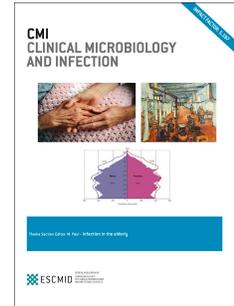


# Journal Pre-proof

Experience abroad and participation in ESCMID educational activities: results from a survey among French infectious diseases specialists in training

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1 **Experience abroad and participation in ESCMID educational activities: Results from a**  
2 **survey among French infectious diseases specialists in training.**

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23 *To the Editor,*

24 Today, infectious diseases (ID) specialists are facing complex and challenging situations due to, among  
25 others, the exponential increase in international travels and migration, the impacts of climate change, the  
26 emerging or re-emerging infectious diseases and the huge diversity of social and cultural background of the  
27 patients they are taking care of. A clinical or scientific experience abroad (outside of one's home or training  
28 country) may then bring valuable benefits to future ID specialists.

29 The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) offers trainees a broad  
30 variety of educational activities across the world: courses, workshops, summer school, mentorship and  
31 observerships.

32 We conducted a national survey among French ID trainees, to assess their motivations to undertake a  
33 clinical or academic international experience, and to identify factors that influence their decision. We also  
34 assessed their knowledge and perception of ESCMID's educational activities.

35 All French ID trainees and all recently graduated ID physicians (with a senior position for less than two  
36 years) were eligible. These criteria are the prerequisite to be member of the RéJIF (the young French  
37 Infectious Diseases society). The 29-item questionnaire (supplementary data) was pilot tested by 15 ID  
38 trainees. The survey was accessible online from November 5<sup>th</sup> 2018 to January 30<sup>th</sup> 2019. Data were  
39 analyzed with R software (version 3.5.3).

40 We received 123 responses out of the 402 invitations sent by email (response rate 31%). Half of the  
41 respondents were female (65/123, 53%). Positions held were mainly resident (48%) followed by fellows  
42 (22%) and senior ID specialist (15%) (supplementary material).

43 To the question "how much would you like to complete part of your clinical or scientific training abroad?" (on  
44 a 6-point Likert-scale), the answer was "Yes, very much" for half of the respondents. Overall, 81% of the  
45 respondents were in favor of completing part of their training abroad. Their most frequent motivations were

46 to discover a new culture (71%), to improve skills in a specific area (71%), to improve foreign language  
47 skills (70%) and to discover a new health-care system (66%).

48 The main barriers encountered were: the burden of administrative procedures (59%), financial reasons  
49 (additional costs related to moving, fees for administrative procedures, lower income during the period  
50 abroad (grant or lower-graded position)) (58%), family reasons (54%) with no significant difference between  
51 men and women, and the fear of a negative impact on career progression (fear to lose a current or future  
52 position during the stay abroad) (26%).

53 Factors perceived as facilitators were: having available contacts abroad (e.g. established partnership  
54 between university or between hospitals) (82%), financial support (78%), incentives via a validation of the  
55 training abroad as part of the French mandatory training (70%), administrative support (62%).

56 Fifty-five percent had previously heard about ESCMID educational activities but only 4% had participated in  
57 one of them. The main barriers for not participating were clinical duties (53%), lack of time to find out about  
58 the sessions (30%), self-perception of insufficient level of English (19%). We identified the following  
59 facilitators for participation: better communication on grants (70%) and validation of the educational activity  
60 as part of the mandatory French training (53%).

61 Our results show that a majority of the respondents declare having interest in undertaking an international  
62 experience during their ID training. So-called "International health electives" are a popular component of  
63 many medical schools in Canada and the United States (1). An abroad training allows to acquire cross-  
64 cultural attitudes, skills, and knowledge that directly affect clinical decision-making in treating imported  
65 diseases among immigrants and travelers. It has also been reported to enhance personal development (2)  
66 and favor certain values such as altruism, idealism, community service, and humanism (3).

67 The top-ranked facilitator was establishing and expanding contacts abroad. It emphasizes that connections  
68 and network play a crucial role. Several European initiatives took place over the past years to promote  
69 networking for trainees. The Trainee Association of ESCMID (TAE) Trainees Day organized during

70 ECCMID, observership grants and mentorship program launched by ESCMID are a few examples. In the  
71 search for connections abroad, mentorship can play a determining role and help building a career, as  
72 recently highlighted in the survey conducted among ID trainees from Europe (4).

73 Administrative and financial concerns were the main reported barriers. Similarly, financial burden was found  
74 as the main obstacle in a survey assessing obstacles for European student mobility (5).

75 Family burdens came third only to financial and administrative concerns. Family burdens include difficulties  
76 in maintaining two careers, in moving family and/or partner abroad, childcare or transfer children to a new  
77 education system, being separated from the rest of the family etc. A European study on factors that may  
78 inhibit researcher mobility and career development (6), acknowledge how the pressure to be mobile can  
79 discourage women from pursuing research. The problem of having to “choose” between a research career  
80 and family or relationship was frequently mentioned (6). The French medical academic landscape is still  
81 dominated by the male gender for the top-level positions. In France, only 21% of medical professors were  
82 women in 2018 (sex ratio 3.7 men for one woman) (7). This severe unbalanced gender distribution at the  
83 professorship ID positions has also been observed in other European countries (8). A survey conducted  
84 among ID physicians from Europe shown that women were less likely than men to receive visiting  
85 appointments and participate in high-level decision-making boards, activity that encourages the building of  
86 professional networks and contacts outside home institutions (8). A mobility abroad is mandatory to access  
87 a professorship position in France and other European countries. This required mobility may play a role,  
88 among other factors, in keeping women outside of the academic world. Potentials solutions need to be  
89 explored. The provision of childcare services in conference as recently highlighted by young researchers in  
90 the field is one example (9).

