



Appointment-keeping behavior of Medicaid-enrolled pediatric dental patients in eastern Iowa

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Abstract

Purpose: The purpose of this prospective study was to assess the appointment-keeping behavior of Medicaid-enrolled pediatric dental patients in three Eastern Iowa practices.

Methods: During the month of October 1998, a tally was kept of all patient appointments at a private pediatric dental office, a public health dental clinic, and a university-based pediatric dentistry clinic. Patients were categorized as either Medicaid or non-Medicaid. Appointment behavior categories were defined as: On time; Failure; Late-notice Cancellation (less than 24 hours notice); and Tardy (greater than 10 minutes). The data was entered in SPSS and analyzed using the chi square statistic. Statistical significance was $P < 0.05$.

Results: A total of 1,406 appointments were recorded for all three sites. Overall, patients on Iowa Medicaid had higher appointment failure, late-notice cancellation, and tardiness rates than non-Medicaid patients at all three clinics. However, these differences were only statistically significant for the private office and the university-based clinic. Failed appointment rates for Medicaid patients were much higher at the private office (38%) than at the other two sites.

Conclusion: Consistent with anecdotal reports from dentists, Medicaid patients had higher rates of broken appointments than did non-Medicaid patients, particularly in a private practice setting. (*Pediatr Dent* 22:325-329, 2000)

Decreasing provider participation in the dental Medicaid program is of national concern.^{1,2} Dentists cite multiple problems with the program as reasons not to participate. Commonly mentioned are low reimbursement rates or denial of payment altogether, slow reimbursement, and patient noncompliance.¹

In a 1996 survey of Iowa dentists, 82% stated that broken appointments were very important in their decision whether or not to accept Medicaid patients into their practice.¹ It is commonly believed that Medicaid recipients have higher rates of appointment failure, late-notice cancellation, and tardiness. Some medical literature concludes Medicaid recipients indeed have higher appointment failure rates than non-Medicaid patients.³⁻⁵ However, other medical studies demonstrate appointment-keeping behavior of Medicaid patients is as good as or better than private-pay patients or those with other third party coverage.⁶⁻⁹ There is very little in the dental literature to either support or disprove the claim that Medicaid recipients

have higher rates of appointment failure, late-notice cancellation, and tardiness.

In a 1969 study comparing appointment-keeping behavior of Medicaid and private-pay patients in general dental and orthodontic practices in Massachusetts, DiStasio found Medicaid patients were more likely to fail appointments than private-pay patients. Cancellation rates were not significantly different between Medicaid and private-pay patients in either practice setting.¹⁰

A two-part 1977 study by Fazio and Boffa investigated 10 variables, one being source of payment, that may lead to the emergence of a "high risk, no show" behavior profile among patients at the Children's Hospital Dental Facility in Boston. "High risk, no show" patients were defined as those who failed or cancelled one sixth or more of their appointments.¹¹ Part I of this study showed that Medicaid patients were more likely to fail dental appointments than private-pay patients. Results of Part II demonstrated a statistically significant relationship between third party payment patients (those on a Union health care plan and Medicaid) and "high risk, no show" behavior. However, the type of behavior was different among these two groups. The Union plan patients were more likely to cancel appointments, notifying the dental offices in advance. The Medicaid group was more likely to fail appointments without notifying the offices.¹¹

Both the DiStasio and the Fazio studies were retrospective in nature, and as such, have several methodological uncertainties. To date, there have been no prospective studies in the dental literature exploring the relationship between Medicaid status and appointment-keeping behavior. The purpose of this prospective study was to assess the failure, late-notice cancellation, and tardiness rates of pediatric dental patients enrolled in the Iowa Medicaid program. These rates were compared among three different practice settings, and to patients in these clinics who were not Medicaid enrollees.

