

Time, place, and people: composition of the EPIET Alumni Network and its contribution to the European public health resource in 2013

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SUMMARY

The EPIET Alumni Network (EAN) is an association of professionals who have completed field epidemiology or public health microbiology training programmes in the European Union. In 2013, we conducted a survey of EAN members to investigate this network's role within European public health. We distributed an online questionnaire to members registered at the time, collecting data on demographics, professional background, and attitudes towards EAN. Out of 362 registered members, 189 (52%) responded; 97% were from Europe; 65% were female. Their mean age was 39 years. The highest academic qualification was PhD for 44% and Master's degree for 55%. The majority (60%) worked in public health institutes. They were especially satisfied with having access to job offers and professional networking via EAN, but requested more learning opportunities and knowledge-sharing between members. EAN is a unique platform where highly skilled professionals can connect to control infectious diseases locally and internationally. Having a network of professionals that know each other, speak the same 'language', and can easily access each other's expertise, represents an important resource for European and global public health, which should be nurtured by encouraging more collaborations devoted to professional development.

Key words: Alumni association, epidemiologists, evaluation, microbiologists, public health.

INTRODUCTION

Established in 1995 and part of the European Centre for Disease Prevention and Control (ECDC) since 2007, the European Programme for Intervention Epidemiology Training (EPIET) provides practical

experience in infectious disease epidemiology in the European Union (EU) [1–3]. The EPIET Alumni Network (EAN) was formally established in 2001 as the association of graduates of EPIET, other European Field Epidemiology Training Programmes (FETPs), or EUPHEM (the European Programme for Public Health Microbiology Training, established by ECDC in 2008) [4, 5]. EAN is composed of internal and external members. Internal members are alumni of EPIET, European FETPs, and EUPHEM. Other public health

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professionals can join as external members but should not represent more than 10% of EAN members. Current fellows benefit from EAN services even though they are not formally considered members until after graduation.

EAN contributes to the development and maintenance of a network of public health epidemiologists and microbiologists in the EU by:

- Assisting in the maintenance and development of contacts between members to create strong integration between past and current fellows of the above-mentioned training programmes.
- Sharing and exchanging professional experiences, information and skills between members.
- Constituting and enabling access to a pool of expertise of trained European field epidemiologists and public health microbiologists, who can provide epidemiological, microbiological and public health expertise for members, their organizations, and other public and private organizations.
- Taking part and assisting in the promotion, development and delivery of training in field epidemiology and public health microbiology.

The association is managed by a voluntary executive board (EAN Board) comprised of six members (president, vice-president, two treasurers, two secretaries) elected every 2 years. The Board circulates to all members a weekly jobs and courses bulletin (collated from adverts received from the network), produces a quarterly newsletter, manages the website (www.epietalum.net), organizes or supports short training modules (examples include courses on geographical information systems, evidence-based public health and molecular epidemiology) generally facilitated by members with specific expertise; and represents EAN members' interests at EU and international level. In addition, the Board has a seat on the scientific committee of the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) [6], and provides advice to EUPHEM and EPIET, including participating in the selection of fellows and in their assessment before graduation. Finally, EAN provides financial support to colleagues from under-represented countries, with priority for lower-income countries, to present their work at ESCAIDE.

Systematic and regular monitoring of the membership is essential both to characterize their dynamic role with regards to health protection and to increase our understanding of its needs [7]. Although partial assessments of the EAN membership have been

performed previously [8], a comprehensive evaluation of the association has never been conducted since its inception. In order to demonstrate the capability of EAN as a resource for public health in the EU and to tailor its future strategy, we conducted a survey of all EAN members to describe their demographics and current employment situation and assess their satisfaction with the association.

METHODS

Study design and study population

This was a cross-sectional survey, targeting all 362 EAN members and current fellows registered at the time (May 2013) on our email contact list. There were 79 (22%) current fellows, 247 (68%) internal members, and 36 (10%) external members.

Data collection

We emailed the link to an online questionnaire, live in May–June 2013, to all members. The questionnaire enquired about the following topics: demographics, education and fellowship, current employment, competencies, satisfaction and expectations with EAN, mentoring and social aspects, and support to EAN. Questions were a combination of closed-ended (i.e. yes/no, scores, tick boxes) and open-ended. We asked members to rank their level of familiarity with five broad core competencies (i.e. outbreak investigation, surveillance, operational research, training, scientific communication) before the fellowship, after the fellowship, and at present. We also asked them to rank their current level of expertise in technical topics that ranged from specific epidemiological techniques (e.g. time-series analysis) to specific microbiological ones (e.g. laboratory diagnostics). Scores were based on a 5-point Likert scale (with 1 being the lowest score and 5 being the highest) [9].

