

The Duration of Office Visits in the United States, 1993 to 2010

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Since the expansion of managed care in the 1990s, physicians frequently report a high level of concern about the effects of time constraints on medical practice.¹ Many report feeling more and more rushed to see an increasing number of patients. Guidelines recommend that physicians should be providing preventive services, helping to minimize the need for expensive emergency care. However, patient loads for primary care physicians generally contain patient visits that are a response to illness or injury, as opposed to visits that cover preventive care.^{1,2} Time constraints are one of the most cited reasons by physicians for not providing preventive care as often as guidelines would dictate.^{1,3} Spending less time with patients makes it more difficult for physicians to obtain a full history, potentially making treatment choices less efficient, and preventing patients from receiving the entirety of the care they need.⁴ Adult patients in the United States receive a little over half of the healthcare that is recommended to them as outlined by the US Preventive Services Task Force.^{3,5}

The perception that office visits are getting shorter has been common for many years. Responding to the growth in managed care, in 2001 Mechanic, McAlpine, and Rosenthal tested the hypothesis that office visits were becoming shorter, using data from the annual National Ambulatory Medical Care Surveys (NAMCS) from 1989 to 1998.⁶ They found that contrary to the perception, the average duration of office visits continued to increase. The effect was consistent across both prepaid and non-prepaid visits, suggesting managed care did not cause the longer average visit time.⁶ The data also did not support the idea that increased patient age or complexity of patient issues caused longer visits.⁶ Although managed care has now become a less hotly contested issue, time constraints on physicians continue to be a widespread concern. We sought to determine whether the average duration of physician visits has continued to rise, using the most recent available data from NAMCS up to 2010.

METHODS

Data from annual surveys from the NAMCS from 1993 through 2010 were analyzed. These surveys obtained a rep-

ABSTRACT

Objectives

Since many physicians feel that they are not allotted enough time to adequately evaluate and effectively provide care for patients, we sought to analyze the average duration of office visits with physicians from 1993 through 2010.

Study Design

Retrospective analysis of data from the National Ambulatory Medical Care Survey of the National Center for Health Statistics.

Methods

Data were analyzed to examine the duration of office visits with physicians from 1993 through 2010. The trends for patients visiting primary care physicians and specialists, for a range of patient ages, for visits with and without physician's assistants or nurse practitioners, and for different numbers of diagnoses were all analyzed.

Results

From 1993 through 2010, reported visit duration increased over time from 17.9 minutes to 20.3 minutes for primary care visits ($P < .001$) and from 19.0 minutes to 21.0 minutes for specialized visits ($P < .001$). The increase in visit duration was consistent across different age ranges, for different numbers of diagnoses, and for patients who did and did not have a procedure performed during the visit.

Conclusions

Contrary to expectations and beliefs, from 1993 to 2010 a trend of a reduction in the average duration of office visits with physicians has not been observed. Visit duration has increased for both primary care physicians and specialists, across all age ranges, and for different numbers of diagnoses.

Am J Manag Care. 2014;20(10):820-826

representative sample of visit lengths to non-federally employed outpatient physicians in all specialties except anesthesiology, pathology, and radiology. The duration of the visit was recorded to be only the amount of time the physician spent in face-to-face contact with the patient, and did not include time spent with physician extenders or nurses. For each visit selected, the physician or a member of the physician's staff is expected to provide information about the characteristics of the patient, the duration of the visit, the reason for the visit, any diagnoses made, and any tests and procedures performed. Standard errors were adjusted for in the sampling design through the NAMCS survey and through SAS statements "CLUSTER cpsum, and STRATA cstratm." Population-based estimates were calculated by dividing the number of NAMCS visits in each year by the US population according to US Census data. This study was approved by the Wake Forest Baptist Hospital Institutional Review Board and under the rules of the Health Insurance Portability and Accountability Act of 1996, which permits physicians to make disclosures of protected health information with patient authorization for public health purposes or for approved research.⁷

During the declared data recording week, physicians, members of the physicians' staff, or Census field reporters used an arrival log to keep a daily catalogue of all patient visits.⁸ Visits included both scheduled and non-scheduled patients, while excluding cancellations and no-shows.⁸ The CDC website describes that visits from which data were collected were selected "from the list using a random start and a predetermined sampling interval based on the physician's estimated visits for the week and the number of days the physician was expected to see patients that week."⁸ Through this process, the NAMCS was able to produce a systematic random sample of visits from that physician.

