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## Women in Anaesthesia and Intensive Care Medicine in France: are we making any progress?

Anne Godier <sup>1</sup>, Karine Nouette-Gaulain <sup>2</sup>, Marie-Laure Cittanova <sup>3</sup>, H el ene Beloeil <sup>4</sup>, Catherine Paugam-Burtz <sup>5</sup>, Anne-Claire Lukaszewicz <sup>6</sup>

<sup>1</sup> Department of Anaesthesiology and Intensive Care, H opital Europ een Georges-Pompidou, AP-HP, Paris, France; INSERM UMR-S1140, Paris Descartes University, Paris, France. Electronic address: annegodier@yahoo.fr.

<sup>2</sup> CHU Bordeaux, Service d'Anesth esie R eanimation Pellegrin, H opital Pellegrin, Place Am elie Raba L eon, 33000 Bordeaux, France; University Bordeaux, INSERM U12-11, Laboratoire de Maladies Rares : G en etique et M etabolisme (MRGM), 176, Rue L eo-Saignat, 33000 Bordeaux, France.

<sup>3</sup> Department of Anaesthesiology, Clinique Saint-Jean-de-Dieu, Paris, France.

<sup>4</sup> Universit e Rennes, Inserm Numecan CIC1414, Department of Anaesthesiology and Critical Care, CHU Rennes, 2 avenue Henri Le Guilloux, 35000 Rennes, France.

<sup>5</sup> Department of Anaesthesiology and Critical care medicine, DMU PARABOL, BEAUJON Hospital, APHP, Nord-Universit e de Paris, 100 Bd du General Leclerc, 92110 Clichy, France; Inserm UMR\_S1149, Inserm et Universit e de Paris, Paris, France.

<sup>6</sup> Department of Anaesthesiology and Intensive Care, H opital Neurologique Pierre Wertheimer, Hospices Civils de Lyon, 59 Boulevard Pinel, 69500 Bron, France; EA 7426 PI3 (Pathophysiology of Injury-induced Immunosuppression), Hospices Civils de Lyon/Universit e Claude-Bernard Lyon 1/ bioM erieux, H opital E.-Herriot, 5, place d'Arsonval, 69437 Lyon Cedex 03, France.

### Abstract

**Introduction:** Gender imbalance in medicine is a topic of increasing interest. Gender matters, as there is increasing evidence that a gender diverse medical workforce translates into improved patient outcomes. The gender distribution in France among the anaesthetists-Intensive care (AIC) physicians has never been considered.

**Methods:** Gender distribution is described during the last two decades in France among the whole population of AIC physicians according to their age, professional activity, leading and academic position.

**Results:** The proportion of female AIC physicians remained stable from 1999 to 2018, between 35 and 38%. Only 40% of residents choosing this specialty in 2018 were female. Female AIC physicians were under-represented in key medico-political and academic positions: in 2018, 0.7% of the 605 presidents of medical commissions from public hospitals and none of the medical university deans were female AIC physicians; 9% of AIC full Professors were female. In the French Society of Anaesthesia and Intensive Care (SFAR), 42% of the members of the Scientific Committee of our Society are women.

**Conclusions:** A gender imbalance is apparent in French AIC Medicine and worsens as physicians progress through the academic or leadership pipelines. The French Society of Anaesthesia and Intensive Care campaigns for proportional representation at all levels of leadership, which translates into more gender equality in the committees of the society, including the Scientific Committee. A major policy shift is urgently required to support women, to tend toward gender parity to increase the performance of the French AIC workforce.

**Keywords:** Anaesthesia and Intensive Care Medicine; France; Gender; Inclusion; Parity; Women

## Introduction

The gender imbalance in medicine is a topic of increasing interest and discussion. Worldwide, women are under-represented in medicine with 23%, 36% and 42% of Korea, US and Greece medical doctors respectively in 2017 [1]. Gender matters, as there is increasing evidence that a gender diverse medical workforce translates into improved patient outcomes [2]. Consequently, different strategies have been applied to reduce the gender disparity, resulting in increasing proportions of graduating female medical students globally. However, a significant gap remains in the representation of women as professors, as leaders, on guideline panels, as conference speakers and chairs, in scholarly publications, and as grant and award recipients [3].

