Patient Visits to a National Practice-Based Research Network: Comparing Pediatric Research in Office Settings With the National Ambulatory Medical Care Survey
Eric J. Slora, Kathleen A. Thoma, Richard C. Wasserman, Steven E. Pedlow and Alison B. Bocian

*Pediatrics* 2006;118;228-234; originally published online Jul 10, 2006; DOI: 10.1542/peds.2005-0701

This information is current as of August 22, 2006

The online version of this article, along with updated information and services, is located on the World Wide Web at:

http://www.pediatrics.org/cgi/content/full/118/2/e228
Patient Visits to a National Practice-Based Research Network: Comparing Pediatric Research in Office Settings With the National Ambulatory Medical Care Survey

Eric J. Slora, PhD*, Kathleen A. Thoma, MA*, Richard C. Wasserman, MD, MPH†*, Steven E. Pedlow, MS*, Alison B. Bocian, MS*

*Pediatric Research in Office Settings, American Academy of Pediatrics, Elk Grove Village, Illinois; †Department of Pediatrics, University of Vermont College of Medicine, Burlington, Vermont; ‡National Opinion Research Center, University of Chicago, Chicago, Illinois

The authors have indicated they have no financial relationships relevant to this article to disclose.

ABSTRACT

OBJECTIVE. Our objective with this study was to assess the extent to which patients who are seen by practitioners in Pediatric Research in Office Settings, a national primary care practice–based research network, are representative of those who are seen in ambulatory office–based pediatric primary care in the United States.

METHODS. Pediatric Research in Office Settings patient data were collected from the offices of 57 randomly selected network practitioners as part of an Agency for Healthcare Research and Quality–funded effort to describe primary care visits and replicate the National Ambulatory Medical Care Survey in primary care practice–based research networks. These data were from 1706 randomly selected pediatric patient visits that occurred between March and June 2002. National comparison data were 948 randomly selected pediatric patient visits that occurred between March and June 2000 in the offices of the 33 primary care pediatric practitioners who had participated in the National Ambulatory Medical Care Survey. The groups were compared on patient demographics (age, gender, race, ethnicity, and socioeconomic status, as represented by Medicaid status), visit characteristics (percentages of patients referred, practitioner designation of visit as acute versus nonacute, and continuity of care), the top patient/parent-articulated reasons for visit, and the top practitioner diagnoses.

RESULTS. Comparisons revealed substantial similarities between Pediatric Research in Office Settings and national data, including gender, ethnicity, socioeconomic status, and visit characteristics. Differences were noted for age and race, with Pediatric Research in Office Settings children approximately 1 year older and comprising a significantly lower proportion of black patients than their National Ambulatory Medical Care Survey counterparts. Although the top 6 reasons that were articulated by parents for outpatient visits in the 2 groups were remarkably similar in rank order and proportions, there were overall differences, mostly...
attributable to a larger number of the “other” category in the Pediatric Research in Office Settings cases. There were no significant differences among the top 5 practitioner visit diagnoses between the Pediatric Research in Office Settings and National Ambulatory Medical Care Survey data.

CONCLUSIONS. The Pediatric Research in Office Settings patient population is reasonably representative of patients who are seen in US ambulatory office-based pediatric primary care practices; therefore, the Pediatric Research in Office Settings is an appropriate laboratory for studies of care in such settings.

Practice-Based Research Networks (PBRNs), which arose at the end of the 20th century to begin to study questions related to primary care, have become an important feature of the primary care research landscape.1–4 PBRNs have been defined as “groups of practices . . . affiliated with each other . . . for the purpose of investigating the phenomena of clinical practice occurring in communities.”2

