3N2 (534 nt; amino acid residues 105-282), and B (337 nt; amino acid residues 127-239) in this study. Arrows indicate samples obtained in this study. Vaccine strains for the 2007/2008 and 2008/2009 seasons are shown in bold. Key amino acid substitutions are shown on the corresponding branches. Bootstrap values >70% are shown on the branches.

2007 (the vaccine strain for 2008/2009), which accommodated strains from the Middle East (Kuwait and Qatar), Europe, and Asia. Another cluster, representing the A/SolomonIslands/3/2006 (vaccine strain for 2007/2008) lineage and mainly formed of sequences from Asia from the 2006/2007 and 2007/2008 seasons, was also observed. The HA1 of the A/H3N2 sample (A/Lebanon/L08/2008) fell in a cluster exclusively formed by strains from the Middle East (Kuwait, Qatar, and Iraq), and was closely related to A/Brisbane/10/2007 (the vaccine strain for 2008/2009). The influenza B HA1 sequences (B/Lebanon/L18/2008 and B/Lebanon/L23/2008) belonged to the Yamagata-lineage and closely clustered with B/Shanghai/361/2002, the recommended vaccine strain for the 2005/2006 influenza season, but possessed 3 substitutions (S150I, N165Y, and G229D).

This is the first laboratory-confirmed epidemiological study of influenza in Lebanon. We demonstrated that the influenza activity in 2008 occurred in winter and dropped to zero in early spring, in line with previous reports of the seasonal (winter) influenza pattern in temperate areas (2). In this study, we found that influenza A/H1N1, A/H3N2, and B were co-circulating among children in Lebanon. These viruses were genetically diverse from the vaccine strains for the 2007/2008 winter season, but were similar to those circulating in other countries in the same season. Finally, this study demonstrates the usefulness of the rapid antigen testing kit in monitoring influenza activity in countries with limited resources and insufficiently equipped facilities. Further and ongoing surveillance of influenza and other respiratory infections remains essential in Lebanon.

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食中毒の疫学研修講座 7

観光船内の仕出し弁当による食中毒事例(前編)

Training Program on Food-borne Disease Epidemiology [7]
A study on a Food-borne Disease Outbreak by Contaminated Lunch Boxes Distributed in a Sightseeing Ship〈I〉

岡山食中毒の疫学研修プログラム研究会

岡山理科大学総合情報学部情報科学科　山本　英二
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岡山大学大学院環境学研究科　津田　敏秀
岡山大学大学院医歯薬学総合研究科　土橋　酉紀，土居　弘幸

ポイント

1．アウトブレイク調査のステップを把握できる。
2．アウトブレイクの確認と初期情報の収集をしっかり行える。
3．調査票を作成し，調査が実施できる。
4．記述疫学を行い，仮説を形成する。

Ⅰ　はじめに

これまでの講座[1]～[6]において，食中毒アウトブレイク調査に必要な疫学の基礎と，データ解析のソフトCDC：Epi Info™について学んできた。本講座[7]と次回講座[8]では，具体的な食中毒事例を扱うなかで，より実践的な実地疫学をQ&A形式で学ぶ。

各問題には，解答のポイント(ヒント)を与えているので参考にしてほしい。またデータ解析を行う問題については，Epi Info™の操作説明を加えている。扱う事例は，某市における観光船で配られた弁当による集団食中毒事例である。症状喫食調査結果データは2009/02/17以降のEpi Info日本語パッチのExamplesフォルダ内に，エクセルファイル：観光船.xlsとして準備してある。Epi Info日本語版ホームページからダウンロードができる(http://zeus.mis.ous.ac.jp/EpiInfo/epiinfoj.html)。本講座[7]では記述疫学までを扱う。

Ⅱ　実地疫学Q&A

事件の発端

2000年8月6日(日)午前0時頃，某市消防局より食中毒様症状を呈している数名の患者を医療機関に搬送した旨の通報を受け，保健所による調査が開始された。患者等は，8月5日(土)夕方から某社行事に参加し，観光船内で仕出し弁当を喫食していた。

問題1　保健所による集団発生(アウトブレイク)調査の流れを簡潔に述べよ。

ポイント1　講座[2], [3]納豆オクラ事例での調査の流れを思い出そう。

解答例1

(1) アウトブレイクの確認と初期情報の収集
(2) 症例の定義
(3) 調査票作成と調査の実施
(4) 記述疫学(時，場所，人の3要素)と仮説の形成
(5) 分析疫学による仮説の検証
(6) 拡大防止・疾病の予防

問題2　第一報を受けた段階でアウトブレイクの確認と初期情報の収集をどのように行うか。

ポイント2　第一報の情報で聞き漏れていることはないかの確認をする。医師からの届出のときは，以下のことを聞くように求めている(『食中毒調査マニュアル』最終改正：平成20年4月22日食安発第0422001号より抜粋)。

・医師の氏名，住所，連絡先，および医療機関名
・患者等の所在地，氏名，住所，年齢，性別および連絡先
・食中毒の原因(原因食品，病因物質など)
・発病年月日および時刻
・診断または検案年月日および時刻
・診断名
・患者等の勤務先または学校名等
・患者等の容体，症状および特異的症状の有無，今後の見通し
・糞便，血液，吐物，汚物等の検査の状況および検体確保の依頼の状況
・治療方法
・発生の規模(単発か集団発生の別)
・類似の症状を有する者の受診状況

消防署等からの連絡の場合は，上記に加え，次のことを確認することになっている。

・患者等が受診した，または搬送された医療機関名，人数，容体，治療方法，搬送時間

アウトブレイクの確認は，第一報から集団の特性等を把握することである。

解答例2　アウトブレイクの確認は，探知(通報)情報を疫学の三要素(時，場所，人)に基づき整理し，また，症例の診断の点検を行いアウトブレイクかどうかを判断することである。本事例の場合，第一報が消防局であることから，通報時に食中毒調査マニュアルに沿って必要事項を聞き取り情報の整理を行う。

初期情報の収集は，原因施設や原因食品に関する仮説を形成するために，最初は大きく網をかけた仮説を立てて，初動調査を行い，幅広い情報を収集することである。

この情報を整理し，さらに調査を行い，仮説を絞り込むこととなる。本事例の大きく網をかけた仮説は，「観光船内で曝露を受けたアウトブレイク」であり，ここから次の調査を進めるために，患者が搬送された医療機関，患者およびその家族などから症状，患者の行動等について情報収集する。

問題3　大きく網をかけた仮説の下で，どのように症例を定義し調査を実施するか。
(1)調査対象者の範囲はどうするか，(2)症状調査の内容はどうするか，(3)曝露に関する調査の内容はどうするか。

ポイント3　仮説形成検証のための調査方針を決定し，調査票の作成，調査実施となる。後の記述疫学，分析疫学の解析に耐え得るデータが得られなければならない。調査票作成時の注意点としては，以下の点に注意する。

・探知時の少ない情報から，何を調査すべきか考える。