The assessment and the publication of the gender balance within the French community of anaesthetist-Intensive care (AIC) physicians have never been reported before. This study aimed to analyse the current state of gender distribution in Anaesthesia and Intensive Care Medicine in France.

## Methods

We conducted a descriptive study of the gender distribution during the last two-decades in France among the whole population of AIC physicians according to their type of professional activity (the proportion of salaried *versus* unsalaried AIC physicians), also among the population of residents of the specialty, among the Chairs of the medical board/commission of the hospitals, and in different boards of our scientific society. We reviewed information from publically available online data from:

- the French Medical Council [4],
- the National Management Centre (Centre National de Gestion) under the authority of the Ministry for Solidarity and Health [5],
- the Directorate for Research, Studies, Evaluation and Statistics (Direction de la Recherche, des Etudes, de l'Évaluation et des Statistiques - DREES) under the joint authority of the Ministry of Labour, the Ministry for Solidarity and Health, and the Ministry of Public Action and Accounts [6],
- the Conference of Presidents of Medical Commissions from University hospitals (Conférence des Présidents de Commissions Médicales d'Établissement des CHU) [7],
- the National federation of Clinical Fellows (inter syndicat national des chefs de clinique et assistants des hôpitaux) [8],

Data from the French Society of Anaesthesia and Intensive Care (SFAR) was also collected regarding the administration council and the Scientific Committee.

Data are reported as numbers and frequencies.

## Results

In France, the number of AIC physicians progressively increased to become the largest medical specialty after general medicine, with 11,497 practicing AIC physicians in 2018, meaning 5.1% of all the physicians and 9.3% of the specialised physicians. In 2018, 37% of them were female, compared to 46% in the whole population of French medical doctors. Overall only 29% of AIC physicians aged 60 to 64 were female. However, the rate of female physicians increased in the younger generations (figure 1) and women were the dominant gender (52%) in the group of AIC physicians aged 30 to 34. Nevertheless, the proportion of female AIC physicians remained stable from 1999 to 2018 from 35% to 38%; the highest value was observed in 1999 and the lowest one in 2012.

Regarding professional activity, more than three quarters of the AIC women were salaried physicians compared to less than three fifths of the men. The proportions of women among salaried and self-employed AIC physicians remained stable over two decades: women represented 41 to 45% of salaried AIC physicians in the hospital and 24 to 27% of self-employed professionals.

Regarding medical students, the proportion of women choosing anaesthesia and intensive care medicine after classifying for national tests at the end of the second cycle of medical school progressively increased and exceeded the number of men for the first time in 2009 (figure 2). Nevertheless, it decreased afterwards to become lower than 40% since 2016. It should be noted that at the same time the number of residents of the speciality gradually increased from 243 in 2004 to 465 in 2018.

If AIC physicians were under-represented as presidents of medical commission of public hospitals (5%), female AIC physicians were almost absent from this key politico-medical position: four (0.7%) of the 605 presidents of medical commissions from public hospitals were female AIC physicians in 2018 (compared to 168 females/605 presidents) (table 1). When considering exclusively medical commissions from the 32 French university hospitals, one AIC man and no woman were presidents.

Female AIC physicians were also under-represented in academic positions. In 2018, in French academic departments of Anaesthesia and Intensive care medicine, women comprised 9% of all full Professors and 10% of Associate Professors. Whereas four of the 37 French medical universities deans were women, none were female AIC physicians. Nevertheless, the proportion of female AIC in the AIC section of the National Council of Universities increased over the last two decades, from 17% in 2000 to 33% in 2018.

