

Clinically Competent and Fiscally at Risk: Impact of Debt and Financial Parameters on the Surgical Resident

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- BACKGROUND:** While the costs of medical training continue to increase, surgeon income and personal financial decisions may be challenged to manage this expanding debt burden. We sought to characterize the financial liability, assets, income, and debt of surgical residents, and evaluate the necessity for additional financial training.
- STUDY DESIGN:** All surgical trainees at a single academic center completed a detailed survey. Questions focused on issues related to debt, equity, cash flow, financial education, and fiscal parameters. Responses were used to calculate debt-to-asset and debt-to-income ratios. Predictors of moderate risk debt-to-asset ratio (0.5 to 0.9), high risk debt-to-asset ratio (≥ 0.9), and high risk debt-to-income ratio (> 0.4) were evaluated. All analyses were performed in SPSS v.21.
- RESULTS:** One hundred five trainees completed the survey (80% response rate), with 38% of respondents reporting greater than \$200,000 in educational debt. Overall, 82% of respondents had a moderate or high risk debt-to-asset ratio. Residency program, year, sex, and perception of financial knowledge did not correlate with high risk debt-to-asset ratio. Residents with high debt-to-asset ratios were more likely to have a high level of concern about debt (52% vs 0%, $p < 0.001$) when compared with residents who had low debt-to-asset ratios. The majority (79%) of respondents felt strongly that inclusion of additional financial training in residency education is a critical need.
- CONCLUSIONS:** In a climate of increasingly delayed financial gratification, surgical trainees are on critically unstable financial footing. There is a major gap in current surgical education that requires reassessment for the long-term financial health of residents. (J Am Coll Surg 2018;■:1–9. © 2018 by the American College of Surgeons. Published by Elsevier Inc. All rights reserved.)

The cost of medical education has continued to dramatically rise, and coupled with a wide range of additional ongoing financial liabilities, frequently exposes surgical residents to an ever-expanding debt burden early in their career.¹⁻³ The result has been a dramatic rise in medical education debt liability over the last 2 decades; 79% of medical school graduates reported $> \$100,000$ debt in 2014.⁴ Furthermore, resident trainees effectively have no

means to repay these loans, with 74% to 85% reporting significant debt challenges.⁵⁻⁷ Compounding the issue further, residents have been found to demonstrate financially irresponsible habits with large credit card balances, limited savings and cash reserves, and frequent failure to budget ongoing monthly expenses.⁸⁻¹⁰ Educational debt alone, albeit major, is clearly not the only component of the overall debt picture when other liabilities are considered, including home mortgage, automobile financing, and other variable costs of living expenses.

Despite the increasing financial strain and lack of financial planning by trainees, residency programs, for the most part, fail to educate residents about debt management and financial planning. When general surgery residents were surveyed about deficiencies in the residency curriculum, only 13% believed they were trained in the business of medicine along with a core education in personal finance.¹¹ A survey of 1,700 emergency medicine

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residents found 87% had not received any debt management training in residency, and 64% had no financial education in medical school.¹² Eighty-four percent of those residents said they wished they had some basic education on debt management and financial planning during residency. Furthermore, a significant debt load and lack of education about how to manage finances has been shown to correlate with resident burnout, psychological stress, depersonalization, and worse quality of life.¹³⁻¹⁵ With rising concerns about surgeon burnout and effects on the surgical workforce, the additional financial strains in early surgical careers should be considered as potential compounding factors negatively affecting the already strained surgeon workforce.

Given the overall paucity of data on comprehensive debt, income, and tangible assets, we sought to characterize the financial health of surgical residents and risk stratify their financial risk exposure. Our study aimed to assess resident income, tangible assets, and both educational and noneducational debt. We also used simple financial metrics such as debt-to-asset ratios and debt-to-income ratios to evaluate financial liability in residents. We hypothesized that most residents would be at high financial risk exposure to manage present and future debt amortization, principal and interest payments, as reflected in debt-to-asset and debt-to-income ratio financial metrics.

METHODS

We administered an electronic survey (eDocument 1) to all surgical residents at the University of Wisconsin in 2015. The study was approved by the IRB and was specifically developed by the study authors to include all potential assets and liabilities that could be readily tracked. The survey was offered to the following surgical specialties: general surgery, otolaryngology, neurosurgery, orthopaedic surgery, plastic surgery, urology, and vascular surgery. Residents were not provided incentives to complete the survey; however, follow-up contact was made to improve survey completion rates. Survey questions addressed the following domains: demographics, debt (educational and noneducational), fixed and variable expenditures, assets and income, and resident perceptions of financial knowledge and financial training. Responses were coded in the dataset to protect resident identity.

Resident responses were used to calculate total assets, total debt, and total household income. Total household income was reported by residents and included personal income, domestic partner income, military income, and any income from moonlighting, rental properties, or other sources of revenue. Residents were asked what

proportion of their income came from each source. Assets included purchase price of home and second home when applicable, value of vehicles, amount in savings account, value of retirement account, and value of investments. Because home purchase was considered an asset, home value was calculated by subtracting mortgage balance after purchase from the closing purchase price. A similar calculation was used for vehicle purchase, where Kelly Blue Book value minus remainder of vehicle loan was calculated. Contributors to debt included student loan, nonstudent loan, mortgage, vehicle, and credit card balance. Total resident debt and assets were analyzed by quartiles due to the size of the dataset and lack of any previously published or standard cutoffs for the variables of interest.

The primary outcome of interest was debt-to-asset ratio, which was selected from a variety of other personal finance metrics (ie solvency ratio, debt-to-equity ratio, current ratio) to assess the overall financial picture of financial health and financial risk exposure.^{16,17} The debt-to-asset ratio was calculated with the following equation: Debt-to-asset ratio = (student loan debt + nonstudent loan debt + credit card balance + mortgage debt + vehicle debt)/(value of home and other real estate + value of household vehicles + amount in savings + value of retirement account + value of investments). A debt-to-asset ratio of 0.5 to 0.9 was considered moderate risk and a ratio ≥ 0.9 was considered high risk.^{16,17}

The secondary outcome of interest was debt-to-income ratio, which differs from debt-to-asset ratio in that it analyzes the ability to manage debt liabilities. The debt-to-income ratio was calculated with the following equation: Debt-to-income ratio = (student loan debt + nonstudent loan debt + credit card balance + mortgage debt + vehicle debt)/total household income. A high risk ratio was defined as >0.4 , above which trainees may be restricted for a conventional mortgage.

Surgeon salary, which strictly tracked annual US inflation, was calculated over a 15-year period, from 2000 to 2015, and compared with actual Association of American Medical Colleges (AAMC) data of assistant professor starting salaries. We selected AAMC data over the Medical Group Management Association (MGMA) data because the sample size and information regarding initial surgeon starting salaries was more applicable to this study population. An increase in surgeon salary that strictly tracked and was indexed to inflation alone (Fig. 1) was calculated based on annual inflation rates over that 15-year period.¹⁸⁻²²

Total household income, total assets, and total debt were evaluated by quartile. Descriptive statistics were conducted to evaluate resident demographics, assets, and

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