

# Attrition Rates Between Residents in Obstetrics and Gynecology and Other Clinical Specialties, 2000–2009

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## Abstract

**Background** As resident attrition disrupts educational and workload balance and reduces the number of graduating physicians to care for patients, an ongoing goal of graduate medical education programs is to retain residents.

**Objective** We compared annual rates of resident attrition in obstetrics and gynecology (Ob-Gyn) with other clinical specialties of similar or larger size during a recent 10-year period, and explored the reasons for resident attrition.

**Methods** In this observational study, we analyzed annual data from the American Medical Association Graduate Medical Education Census between academic years 2000 and 2009 for residents who entered Ob-Gyn and other core clinical specialties. Our primary outcome was the trend in averaged annual attrition rates.

**Results** The average annual attrition was  $196 \pm 12$  (SD) residents, representing  $4.2\% \pm 0.5\%$  of all Ob-Gyn residents. Rates of attrition were consistently higher among men (5.3%) and international medical school graduates (7.6%). The annual rate of attrition was similar to that for other clinical specialties (mean: 4.0%; range: from 1.5% in emergency medicine to 7.9% in psychiatry). The attrition rates for Ob-Gyn residents were relatively stable for the 10-year period (range: 3.6% in 2008 to 5.1% in 2006). Common reasons for attrition were transition to another specialty (30.0%), withdrawal/dismissal (28.2%), transfer to another Ob-Gyn program (25.4%), and leave of absence (2.2%). These proportions remained fairly constant during this 10-year period.

**Conclusions** The average annual attrition rate of residents in Ob-Gyn was 4.2%, comparable to most other core clinical specialties.

## Introduction

Declining interest in obstetrics and gynecology (Ob-Gyn) training among US medical students has stimulated interest in new strategies to enhance recruitment into the specialty.<sup>1</sup> It is encouraging that the number of applicants per resident

position and number of positions filled increased in recent years.<sup>2</sup> Concurrently, an important goal of any program is not only to attract but also to retain residents to provide an essential number of graduates to care for patients. Furthermore, when a resident leaves a program, faculty or the remaining residents may encounter increased workloads, the program director may face greater pressures to comply with duty hour regulations and diminished flexibility in providing appropriate service and educational coverage, and morale may be negatively affected.

Studies of resident attrition in Ob-Gyn to date are limited by small sample sizes, variable response rates to program director survey studies, or evaluations over relatively short periods.<sup>3–5</sup> Furthermore, the definition of attrition can vary between studies, with attrition being defined as the proportion of residents who leave their initial program at each level per year or at any level per year, or those who do not complete the initial program within the expected 4 years. The objective of this study was to compare annual rates of resident attrition in Ob-Gyn with other clinical specialties of similar or larger size during a recent 10-year period, with attrition defined as a resident at any level leaving a specific program during that year to

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pursue another specialty or another Ob-Gyn program, or to cease training.

## Methods

Data were gathered from the annual American Medical Association National Graduate Medical Education Census.<sup>6</sup> Our study population included all categorical residents without prior US graduate medical education training who entered Accreditation Council for Graduate Medical Education (ACGME)-accredited Ob-Gyn programs between academic years 2000 and 2009. We chose to compare annual attrition rates between Ob-Gyn and other clinical specialties with similar- or larger-sized residency programs (general surgery, internal medicine, family medicine, psychiatry, pediatrics, anesthesiology).

The attrition group consisted of any resident at any level who left his or her original program during a specific year. The attrition rate was calculated for any year by using aggregated national data as the percentage of all residents who left their original program. A primary reason for each departure was reported by the program director. Reasons for attrition included transferring to another Ob-Gyn program, transitioning to another specialty, withdrawal, dismissal, leave of absence, or other.

Data sets between 2000 and 2009 were complete for the total number of residents. The complete data were reported at a population level for the specialty, so inferences using confidence intervals were unnecessary. Rates of annual attrition were undertaken by fitting a line to the data and reporting a slope. Variability for the year-to-year attrition numbers and rates during the 10-year period were reported as a mean  $\pm$  SD.