Regarding our scientific society, the French Society of Anaesthesia and Intensive Care (SFAR), six of the 24 elected members of the current administration council are female AIC physicians (figure 3). In the

37-year history of the Society, one woman has served as president compared to 18 men. Forty-two percent of the members of the Scientific Committee of the Society are now women, with a progressive increase over time (figure 3), and the current President is a woman, as well as the previous one. The editorial board of our Society medical journal, *Anaesthesia Critical Care & Pain Medicine* (ACCPM), comprises currently five women (15%) out of its 34 members.

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## Discussion

This study highlights that women have remained under-represented compared to men in AIC Medicine over time in France. Whereas women are expected to represent close to half of all AIC physicians, the proportion of women has remained constant at about 37% over the last two decades. As the proportion of female medical students selecting this specialty has not exceeded 40% for many years, it is unlikely that the proportion of female AIC physicians will increase spontaneously in the future. These findings are not specific to France. A similar analysis examining the roles of women in Canadian anaesthesiology reports that one third of practicing anaesthesiologists and 38% of anaesthesiology postgraduate residency trainees were female in 2018 [9].

There are many reasons for gender disparity in Anaesthesia and Intensive Care Medicine, including that this medical specialty may be less attractive for women, especially in France, where AIC physicians are both anaesthetist and intensivists. Workload and long unpredictable not flexible work hours could alter the attractiveness of the discipline for women, especially for the ones with families [10]. The high proportion of AIC women with a salaried activity may reflect security requirement for their professional activity and easier organisation of personal and family life.

Gender imbalance is a concern beyond the simple problem of equity for female representation. Female and male physicians have been shown to have different medical practice styles and these differences in practice patterns may have important clinical implications for patient outcomes. Indeed, when synthesising the results of two meta-analytic reviews, Roter al. reported that medical visits with female physicians were, on average, longer than those of male physicians and during this time, female physicians engaged in significantly more patient-centred communication, more active partnership behaviours, positive talk, and emotionally focused talk [11]. The results of this extra-time spent with the patients were more information disclosed by the patients during the visit. Women are also more likely to follow guidelines as neatly showed by Baumhake et al. [12] In 1857 consecutive patients suffering of chronic heart failure, the authors reported the influence of the gender of the physician, as female physicians did not treat male and female patients differently. In contrast, male physicians favoured male patients for prescription and dosage of beta-blockers. The article by Lurie et al. should also be cited as it was one of the well-designed first large scale study (97 962 patients included) showing that women were more likely to undergo screening with cervical cancer (Pap test) and mammography if their physician was a woman [13]. In the field of intensive care, Meier et al. recently showed in 1082 patients who suffered from cardiac arrest that female leader gender was independently associated with a higher likelihood of return of spontaneous circulation (odds ratio, 1.36; 95% CI, 1.01-1.85;  $p = 0.049$ ) and survival to discharge (odds ratio, 1.53; 95% CI, 1.15-2.02;  $p < 0.01$ ) [14]. Because female and male physicians complement each other in patient management, gender diversity will benefit to medical

practice and patient outcome. Therefore, by promoting complementary approaches, parity would be a real strength for our discipline.

Gender disparity worsens when considering academic or leadership positions, with even fewer women involved. Reasons include implicit bias that contributes to stereotypes that associate men with leadership, unequal mentorship and sponsorship [3], but also specific French characteristics of academic carriers: academic appointment requests high performance in the tripartite mission of academic medicine, i.e. patient care, research, and education, but requests also to perform a postdoctoral fellowship abroad [15]. This accomplishment is difficult to accommodate within the old family organisation, in which women handle most of the responsibilities. Indeed, women are more likely to take career breaks and these breaks have been shown to be barriers for women's careers progression [16-17]. For example, no options for flexible working hours are available during pregnancy so far in France. One can imagine that women could be discharged from clinical work and focus on the academic side during that time. Some countries in northern Europe have implemented such organisations [18].

Even if fewer among AIC population, AIC women could be expected to be in the same proportion in academic and hospital leadership positions. Obviously, women are underrepresented among academic or hospital leaders. The achievement of gender balance in leader positions may influence the young graduates choosing AIC as future career, in return offering greatest opportunity to bring out female leaders. It has to go through a virtuous cycle from equality to equity for women's representation in positions of responsibilities. Above all, because women and men complement each other in their management strategies, gender diversity will bring different perspectives and ideas to the table and improve academic and hospital performances.