Data management

The information provided was exported from the online tool (Limesurvey.org) to a secure encrypted server (Wuala, LaCie Inc., Switzerland).

Data analysis

We used descriptive statistics to report on responses to the questionnaire. We also compared respondents with regards to different outcomes. Prevalence ratios

(PR) were used to determine univariate statistical associations [10]. *P* values of 0.05 were set as the threshold for statistical significance. Data were analysed using Stata (StataCorp LP, USA) and Excel (Microsoft Corporation, USA).

RESULTS

Demographics

Out of 362 people surveyed, 189 (52%) responded. They were primarily internal members (138/189, 73%), followed by current fellows (34/189, 18%), and external members (17/189, 9%). The majority (123/189, 65%) were female. Response rate was 26% for the fellows graduating in the period 1997–2001, 41% for 2002–2006, 58% for 2007–2011, 62% for fellows graduating in 2012 or later, and 63% for external members. Forty-six countries of birth were reported, mainly in Europe (97%) but also Asia (2%), Africa (0.5%), and North America (0.5%). Respondents resided in Europe (90%), Africa (4%), Americas (3%), Asia (2%), and Oceania (3%). About half (101/189, 53%) indicated that their country of citizenship was the same as of residence. This proportion was highest for external members (13/17, 76%); while for internal members it was 52% (72/138). Of the 66 internal members reporting living outside their country of citizenship, 50 (76%) were living in Europe.

Education and fellowship

About half (49%) of respondents reported ‘vocational’ (e.g. medicine, veterinary, pharmacy, or nursing) professional backgrounds. The highest academic qualification was PhD for 44% and Master’s degree for 55%. The majority (73%) reported ‘public health epidemiology’ as their main field of graduation, followed by ‘medicine’ (48%), ‘biological sciences’ (10%), ‘veterinary medicine’ (8%), ‘molecular biology’ (7%), and ‘clinical microbiology’ (7%). Field public health training programmes undertaken by respondents are listed in Table 1.

Current employment

Out of the 155 respondents excluding current fellows, 94 (61%) reported public health epidemiologist as their job status, followed by academic (10%). One third (53/155, 34%) reported working in national public health institutes (PHIs), followed by international PHIs (16%), including ECDC; regional PHIs (10%);

Table 1. Training programme undertaken by respondents, survey of EPIET Alumni Network members, May–June 2013 (*N* = 189)

Programme	<i>n</i>	(%)
EPIET EU track*	99	(52)
European FETP	47	(25)
None	16	(9)
EPIET MS-Track†	11	(6)
EUPHEM EU-Track	7	(4)
UK public health speciality training	2	(1)
Non-European FETP	2	(1)
EUPHEM MS-Track	1	(0)
Missing	4	(2)

EPIET, European Programme for Intervention Epidemiology Training; FETP, Field Epidemiology Training Programme; EUPHEM, European Programme for Public Health Microbiology Training.

* Fellows in the EU-Track are trained in a European Union Member State different from the one of origin.

† Fellows in the MS-Track are trained in the Member State of origin.

Table 2. Main areas of work, survey of EPIET Alumni Network members, May–June 2013 (*N* = 189)

Area	<i>n</i>	(%)
Vaccine-preventable diseases	74	(39.15)
Food- and waterborne diseases	71	(37.57)
Emerging and vector-borne diseases	52	(27.51)
Influenza	43	(22.75)
Antimicrobial resistance	37	(19.58)
Sexually transmitted infections	36	(19.05)
Tuberculosis	31	(16.4)
Other communicable diseases	16	(8.47)
Non-communicable diseases	13	(6.88)
Surveillance	7	(3.7)
Training	4	(2.12)

and research institutions (8%). Their areas of work are reported in Table 2.