It is ironic that although PBRNs were established, in part, to study patient samples that are more generalizable than those that are recruited from academic medical centers, the generalizability of PBRN patient samples itself has been called into question.3 Pediatric Research in Office Settings (PROS), established by the American Academy of Pediatrics (AAP) in 1986, is a national pediatric PBRN. The PROS mission is to improve the health of children and to enhance primary care practice by conducting national collaborative practice-based research. PROS pediatricians have been shown to be very similar to random samples of AAP general pediatricians in selected attitudes and self-reported behaviors.4 A 1998 analysis showed no significant demographic difference with respect to age or gender of providers. PROS practitioners at that time differed slightly on practice location (more suburban and less inner city) and time spent in general pediatrics (93% PROS; 75.4% AAP).5 However, recent unpublished analyses that compared PROS pediatricians with AAP general pediatricians suggested that the PROS group is slightly older; more likely to be male; and practicing in settings that are more urban, less suburban, and equally rural (S. A. Finch, MA, American Academy of Pediatrics, Division of Primary Care Research, written communication, October 2004).

The extent to which patients who are seen in PROS samples are typical of national samples, however, has never been assessed. One resource that is used in national–regional comparison research is the National Ambulatory Medical Care Survey (NAMCS), a program administered by the National Center for Health Statistics to survey office-based practitioners’ utilization of ambulatory medical care services.6 Practices are selected to participate in NAMCS through a stratified random sampling scheme and collect data on a random sample of visits during a preassigned 1-week data collection period. A multistage estimation procedure allows for the assignment of weights to each visit for which data are collected so that unbiased national estimates of ambulatory medical care are produced. NAMCS provides for overall estimates as well as estimates by specialty. Previous NAMCS comparison research in a national family medicine network showed remarkable similarities between network patients and a national sample.5 Given the need for such research to help interpret PROS findings and the availability of specialty-specific NAMCS data, the aim of the present study was to use NAMCS comparisons to determine the degree to which patients who are seen for office visits to PROS practices are typical of those who are seen nationwide.

METHODS
As part of an Agency for Healthcare Research and Quality–funded effort to describe patient visits across PBRNs, PROS collected practitioner-reported data on patient visits from a stratified random sample of its active membership.10 The data collection method and variable definitions for this effort were based on those used in the NAMCS.11 The study was approved by the Institutional Review Board of the AAP.

PROS Practice Selection
The PROS sample was drawn from the domain of practices that were active recently within the network, as defined by their participation in at least 1 PROS study during the previous 5 years. Because NAMCS does not sample practices in the Commonwealth of Puerto Rico, 2 Puerto Rican PROS practices were excluded from this domain, as were practices that were actively collecting data for a PROS study on newborn discharge that required oversampling of practices with high-minority populations. Overall, the domain of study-eligible active PROS practices was 242 practices, which included 794 practitioners. A stratified random sample of 120 practices was recruited, reflecting the geographic distribution of the active PROS practices (defined by US Census regions), as well as the urban–rural split within geographic area. Of those, 57 practices agreed to participate (see “Acknowledgments” for the list of participating practices). One practitioner from each of the 57 practices (54 pediatricians, 2 nurse practitioners, and 1 physician assistant) agreed to collect data, and all 57 completed the study.

Practice/Practitioner Comparisons
By region, PROS practices that participated in the study represented the South (29.8%), Northeast (26.3%), Midwest (22.8%), and West (21.1%). The participating practices were located primarily in nonrural settings
(26.1%). Participating practitioners primarily were male (57.9%), white (89.5%), non-Hispanic (94.7%), and engaged in direct patient care as a primary activity (100%), and a plurality were associated with a pediatric group (43.1%). Their mean age was 47.2 years. There were no significant differences on any of these characteristics between the study-eligible active PROS practices and the group of practices that ultimately participated. Practices also were compared on their answers to a previously fielded enrollment survey question on estimated percentages of patients by various categories, including race, ethnicity, and Medicaid status. Practices that participated in this study indicated significantly lower estimated percentages of Medicaid and black patients in their patient panels than those in the full PROS practice complement.