The study was approved by the University of New Mexico Human Health Research Committee.

## Results

There were  $252 \pm 3$  residency programs at any time, which did not vary much during this 10-year period. The number of applicants for the  $1516 \pm 173$  residency positions varied from a low of 1366 in 2003 to a high of 1834 in 2006. Applicants who matched in 2012 came from US allopathic medical schools (74.7%), international medical schools (12.4%), US osteopathic schools (10.9%), and other (2.0%). These percentages remained constant from 2004.

The total number of Ob-Gyn residents in ACGME-accredited programs remained fairly stable between academic years 2000 and 2009 (TABLE 1). The lowest number was 4656 in 2003, while the highest was 4815 in 2009. The number of residents who left their original program averaged  $196 \pm 12$  per year. Resident attrition rates

### What was known

Resident attrition in obstetrics-gynecology programs disrupts educational and workload balance, as well as reduces the number of graduating physicians to care for patients.

### What is new

Residents left obstetrics-gynecology residency primarily to pursue nonsurgical specialties. Attrition rates were higher for male residents and international medical school graduates.

### Limitations

Program director recall and reporting bias may limit accuracy of reasons provided for leaving the program.

### Bottom line

The annual attrition rate of residents in obstetrics-gynecology remained steady, with nearly a third of residents leaving to pursue primarily nonsurgical specialties. The rate of attrition is similar to that of other clinical specialties.

averaged 4.2% ( $\pm$  0.5%) per year and ranged from the lowest in 2008 (3.6%) to the highest in 2006 (5.1%).

Sex and medical school backgrounds were evaluated for those residents who left their original training program (TABLE 2). While most residents who left were women, annual attrition rates were consistently higher for men (mean: 5.3% versus 3.8%). Residents who left their program were predominantly graduates from US allopathic medical schools. Despite this, annual attrition rates were similar between graduates from US allopathic and osteopathic schools (3.4% versus 4.1%) and were consistently lower than rates for international medical graduates (7.6%).

Primary reasons for resident attrition in Ob-Gyn were nearly equally divided between transitioning into another specialty (30.0%), withdrawing from the program (28.2%), and transferring to another Ob-Gyn residency program (25.4%). These primary reasons for attrition remained proportionally constant from year to year during this 10-year period. Among residents who switched fields, the most commonly chosen specialties were family medicine, emergency medicine, and internal medicine. Few residents took a leave of absence (2.2%) or left for other reasons, such as entering the military (0.5%). Reasons for withdrawal were not available; some residents were dismissed (4.0%), whereas some were designated as having "withdrawn" (24.2%). Program directors did not provide reasons for the remaining 269 residents (13.7%) who left during this period.

Annual attrition rates in Ob-Gyn remained constant with minimal year-to-year variation. The rate average during the 10-year period for Ob-Gyn was fairly similar to other clinical specialties of comparable size or larger. As

**TABLE 1** ANNUAL ATTRITION RATES AND NUMBER OF OBSTETRICS-GYNECOLOGY RESIDENTS WHO LEFT THEIR INITIAL PROGRAM, 2000–2009

Academic Year	Total Residents	Attrition	
		Residents, No.	Total Residents, %
2000	4710	197	4.2
2001	4679	171	3.7
2002	4701	207	4.4
2003	4656	228	4.9
2004	4681	198	4.2
2005	4703	192	4.1
2006	4720	241	5.1
2007	4739	183	3.9
2008	4770	170	3.6
2009	4815	177	3.7
Mean	4717	196	4.2
SD	45	12	0.5

shown in the FIGURE, the annual proportion of residents who left was 4.0% for all clinical specialties, compared with 4.2% in Ob-Gyn. Attrition rates in Ob-Gyn were most similar to those in general surgery (5.1%), family medicine (4.7%), and anesthesiology (3.6%). Psychiatry was the only specialty with a higher mean attrition rate (7.9%), while much lower rates than Ob-Gyn were found in neurology (2.9%), pediatrics (2.9%), internal medicine (2.7%), and emergency medicine (1.5%).