Competencies

There was a significant difference in the mean score of all five core competencies in the three observation times (Table 3). The mean increase in ranking of all competencies from before to after the fellowship was 1.50; while from after the fellowship to the time of the survey was 0.20. The highest ranked technical topic was multivariable analysis (Table 4). Collectively, respondents reported having published

Table 3. Mean ranks on a Likert scale* for each competency before and after the fellowship and at the time of the survey, survey of EPIET Alumni Network members, May–June 2013 (n = 134, excluding external members and current fellows)

Competency	Mean score			Increase	
	Before	After	Present	Before/after	After/present
Outbreak investigation	2.23	4.15	4.27	1.92	0.12
Surveillance	2.34	4.04	4.30	1.70	0.27
Operational research	3.04	4.11	4.31	1.07	0.20
Training	2.54	4.21	4.43	1.67	0.22
Written scientific communication	3.18	4.29	4.50	1.11	0.21

* Likert scale: 1–5 (with 5 being the highest level of expertise).

Table 4. Mean ranks on a Likert scale* for specific technical topics, survey of EPIET Alumni Network members, May–June 2013

Topic	Mean score	No. of responders
Multivariable analysis	3.5	168
Statistical sampling	3.3	167
Bacteriology	2.7	161
Time-series analysis	2.7	168
Laboratory diagnostics	2.7	165
Social science	2.6	157
Clinical microbiology	2.6	160
Virology	2.6	162
Geographical information systems	2.6	167
Molecular epidemiology	2.5	165
Parasitology	2.5	161
Biosecurity	2.4	161
Field laboratory capacity assessment	2.1	160
Bioinformatics	2.1	154
Statistical modelling	2.1	167

* Likert scale: 1–5 (with 5 being the highest level of expertise).

2284 peer-reviewed articles, 851 (37%) as first author, with a median of eight articles each (mean 12.1).

Satisfaction and expectations with EAN

The mean degree of satisfaction of respondents with EAN was 4.1. Receiving job alerts was considered the biggest benefit of being part of the association; while continuing professional development was scored as the highest domain where EAN should invest more resources (Fig. 1). One fifth of respondents (38/189) reported having ever applied to one of the positions

circulated; out of these, 47% (17/38) reported having been successful in their application. Only 2% (4/189) claimed not to have ever read the newsletter; 28% (53/189) reported having contributed. Only 5% (9/189) of respondents reported connecting to the EAN website at least once a month. More than two thirds (132/189, 70%) reported having attended ESCAIDE at least once in the previous 3 years. Most respondents (143/189, 76%) indicated that EAN should continue to be part of the ESCAIDE scientific committee, followed by providing travel grants (134/189, 71%) and providing training modules before or after the conference (123/189, 65%). Forty-one (22%) out of 189 respondents reported participating in an EAN training activity, with a mean degree of satisfaction of 3.2. The majority (32%) would prefer in-country face-to-face training, although 22% also suggested self-training through online modules or web seminars (15%) on different topics (Table 5).

Mentoring and social aspects

Of 159 current and past fellows graduating after EAN's establishment, 48 (30%) reported having received support (e.g. technical, administrative, social) from EAN members during their fellowship and 44 (27%) reported having offered support. Members who had been helped as fellows were three times more likely to help other fellows [PR 3.20, 95% confidence interval (CI) 1.87–5.50, $P < 0.001$].

Support to EAN

About half (97/189, 51%) of respondents indicated that they were happy to be approached to contribute to EAN activities. The majority of respondents (134/189, 71%) agreed that EAN should look for sponsorship for its