The rate of response to the survey varied from 58.3% in 2010 to 73.0% in 1995 and 1993 over the 18-year period, with an average response rate of 65.6%. A systematic random sample of visits to each physician was selected during 1 randomly chosen 1-week period. The number of visits sampled per year ranged from 20,992 visits in 1999 to 36,875 visits in 1995. The estimates presented were calculated with the weighting used by the NAMCS to adjust for nonresponse and to produce nationally representative estimates. All data analysis was performed using SAS 9.1.3 (SAS Institute, Cary, North Carolina).

The data included information about the visit duration for visits to all physicians, including primary care physi-

Take-Away Points

This study supports the conclusion that outpatient office visits have continued to get longer over time.

- The increase in the length of visits remains present after controlling for factors such as increasing patient age or complexity, an increased number of procedures, or adoption of electronic medical records.
- Increasing length of visits should be expected to exacerbate the anticipated physician shortage in coming years, and may increase problems with access to care.

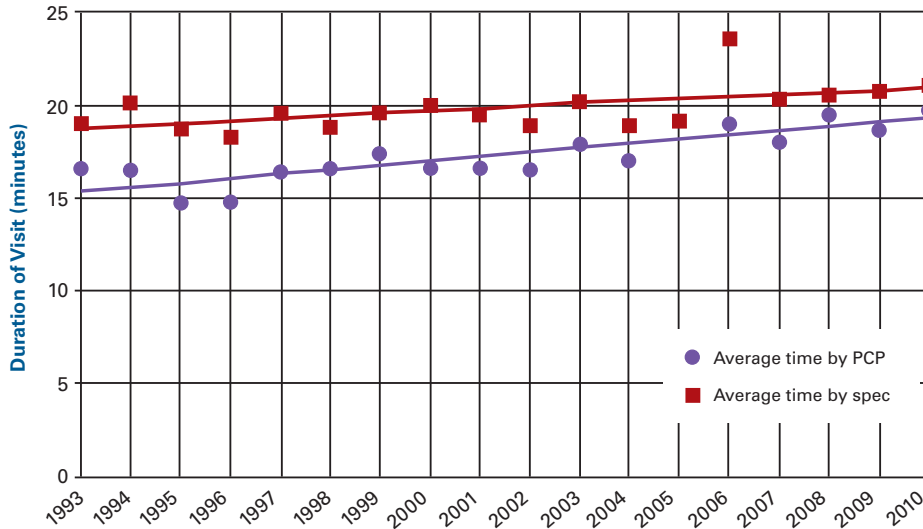
cians and specialists. In bivariate analyses, duration was also examined separately for those of different age ranges, for individuals who did and did not have a procedure performed, for visits in which patients only saw a physician (without a nurse practitioner or a physician's assistant present), and for patients who had different numbers of diagnoses. A regression was performed to analyze visits that occurred without the use of the electronic medical record (EMR). A multivariate linear regression was performed to assess simultaneously the impact of age, year, specialty, insurance type, new versus return patient status, procedure status, employment status (owner versus employee or contractor), use of the EMR, and number of diagnoses on visit length. The multivariate analysis was run 3 different times beginning in the years 1993, 1997, and 2003 to allow for the inclusion of variables relating to payment type and employment status (first included in the survey in 1997), and the use of the EMR (first included in 2003).

RESULTS

From 1993 to 2010, the total number of physician visits increased from approximately 717 million to 994 million, resulting in an approximate 39% increase in total visits. During this time, there was a 19% increase in the total population of the United States.^{9,10} The number of visits per physician eligible for NAMCS showed little change, fluctuating from 1993.8 visits per physician in 1993 to 1943.2 visits per physician in 2010. Additionally, the number of annual visits per United States resident increased from 2.7 visits per resident in 1993 to 3.2 visits per resident in 2010. One would assume that in order to compensate for the increase in the number of possible patients and the increase in the number of visits per US resident, the duration of each such visit would need to decrease.

