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Part-time Residency in Pediatrics: Description of Current Practice

Alison Volpe Holmes, MD, MS*; William L. Cull, PhD‡; and Rebecca R. Socolar, MD, MPH§

ABSTRACT. *Objective.* To determine current national utilization levels of part-time pediatric residency and to identify reasons for pursuing training on a part-time basis.

Design. Data were obtained through (1) a survey regarding part-time residency mailed to all accredited pediatric residency programs, (2) the American Medical Association Fellowship and Residency Interactive Electronic Database, and (3) the American Academy of Pediatrics postgraduate level 3 survey, 2003.

Results. Of the 190 accredited pediatric residency programs surveyed, 156 (82%) responded; 18 (12%) of these programs had ≥ 1 part-time resident during academic years 2000–2003. Nationally, 43 of 6609 residents represented in the survey (0.7%) undertook some of their training on a part-time basis. All programs prorated salaries in proportion to time percentage, 10 (71%) continued full benefits for part-time residents, and 15 (88%) used a reduced call schedule. Although multiple reasons were given for part-time status, including travel (16%), research (14%), advanced degrees (9%), personal illness (9%), and family illness (5%), 67% cited child care as 1 reason. Length of residency was extended by an average of 15 months (range: 4–36 months). Analysis of the American Medical Association Fellowship and Residency Interactive Electronic Database showed that 45 (24%) of 190 programs advertise part-time slots.

Conclusions. Although numerous pediatric programs advertise part-time positions, few residents actually held such positions during a 3-year period. There is variability among programs in how benefits and call schedules are managed. Part-time positions are chosen for multiple reasons, but the most common reason is to care for children. Pediatric residency programs can use this information to meet resident needs. *Pediatrics* 2005;116:32–37; resident education/training, residency/internship, part-time, medical education, workforce.

ABBREVIATIONS. AMA-FREIDA, American Medical Association Fellowship and Residency Interactive Electronic Database; AAP, American Academy of Pediatrics; PL, postgraduate level.

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In the United States, 8% of men and 21% of women work part-time.¹ Commonly cited advantages of part-time employment include work/life balance, retention of talent in the workforce, and increased job satisfaction.² In 2000, an American Academy of Pediatrics (AAP) survey showed that 15% of all pediatricians and 28% of female pediatricians practice on a part-time basis. In addition, a survey of residents in postgraduate level (PL)-3 indicated that a majority of women at the end of training were likely to seek part-time work within 5 years after graduation.³ Women now hold 70% of pediatric residency positions. Part-time pediatricians in practice work an average of 32 to 37 hours per week.⁴ During residency training, pediatric residents are expected to work up to 80 hours per week under the new work hour limits.⁵ If large numbers of new pediatricians are seeking part-time employment at ~35 hours per week, is there also a need for part-time options for some during residency training?

Part-time and shared residency positions have been proposed as alternative means for completing a traditional pediatric residency for individuals who want or need additional time because of family responsibilities, personal illness, research, academic pursuits, or community service work.^{6–10} In fact, from 1976 until 1981, federal law mandated all primary care residencies to offer shared-schedule residency positions if they were to continue to receive federal assistance.^{11,12} There are a few articles in the medical literature about experiences with part-time tracks in individual residency programs.^{13–17} Before the present study, there had not been any national studies of the availability or utilization of part-time postgraduate medical training in any of the medical specialties. The purpose of this study was twofold. First, we determined how many pediatric residency programs have had recent experience with part-time positions. Second, we examined the prevalence of part-time training and assessed how many pediatric residents obtain at least a portion of their residency training on a part-time basis. The specifics of salaries, benefits, and call schedules were examined, as were the reasons given for reduction of hours.

METHODS

Supervisor Survey

In December 2002, the names and e-mail addresses of all pediatric residency programs were obtained from the American Medical Association Fellowship and Residency Interactive Electronic Database (AMA-FREIDA), an online directory of postgraduate training programs in all medical specialties. Several other characteristics of the programs, such as program size and advertisement of part-time residency slots, were also collected, to provide a

cross-check for our survey results and to allow for an examination of survey nonrespondents.

