

ORIGINAL RESEARCH

The Financial Cost of Medical Assistant Turnover in an Academic Family Medicine Center

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Introduction: Primary care clinics increasingly hire medical assistants (MAs) to perform a variety of clinical and administrative tasks. Anecdotal reports suggest that MA turnover is high, but no studies to date have calculated the rate or cost of MA turnover. The purpose of this study was to calculate the rate of MA turnover and associated costs in a single, large academic Family Medicine clinic.

Methods: Retrospective data were collected from clinic administrators regarding MA turnover, over-time worked, salaries and benefits as well as administrator salaries and benefits and the amount of administrator time spent in MA hiring, training, and termination in 2017.

Results: During 2017, MA turnover rate was 59%. The total estimated cost of MA turnover was \$213,000. The per-MA cost of turnover was \$14,200, or approximately 40% of the average annual salary of MAs.

Conclusion: Turnover rate in this practice was similar to other estimates of primary care clinic staff and allied health professionals. The estimated cost of MA turnover relative to annual salary was significantly greater than that in other fields, likely reflecting the costs of training MAs. Establishing a method for calculating the turnover rate and costs can allow other healthcare systems to better describe turnover and evaluate retention strategies. (J Am Board Fam Med 2020;33:426–430.)

Keywords: Allied Health Personnel, Family Physicians, Personnel Selection, Personnel Turnover, Primary Health Care, Retrospective Studies

Introduction

In recent decades, primary care clinics have increasingly hired and used medical assistants (MAs) for a variety of clinical and administrative tasks. Many innovative models of primary care rely on these low-paid, unlicensed staff to meet increasing clinical demands.^{1–7} As such, the number of MAs has grown significantly and now numbers are approximately 650,000, with a projected increase of 29% from 2016 to 2026.⁸

Literature about nursing turnover and its costs are extensive.^{9–13} Detailed analysis allows for intervention on the high-cost areas of turnover, and it enables health system leaders and administrators to make

business cases for programs and policies that support nursing retention. In contrast, the literature on MA turnover is not as robust. In 2004, Ruhe et al.¹⁴ calculated the overall physician and staff turnover rate at primary care clinics in northeast Ohio as 36% over 1 year and 53% over 2 years. In 2010, Waldman et al.¹⁵ looked at staff turnover at a major academic medical center; 49% of allied health professionals were new in that year. Similarly, in a recent survey of MAs in Washington State, 56% stated they would seek training or employment in another health care-related field in the next 5 years.¹⁶ These data suggest that MA turnover rates are high, and the costs associated with turnover may also be significant.

To our knowledge, no study has calculated the turnover rate of MAs in primary care practices or attempted to characterize the economic effects of MA turnover on primary care practices. In this study, we aimed to quantify the turnover rate of MAs and the annual costs of MA turnover in our clinic.

Methods

A retrospective, descriptive design was used to gather data from calendar year 2017 at the University of

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North Carolina (UNC) Family Medicine Center. The research project was approved by the UNC Chapel Hill Institutional Review Board (number 19-726). Cost calculations are from the health system's perspective. The UNC Family Medicine Center is a large academic teaching practice in Chapel Hill, NC. In 2017, the practice included 17,724 continuity patients who had 65,638 visits and were cared for by 73 different primary care providers (24 residents plus faculty physicians and advanced practice clinicians), representing 16.5 full-time equivalent clinicians.

In this practice, 1 MA is paired each half day with a provider on 1 of 4 teams. Although MAs and providers are always assigned to the same team, they may not be paired with the same individuals each day given the part-time nature of the providers. MAs are responsible for the entire rooming process: ushering patients from the waiting room; performing the administrative check-in, which includes verifying insurance information and collecting copays; and the clinic check-in, which includes measuring and entering vital signs, documenting the chief complaint, and verifying the medication list and pharmacy. In addition, MAs close care gaps, such as performing diabetic foot exams and depression screening, assist with procedures, administer immunizations, and schedule follow-up appointments.