Methods

Three Eastern Iowa dental clinics participated in this study: a private pediatric dental office (PP), a dental public health clinic (PH), and a dental school's pediatric dentistry clinic (DS). All three sites have computerized record keeping systems and accept patients enrolled in the Iowa Medicaid program (Title XIX).

Table 1. October 1998 Practice Data for Each Site

Location	Days Worked	Hours Worked	Scheduled Appointments	Medicaid Appointments Number (Percent)
Private Practice	17	110.5	679	150 (22%)
Public Health	17	101.5	234	120 (51%)
Dental School	22	144	493	91 (19%)
TOTAL	56	356	1406	361 (26%)

The first site was a private pediatric dental office in Davenport, Iowa. This office sees children between the ages of one and eighteen, as well as adults with special health care needs. The practice population consists of about 75% Caucasian patients and 20% African-American patients. Vietnamese, Bosnian, and Hispanic patients comprise the remaining 5%. This practice has 5,640 active patients (seen within one year), of which 20% are on Iowa Medicaid, 55% have private insurance, and 25% pay out-of-pocket. Medicaid enrollees are scheduled at this office between the hours of 8:30 A.M. and 10:30 A.M. and 1:00 P.M. and 2:30 P.M. Patients must bring their current Medicaid card to the appointment in order to be seen.

The second site was a hospital-affiliated dental public health clinic in Cedar Rapids, Iowa serving mainly low-income children from age one through high school, as well as adults with special health care needs. The ethnic make-up of this office's patient population consists of 88% Caucasian patients, 10% African-American patients, and 2% Hispanic, Asian, and Bosnian patients. This clinic has 1,739 active patients (seen within one year). This clinic did not accept Medicaid patients before the spring of 1997. During the survey month of October 1998, 20% of the patients seen were enrolled in the state Medicaid program. Since that time, this clinic's Medicaid population has risen to 74%, 18% of patients pay out-of-pocket, 4% are enrolled in the CHIP program, and 4% have non-Medicaid Women, Infant, and Children (WIC) vouchers. This clinic does not limit the number of Medicaid patients that are scheduled and has no specific hours in which they are treated.

The final surveyed site was the pediatric dentistry undergraduate clinic at the University of Iowa College of Dentistry in Iowa City, Iowa. In this clinic, children between the ages of one and sixteen are treated at reduced fees, primarily by junior dental students. The dental school clinic has approximately 2,365 active patients (seen within eighteen months). This clinic treats primarily Caucasian patients. African-American, Hispanic, and Asian patients are also seen, as well as a very small non-English speaking patient group. Unfortunately, specific ethnicity information is not available. Children treated at the dental school come from various socioeconomic backgrounds. Patient payment methods include self-pay, private insurance, CHIP, and Medicaid. However, adequate information is not available to determine specific payment method percentages. This clinic does not limit the number of Medicaid patients seen per month, nor does it schedule these children at any particular time of day.

Receptionists and clinic clerks at the three sites were instructed to track all appointments during the month of October 1998. At the first two sites (PP and PH), dental receptionists

kept a daily tally of all appointments upon patient check-in. Appointment information was gathered a bit differently at the third clinic (DS), due to the nature of patient flow. Instead of documenting appointment information upon patient check-in on the tally sheet designed for this study, notations were made in the clinic appointment book indicating the patients who failed, cancelled with less

than twenty-four hours notice, and were more than ten minutes late for their appointments. This information was then collected at the end of each working day by one of the authors. Data in the appointment book was compared with patient visit slips and records to verify accuracy.

All patients were categorized as either Medicaid or non-Medicaid patients. Non-Medicaid patients included those with non-Medicaid third party coverage as well as patients paying "out of pocket". Four appointment behavior categories were defined. These were: 1) on time; 2) failure; 3) late-notice cancellation; and 4) tardy. Appointment failure was defined as the patient failing to show up for the appointment and not notifying the office. Late-notice cancellation was defined as the patient canceling the appointment with less than 24 hours notice. Tardiness was defined as the patient being more than ten minutes late for the appointment.