### Discussion

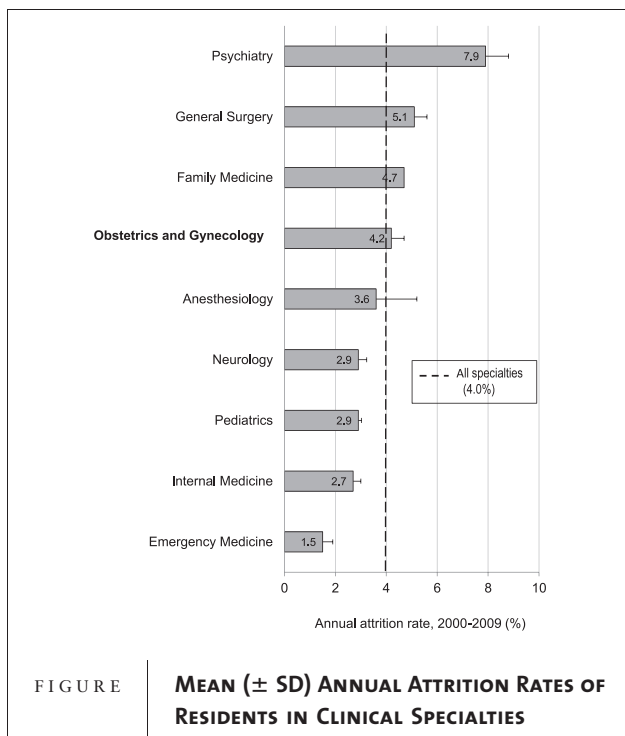
Efforts to recruit and retain resident physicians are important for the stability of any training program. Our analysis revealed a 4.2% annual attrition rate of Ob-Gyn residents between 2000 and 2009, which demonstrated substantial stability from year to year. Furthermore, resident attrition was not more common in Ob-Gyn than in many of the other specialties of comparable size or larger, such as anesthesiology, family medicine, and general surgery.

In 1989, Seltzer<sup>7</sup> conducted a national survey of Ob-Gyn programs directors, with a 90% response rate, and reported a 3.5% annual attrition rate across all training years. Moschos and Beyer<sup>3</sup> conducted program director surveys in 2001 and 2002, reporting an annual attrition rate for residents in all years as low as 3%. Reporting rates for the entire resident workforce may underestimate

**TABLE 2** INFLUENCE OF SEX AND MEDICAL SCHOOL BACKGROUND ON THE PERCENTAGE OF OBSTETRICS-GYNECOLOGY RESIDENTS WHO LEFT THEIR ORIGINAL PROGRAM

Academic Year	Sex of Residents		Medical School Background		
	Male	Female	USMG	DO	IMG
	Left (% Total Males)	Left (% Total Females)	Left (% USMG Total)	Left (% DO Total)	Left (% IMG Total)
2000	67 (4.3)	130 (4.1)	159 (3.8)	10 (5.5)	28 (7.9)
2001	59 (4.1)	112 (3.4)	129 (3.2)	15 (7.1)	23 (5.6)
2002	74 (5.5)	133 (4.0)	152 (3.9)	8 (3.1)	47 (8.4)
2003	72 (5.9)	156 (4.5)	144 (3.9)	18 (6.5)	65 (9.9)
2004	71 (5.9)	127 (3.7)	118 (3.3)	13 (4.0)	66 (8.6)
2005	54 (4.5)	138 (3.9)	111 (3.2)	8 (2.6)	72 (8.2)
2006	82 (7.1)	159 (4.5)	138 (3.6)	15 (4.2)	84 (8.7)
2007	65 (5.7)	118 (3.3)	107 (3.2)	14 (4.0)	62 (6.2)
2008	54 (4.9)	116 (3.2)	88 (2.6)	9 (2.5)	69 (6.9)
2009	58 (5.5)	119 (3.2)	103 (3.0)	14 (3.6)	60 (6.3)
Mean	66 (5.3)	131 (3.8)	126 (3.4)	12 (4.1)	58 (7.6)

Abbreviations: IMG, international medical graduate; DO, US medical school graduate (osteopathic school); USMG, US medical graduate (allopathic school).



attrition among first- and second-year residents, since nearly all attrition occurs in the first 2 years of training.<sup>3</sup> A strength of our study was that we used a reliable and complete national database about residency matching. We also compared attrition before and after the 2003 duty hours<sup>8</sup> and found no negative or positive effect of the duty hour limits on resident attrition.