The supervisor survey was a 12-item survey that was developed and pilot-tested with 5 local programs. After refinement, the survey was e-mailed to the pediatric chief resident at each of 190 nonmilitary US residency programs (excluding those in Puerto Rico). If no reply was obtained within 2 weeks, then the survey was e-mailed again. If there was still no response from the program, then the survey was e-mailed to the residency program director. Again, if there was no response, a second e-mail was sent after 2 weeks. Finally, paper surveys were sent to the program directors of programs that had not yet responded.

The survey asked for the name of the program, the number of total categorical pediatric residents in the program, the numbers of male and female residents, and whether intern applicants were allowed to apply for part-time or shared residency positions in the Match. Finally, how many residents (if any) had been in the program on a part-time basis during the academic years 2000–2001, 2001–2002, and 2002–2003 was assessed. Residents who had taken an extended leave of any type were excluded; only those who returned to work on a reduced-hours basis were deemed to be “part-time” as we defined it.

If respondents answered that the program had ≥ 1 part-time resident, then they were asked how the program dealt with salaries, benefits, and call schedules. Respondents were then asked to complete a small section for all residents who had undertaken some portion of their training on a part-time basis. In this section, respondents were asked for the residents’ gender, the years of training that had been completed or were in progress on a part-time basis, whether the residents were in a solo part-time position or in a shared position, the time percentage, and the reasons given for part-time status. Respondents were allowed to cite multiple reasons. The supervisor survey was reviewed and approved by the University of North Carolina School of Medicine institutional review board.

AMA-FREIDA Data

In addition to the survey, data available from AMA-FREIDA online were examined, to determine the association of the size of the program, the region of the country, and the advertised availability and program experience with part-time residents. This was again restricted to nonmilitary programs.

AAP PL-3 Survey

The 2003 AAP Graduating Resident Survey was sent to a national random sample of 500 PL-3 categorical pediatric residents as they were concluding training or just thereafter (May–August). The residents surveyed were randomly selected from a database of all Accreditation Council on Graduate Medical Education-accredited US pediatric residency programs that the AAP uses to offer the Pediatrics Review and Education Program free to residents. Residents in combined specialty programs, such as medicine/pediatrics, were not included in this survey. The survey was mailed to residents up to 4 times and asked residents about their residency experiences, career intentions, and job search experiences. Two specific questions that focused on part-time residencies were included. The first asked whether the resident held a part-time or shared residency position at any time during residency training, and the second asked how difficult it would be to arrange a part-time position in the resident’s program if someone was interested.

A total of 308 residents (62%) from 173 different US pediatric residency programs (86% of programs) responded to the survey. Nearly all (99%) of the respondents provided responses to the part-time residency questions. This survey was approved by the AAP institutional review board.

Statistical Analyses

Analyses performed were predominantly descriptive. Survey data were coded and entered into a Microsoft Excel XP database (Microsoft, Redmond, WA). Student’s *t* test was used for analyses of continuous variables, and χ^2 tests were used for analyses of dichotomous variables.

To determine categories of residency program size, the total numbers of residents provided by the survey respondents were used to create tertiles of equal numbers; these are referred to as

small (<27 residents), medium (27–45 residents), and large (>45 residents). Regions were operationalized as follows: Northeast: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, and Maryland; Southeast: West Virginia, Kentucky, Virginia, North Carolina, South Carolina, Tennessee, Mississippi, Alabama, Georgia, and Florida; Midwest: North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa, Missouri, Arkansas, Louisiana, Michigan, Wisconsin, Ohio, Illinois, and Indiana; West: Hawaii, Alaska, California, Oregon, Washington, Idaho, Montana, Wyoming, Colorado, Utah, Nevada, Arizona, and New Mexico.