Only scheduled pediatric patients (18 years old and younger) treated in-office were tracked in this study. Practitioners at the private office and the dental public health clinic also treated adults with special health care needs both in-office and in the operating room. These patient appointments were not considered in this study. The dental public health clinic also saw low-income obstetric patients. None of these patients were under the age of 18, and so, were not included in the study. "Walk-in" patients were also excluded at all three locations.

At the end of the survey month, the tallied information was summed for each category by location and cumulatively. The data was entered into SPSS and analyzed using the chi square statistic.

Results

A total of 1,406 appointments were recorded for all three sites during the survey month. The PP and PH clinics worked the same number of days, but the PP office operated 9 hours more. The DS clinic practiced more hours and days than either the PP or PH offices that month. The highest number of appointments was in the PP clinic. This office also had the highest number of appointments made to Medicaid recipients. The PH clinic had the highest percentage of appointments made to Medicaid-enrolled children (Table 1).

Overall, patients on Iowa Medicaid had significantly ($p < 0.001$) higher appointment failure, late-notice cancellation, and tardiness rates than non-Medicaid patients at all three sites (Table 2). However, examination of the individual site data illustrates these differences were only statistically significant for the PP and DS clinics. Failed appointment rates for Medicaid patients were much higher at the PP office (38%) than at the other two sites (Table 3). The DS clinic had the highest tardiness rates for both Medicaid and non-Medicaid patients. "On

Table 2. Appointment-Keeping Behavior at All Three Sites*

Appointment Status	Medicaid Number (Percent)	Non-Medicaid Number (Percent)
On Time	234 (65%)	877 (84%)
Failure	87 (24%)	70 (7%)
Cancellation	22(6%)	60 (6%)
Tardy	18 (5%)	38 (4%)
Total	361 (100%)	1,045 (100%)

* $P < .001$

time” rates among Medicaid recipients were highest at the PH clinic and lowest at the PP office. “On time” rates among non-Medicaid patients were very similar at all three clinics (Table 3).

Discussion

Like the 1969 study by DiStasio, the findings from this study confirm common opinion that Medicaid patients tend to fail dental appointments more often than those not on Medicaid. While the percentage of failures among Medicaid-enrolled patients was greater than non-Medicaid for all sites, the rate was considerably higher for the private practice setting than the other two locales. This may partially explain the reluctance of private practitioners to participate in the Medicaid program, especially given the lower reimbursement rates.

Unlike the DiStasio study, which found cancellation rates were not significantly higher between Medicaid and private-pay patients, this study finds significant, although not appreciable, differences in cancellation and tardy rates for Medicaid recipients compared to non-Medicaid patients at all three locales. (It should be noted, though, that DiStasio’s failure and cancellation data may be biased, since practitioners were allowed to select the patient records to be used. In doing this, the dentists could have intentionally or unintentionally chosen patients with exceptionally positive or negative appointment-keeping behaviors).^{10, 11}

Decreased provider participation in the Medicaid program is a growing public health problem. In 1992, 62% of all Iowa dentists were accepting new Medicaid patients into their practices. However, this figure dropped to 42% in 1995. 82% of these surveyed dentists stated that broken appointments were a very important problem.¹ In North Carolina, 84% of surveyed pediatric dentists stated the possibility of broken and

canceled appointments prompted them to limit the number of Medicaid patients in their practices.¹² In a 1990 study by Damiano *et al*, California dentists who were not Medicaid providers ranked broken appointments the second most important problem with the program.¹⁴ 83% of surveyed Texas dentists participating in the Medicaid program stated they would see more Medicaid patients if this group had less broken and canceled appointments.¹³