Visit Selection
Participating practitioners collected data on a random sample of visits during a preassigned 1-week period between March and June 2002. Eligible visits included only patients who were seen by the participating practitioner. As with NAMCS, the specific visits selected are based on an “every nth visit” method, with n calculated on the basis of practitioner prestudy patient-load estimates to ensure that visits from all clinical sessions that week are represented. The PROS sample comprised a total of 1706 such visits. Data were collected on a broad range of patient and visit characteristics. For purposes of comparison with the PROS visit data, we used similar data that had been collected during a 1-week period on 948 randomly selected pediatric patient visits that occurred between March and June 2000 in the offices of 33 primary care pediatric practitioners who participated in the NAMCS. As to weighting, the NAMCS data, collected via multistage probability sampling, were weighted by a selection probability factor to yield accurate national estimates. In a similar manner, PROS data (which also were collected via multistage probability sampling) were weighted by a selection probability factor to produce accurate network estimates. PROS data were compared with the national sample on a wide variety of variables that were chosen to characterize best the patients, the conditions for which patients were being seen, and factors related to continuity of care. These variables included patient demographics (age, gender, race, ethnicity, and socioeconomic status, as represented by percentage of Medicaid patients), as well as characteristics of the visit (percentage of patients referred, patient/parent-articulated reason for visit, nature of the visit, practitioner diagnosis, whether the patient was seen regularly in the practice, and whether the practitioner who saw the patient was the patient’s regular practitioner). For both data sets, “patient/parent-articulated reason for visit” was the complaint(s), symptom(s), or reason(s) for the visit in the patient’s or parent’s own words, and “nature of the visit” was defined as whether the visit was for acute, routine chronic, routine flare-up, pre- or postsurgery/injury follow-up, or nonillness care. “Practitioner diagnosis” is defined as the specific diagnoses, including chronic conditions, related to the visit, that were made by the practitioner.

Power Analysis
We performed a power analysis under the assumption that 60 practices would provide 30 patients each (1800 patients total). Because the patients are clustered within practices, however, the effective sample size is less. We used a conservative design effect of 2.45 (based on a cluster size of 30 and a hypothetical intraclass correlation of 0.05) to give effective sample sizes of 735 for PROS and 387 for NAMCS (using the same design effect). Bausell and Li12 showed that these effective sample sizes would result in an 80% chance of obtaining statistical significance via an independent samples t test (P = .05) with an effect size of 0.20 SD. Using Cohen’s terminology, this is halfway between a small (0.10) and a medium (0.30) effect size. For continuous variables such as age, power is sufficient. However, most of the comparisons in this article are for proportions using χ² tests. Standard power calculations indicate that these sample sizes are large enough to detect differences of these sizes with 80% power: 8.8% for proportions near 50%, 8.0% for proportions near 30% (or 70%), and 5.2% for proportions near 10% (or 90%). We note that these calculations are conservative when the intraclass correlation is smaller for particular variables.

Data Analysis
In general, categorical data were analyzed with goodness-of-fit χ² tests. When the overall distribution χ² was significant, specific categorical differences were identified with posthoc χ² tests. Although multiple comparisons among correlated variables were performed, we decided to take a conservative approach and not apply a Bonferroni or other type of multiple comparison procedure to adjust the α = .05 critical value downward because such a procedure would make it more difficult to determine a difference between the 2 data sets as statistically significant. P values are reported when they fall below .10. Continuous data were analyzed with t tests for means. All analyses were conducted with SPSS 12.0 (SPSS, Inc, Chicago, IL).

RESULTS
Patient Demographics
As Tables 1 and 2 indicate, the groups were not statistically different on 3 of the 5 patient demographic variables examined. Close similarities were observed for 2 of the variables. For both groups, boys comprised slightly more than half of the patient visits. The percentage of
Medicaid patient visits also was similar, with slightly more than 20% of each group reporting chief payment source for the visit as Medicaid. Comparisons for the third variable, ethnicity, were more equivocal. The groups did not differ statistically on proportions of visits by Hispanic patients, but the difference between groups bordered on significance ($P = .076$).