91 This research work emphasizes the barriers met by future ID specialist to temporary train outside of their  
92 home country. These results invite us to reflect on logistical and financial solutions to make this opportunity  
93 accessible to more ID trainees. Further research should focus on mapping determinants of mobility among

94 ID trainees at the European level and we are open to future collaborative projects with the Trainee  
95 Association of ESCMID (TAE) or other national young Infectious diseases societies. We hope that our  
96 findings can help promote mobility within and outside Europe for future ID specialists and raise awareness  
97 for equal opportunities for training abroad.

98

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101 number: 2213137). In accordance with French laws, this survey did not need any ethical approval.

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109 DUBEE Maxime HENTZIEN, Adrien LEMAIGNEN, Michael THY, Capucine MARTINS, Pauline THILL

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### 111 **Transparency Declaration**

112 The authors have no conflicts to declare. No funding was received for this work

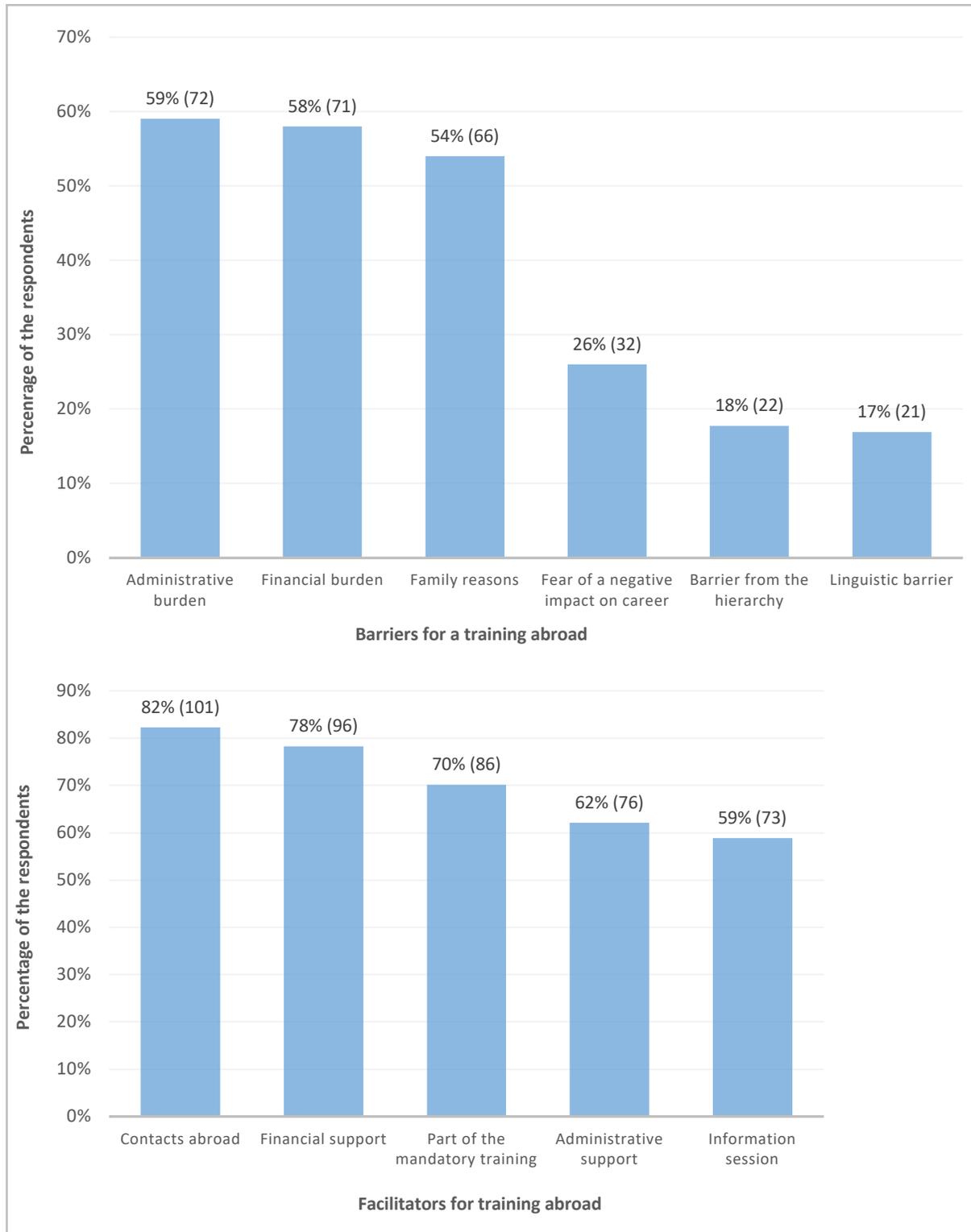
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**Figure 1.A: Main barriers and facilitators perceived by the respondents to undertake part of their training abroad**