This study examined appointment-keeping behavior among pediatric dental patients based on only one variable, Medicaid status. However, problematic appointment-keeping behaviors, especially failed appointments, are multifactorial. Investigators studying ambulatory care in both fee-for-service and pre-paid settings, and in psychiatric clinics have reported a link between low socioeconomic status and high appointment failure rates.^{3, 15-21} This finding may explain why the failed appointment rates at the private office and dental school clinic surveyed in the present study were higher for Medicaid than non-Medicaid patients, if indeed the non-Medicaid patients were of higher socioeconomic status. However, it does not explain the appointment-keeping behavior at the dental public health clinic. This clinic only accepts patients up to 185% of the Federal Poverty Level. Therefore, the socioeconomic status of Medicaid and non-Medicaid patients is probably similar. Quite possibly the subsequent life circumstances, some of which have been correlated to negative appointment-keeping behavior, may also be the same. If trends outlined in the above-mentioned studies hold true, the dental public health clinic should have had fairly high appointment failure rates for both Medicaid and non-Medicaid groups. However, this does not appear to be the case. At 13%, the failure rate of Medicaid recipients at this clinic was lower than the other two clinics, and was not significantly different from the non-Medicaid group (9%).

It is unclear why the private pediatric dental office in this study had such a high failure rate among Medicaid-enrolled patients. Perhaps geographic location was a factor. The office may not be located in a part of the city where many Medicaid recipients live or travel to, although some authors state distance traveled to the clinic does not affect appointment-keeping behavior.^{9, 21-23} The dental public health clinic is housed in a building with other public health clinics and agencies, and the dental school is in close proximity to the University of Iowa Hospitals and Clinics, a large research facility that also accepts patients on Medicaid.

Table 3. Appointment-Keeping Behavior at Individual Sites

Appointment Status	Private Pediatric Clinic*		Public Health Clinic*		Dental School Clinic*	
	Medicaid Number (Percent)	Non-Medicaid Number (Percent)	Medicaid Number (Percent)	Non-Medicaid Number (Percent)	Medicaid Number (Percent)	Non-Medicaid Number (Percent)
On Time	76 (51%)	442 (84%)	98 (82%)	100 (88%)	60 (66%)	335 (83%)
Failure	57 (38%)	39 (7%)	15 (13%)	10 (9%)	15 (17%)	21 (5%)
Cancellation	12 (8%)	38 (7%)	5 (4%)	4 (4%)	5 (5%)	18 (5%)
Tardy	5 (3%)	10 (2%)	2 (2%)	0 (0%)	11 (12%)	28 (7%)
Total	150 (100%)	529 (100%)	120 (100%)	114 (100%)	91 (100%)	402 (100%)

* PP: $P < .001$
 PH: $P = .341$
 DS: $P = .001$

The private pediatric dentistry office is not located on a city bus line, whereas the other two clinics in this study were. According to Gruzd *et al.*, absence of a car is predictive of broken appointment behavior.⁹ Trenouth and Hough found that patients in a British orthodontic clinic cited lack of transportation as the second most common reason for failing an appointment.²⁴ Patients surveyed in other studies have also cited lack of transportation as a reason for failing appointments.^{3, 5, 25} Patients without cars may rely on city buses to take them to appointments. Therefore, not being on a bus line may contribute to the high appointment failure rate at the PP office.

Separate studies by Hofmann and Walsh report that communication breakdown is the most common reason patients gave for breaking medical appointments.^{26, 27} Glogow states that communication delivered on a level the patient understands can have positive effects on appointment-keeping behavior.²⁸ The PP and PH clinics participating in this study employ similar methods to communicate office policy and reduce negative appointment-keeping behavior. Personnel at both clinics call patients the day before to confirm appointments. The PH clinic receptionist verbally explains to patients on multiple occasions that they are allowed only three failed appointments within a calendar year. If this rule is violated, the patients cannot be re-appointed. This policy is also related via postcard after failed appointments. The PP office also sends postcards after a patient's second broken appointment informing the patient that only one more failed appointment will be allowed. However, this policy is rarely conveyed verbally to patients. Perhaps this one-on-one, verbal exchange, in addition to the reminder phone calls and failed appointment postcards helped reduce broken appointments at the PH clinic. The DS clinic also allows only three failed appointments. However, practitioners in this clinic are third-year dental students who are responsible for confirming patient appointments ahead of time and sending postcards when patients fail. It is difficult to determine to what extent these activities are being performed.