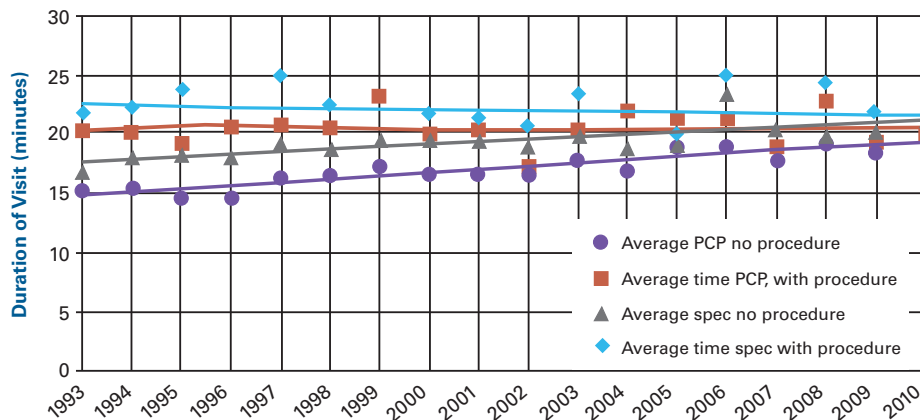
However, based on the data, the average visit duration increased for both primary care physicians and specialists, with an annual increase of 0.17 minutes per visit from 1993 to 2010 for primary care physicians, to give an approximately 3-minute total increase over the 17-year span for general practitioners, family practitioners, internal medi-

■ **Figure 1.** Average Time Spent by PCPs and Specialists per Visit From 1993 to 2010



PCP indicates primary care physician; SPEC, specialist.

■ **Figure 2.** Average Time Spent by PCPs and Specialists per Visit from 1993 to 2010 For When Procedures Were and Were Not Performed



PCP indicates primary care physician; Spec, specialist.

cine physicians, and pediatricians ($P < .001$, **Figure 1**). The annual increase was 0.12 minutes for specialists, to total a 2.1-minute increase per visit from 1993 to 2010 ($P < .001$, **Figure 1**). The increasing duration of office visits was observed across each age group (children, adults, and the elderly, **eAppendix**, available at www.ajmc.com) and for both primary care physicians and specialists. The increase in visit duration remained when patients who saw physician extenders were excluded, and when no procedures were performed (**Figure 2**).

Multivariate Regression

In the multivariate regression for 1993-2010, of the 13 specialties compared with general and family practice, 9

specialties averaged longer visits, with only pediatrics, orthopedic surgery, dermatology, and otolaryngology averaging the same or shorter visits (**Table**). Additionally, the positive values demonstrate that higher age, later year, and a greater number of diagnoses are all associated with longer visits (**Table**). Through these data, we were able to identify a number of factors associated with an increased duration of visits, but after controlling for all of these variables, it was seen that later year has a large effect upon visit duration (0.17 minutes longer per year) (**Table**). In the 1997-2010 analysis, visits paid by insurance from Medicare ($P = .02$, $\text{beta} = -1.71$ minutes) or Medicaid ($P = .006$, $\text{beta} = -1.61$ minutes) were associated with shorter visits compared with payers other than Medicare or Medicaid.

■ **Table.** Physician Visit Duration by Specialty

| Variable | Trend Over Time for Specialty | | Effect of Variable in Multivariate Analysis | | |
|---------------------------|-------------------------------|--------|---|-------------------------|--------|
| | Beta (min/yr) | P | Effect Size ^a | 95% Confidence Interval | P |
| Specialty | | | | | |
| General & family practice | 0.28 | <.0001 | (Ref) | — | — |
| Internal medicine | 0.18 | .0001 | 2.00 | (1.52-2.48) | <.0001 |
| Pediatrics | 0.24 | <.000 | -0.06 | (-0.49-0.37) | .7812 |
| General surgery | 0.16 | .0003 | -0.44 | (-0.95-0.07) | .0938 |
| Obstetrics & gynecology | 0.11 | .0024 | 0.60 | (0.11-1.09) | .0165 |
| Orthopedic surgery | 0.15 | .0004 | -1.08 | (-1.64 to -0.53) | .0001 |
| Cardiovascular diseases | -0.07 | .23 | 2.19 | (1.56-2.82) | <.0001 |
| Dermatology | 0.21 | <.0001 | -3.37 | (-3.86 to -2.89) | <.0001 |
| Urology | 0.18 | <.0001 | -0.31 | (-0.88 to 0.26) | .2822 |
| Psychiatry | -0.38 | .0015 | 17.04 | (15.87-18.21) | <.0001 |
| Neurology | -0.10 | .17 | 8.57 | (7.77-9.37) | <.0001 |
| Ophthalmology | -0.17 | .023 | 0.01 | (-0.68 to 0.69) | .9764 |
| Otolaryngology | 0.27 | <.0001 | -1.58 | (-2.11 to -1.05) | <.0001 |
| All other specialties | 0.26 | .009 | 4.19 | (2.93-5.46) | <.0001 |
| Other Variables | | | | | |
| Procedure performed | | | (Ref) | — | — |
| Procedure not performed | | | -3.24 | (-3.67 to -2.80) | <.0001 |
| Age | | | 0.03 | (0.02-0.03) | <.0001 |
| Year | | | 0.17 | (0.13-0.21) | <.0001 |
| Number of diagnoses | | | 0.48 | (0.21-0.74) | .0003 |

