

tus was defined as an affirmative response to the diabetes variable, a code between 250 and 250.93 (“diabetes mellitus”) in a diagnostic field, and/or any of 3 NCHS-defined “reason for visit” variables coded as 2205.0 (“diabetes mellitus”).

All statistical analyses took into account the NHAMCS and NAMCS designs and sampling plans, by retaining all records and the weighting, strata, and primary sampling unit design variables, and used SAS/STAT version 9.2 survey module (SAS Institute Inc, Cary, North Carolina). These surveys’ sampling designs permit statistically reliable estimation when the estimate is based on at least 30 records and the associated relative standard error is 30% or lower. The diabetes data do not meet these criteria. Visit rates were calculated using US Census Bureau data.

**Results.** Between 2003 and 2008 there were 175 records associated with PCOS, representing 2 328 000 medical visits (eTable; <http://www.archinternmed.com>). Between 2005 and 2008, the mean yearly number of PCOS-related visits was 516 000 (95% confidence interval, 301 000-730 000) and the mean yearly rate of PCOS-related visits was 493 per 100 000 women aged 10 to-60 years (eTable). For 25% of PCOS-related visits, the symptoms began within 3 months of that visit.

Compared with 10- to 60-year-old women seen at non-PCOS-related visits, those at PCOS-related visits were significantly younger (mean age, 27 years vs 38 years). They also weighed more (mean weight, 87.45 kg vs 76.66 kg) and were more often obese (50% vs 18%;  $P < .001$ ). A contraceptive prescription was provided at 34% of PCOS-related visits and metformin at 30%. Diet and nutrition counseling was provided at 40% of PCOS-related visits by obese women, compared with 24% of non-PCOS-related visits by obese women ( $P = .045$ ).

The estimated annual national health care cost associated with PCOS was \$1.16 billion, in 2010 dollars, with the greatest contributors being diabetes, obesity, contraceptives, initial evaluation, and infertility treatment (Table).

**Comment.** Interpreting these national data on PCOS-related visits requires several caveats: (1) They do not include cases of unrecognized disease. (2) Diagnostic accuracy cannot be confirmed. (3) Although the number of PCOS-related visits over this period is adequate for analysis, the sample size is small, and associated 95% confidence intervals are large. (4) These data represent clinical visits, not patients, and thus cannot be used to calculate PCOS incidence or prevalence.

To my knowledge, this study provides the first estimate of the annual rate of PCOS-related visits in the United States: 5 visits per 1000 women aged 10 to 60 years. A quarter of these visits were for recent-onset disease. As expected, most women seen for PCOS were of childbearing age. Half were obese; 40% of these women received some form of diet and nutrition counseling. Given the current economic environment, this study’s greatest contribution may be in providing a conservative estimate of the annual national cost of PCOS-associated medical care: \$1.16 billion. Because diabetes and obesity contribute greatly to this cost, it would be useful for health care providers to intensify their nutritional, diet, weight loss, and

exercise counseling and education efforts, examine the specific content of these activities, and compare the relative cost-effectiveness of various educational and counseling interventions for patients with PCOS.

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**Online-Only Material:** The eTables are available at <http://www.archinternmed.com>.

