



EPIET REPORT



Summary of work activities

Teija-Katri Talvikki Korhonen
European Programme for Intervention
Epidemiology Training (EPIET), 2011 cohort

Background

Pre-fellowship short biography

Teija Korhonen is a veterinarian. Prior to EPIET, she worked as a veterinary pathologist at the Finnish Food Safety Authority *Evira*, as a meat-inspection veterinarian, and at the National Institute for Health and Welfare (THL) in Helsinki, where her tasks involved investigating outbreaks (e.g. food- and waterborne) in collaboration with other agencies in the field of human and veterinary medicine.

EPIET assignment

On 19 September 2011, Teija Korhonen was assigned to the regional office of the French Institute for Public Health Surveillance in Marseille (Institut de Veille Sanitaire, InVS, Paca et Corse – Cire Sud – Marseille).

Fellowship projects

Surveillance project

Increase in notified acute respiratory infection clusters in nursing homes: surveillance 2011–2012, Paca, France [1-3]

Background: Acute respiratory infection (ARI) outbreaks in nursing homes are common, causing increased morbidity and mortality. To ensure early detection and control of ARI outbreaks, a surveillance system was implemented in the region of Provence-Alpes-Côte d'Azur (Paca) in 2005. We analysed the 2011–2012 surveillance data and compared them with the previous four winter seasons to explore potential trends.

Methods: Nursing home professionals are requested to notify the Regional Health Office when three or more cases meeting the clinical case definition occur among residents or personnel within eight days. We fitted Poisson models to identify trends and compared observed values (2011–2012) with expected values (previous four seasons) assuming Poisson distributions.

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Results: Between October 2011 and April 2012, we identified 84 clusters, compared to a mean of 34 clusters during the previous four seasons (p 0.008). During 2011–2012, the attack rate among residents and personnel was 28% and 9%, respectively. Among ill residents in 2011–2012, 137 (10 %) were hospitalised and 86 (5%) died, compared with a mean case-fatality of 2.8% in the previous years (p 0.018). At least one case of influenza was confirmed in 60% of the clusters in 2011–2012, while the mean proportion in previous seasons was 12% (p < 0.001). Influenza A (H3N2) was the only virus strain identified in seven outbreaks during 2011–2012.

Conclusions: We report the largest number of notified ARI clusters with influenza confirmation since the implementation of the surveillance system. This increase may be due to the circulation of H3N2 virus following two years of predominance of the pandemic H1N1 virus. It may also reflect the increasing cluster ascertainment due to better acquaintance of reporting personnel with the system.

Role: Collected and analysed the data, wrote the report.

Outbreak

Foodborne Group A streptococcal outbreak on a camping site in Corse, July 2012

Background: Foodborne streptococcal pharyngitis outbreaks have become rare since pasteurization of milk and improvement of hygiene. We investigated an outbreak of group A *Streptococcus* (GAS) pharyngitis on a camping site in Corsica in July 2012.

Methods: A person was defined as (1) a possible case when presenting with sore throat or pharyngitis, (2) a clinical case when presenting with fever or headache or swallowing difficulties, or a positive GAS rapid test result, and (3) a confirmed case when GAS rapid test results or culture were positive, between 18 and 31 July 2012. We searched for cases among children and instructors, and those who ate at least one meal on the site were included in a cohort study. We defined primary cases as those with onset before 25 July, leaving the remainder as secondary cases. We compared participants exposed and unexposed to various meals using relative risks (RR) and 95% confidence intervals (95% CI). We cultured throat swabs and inspected food-handling facilities.

Results: Of a total of 488 participants, we identified 156 cases, 46 (29%) of whom were rapid test (or culture) positive cases; 148 (95%) cases were primary cases (attack rate, AR: 30%). Ninety-six (65%) cases were detected in the first 48 hours. AR was higher among full-board (38%) than among half-board participants (13%, RR: 3.0, 95% CI: 1.9–4.8). Eating lunches served on 20 and 21 July 2012 was associated with being a primary case (RR: 1.8, 95% CI: 1.2–2.6 and RR: 1.8, 95% CI: 1.2–2.6, respectively). We grew identical *Streptococcus* from cases and food handlers, who did not monitor the temperature of the food.

Conclusions: Epidemiological and microbiological investigations suggested that infected food handlers were at the source of this foodborne GAS outbreak. We provided suggestions to address the observed breaches in food hygiene standards.

Role: Collected and analysed the data, wrote the report.

Research

Estimation of measles vaccination coverage among the residents of the University of Marseille/Aix medical faculty and identification of reasons for being vaccinated/non-vaccinated, March 2013 [4-5]

Background: Between 2008 and 2012, France and other European countries experienced large measles outbreaks, also involving healthcare workers (HCW). We aimed to estimate the vaccination coverage (VC) of measles among medical residents of the University of Marseille in south-eastern France.