Data source: National Ambulatory Medical Care Survey, 1993-2010.

Unweighted sample size: 500,561.

Weighted sample size: 14,916,100,000.

^aFor example, in the case of psychiatry, the visits were on average 17 minutes longer than for the reference standard of primary care visits, and in the case of neurology, the visits were on average 8.5 minutes longer than for the reference standard of primary care visits.

Visits paid with private insurance were not significantly different from those visits that were paid out of pocket ($P = .09$; $\beta = -1.03$). Employment status did not have a significant effect ($P = .26$), and the effect of later year was still similar ($\beta = 0.21$; $P < .0001$).

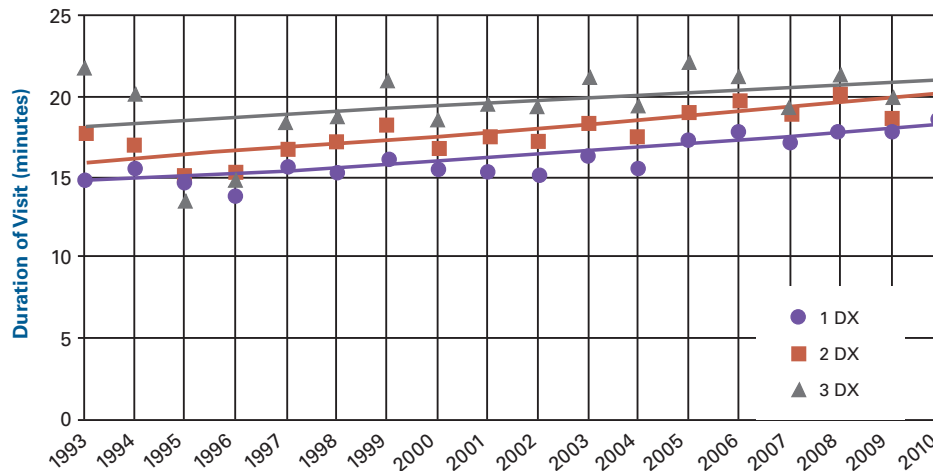
Bivariate Analysis

To control for the possibility that increased patient complexity caused the rise in visit duration, we analyzed patients with only 1 diagnosis separately from those with multiple diagnoses. While there were longer visits associated with more diagnoses, the average visit duration increased in all groups for primary care physicians and specialists (Figures 3 and 4). Also, visits without EMRs showed the same increasing trend ($P < .001$), suggesting that the increase in visit length was not caused primarily by EMR use.

The data were also stratified by whether an outpatient procedure was performed, to control for the possibility