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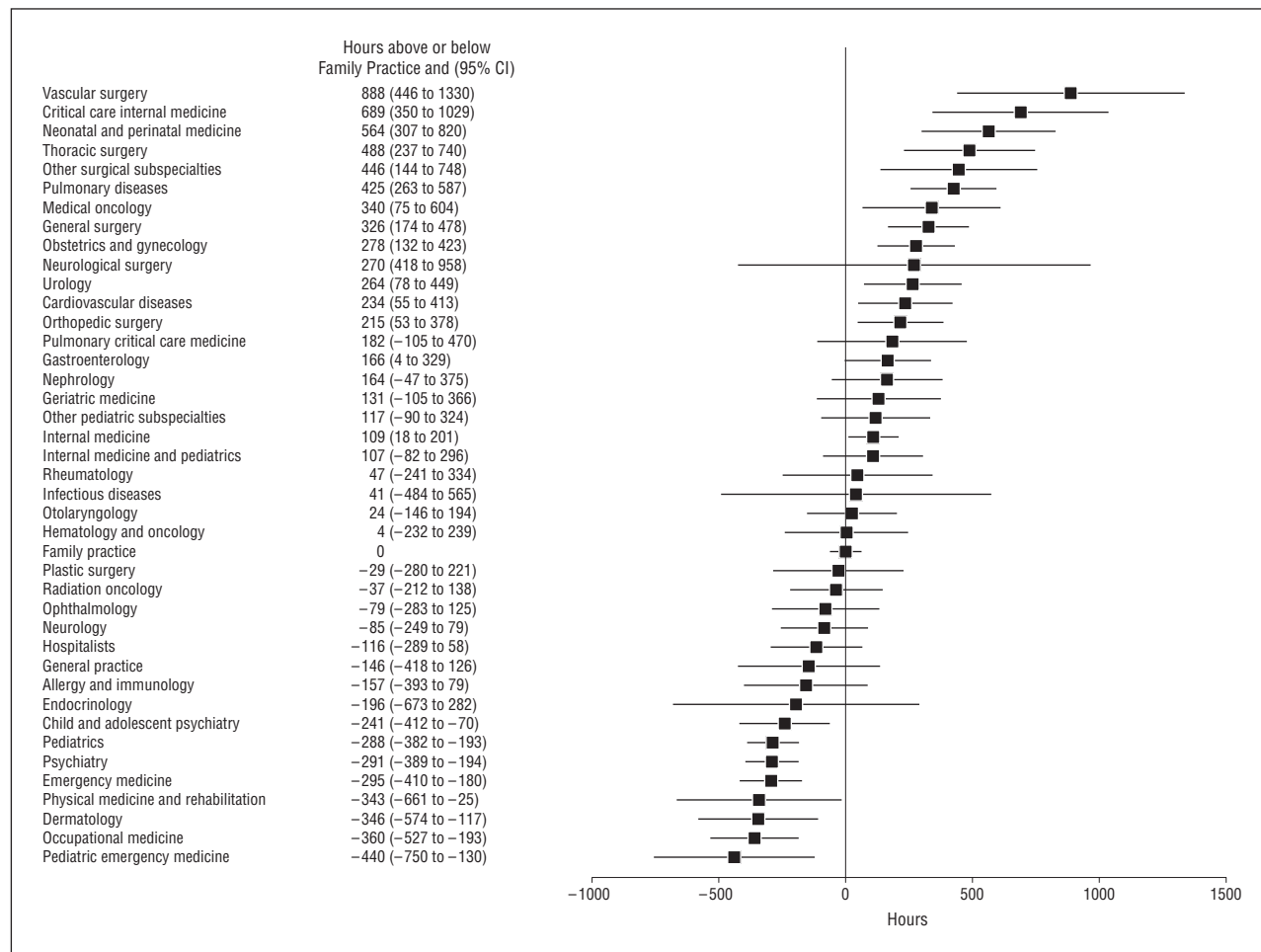
## HEALTH CARE REFORM

### Annual Work Hours Across Physician Specialties

Debate surrounds the relative pay of physicians in various specialties. Several studies have addressed income differences.<sup>1</sup> Few, by comparison, have addressed work hours, and we are not aware of any that consider annual work hours. Yet, work hours— independent of income—figure prominently in discussions of physician lifestyles,<sup>2</sup> student choices,<sup>3</sup> and patient safety.<sup>4</sup>

**Methods.** Data were drawn from a nationally representative sample of physicians in the 2004-2005 Community Tracking Survey (CTS). Our subsample contained 6381 physicians self-reporting 20 to 100 weekly work hours and at least 26 weeks worked annually.<sup>1</sup> Work hours included all medically related activities (direct patient care, administrative tasks, and professional duties).<sup>1</sup> Annual work hours were calculated as (weekly work hours) × (weeks worked per year).

We analyzed 41 specialties with at least 20 respondents, as well as 4 broad-specialty categories: primary care, surgery, internal medicine, and pediatric subspecialties, and other specialties.<sup>1</sup> Control variables were age, sex, race, whether board certified, whether graduated from foreign medical school, residence in areas with less than 200 000 population, region of residence, practice ownership, academic employment, and revenue from managed care.



**Figure.** Adjusted mean differences in annual work hours for physician specialties vs family practice in community tracking survey (n=6381). Note: Estimates from a multiple linear regression that statistically adjusted for physician, practice, and market characteristics (see text for details). Error bars represent 95% confidence intervals.

Analyses were conducted using Stata version 11 (Stata-Corp, College Station, Texas), accounting for the survey design. Two regression analyses compared work hours among 41 specialties, with and without control variables, with family medicine as reference. Two additional regressions compared the 4 broad categories, with and without control variables, with primary care as reference.

**Results.** Mean annual hours worked was 2524 (median, 2420; interquartile range, 1960-2940). The **Figure** presents selected results of a linear regression of annual hours on the 41 specialties adjusted for control variables. Compared with family practice, the 3 highest specialties were vascular surgery, critical care internal medicine, and neonatal and perinatal medicine; the 3 lowest were pediatric emergency medicine, occupational medicine, and dermatology.