We adapted the methods of the Nursing Turnover Cost Calculation Methodology (NTCCM) developed by Jones.^{17–19} The NTCCM accounts for direct and indirect costs of nursing turnover: advertising and recruiting, vacancy, hiring, orientation and training, decreased new-hire productivity, decreased preturnover productivity, and termination. At our clinic level, we were able to collect data that enabled estimates of the costs related to vacancy, hiring, orientation, training, and termination. Our health care system has a centralized process for advertising and recruiting MAs, and it was not possible to get these data at the clinic level. We chose not to include estimates related to productivity of both MAs and providers because we estimated that decreased MA productivity had a negligible effect on clinic revenue.

We e-mailed the 5 clinic administrators and managers to obtain the number of MAs employed at the beginning and end of 2017, the number of MAs who left in 2017, the value of MA salary and benefits, MA overtime worked, the amount of compensated time MAs spend in training, and administrator salary and benefits. Administrators consulted

Table 1. Medical Assistant Turnover Cost Calculations

Cost Category	Calculation
Overtime	Costs (hours worked \times average overtime hourly MA salary) – savings (hours not paying an MA to work \times average hourly MA salary and benefits)
Training	Hours in training \times average hourly MA salary and benefits
Manager time: for each manager	Estimate of percent of annual time in MA turnover-related tasks \times value of annual salary and benefits

MA, medical assistant.

official human resources records to obtain this information. We asked each administrator and manager to estimate the amount of their time in 2017 spent recruiting, hiring, training, and terminating MAs. All administrators responded to our e-mails.

The data were collected and analyzed in Microsoft Excel. Turnover rates were calculated as the number of MAs who left the practice in 2017 divided by the average number of MAs employed in 2017. The average number of MAs employed in 2017 was calculated as the number of MAs employed on January 1, 2017 plus the number of MAs employed on December 31, 2017, divided by 2. Although there are alternative methods to calculate staff turnover, we used this method based on its ease of retrospective use as well as our health care system's use of this method in human resources accounting, which facilitates comparisons between departments, clinics, and employee type (J. Lancaster, personal communication).

We calculated the cost of administrator/manager time by multiplying the value of their salary and benefits by the estimated portion of time they spent in activities related to MA turnover in 2017. Overtime costs were calculated by determining the difference between the cost to pay MA overtime (the number of overtime hours in 2017 multiplied by 1.5 times the average MA hourly wage) and the cost the clinic would have incurred if a full-time MA had worked those hours (the number of overtime hours in 2017 multiplied by 1.24 times the average MA hourly wage, where 0.24 represents the approximate value of MA benefits for a full-time employee) (Table 1). Training salaries and benefits were calculated by multiplying the average value of MA wages and benefits by the time spent in training by the number of MAs who turned over in 2017. A subanalysis of training-associated costs was

Table 2. Estimated Total and per Medical Assistant Costs Associated with Medical Assistant Turnover

Category	Total Cost*	Per-Medical Assistant Cost*
Overtime	\$9,000	\$600
Training	\$126,000	\$8,400
Manager time	\$78,000	\$5,200
Total cost	\$213,000	\$14,200

*2017 US dollars.

calculated by adding MA training salary and benefits to the cost of the time of the primary manager involved in training MAs. Given the subjective nature of these estimates, we rounded the dollar value to the nearest \$1000 for total cost estimates and nearest \$100 for per MA estimates.

The total cost of MA turnover was the combined total of the cost subtotals. We calculated the per-MA cost of turnover by dividing the total cost by the number of MAs who turned over.

Results

During the study period, 15 MAs turned over out of an average 25.5 MAs employed in 2017 (27 at the beginning of the year and 24 at the end), for a turnover rate of 59%. Administrator and manager estimates of their time spent in activities related to MA turnover ranged from 0% to 65%. The portion of administrator/manager salaries/benefits attributable to MA turnover was \$78,000. The attributable wages and benefits of the primary manager responsible for MA training was \$31,000. Overtime costs were \$9,000. MA wages and benefits while training to replace MAs who left were \$126,000. The total cost of MA turnover in 2017 was \$213,000 (Table 2). The per-MA cost of turnover was \$14,200 or approximately 40% of the average annual full-time salary of MAs of \$35,194. The training-associated costs were \$157,000, or over 70% of the total costs.