Significant differences were found for 2 variables. As Table 1 demonstrates, the patients in the PROS sample were older than the NAMCS sample by ~1 year (an average of 6.45 years vs 5.47 years; $P < .001$). Table 2 illustrates the racial differences between the samples. The overall $\chi^2$ is significant ($\chi^2 = 108.885$; degrees of freedom [df] = 4; $P < .001$), and the posthoc $\chi^2$ tests reveal significant within-category differences for white patients (82.2% visits by white children in the PROS sample vs 78.7% for the NAMCS group; $\chi^2 = 5.00$; df = 1; $P = .025$), black patients (7.5% for PROS vs 17.6% for NAMCS; $\chi^2 = 61.49$; df = 1; $P < .001$), and children from other/multiracial backgrounds (6.8% for PROS vs 0.5% for NAMCS; $\chi^2 = 54.99$; df = 1; $P < .001$).

With respect to an age–race interaction, PROS white children were older than NAMCS white children (an average of 6.46 vs 5.23 years; $P < .001$). There were no significant age differences between the data sets for black children (an average of 6.46 vs 6.48 years) or for children of other races (an average of 6.42 vs 5.87 years).

**Visit Characteristics**

Four key visit characteristics were examined. First, the percentage of visits that resulted in a referral was examined. The PROS group referred in 4.3% of the visits, whereas the NAMCS group referred in 3.8%, which was not a significant difference.

Second, continuity of care was examined at 2 levels: practice and practitioner. Analysis of these data reveals a mixed picture. A slightly higher proportion of visits to PROS practices were made by established patients as compared with NAMCS practices (95.8% for PROS vs 93.7% for NAMCS; $P = .025$), suggesting higher continuity at the practice level. At the practitioner level, however, restricting the analysis to practices with 2 or more practitioners, NAMCS practices displayed a significantly higher proportion of visits to the regular practitioner than PROS practices (91.6% for NAMCS vs 81.8% for PROS; $P < .001$).

Table 3 reports the findings of a comparison on a third visit characteristic, the nature of the visit. The distribution of visits among acute problems, chronic problems, and nonillness care were remarkably similar, with no significant difference found.

Table 4 provides the results of a comparison of the top 6 patient/parent-articulated reasons for the visit. Once again, the reasons for the visit seem similar. The overall $\chi^2$ statistic was significant ($\chi^2 = 14.092$; df = 6; $P = .029$); however, posthoc testing revealed that a significant difference existed only for the “other reasons” category (40.7% for PROS visits vs 45.4% for NAMCS; df = 1; $P = .022$).

Last, the groups were compared with respect to primary diagnosis assigned by the pediatric practitioner. Table 5 reports the findings of this comparison in terms of the top 5 primary diagnoses assigned. Again, the similarity of the 2 groups is strong in terms of frequency and order, with only a difference in the ranking of pharyngitis and virus, and no significant difference found between the 2 groups.

**DISCUSSION**

These data suggest that the sample of visits to PROS practices resembles national community-based, pediatric primary care in many ways. In terms of 2 important patient characteristics, gender and socioeconomic status (as measured by Medicaid status), visits by PROS patients resemble the national sample. The comparable Medicaid status findings represent an important improvement for the network when compared with previous study-specific data, with the network clearly becoming more representative. There are, however, some important differences. Although the PROS visits resemble national visits in terms of 1 marker of racial/ethnic
The magnitude of the race difference may be questioned, however. The 18% black figure in the NAMCS sample is several percentage points higher than that found in the US population for this age group. A review of the documentation for the 2000 NAMCS reveals that for nearly 20% of visits in the NAMCS sample, race data are missing and are imputed statistically. It is possible, then, that the NAMCS estimate of black children may be slightly high because of this factor. In addition, as noted in “Methods,” the sample of the 57 PROS practitioners for this study necessarily excluded practices that were not actively participating in a PROS study of newborn discharge. That PROS newborn study deliberately oversampled practices that serve high-minority populations within the network (practices self-described as having >40% of patients either black or Hispanic/Latino). This could have led to potential undersampling of visits by minority patients. As noted earlier, an examination of network enrollment surveys for the 57 PROS practitioners, as compared with all active PROS practitioners (including those involved in the newborn study), corroborates this hypothesis; the sample of 57 had lower self-estimated percentages of black patients (8.8% vs 15.0%; P = .003) than the entire sample of active PROS practitioners.