Interestingly, gender gap is less marked in the National Council of Universities and especially in the Scientific Committee of our society. This improvement results from an active program of SFAR that campaigns for proportional representation at all levels of leadership. Whereas elected women remain underrepresented in the Administrative Council of SFAR, the Scientific Committee consistently corrected gender disparity, with a 150% increase of the number of nominated women within 10 years. This committee, as the other 11 committees of the society, has a recent equity policy for panel to achieve better gender balance. Among its missions, the committee balances the gender of invited plenary speakers at the annual meeting to avoid conferences that are overwhelmingly male. Similarly, the National Council of Universities has a specific policy regarding gender. Such improvement in gender equity highlights that active programs and policies are effective to improve visibility of women in academia. Making women more visible in anaesthesiology is a key step for efficient mentoring of the youngest women and their promotion in our discipline [19].



Concerning editorial boards of medical journal, *The Lancet* audited its practices and highlighted discrepancies between different editorial boards [20]. While the editorial department included 84% of women, 30 % of them were part of the editorial advisory board. *The Lancet's* workforce was female-dominated but the peer reviewers were vastly male (only 22% of women in 2017). After identifying the determinants explaining the under-representation of women, specially the vicious cycle for women showing how meritocracy is rigged against women, *The Lancet* developed a full strategy to improve women's participation and representation at each level. The editorial board of our French society's medical journal Anaesthesia Critical Care and Pain Medicine, including currently 6% of women, could definitely benefit from a strong similar strategy including a structural change.

It is urgent to recognise the importance of gender equity and to start taking measures to ensure gender balance. The anaesthesiology-intensive care community in France needs to engage efforts to increase diversity and inclusion. Management research shows that interventions that aim to change individual attitudes and behaviour are usually ineffective [21]. We should move to more comprehensive interventions that address structural and systemic changes, including behavioural guidelines. Men should be engaged with supporting women in improving gender balance within institutions and hospitals, including changing patterns of promotion, leadership of universities, research centres, and journal editorship [19]. In addition, our hospitals and institutions must draw up strategies to make everyday family life easier and facilitate the family environment adhesion to women careers, like arranging time of meetings, access to nursery, spousal hiring program to facilitate appointment of accompanying academic spouse [22]. Last, we have to seek opportunities to identify and guide junior female faculty, to mentor and sponsor them, to support and elevate them. Such strategy will increase the number of potential female applicants to leading and academic position, without biased selection process. However, an important trigger will be the implementation of a national policy as it has been initiated in the UK by the Royal College of Physicians [23]. The emphasis was on mentoring, leadership development and networking opportunities for aspiring female leaders.

### Conclusion

A gender imbalance is apparent in the French AIC physicians, more than in the whole population of French medical doctors, although it is no longer observed in the youngest AIC group aged 30 to 34 years old. Moreover, this gender imbalance worsens as physicians progress through the academic or leadership pipelines. A major policy shift is urgently required to support women, to accelerate the rate of diversification of academic medicine and to reach gender parity, which ultimately will increase the performance of the whole French AIC workforce.

**Authors' contributions**

Study design: AG, KNG, CPB, ACL

Data collection, and analysis: all authors

Conceived figures, drafted manuscript, and wrote the manuscript: AG, ACL

Discussed results, provided critical revisions of the manuscript, and approved final manuscript: all authors.