Language barriers may exist at all three sites, since a small percentage of each practice consists of non-English speaking patients. However, it appears that access to interpreter services is fairly similar among sites and was not considered to be a problem by any personnel at the three locales.

Another possible contributing factor to the higher failure rate among Medicaid patients at the private office is the fact that receptionists at this clinic generally schedule Medicaid patients during the mid-morning and early afternoon hours, and reserve the before and after school appointments for those not on Medicaid. Program enrollees must also present their current Medicaid card before being seen. These policies, not employed by either the public health clinic or dental school, may create scheduling difficulties or other barriers that result in higher failure rates for Medicaid recipients.

This study examined appointment-keeping behavior of Medicaid-enrolled pediatric dental patients at three Eastern Iowa clinics over a one-month period. Future study is needed involving more clinics and a longer time span to determine if the findings of this study accurately reflect trends. Another point of interest not addressed in this study is whether the 361 failed appointments recorded at the three sites were the result of 361 different patients, or multiple failures for the same chil-

dren or families. This information may clarify if negative appointment-keeping behavior is primarily a family problem or a problem with the Medicaid population as a whole. Additional research exploring dental patients' reasons for problematic appointment-keeping behavior is also necessary.

Considering the rather high percentage of dentists in past studies who have said broken appointments are a very important problem, and the findings of this study verifying negative appointment-keeping behaviors among Iowa Medicaid recipients, it is evident more emphasis needs to be placed on decreasing failure, late-notice cancellation, and tardiness rates among Medicaid clientele.

Decreasing participation in the dental Medicaid program must also be addressed. A possible solution is to increase the number of dental public health clinics designed to provide service to Medicaid and other low-income patients who cannot find care in the private sector. However, findings of this study suggest private practitioners may be key in resolving the access to care problem. The PP office in this study had more appointments (in number) made to Medicaid recipients than either the PH or DS clinics. Private practitioners must work quickly and efficiently, treating as many patients during the workday as possible, if they are to be economically successful. Encouraging more of these pediatric and general dentists to accept Medicaid patients into their practices by addressing perceived program problems like low reimbursement rates and claims processing difficulties, along with further study and possible improvement of patient appointment-keeping behavior, may result in more young Medicaid recipients getting needed dental care.

Conclusions

1. Pediatric dental patients on Iowa Medicaid had higher appointment failure, late-notice cancellation, and tardiness rates than non-Medicaid patients in three Eastern Iowa dental clinics. However, the differences between Medicaid and non-Medicaid patients' appointment-keeping behaviors were only statistically significant at the private pediatric dental office and dental school pediatric clinic. Statistical significance was $p < 0.05$.
2. The failed appointment rate for Medicaid patients was highest at the PP office.
3. The "on time" rate for Medicaid patients was lowest at the PP office.
4. "On time" rates for non-Medicaid patients were very similar at all three sites.

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ABSTRACT OF THE SCIENTIFIC LITERATURE



A NEW WAY TO ASSESS SALIVARY FLOW IN ELDERLY PATIENTS

Since saliva is affected by an increasing array of drugs taken by elderly people whose lifespans are longer than in the past, researchers will be studying salivary flow with more urgency. This paper represents one attempt in the search for a more feasible method to measure salivary flow rate in the epidemiologic study of an elderly population

Comments: This is novel approach to measuring and examining salivary flow and appears to be both rapid and reliable. In addition, it is applicable to children as well; faster yet as accurate as traditional methods. The paper itself is interesting background reading for anyone who wants a concise reference to all saliva collection studies currently available. **SJM**

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