Even if the magnitude is not as great as suggested by the simple numbers, it seems that PROS underrepresents minority patients to some degree. To improve its representativeness with respect to race and ethnicity, PROS continues to engage in strategies to ensure that adequate numbers of minority patients are recruited for PROS studies and that minority viewpoints are represented in study design. In addition to oversampling from existing PROS practices that serve high-minority populations and recruiting high-minority practices, the most successful of these strategies has been partnership and collaboration with other research networks that serve high-minority populations, most notably with the National Medical Association’s NMAPedsNet. As the result of such partnerships, the percentages of minority patients have risen in recent studies. Minority representation averaging 15% in the early 1990s has risen to proportions in excess of 30% during the past 5 years. With respect to Hispanic ethnicity, although the percentage of Hispanic patients in the PROS sample was not significantly different from the NAMCS sample, the difference bordered on significance, suggesting a continuing need to ensure Hispanic representation in PROS studies.

The age difference noted between the PROS and NAMCS samples is also worthy of additional note. Current unpublished data from PROS and the AAP membership survey suggest that PROS practitioners now are older than their national counterparts (S. A. Finch, MA, written communication, October 2004). The age of pediatricians in the NAMCS sample is not available. However, to the extent that patient age covaries with practitioner age, a possible explanation for the difference between PROS and NAMCS samples on patient age is the older pediatric practitioners in PROS have stopped accepting new patients and therefore see slightly older patients and have slightly more visits by older children.

The visit characteristics offer considerable similarities. The distributions of visits that resulted in referrals, general nature of the visit, and the variables relating to patient- and practitioner-identified specific nature of the visit all are remarkably similar between the 2 samples.

Continuity of care represents an area in which differences exist between PROS and the national sample, although the picture is mixed. At the practice level, the 2.1% preponderance of visits by established patients in the PROS sample is significant statistically but, one might argue, not clinically meaningful. At the practitioner level, however, a more substantive difference emerges. As noted above, the 9% preponderance of visits to the patient’s regular practitioner in the NAMCS sample seems to reflect between the samples a real difference that persists even after solo practice sites are eliminated from the analysis. It seems that in multipractitioner PROS sites, more patients end up seeing the next available practitioner rather than their regular practitio-

---

**TABLE 4** Patient/Parent-Articulated Reason for Visit

<table>
<thead>
<tr>
<th>Reason for Visit</th>
<th>PROS Sample (n = 1700), %</th>
<th>NAMCS Sample (n = 939), %</th>
<th>P&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-child examination</td>
<td>29.1</td>
<td>25.7</td>
<td>.060</td>
</tr>
<tr>
<td>Cough</td>
<td>9.1</td>
<td>10.5</td>
<td>—</td>
</tr>
<tr>
<td>Fever</td>
<td>8.1</td>
<td>6.3</td>
<td>.085</td>
</tr>
<tr>
<td>Sore throat</td>
<td>5.1</td>
<td>4.0</td>
<td>—</td>
</tr>
<tr>
<td>Earache</td>
<td>4.8</td>
<td>3.9</td>
<td>—</td>
</tr>
<tr>
<td>Skin rash</td>
<td>3.1</td>
<td>4.2</td>
<td>—</td>
</tr>
<tr>
<td>Other</td>
<td>40.7</td>
<td>45.4</td>
<td>.022</td>
</tr>
</tbody>
</table>

Overall distribution: χ² = 14.092; df = 6; P = .029.