RESULTS

Supervisor Survey Results

One hundred fifty-six of 190 surveyed programs completed the survey, for a response rate of 82%. To examine potential response bias, programs that responded to the survey were compared with programs that did not respond to the survey, on the basis of data available through AMA-FREIDA. Larger programs were more likely to have returned the survey ($P = .05$). Region did not play a role in survey response rates ($P = .52$). Programs that advertised part-time positions on AMA-FREIDA were significantly more likely to have returned the survey ($P < .001$). Therefore, the results may tend to overestimate slightly the numbers of residents who hold part-time positions.

Eighteen of the 156 programs that responded to the survey, or 12%, had ≥ 1 resident in a part-time position during the 3-year period in question. Forty-three individuals from these 18 programs completed some portion of their training on a part-time basis.

Table 1 describes programs that had ≥ 1 part-time resident during the 3 years of the survey. There was a trend showing that large programs (>45 residents) were more likely than small programs (<27 residents) to have had part-time residents (15% vs 4%; $P = .06$), but this result was slightly below the level of statistical significance. The gender constitution of the programs was 70% women for programs with part-time residents and 67% for programs without part-time residents, a difference that was not statistically significant ($P = .08$).

As would be expected, the programs with part-time residents were much more likely to allow intern applicants to apply for part-time positions in the Match (35% vs 7%; $P = .003$). Similarly, programs with part-time residents were more likely to advertise that they offer part-time positions on AMA-FREIDA (72% vs 19%; $P < .001$). The match between the results of the supervisor survey and the AMA-FREIDA data was not perfect, however. Five programs had part-time residents during the 3 years studied but did not indicate on AMA-FREIDA that they have such positions, whereas 26 programs advertise part-time positions but did not have a part-time position filled.

Table 2 presents additional program characteristics for the 18 programs identified through the supervisor survey that had ≥ 1 part-time resident in the previous 3 years. A total of 43 part-time residents were reported. An analysis of benefits, salaries, and call schedules was performed. In all programs, residents’ salaries were prorated to their time percent-

TABLE 1. Supervisor Survey on Part-time Residents

| | Programs Without Part-time Residents From Survey (<i>n</i> = 138) | Programs With Part-time Residents From Survey (<i>n</i> = 18) | <i>P</i> |
|--|---|---|----------|
| Program size, <i>n</i> | | | |
| Large (>45 residents) | 49 | 9 | .06* |
| Medium (27–45 residents) | 43 | 7 | |
| Small (<27 residents) | 46 | 2 | |
| Women, mean % | 67 | 70 | .08 |
| Region, <i>n</i> | | | |
| Northeast | 44 | 5 | .5 |
| South | 27 | 6 | |
| Midwest | 46 | 4 | |
| West | 21 | 3 | |
| Allowed interns to apply for part-time slot in the Match, <i>n</i> (%) | 9 (7) | 5 (35) | .003 |
| Advertise part-time on AMA-FREIDA, <i>n</i> (%) | 26 (19) | 13 (72) | <.001 |

* For pairwise comparison of large and small programs.

TABLE 2. Characteristics of Part-time Residency Programs

| | No. of Programs (<i>N</i> = 18) | % of Programs With Part-time Residents |
|----------------------------|--|--|
| No. of part-time residents | | |
| 1 | 8 | 44 |
| 2 | 3 | 16 |
| 3 | 4 | 22 |
| 4 | 1 | 6 |
| 5 | 1 | 6 |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0 | 0 |
| 9 | 1 | 6 |
| Salaries | | |
| No data | 5 | |
| Prorated | 13 | 100 |
| Full | 0 | 0 |
| Benefits | | |
| No data | 4 | |
| Partial | 4 | 29 |
| Full | 10 | 71 |
| Call | | |
| No data | 1 | |
| Full call | 2 | 12 |
| Part-time call | 15 | 88 |

ages. Four programs (29%) provided only partial benefits for their part-time residents, whereas 10 (71%) retained full benefits. In 2 of the programs, part-time residents were expected to take full-time call; in the remaining 15 programs, they took part-time call.