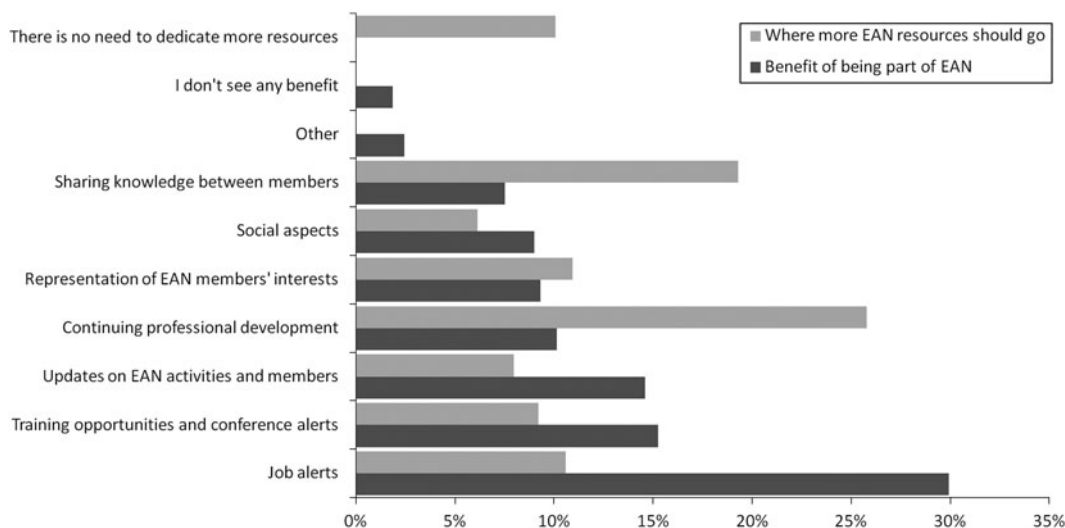


Fig. 1. Ranking of benefits in being part of EPIET Alumni Network (EAN) and domains where EAN should dedicate more resources, weighted by order of preference. Survey of EAN members, May–June 2013.

Table 5. Topics on which members would like to see training modules organized

Topic	n	(%)
Analytical methods (biostatistics)	73	(39)
Geographical information systems	72	(38)
Hospital epidemiology	57	(30)
Time-series analysis	55	(29)
Computer tools (software)	45	(24)
Laboratory for epidemiologists	40	(21)
Communication – relationship with media and public	34	(18)
Specific diseases	28	(15)
Communication – scientific writing and presentation	14	(7)

activities; but over half (75/134, 56%) did not wish to seek funding from pharmaceutical companies.

DISCUSSION

This report represents the first comprehensive assessment of the EAN membership since its inception. The network consists of highly qualified and competent professionals from all over the world, although most are European citizens who work within the EU, mainly in PHIs. Members were satisfied with EAN, especially through access to job offers and professional networking. They requested more professional development opportunities and knowledge-sharing between members.

Facilitating the return of alumni to their countries of origin after training has been one of the challenges of EPIET, especially with regard to lower-income EU countries offering comparatively fewer professional opportunities than more established ones [1, 4, 8, 11]. This is reflected in our findings showing that about half of internal members live in a country different from the one where they were born. However, only one-quarter of them actually live outside the EU; this is less than the number reported by a previous analysis of EPIET graduates performed for the period 1995–2008 [8]. Recent initiatives such as creating EPIET MS-Track in 2011, which allows fellows to be trained in their country of origin, or reinforcing collaboration with local FETPs, will likely contribute to building and retaining capacity in less established Member States [1, 4, 8, 11].

Compared to other alumni associations [12], EAN is unique in the sense that public health microbiologists (i.e. alumni of the EUPHEM programme) can also join the network. Although there was variability in professional and academic background, resulting in a positively multidisciplinary network [13], most respondents indicated being graduates in public health epidemiology, followed by medicine, and were currently working as public health epidemiologists. This is comparable to findings of similar analyses of graduates of extra-European public health programmes [14–17]. As expected, the main areas of work were related to infectious diseases; but non-communicable diseases, also a priority for European public health [18], were represented too.

Excluding current fellows, national, regional, or sub-regional PHIs remained the most common employers of respondents, indicating that EAN members are ideally placed to respond to public health emergencies at country and local levels. International institutes were also well represented, confirming that the role of EAN members at an international level is also strong.

Respondents were highly qualified with almost half of them having a PhD as the highest academic degree and collectively reporting hundreds of peer-reviewed publications and high expertise in a variety of specific technical topics. Instead of a detailed investigation of competencies [17], we chose to measure the five broad competencies on which EPIET and other FETPs have been based [5, 8, 19–21]. Encouragingly, for all competencies the mean was >4 on the Likert scale, always increasing significantly from before to after the training. There was also an increase from immediately after the training to the day of the survey, which indicates that members continue to develop their skills after completion of the formal training programmes.

Members considered receiving job advertisements as the greatest benefit of being in the association. However, only a minority had actually applied for a job, suggesting that the interest in job alerts may be mostly informational. The website, which was developed according to the Web 2.0 principle to encourage user-generated content as a social networking tool for all members, was actually the least used resource. Members were in general satisfied with the training opportunities offered; requesting that EAN should put even more resources into continuing professional development. Almost all members approved the involvement of the EAN in organizing the ESCAIDE conference. This suggests that members appreciate more the networking opportunities that happen in person rather than online.