<sup>a</sup> P values are reported when <.10.

**TABLE 5** Practitioner’s Primary Diagnosis

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>PROS Sample (n = 1693), %</th>
<th>NAMCS Sample (n = 941), %</th>
</tr>
</thead>
<tbody>
<tr>
<td>General examination</td>
<td>30.1</td>
<td>28.5</td>
</tr>
<tr>
<td>Otitis media</td>
<td>10.1</td>
<td>8.6</td>
</tr>
<tr>
<td>Upper respiratory infection</td>
<td>6.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>3.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Virus</td>
<td>2.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Other</td>
<td>47.5</td>
<td>49.3</td>
</tr>
</tbody>
</table>

Overall distribution: χ² = 10.02; df = 5; P = .075.
ner. This may be accounted for by the fact that a higher proportion of PROS visits were made to community health centers and other hospital sites (8.2% for PROS vs 3.0% for NAMCS), which, by necessity, may be staffed by multiple part-time practitioners and therefore characterized by “next available practitioner” policies.

Several methodologic cautions are worth mentioning. First, although the results of this study suggest that PROS patient encounters are reasonably representative of national community-based, pediatric primary care practices, additional characteristics relating to practitioners and patients remain unexplored. It has been argued elsewhere that practitioners who volunteer for such a network may be systematically different from others (eg, more adherent to official recommendations than other pediatric practitioners, and/or likely to be biased toward higher standards of care). The ways in which this may be true are difficult to identify generically and therefore are not examined here. PROS does examine study-specific representativeness of network practitioner attitudes and practice patterns through fielding of pre-study surveys to network practitioners and samples of larger practitioner populations through the AAP's Periodic Survey program, a random-sample survey of the AAP’s membership fielded quarterly (eg, surveys fielded in conjunction with PROS studies on treatment of children with psychosocial problems and a descriptive look at the primary care referral process).

A second methodologic caution is that this study is based on seasonally limited patient comparisons. The study design included an examination of only 4 months of visit data; data collection during the other 8 months of the year might have revealed a different pattern of similarities and differences. That the fielding period did include 2 months that typically are characterized as the “acute-care” season and another 2 from the “well-care” season reduces but does not completely eliminate this concern. Finally, racial and ethnic comparisons between samples are problematic when, as with both the PROS and NAMCS methods, patients are not asked directly about these categories but practitioner assessment is used instead. The race categorization is of particular concern in the NAMCS sample, because in contrast to the PROS sample, race was imputed for nearly 20% of the NAMCS sample.

Keeping in mind the methodologic cautions and exceptions noted herein, we conclude that PROS visits are reasonably representative of ambulatory, office-based, pediatric primary care in the United States; therefore, the PROS is an appropriate laboratory for studies of care in such settings. Ongoing assessment of generalizability, whether for an entire network or for a specific study, is a necessary part of the PBRN endeavor. Although PROS strengths lie in the large samples that it can generate and the “real-world” settings in which PROS data are collected, the network will need to remain vigilant for biases that might limit the applicability of study conclusions. Practice-based research networks should continue to attend to the generalizability issue as they continue to generate new knowledge about primary care.

ACKNOWLEDGMENTS

This study was supported by Agency for Healthcare Research and Quality grant R21 HS13512 and Health Resources and Services Administration Maternal and Child Health Bureau grant MCJ-177022.