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Table 1: Presidents of Medical Commissions from French public hospitals in 2018

	Public hospitals		University hospitals	
	N	%	N	%
All presidents	605	100%	32	100%
Men	437	72%	30	94%
Women	168	28%	2	6%
Men AIC physicians	25	4%	1	3%
Women AIC physicians	4	0.7%	0	0%

AIC physicians: anaesthetists-intensive care physicians

Figure legends

Figure 1:

Practicing Anaesthetists-Intensive care physicians by age group and by gender in 2018

dark grey: women; light grey: men

Figure 2:

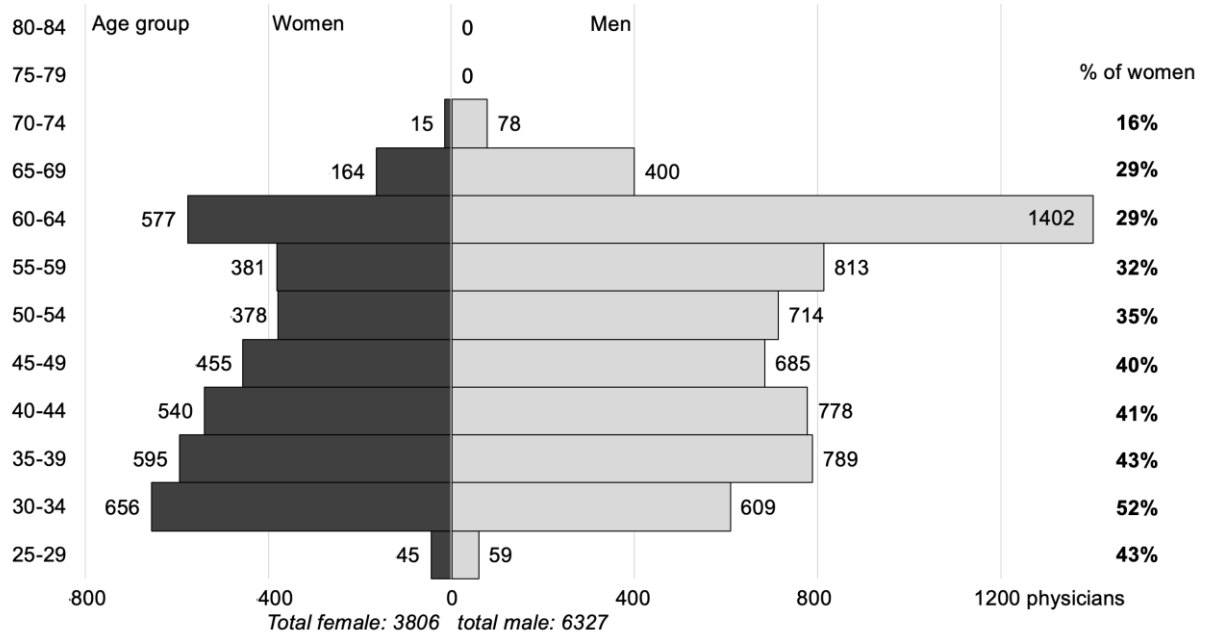
Percentage of women choosing anaesthesia and intensive care medicine after classifying national tests at the end of the second cycle of medical school

Figure 3:

Number of men and women in the Administrative Council and in the Scientific Committee of the French Society of Anaesthesia & Intensive Care (SFAR)

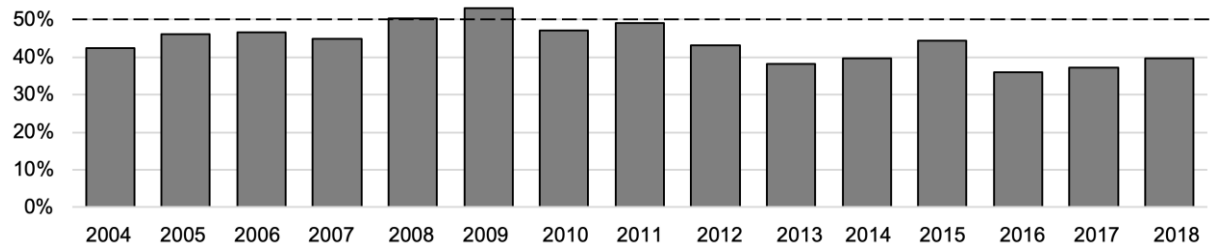
dark grey: women; light grey: men

Figr-1Figure 1:



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Figr-2Figure 2



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Figr-3Figure 3