Mentoring from alumni to fellows was not as common as we had hoped from such an active network. Only one third of members reported having offered support to fellows during their training. However, it was somewhat reassuring to see that a higher proportion reported actually having received help from members while in training. The reason for this difference may be that members do not consider that they have a mentoring role even though they are perceived as mentors by fellows. Although not surprising, it was also positive to see that members who had been helped as fellows were in turn more likely to help fellows as alumni.

While training public health professionals is undoubtedly a costly activity [8, 18], maintaining the network has virtually no costs for the public health system. However, certain activities of EAN (e.g. the travel grants scheme or organizing training courses) would benefit from extra funding in addition to the membership fee. In the current financial climate that sees prioritizing public spending on biomedical and technological research (with commercial as well as scientific benefits) compared to population and organizational research (with more social benefits) [22, 23], EAN has been debating whether financial support from outside individuals or organizations should be searched more proactively. Analysis of responses provided a mandate for EAN to seek non-commercial external support, with over half being against seeking funds from pharmaceutical companies.

This study is subject to some limitations. First, a response rate of about half the membership base may indicate that there is a group of members that are not active and not interested in the network. If this is the case, we may have overestimated certain factors such as the level of satisfaction with the network. Response rate was higher in current fellows, recent graduates, and external members (who volunteer to join EAN). This may indicate that a pool of recent, more enthusiastic members, have replied to the survey. It could also be that non-responders are working outside of public health and do not consider themselves as part of the network. Having said that, response rate seemed to be even across the three different groups, reassuring us that these data may be representative of the association as a whole. Second, the responses were self-reported and certain factors (e.g. competencies) may have been subject to 'optimistic bias', as seen elsewhere with this type of survey [24]. Third, the total number of publications reported does not take into account the fact that some EAN members may have co-authored certain publications, resulting in an overestimation of publications collectively.

EAN should be primarily a resource for its own members, to preserve and nurture their expertise. In this sense, mentoring should be encouraged for fellows currently in training; while after the fellowship, the EAN Board should put extra efforts into the organization of training modules for members and the facilitation of networking opportunities, focusing on face-to-face interactions, but also considering a re-modernization of the IT infrastructure. On this note, the current web-based strategy of EAN could

be reinforced by greater utilization of the already established social networking sites (e.g. LinkedIn, Facebook, Twitter, etc.) [25–27].

Since its foundation in 2001, EAN has grown into a substantial and unique body with around 400 public health professionals and public health microbiologists. Given the disparity in public health training in the different countries of Europe and elsewhere [18] having a network of professionals that know each other, have a common background, speak the same ‘language’, and can easily access each other’s expertise, represents also an important resource for European and global public health. EAN is therefore ideally placed to advocate for public health and infectious disease epidemiology in international forums, lend its support for grants in the field of infectious disease epidemiology, participate in international think tanks, and most importantly contribute to an extensive global reserve workforce of experts with ‘core public health capacities’ to be mobilized in case of ‘events that may constitute a public health emergency of international concern’ as envisioned by the International Health Regulations [28].

How best should we develop, manage, and use this resource in the future? The current management by the EAN Board, consisting of only six members working on a voluntary basis, needs support to meet the needs of the growing membership and the increasing activities needed for internal and external development. This support could come from members, especially recent graduates who are often particularly keen to contribute and who could be involved more in the running of EAN. Logistic and administrative support, such as the establishment of an office with dedicated staff time, is also required to professionalize the organization, but would require specific funding not currently available. EAN should consider how to find resources for future development, including new sources of income and support through establishing or reinforcing partnerships not only with ECDC or the Global Alert and Response Network (GOARN) of which EAN has been a formal member since 2012, but also with other governmental and non-governmental organizations and other public health alumni associations around the world,

Finally, as EAN is an entity in constant evolution, changing our name from EPIET Alumni Network to include other fellowship programmes may help in attracting members beyond EPIET. Moreover, we should consider a further survey in a few years’ time to address how certain factors may have evolved

(e.g. after the inclusion of more EUPHEM and MS-Track alumni) and also conduct specific assessments, e.g. a more complete competency survey or a review of activities by members to measure the impact of EAN on global health, or enquire among members about the possibility of EAN evolving into a professional organization and what the possible consequences of such professionalization would be.

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DECLARATION OF INTEREST

None.

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