We acknowledge the dedicated work of the PROS chapter coordinators and PROS Steering Committee members in manuscript review and, in particular, the following PROS practices, listed according to AAP chapter, that participated in this study. Arizona: Mesa Pediatrics Professional Associates (Mesa), Tanque Verde Pediatrics (Tucson); California-1: Practice of Jeffrey Glassheim, DO (Fresno); California-4: Edinger Medical Group, Inc (Fountain Valley); Colorado: Prowers Medical Center Associated Physicians (Lamar); Connecticut: Southford Medical Center (Southbury); Florida: MacKoul Pediatrics (Cape Coral), Atlantic Coast Pediatrics (Merritt Island); Hawaii: Pediatric Group of Honolulu (Honolulu); Iowa: Practice of Asha Madia, MD (Des Moines); Illinois: Southwest Pediatrics SC (Orland Park); Kansas: Ashley Clinic (Chanute); Massachusetts: Riverbend Medical Group (Chicopee), Pediatric Associates of Norwood (Franklin), Practice of John Mulqueen, MD (Gardner), Holyoke Pediatric Associates (Holyoke); Maryland: Dundalk Pediatric Associates (Baltimore), Practice of Steven E. Caplan, MD (Baltimore), Children’s Medical Group, PA (Cumberland), Drs Wiczer, Korengold, and Mayol (Potomac), Main Street Pediatrics, LLC (Towson); Michigan: Orchard Pediatrics (West Bloomfield); Minnesota: Brainerd Medical Center, PA (Brain- erd); North Carolina: Eastover Pediatrics (Charlotte); North Dakota: MeritCare Medical Group–Pediatrics (Fargo), Medical Arts Clinic–TMC (Minot); New Hampshire: Dartmouth-Hitchcock Clinic–Keene (Keene), Laconia Clinic (Laconia); New Mexico: Presbyterian Family Healthcare–Rio Bravo (Albuquerque); Nevada: Capital Medical Associates (Carson City), Job’s Peak Primary Care Specialists (Gardnerville); New York-1: Panorama Pediatric Group (Rochester); New York-2: Practice of Dr Andrea Leeds (Bellmore); Ohio: South Dayton Pediatrics, Inc (Dayton), Pediatric Associates of Lancaster (Lancaster), Oberlin Clinic (Oberlin), Comprehensive Pediatrics (Westlake); Oklahoma: Medical Care Associates of Tulsa (Tulsa); Oregon: MidValley Children’s Clinic (Albany); Pennsylvania: Plum Pediatrics (Pittsburgh), Pennridge Pediatric Associates (Sellersville); Rhode Island: Practice of Marvin Wasser, MD (Cranston); South Carolina: Barnwell Pediatrics, PA (Barnwell); Texas: Pediatric Clinic (Mineral Wells); Utah: Mountain View Pediatrics (Sandy); Virginia: Alexandria Lake Ridge Pediatrics (Alexandria), Drs Casey, Goldman, Lischwe, Garrett, and...
Kim (Arlington), Fishing Bay Family Practice (Delta-ville), Stafford Pediatrics, PC (Stafford), Lakeview Medical Center (Suffolk); Vermont: Green Mountain Pediatrics, PC (Bennington), Practice of Rebecca Collman, MD (Colchester), Saint Johnsbury Pediatrics (St Johnsbury); Washington: Columbia Basin Health Association (Othello); Wisconsin: Beloit Clinic SC, Department of Pediatrics (Beloit), Gundersen Clinic–Whitehall (Whitehall); and West Virginia: Grant Memorial Pediatrics (Petersburg).

REFERENCES


Patient Visits to a National Practice-Based Research Network: Comparing Pediatric Research in Office Settings With the National Ambulatory Medical Care Survey
Eric J. Slora, Kathleen A. Thoma, Richard C. Wasserman, Steven E. Pedlow and Alison B. Bocian
Pediatrics 2006;118;228-234; originally published online Jul 10, 2006;
DOI: 10.1542/peds.2005-0701

This information is current as of August 22, 2006

Updated Information & Services
including high-resolution figures, can be found at:
http://www.pediatrics.org/cgi/content/full/118/2/e228

References
This article cites 12 articles, 6 of which you can access for free at:
http://www.pediatrics.org/cgi/content/full/118/2/e228#BIBL

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
Office Practice
http://www.pediatrics.org/cgi/collection/office_practice

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.pediatrics.org/misc/Permissions.shtml

Reprints
Information about ordering reprints can be found online:
http://www.pediatrics.org/misc/reprints.shtml