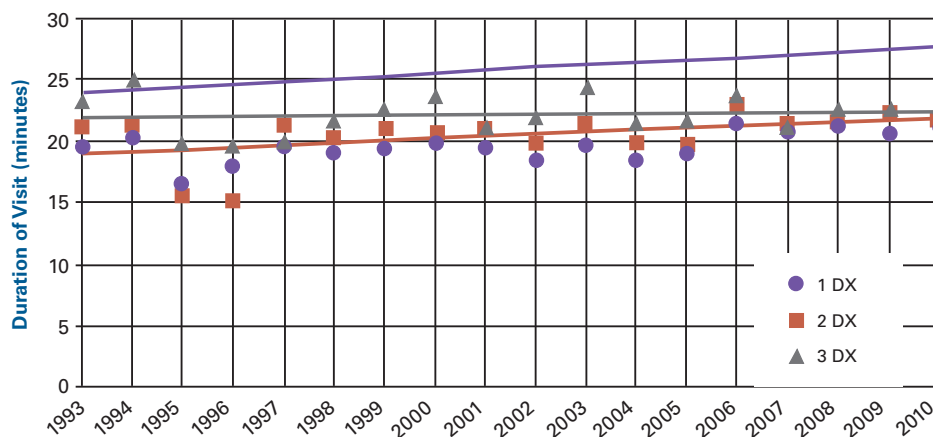
that procedures being performed were the cause of the rise in visit duration. Visit duration increased with patients who did and did not receive a procedure by primary care physicians and with patients who did not receive a procedure by specialists (Figure 2). Those patients who did receive a procedure by specialists actually experienced a decrease in duration of visit (Figure 2). However, this result is likely an anomaly resulting from a greatly increased number of procedures recorded in the last 2 years. The number of recorded procedures jumped from 99 million in 2008 to 400 million in 2009 and 395 million in 2010, including large increases in the number of nonoperative measurements and examinations, general physical examinations, and eye examinations not otherwise specified. When stratified by specialty area, 11 of 15 specialty areas showed an increase in visit duration, with only cardiology, psychiatry, neurology, and ophthalmology showing a decrease in visit duration.

■ **Figure 3.** Average Time Spent by PCP From 1993 to 2010 For Patients Who Had Various Numbers of Diagnoses



DX indicates diagnosis; PCP, primary care physician

■ **Figure 4.** Average Time Spent by Specialists From 1993 to 2010 Who Had Various Numbers of Diagnoses



DX indicates diagnosis.

DISCUSSION

In 2001, Mechanic et al determined that between 1989 and 1998 the number of visits to physicians' offices increased significantly.⁶ Mechanic et al also determined that the average duration of visits increased between 1 and 2 minutes between 1989 and 1998.⁶ NAMCS data through 2010 permit an analysis of subsequent changes that may have occurred after 1998. The analysis performed on the data from 1993 to 2010 provided results consistent with those of Mechanic et al, demonstrating the continued increase in visit duration over the entire time period from 1989 to 2010.

Visit duration increased in all types of visits tested, except for those during which a procedure was performed. While duration of visits increased in all primary care specialties, duration of visits for 6 types of specialists increased, while the duration of visits for 2 specialties (psychiatry and ophthalmology) showed significant decreases, and the visit duration for 2 others (cardiology and neurology) showed nonsignificant decreases. The multivariate linear regression of the data confirmed our initial analysis that visit durations were increasing; we saw that later year has a large effect upon visit duration, even after controlling for all other variables. The increase in visit duration over time appears independent from greater pa-

tient complexity, changes in specialties seen, or any other factors analyzed. The multivariate regression provided new analysis in comparison to what Mechanic et al had analyzed, and allowed us to conclude that once these external variables were taken into account, the increase in the duration of visits to general physicians and specialists was consistent with the original analysis.

CONCLUSION

One possible explanation for the increase in visit duration could be an increase in discussions between patients and their physicians. According to a National Research Corporation Survey, patients listed “willingness to explain things” as the most important factor in selecting a physician.¹¹ Recent surveys estimate that about 86% of the adults who have access to the Internet use it to seek health information.^{12,13} With patients’ expanded access to Internet resources, they are able now, more than ever, to research any problems they may be experiencing and the multitude of treatment options available to them¹⁴—options they may be discussing with their physicians. Visit duration may be increasing due to these more thorough discussions.

The use of care managers, or other nonphysician extender personnel, might allow for physicians to spend more time with their patients, as these personnel are able to oversee other work that would have been previously performed by physicians and limited the amount of time for physicians to interact with their patients. Additionally, as the use of the EMR increases, physicians may be spending an increasing portion of the time spent with their patients documenting their assessments of patient health.¹⁵ However, the regression analysis of visits without the use of the EMR are also increasing in duration, so the use of the EMR cannot be the sole reason for the increase.