Methods: In March 2013, we conducted a cross-sectional study among all medical residents of the medical faculty of Marseille. We used a self-administered questionnaire to collect information on self-reported VC and on reasons for vaccination and non-vaccination. We compared proportions, using the chi-squared test.

Results: Of 1152 eligible residents, 703 (61%) participated in the study, and 95 (14%; 95% CI: 12%–17%) reported having had measles in the past. Of all participants, 613 (93%; 95%CI: 91%–95%) reported being vaccinated against measles, and 389 (76%; 95%CI: 73%–80%) received two doses. Of the vaccinated residents, 151 (25%) could not recall how many doses they had received; 268 (38%) reported having visited an occupational health physician. Nine (19%) unvaccinated residents reported lack of interest or time as the reason for non-vaccination. Vaccinated individuals were more likely to report easy access to vaccination as the main motivation for measles vaccination, compared to unvaccinated residents [435 (71%) and 21 (45%); p < 0.001, respectively].

Conclusions: VC among the medical residents of the University of Marseille was well below the recommended 95% coverage for two doses of measles vaccination. The majority of participants had not visited an occupational health doctor. Lack of easy access or lack of interest seem to be major barriers to measles vaccination. We recommend that occupational health services address these barriers to improve VC in this group.

Role: Primary investigator

Scientific communication

- Two oral presentations [1,2]
- One manuscript published in the regional epidemiological bulletin [3]
- One poster presentation [4]
- One manuscript submitted for publication [5]

Teaching experience

Facilitator in 'Cours International d'Epidémiologie appliqué', IDEA 2013, Rennes, France, April 2013.

IDEA 2013 was a training course similar to the EPIET/EUPHEM introductory course, with 30 public health professionals as participants. Teija Korhonen attended 'the training of the trainers' preparatory course (27–29 March 2013) and contributed to a revision of case studies and the planning of a research project. During the training course (8–12 April 2013) she facilitated three case studies (trichinellosis, asthma in Barcelona, occupational diseases) and hosted two sessions of research project analysis (in French).

Supervisors' conclusions

During her two-year fellowship at the Regional Office of the French Institute for Public Health Surveillance, Teija Korhonen gained substantial professional experience and developed new skills due to her involvement in a large variety of epidemiological activities. She accomplished all assigned tasks in a competent manner and worked on her projects, displaying a good degree of independence, but at the same time seeking assistance when appropriate. During the time I worked with Teija, I found her a dedicated and hard-working colleague. In her daily work, she demonstrated the ability to apply her epidemiologic skills to public health problems in an analytical and rational way based on common sense and field experience. She is a reliable person who established a constructive working relationship with all her colleagues, and she was a highly appreciated team member.

Next steps

After EPIET, Teija Korhonen would like to go on missions with international organisations or NGOs (e.g. WHO, MSF, Red Cross, etc.) and therefore plans to apply for the next 'Impact training' course offered by the Finnish Red Cross in March 2014. People who pass that course have the possibility to become part of the personnel reserve of the Finnish Red Cross and can eventually participate in international missions.

References, list of the publications and communications

1. Korhonen T, Six C, Charlet F, Malfait P. Increase in notified acute respiratory infection clusters in nursing homes: Surveillance 2011–2012, Paca, France. Presented (in French) at: Regional public health surveillance seminar in Paca region (La journée régionale de veille sanitaire en Paca, JRVS); 2012 Sep 21; Aix-en-Provence, France.
2. Korhonen T, Six C, Charlet F, Malfait P. Increase in notified acute respiratory infection clusters in nursing homes: Surveillance 2011–2012, Paca, France. Presented at: European Scientific Conference on Applied Infectious Disease Epidemiology, ESCAIDE; 2012 Oct 24–26; Edinburgh, United Kingdom.
3. Korhonen T, Marchand E, Six C, Charlet F, Lafont E, Decoppet A, et al. Surveillance des IRA en Ehpa au cours de l'hiver 2011–2012 en Paca. Bulletin de veille sanitaire (BVS Cire Sud) – Spécial grippe, n° 6, janvier 2013. [Article in French.]
4. Korhonen T, Neveu A, Armengaud A, Succo T, Six C, Malfait P. Low measles vaccination coverage among the medical residents of Aix/Marseille: reasons for non-vaccination. Poster presented at: European Scientific Conference on Applied Infectious Disease Epidemiology, ESCAIDE; 2013 Nov 5–7; Stockholm, Sweden.
5. Korhonen T, Neveu A, Armengaud A, Six C, Danis K, Malfait P. Low measles vaccination coverage among medical residents in Marseille, France: reasons for non-vaccination, March 2013. [Manuscript submitted for publication]