In the regression for the 4 broad-specialty categories with control variables, surgery (+303 hours; 95% confidence interval [CI], 219 to 387 hours) and internal medicine and pediatrics subspecialties (+208 hours; 95% CI, 132 to 284 hours) had significantly higher hours, and other medical (-228 hours; 95% CI, -295 to -161 hours) had significantly lower hours than primary care. Control variables did not materially alter any of the rank-

ings in any regression. Excluding physicians classified as working part time (mean, <32 h/wk) did not affect relative rankings in any regression.

**Comment.** We found that specialists caring for more acutely ill patients or those requiring intensive monitoring (usually in hospital settings) work longer hours than physicians focused on more stable, chronically ill patients (mostly in ambulatory settings). The exceptions were physicians practicing emergency medicine or hospital medicine. Both of these specialties are characterized by fixed, hourly shifts; although patient acuity may be high, the number of work hours per day and days per month are limited.

Our rankings are somewhat similar to studies of annual income, with procedural specialties being paid more than cognitive specialties.<sup>1,2</sup> But there are differences. Neurological surgery receives the highest statistically significant wage, yet is not significant in the hours rankings.<sup>1</sup> Dermatologists have significantly higher wages and significantly lower hours.<sup>1</sup> Family practice receives one of the lowest wages but is near the middle of the hours rankings.<sup>1</sup> Finally, among broad categories, primary care receives the lowest wage but is neither the highest nor lowest for hours.

Specialties with more (less) work hours tend to have relatively low (high) physician job satisfaction ratings. For example, pediatricians, dermatologists, and child and adolescent psychiatrists reported relatively low hours and have relatively high career satisfaction.<sup>5</sup> Similarly obstetrician and gynecologists reported relatively high hours and have relatively low career satisfaction. However, this relationship does not always hold; for example, neonatologists and perinatologists reported high average hours yet have high career satisfaction.<sup>5</sup>

Our study had limitations. The CTS excluded radiologists, anesthesiologists, and pathologists. Self-reported work hours did not capture variability across day, swing, or night shifts or for weekends or weekdays, nor were hours-on-call included. Finally, the CTS have data from 2008, the only wave after 2004-2005. The CTS administrators, however, warn against comparing the 2008 data to studies using 2004-2005 data.<sup>1,5</sup>

We ranked 41 specialties and 4 broad categories by annual work hours. We believe this ranking will likely be useful to medical students, residency directors, hospital administrators, physicians contemplating switching specialties, and policy makers.

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**Author Contributions:** Dr Leigh had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Leigh, Tancredi, and Kravitz. *Acquisition of data:* Leigh, Tancredi, and Kravitz. *Analysis and interpretation of data:* Leigh, Tancredi, and Jerant. *Drafting of the manuscript:* Leigh. *Critical revision of the manuscript for important intellectual content:* Leigh, Tancredi, Jerant, and Kravitz. *Statistical analysis:* Leigh and Tancredi. *Obtained funding:* Leigh. *Administrative, technical, and material support:* Leigh, Jerant, and Kravitz. *Study supervision:* Leigh.

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## COMMENTS AND OPINIONS

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### Outcome-Blinded Peer Review

The study conducted by Emerson et al<sup>1</sup> provides strong evidence of positive outcome bias, yet does not fully address how to approach the problem. Making reviewers and authors more aware of the problem of positive outcome bias, as Emerson et al<sup>1</sup> suggest, could increase the number of articles published with null findings. But adding a counteracting bias to the already present positive outcome bias might lead to over- or undercompensation. Theoretically, one could only remove (as opposed to counteract) positive outcome bias by blinding reviewers to the outcomes of studies. A practical version of this would be to semiblind.

Reviewers evaluating a manuscript under a semi-blind approach would assess it in steps. Reviewers would first be provided with a manuscript shell that would include the manuscript background and detailed methods section. The latter would contain enough detail to determine the power and potential generalizability of the study. Reviewers would also receive all of the data tables and figures, with breakdowns of available sample sizes and relevant follow-up times for subgroups. But these tables and figures would be stripped of actual results. On the basis of this information, reviewers could render a preliminary decision regarding the importance of the manuscript. Once the reviewers had entered their evaluation, the results and discussion section of the manuscript could then be released to and evaluated by the same reviewers and their final input would be sought. Hopefully, the reviewers' initial commitment to assessing the quality and importance of the study would minimize the impact of any bias introduced when the reviewers finally see the study's results.

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