Table 3 presents characteristics of the 43 part-time residents. Thirty-nine residents, or 91%, were women, compared with 67% nationally. In terms of the years of training undertaken on a part-time basis, a combination of PL-2 and PL-3 was most common, and PL-3 alone was next most common. Interns were least likely to work part-time. In terms of percentage of time worked, 50% time was the most common option, followed by 67% time. Child care was the overwhelming reason cited for part-time training and was given as a reason by 67% of the residents. Part-time men were just as likely as part-time women to cite children as a reason for part-time training

TABLE 3. Individual Residents

| | No. of Individuals Part-time (<i>n</i> = 43) | % of Part-time Residents |
|-----------------------|---|-----------------------------|
| Gender | | |
| Women | 39 | 91 |
| Men | 4 | 9 |
| Residency year | | |
| PL-1 | 5 | 12 |
| PL-2 | 7 | 16 |
| PL-3 | 11 | 26 |
| PL-1 and -2 | 2 | 5 |
| PL-2 and -3 | 14 | 32 |
| PL-1, -2, and -3 | 4 | 9 |
| Type of position | | |
| Solo part-time | 29 | 67 |
| Shared position | 14 | 33 |
| Time percentage | | |
| 50 | 28 | 65 |
| 67 | 8 | 19 |
| 75 | 2 | 5 |
| 50/75 | 3 | 7 |
| 80 | 1 | 2 |
| 85 | 1 | 2 |
| Reason* | | |
| Child care | 29 | 67 |
| Elder care | 0 | 0 |
| Personal illness | 4 | 9 |
| Family illness | 2 | 5 |
| Academic | 4 | 9 |
| Research | 6 | 14 |
| Travel | 7 | 16 |
| Other | 8 | 19 |
| Extended residency by | | |
| 0–6 mo | 5 | 12 |
| 7–12 mo | 27 | 63 |
| 13–18 mo | 0 | 0 |
| 19–24 mo | 7 | 16 |
| >24 mo | 4 | 9 |

* Respondents were allowed ≥ 1 answers.

(75% of men and 67% of women). Smaller numbers of residents cited personal illness, family illness, pursuit of advanced degrees, research, travel, or other (including community service) as reasons for part-time training.

A computation of how long residency was extended for these residents was performed by multiplying the designated time percentage by the num-

ber of academic years of part-time work (Table 3). To complete pediatric residency, all residents would have to fulfill the requirements of the American Board of Pediatrics for 33 months of training. This includes 36 months of training minus 12 to 13 weeks for vacations and leaves in 3 years. The length of residency was extended by an average of 15 months (range: 4–36 months).

AMA-FREIDA

Twenty-four percent of the 190 pediatric residency programs in the AMA-FREIDA indicated that they offer part-time and/or shared residency positions. Programs that report on AMA-FREIDA that they offer part-time residency positions were compared with those that do not. Thirty-four percent of large programs (>45 residents) offer part-time positions, whereas only 14% of small programs (<27 residents) offer such positions ($P = .03$). No regional differences in the availability of part-time positions were found. There was no difference in the gender composition of the programs offering or not offering part-time positions.

PL-3 Survey

When residents were asked directly through the PL-3 survey whether they had held a part-time or shared residency position during their training, only 2 of the 304 reported that they had. This equals <1% (0.7%), which is identical to the results of the supervisor survey. One of the residents who had held a part-time residency position was from a large program (69 total residents), whereas the other resident was from a medium-sized program (37 total residents).

When queried about the difficulty of arranging a part-time position at their program, 35% of all residents reported that they did not know how difficult it would be. For those residents who did know, Fig. 1 shows a breakdown of residents' difficulty assessments. Responses were distributed fairly evenly across the rating categories. Only 19% of residents reported that there would be no difficulty in arranging a part-time position. Residents from smaller res-

idency programs were more likely to indicate difficulty in arranging a part-time position ($r = -0.21$; $P = .003$).

DISCUSSION

Part-time or shared residency positions have long been discussed as options for individuals who find the long hours of traditional residency training incompatible with other responsibilities or interests.^{6–10} Our national study of pediatric part-time residency training revealed that few part-time residency positions are being offered now and even fewer are being used. Part-time opportunities are especially rare within smaller residency programs. Although all residents must complete the same total amount of training time, as required by the American Board of Pediatrics, it is surprising that <1% of all residents are fulfilling their training requirements on a part-time basis.