One limitation of this study is the cross-sectional nature of the NAMCS; we could not follow visit durations of individual patients over time. Although the NAMCS provides considerable detail on characteristics of office visits, it does not provide information on how much time was devoted to examination versus discussion and patient education, which might further explain the increase in visit duration if patients have increased the amount of time they spend talking to their physicians. Additionally, the NAMCS does not provide information about Work Relative Value Units, so it is difficult to quantify specifically if more is being done during individual visits than in the past. The control of the number of diagnoses per

visits was an attempt to monitor this; however, it is possible that patient complexity is increasing, and as a result more is being done in each visit without accruing extra diagnoses. The study was not able to directly assess the amount of useful time spent by physicians, and future research may be able to provide insight on how much is spent on tasks that might be more efficiently assigned to other healthcare workers.

A potential bias for the data collected by the NAMCS would be the type of physicians who agreed to participate in the survey. Those physicians who agree to the NAMCS survey often have to fill out a significant amount of paperwork associated with it; therefore, one could assume that those physicians who truly feel pressed for time with their patients would not agree to participate in the survey. However, with the NAMCS covering such a significant number of physicians over the entire country, we feel that the data presented should still be an excellent representation of the average time physicians are spending with their patients.

By 2020, the Association of American Medical Colleges projects that there will be a shortage of 91,500 doctors in the United States.^{16,17} This shortage is in part attributed to the severely limited number of residency positions available, and in part to the dramatic increase in the number of insured Americans under the Patient Protection and Affordable Care Act.¹⁶⁻¹⁸ During the span of the survey, the total number of physicians eligible for NAMCS increased from 359,598 in 1993 to 511,517 in 2010, resulting in a 42% increase in the number of doctors over the span of the survey. Thus, while the number of physicians is growing, the number of visits to physicians is growing at an even greater rate and could overwhelm the number of physicians available. Consequently, it would be prudent to continue to monitor the durations of visits as a measure of determining if physicians are able to continue to provide the high standard of quality care that we have come to expect in the United States.

Acknowledgments

The authors would like to gratefully acknowledge Karen E. Huang, MS, for statistical assistance.

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Funding Source: The Center for Dermatology Research is supported by an unrestricted educational grant from Galderma Laboratories, LP. However, the funding source had no role in the study.

Author Disclosures: The authors report no relationship or financial interest with any entity that would pose a conflict of interest with the subject matter of this article.

Authorship Information: Concept and design (MKS, SAD, ABF, SRF); acquisition of data (SAD); analysis and interpretation of data (MKS,

SAD, ABF, SRF); drafting of the manuscript (MKS); critical revision of the manuscript for important intellectual content (MKS, SAD, ABF, SRF); statistical analysis (SAD); administrative, technical, or logistic support (ABF, SRF); and supervision (SAD, ABF, SRF).

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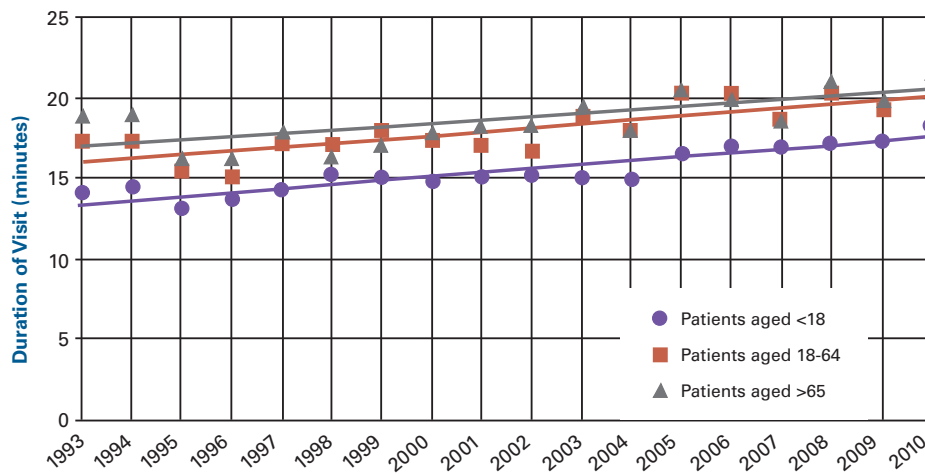
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eAppendix

■ **Figure 5.** Average Time Spent by Primary Care Physicians From 1993 to 2010 For Patients of Different Age Ranges



■ **Figure 6.** Average Time Spent by Specialists From 1993 to 2010 For Patients of Different Age Ranges