Discussion

In our clinic in 2017, the MA turnover rate was 59%. This turnover rate is relatively similar to other published clinic staff turnover rates in similar settings,^{14,15} although higher than Jones¹⁸ estimate of nursing turnover rate of 19.4%. In calculating our turnover rate, we establish a baseline by which to compare future rates within our own clinic as well as a potential benchmark for similar clinics to use in

addressing their own turnover. We also describe a method that other clinics can replicate and adapt to calculate their own turnover rates and costs.

The cost of MA turnover in our clinic in 2017 was \$213,000, or \$14,200 per MA, which is approximately 40% of the average annual salary of MAs working full time. In contrast, in a 2012 review of 11 studies on employee turnover, the Center for American Progress found that it costs businesses approximately 20% of a worker's salary to replace them.²⁰ This difference may, in part, be due to the prolonged training time MAs must complete to be competent in a wide range of areas, relative to employee training in other fields and, perhaps, MA training in other clinics and specialties. In our clinic, MAs train in both "front-desk" duties like taking insurance and copayments as well as more traditional tasks. They complete approximately 3 months of full-time, paid training before they work independently; this is consistent with the Bureau of Labor Statistics' description of MA training duration.⁸ As such, training accounted for over 70% of costs. Moreover, our total per employee cost was higher than the value (\$4000–\$11,000) Waldman et al.¹⁵ calculated for allied health workers at an academic medical center in 2010. Differences may reflect geographic differences in salaries and costs, as well as mild contributions from inflation. However, it is more likely due to methodological differences; although Waldman et al.¹⁵ were able to account for the lesser effectiveness of new hires, it is not clear that they accounted for the indirect cost of the time administrators and managers spend hiring, training, and terminating employees. Our per employee cost is lower than the \$62,100–\$67,100 Jones¹⁸ estimated for nurses in the United States, despite a higher turnover rate, likely owing to the lower average salary of MAs relative to nurses as well as the highest cost category of nurse turnover being related to filling vacancies (\$48,300) rather than training (\$5300).¹⁸

When adapting the NTCCM, we experienced greater challenges than initially anticipated in collecting the data to calculate the turnover rate and costs. MA hiring and training occur at both the health system and clinic level, and multiple clinic and health system administrators are involved in processes related to MA turnover. In our model, we balanced a desire for precision with the reality that most of the data we sought were not readily available and existed primarily as averages and estimates.

Our study had multiple methodological limitations, including the use of self-reported estimates to determine the cost of administrator/manager time in turnover. If this element were completely removed from the calculation, total cost of MA turnover would remain high at \$135,000, or \$9000 per MA. Our calculation of training costs assumes that all the costs for training replacement MAs were incurred in 2017; because there is often a time lag between an MA leaving and a new employee being hired, as well as the 3-month duration of training, it is likely that some of the training occurred in 2018. This is balanced by the fact that we did not calculate costs of training MAs in 2017 who were hired to replace those who left in 2016.

Moreover, our work does not address the indirect costs of learning curves and decreased productivity for MAs, the other MAs and providers working with them, and patients in terms of satisfaction, provider productivity, patient safety, and organizational performance. From a systems perspective, we were not able to account for the potential benefits of employee turnover (i.e., bringing in fresh ideas and the lower salaries of less experienced staff), intangible losses (i.e., bringing knowledge of how our clinic works to competitors and employee morale), or the costs and benefits to MAs themselves or our patients. It is impossible to generalize our findings in a single practice in a region with high demand for MAs to other practices and other regions. Moreover, it is unclear to what degree, if any, the academic nature of our practice affected turnover rate or cost; measuring this would likely require a comparison with a similar, nonacademic practice.

As new models of care increasingly rely on MAs, it is important for health care systems to address the high turnover in this group of workers. Measuring this rate and its economic impact are the vital first steps that enable further research into the individual and system factors that promote and prevent MA turnover, a comparison of turnover rates between different practices and practice types, and evaluation of retention strategies. Increasing wages, adapting staffing models, and providing opportunities for career advancement have the potential to both increase overhead and decrease turnover cost. Clinics and health care systems must measure turnover rates and costs to make cost-effective decisions that maximize MA, clinician, and patient well-being.

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