The issue of part-time training will likely become more important in the coming years, for a number of reasons. First, there are increasing numbers of women in medicine, particularly in pediatrics.¹⁸ Traditionally, more women in the overall US workforce work part-time, as do female physicians.⁴ Second, there is an especially large percentage of women in the pediatric workforce, and this percentage has increased steadily over time.¹⁸ Our survey results indicate that 67% of residents now in pediatric training are women. Once in practice, women pediatricians are 7 times as likely as their male counterparts to work part-time.⁴ Regarding residents now in training, a 2002 survey showed that 42% of female PL-3 residents were considering part-time positions in their searches. In the same survey, 58% of new female graduates said that they would like part-time work in the next 5 years.³ Third, the age for beginning medical school is now 23.6 years.¹⁹ With deferral of the start of medical training, it is likely that more residents, both men and women, will be parents before residency or become parents during residency. Because both men and women in our study cited children as the overwhelming reason for extending residency on a part-time basis, this demographic factor could increase interest in part-time training.

There are many commonly cited advantages and disadvantages of part-time work. Advantages include work/life balance, retention of talent in the workforce, job satisfaction, the ability to pursue other career interests, maintenance of workforce diversity, scheduling flexibility because of the willingness of some part-time workers to work odd hours, and the idea that part-time workers "cost less" because they usually work more than their agreed-on time percentages. Disadvantages include loss of income, loss of benefits, less respect from colleagues, educational loan burden, a perception of less commitment, scheduling problems because of less availability, and the idea that part-time workers "cost more" because of the need to provide benefits and administrative support.²⁰ Of these factors, loan burden may be a particularly acute disadvantage in the residency setting. In 2003, 85% of medical students graduated

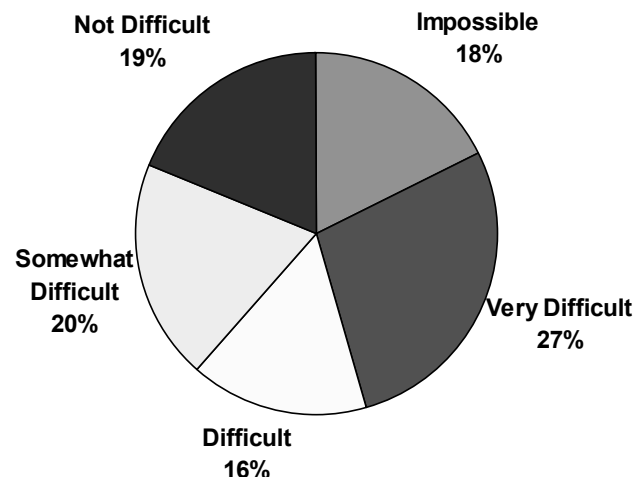


Fig 1. Residents' perceptions of difficulty of arranging part-time residency positions in their programs.

with educational debt. For students with debt, this averaged \$100 000 for graduates of public schools and \$135 000 for graduates of private schools.²¹ Many may find it difficult to contemplate making loan payments on a reduced residency salary or to put off the large increase in income that comes with the completion of postgraduate education.

Academic institutions already have experience with part-time workers, including faculty members; 36% of college and university faculty members work part-time. In medical schools, 6% of basic science faculty members and 15% of clinical faculty members work part-time.^{22,23} A 1996 survey of medical school deans' offices found that, although most part-time faculty members are promoted, only 26% are eligible for tenure.²⁴ A 2002 survey of department chairs found that most department leaders were "satisfied" or "very satisfied" with their part-time faculty members. They saw retention of talent in the workforce as the most important benefit of employing part-time faculty members.²⁰ The same argument could be made for residents, whose hours are typically longer than those of faculty members. The availability of part-time positions could help retain in residency those who might otherwise terminate their training or take a leave of absence. Aborting a medical career near the end of training comes at great cost to taxpayers, who underwrite much of medical education.