We observed consistently higher annual attrition rates among male residents, which counters a report by McAlister and colleagues<sup>5</sup> who tracked a single class of incoming first-year residents in 2001 and found that men who entered Ob-Gyn training were just as likely as their female peers to complete training at their initial program.<sup>3</sup> We did not examine race, yet McAlister and colleagues<sup>5</sup> found that attrition was more likely among Asian and underrepresented minority residents, particularly in changing Ob-Gyn programs or in completing training “off cycle.”

The proportion of residents who left their original program but remained in Ob-Gyn was lower in our study than the data reported by Gilpin<sup>4</sup> and McAlister.<sup>5</sup> Transferring to another Ob-Gyn program should not be entirely viewed negatively, since the size of the emerging Ob-Gyn workforce was not reduced. Transfer to another Ob-Gyn program can represent challenges, however, since program directors must work to minimize the resultant changes in schedules and workload shifts of other residents as they integrate any eventual replacements.

Our finding that 30% of residents who left transferred into another specialty, such as family medicine, emergency medicine, and internal medicine, was consistent with previous studies reporting 15% to 39% of transfers to primary care fields such as family medicine, internal medicine, and pediatrics.<sup>4,5</sup> A transfer to other specialties may potentially be due to an individual’s desire for a more “controlled lifestyle” with a more predictable work schedule. The additional time to complete training in another specialty did not appear to be a deterrent for those residents.

The association between the resident’s type of medical school and their likelihood of leaving revealed that the proportion of first-year Ob-Gyn residents who graduated from US/Canadian allopathic medical schools steadily declined to 71.3% in 2005 before beginning to increase.<sup>6,9</sup> This did not appear to affect attrition rates for members of these cohorts. In contrast, results from our investigation showed that international medical graduates who became Ob-Gyn residents were more likely to leave their original residency program than individuals who completed their undergraduate medical education at a US allopathic or osteopathic medical school (7.6% versus 3.4% or 4.1%). As the number of students graduating from US medical schools increases, we anticipate that the proportion of entry-level Ob-Gyn residents who are graduates of US allopathic or osteopathic schools will increase.<sup>10</sup>

Another finding in this investigation was that the number of Ob-Gyn residents remained fairly constant over the years. An increase in the number of Ob-Gyn residency positions is necessary to accommodate the anticipated increased number of women seeking care, retirement among existing physicians, changing practice patterns, and fewer hours worked by younger physicians in practice.<sup>11</sup> The combined efforts of the government, accrediting bodies, training institutions, educators, and trainees themselves are required to bring about changes in accountability and transparency to develop a physician workforce equipped to meet future health care challenges.<sup>10,11</sup>

Our study has several limitations. We did not examine attrition according to the size of residency programs or whether the program was primarily community based or at an academic health center. Another limitation was program directors’ recall bias in reporting reasons for residents’ leaving the program. Distinguishing between a resident being dismissed, withdrawing, and undergoing a leave of absence was subject to reporting bias to protect the resident and program. In addition, no reasons were provided for 269 residents who departed programs during this 10-year period.

## Conclusion

National attrition rates of Ob-Gyn residents were stable between 2000 and 2009 and were similar to rates for residents in other clinical specialties of comparable or larger size. Nearly a third of residents leaving an Ob-Gyn program did so to pursue primarily nonsurgical specialties. Future studies should investigate the higher attrition rates that exist among male residents and international medical school graduates we found in our investigation.

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