The United States lags behind other nations in options for part-time residency training. England has had options for part-time training since 1969, and all residencies in Australia offer a part-time track.²⁵

Prior studies of part-time residencies merely described experiences within individual programs in the fields of psychiatry, internal medicine, and pediatrics. Overall, residents who completed part-time training had specialty board pass rates equivalent to those of their full-time peers and received equivalent or better faculty reviews.¹³⁻¹⁶ The most recent study of part-time residency was from the pediatrics program at the University of California, San Francisco, which for 10 years has offered a part-time track they call the "flexible option." Eight percent of residents at the University of California, San Francisco, used this track, and 40% of those residents said that they would have requested a leave of absence had it not been offered. Disadvantages cited by the flexible option residents were financial issues and delayed graduation. A survey of the full-time residents in 1 year found that 88% of them thought that the flexible option should continue to be offered.¹⁷

There are several limitations of the current study. First, we could not look at performance reviews of the part-time residents, and it is possible that resident performance is influenced, positively or negatively, by part-time training. Second, the information about residents was collected from their supervisors, rather than from the residents themselves, and it is possible the reasons for part-time training given by supervisors may not be as complete. Third, some response bias was apparent in the study, with supervisors from larger programs being more likely to respond. Because these programs were also more likely to offer part-time positions, the low rates of

part-time residency training that we found might be even lower across all residency programs. Finally, this study was limited to pediatrics only. Future research in this field should include information on other medical specialties nationally, such as internal medicine, family medicine, psychiatry, obstetrics/gynecology, and surgery. It would also add to our knowledge to include performance reviews of the residents. Knowing the attitudes of both part-time and full-time residents regarding part-time training would also be useful.

CONCLUSIONS

In a national study of pediatric residents, we found that very few residents hold part-time residency positions. Larger residency programs were somewhat more likely to have had part-time residents during a 3-year period. Salaries of part-time residents tend to be prorated, whereas benefits are full for a majority of residents. Call schedules are usually reduced. Ninety-one percent of part-time residents are women, whereas 67% of all residents are women. Child care was the most often cited reason for part-time residency, with 67% of women and 75% of men reducing hours to care for their own children. Pediatric residency programs can use this information to meet resident needs with the specific features of the training program. It will be important to monitor whether the increase in part-time employment that is occurring in pediatrics overall will also be seen in residencies in the coming years.

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IS THERE A RELATION BETWEEN SIDS AND LONG QT SYNDROME?

“Should the ECG be used to screen for long QT syndrome in infants? Analysis of the data from the mass neonatal ECG screening study of Schwartz et al shows that a QTc of above 440 ms would have a positive predictive accuracy for SIDS of only 1.4%. Furthermore, accurate measurement of neonatal QT interval is difficult, with 95% confidence limits for repeatability as high as 50 ms in infants. At such rapid heart rates, determination of the end of the T wave can be difficult, and correction for heart rate using the Bazett formula ($QT_c = QT \text{ interval divided by the square root of the preceding R-R interval}$) is invalid. Positive and negative predictive accuracy would therefore be even worse than 1.4%. Schwartz et al estimated, from their mass neonatal ECG screening study, that 100 infants would have to be treated (with β blockers) to save two lives. However, even if the ECG is positive, therapy with β blockers may be ineffective in reducing risk. Long QT type 3, the commonest type in SIDS to date, is not proven to respond to β blockers. It would be counter-intuitive if they did, since events occur at rest, and not at times of adrenaline release—unlike types 1 and 2. The question is not only whether the ‘economic inefficiencies of current screening methodologies supersede the value of a young life,’ but also whether such an ECG-based screening programme would affect outcome at all. . . . The ECG is a remarkably poor test to screen for SIDS, and the most frequently recognized long QT genotype in SIDS has not been shown to respond beneficially to β blockers. The ECG should not yet be used for mass neonatal screening to prevent SIDS, since there is insufficient evidence that it will.”

Skinner JR. *Arch Dis Child*. 2005;90:445–449

Noted by JFL, MD

Part-time Residency in Pediatrics: Description of Current Practice

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