

Appointment-Keeping Behavior Re-Evaluated

PHILIP HERTZ, MED, MSPH, AND PAULA L. STAMPS, MS, PHD

Abstract: Many of the traditional approaches to the problem of appointment-keeping behavior have ignored the organizational factors that may be implicated in differentially high broken appointment rates leading to an implicit assumption that low-income and ethnic minority patients will be more likely to break appointments. A case study at a Model Cities Health Center which maintains a kept appointment rate of 85

per cent examined the relationship of broken appointments to age, sex, ethnic background, and payment mechanisms. The results suggest alternative explanations for differentially high broken appointments centering on the role of the institution in reinforcing appointment-keeping behavior. (*Am. J. Public Health* 67:1033-1036, 1977)

Broken appointment rates in ambulatory care facilities range from 16 per cent to 44 per cent. It is important to decrease the broken appointment rate as much as possible in order to provide for the best utilization of the direct care staff members. Explanations of broken appointment rates have concentrated primarily upon factors related to the patients, with emphasis placed upon demographic characteristics, such as socioeconomic status, race, age, sex, and educational levels, with other factors such as attitudes toward health care and personality factors also noted. Occasionally, additional factors have also been investigated, including the effect of weather and distance, and variables associated with the organization itself such as the appointment system, staffing patterns, and information flow in the organization. Most studies have concluded with acceptance of a primary myth which is that low-income patients do not keep appointments as well as people in middle-class socioeconomic groups. This has been consistently reported by several investigators over the last ten years.¹⁻⁷ The conclusion of the relationship between low income and high broken appointments has been proposed for ambulatory care in fee-for-service settings,¹ psychiatric care,⁴ and ambulatory care in a pre-paid setting.⁵ The magnitude of the differences vary, but in one of the better designed studies, Greenlick contrasted appointment-keeping rates of a pre-paid group and an OEO* Comprehen-

sive Neighborhood Health Care Program that was part of the same medical system. The broken appointment rate for the pre-paid health plan sample was 8 per cent and for the OEO health plan sample 25 per cent.⁵

Confounding variables with low social class include age, ethnic identification, and educational levels. In general, the conclusion of most studies is that the older the patients the more likely they are to keep an appointment;^{3, 8} and that members of ethnic minorities, especially Blacks and Spanish-speaking are more likely to break appointments.^{1, 6, 7, 9, 10} Patients with lower educational levels are generally concluded to be poorer keepers of appointments,¹⁰ although Adler's study did not confirm this relationship for psychiatric patients.⁴ Social disorganization of urban families, especially lower-income families, has also been related to poor appointment keeping behavior.¹¹

All of these studies have in common the emphasis upon the failure of the patient to keep an appointment, without analyzing the organizational factors which might be responsible for reinforcing poor appointment-keeping behavior. In those studies where efforts were made to increase the kept appointment rate, some interesting observations have been made with respect to the role of the health facility in broken appointments. Three major factors can be identified as being related to appointment-keeping behavior: physician continuity, communication systems, and type of appointment system. Becker found that physician continuity, i.e., seeing the same physician each time, was positively correlated to appointment-keeping among a group of low-income, mostly Black patients.¹² Increased efforts at communication, including various reminders for missed appointments, also seems to be effective in reducing the broken appointment

*Office of Economic Opportunity

Address reprint requests to Dr. Paula L. Stamps, Assistant Professor, Health Services Administration, University of Massachusetts, Amherst, MA 01003. Dr. Hertz is Administrator, Holyoke (MA) Health Center. This paper, submitted to the *Journal* January 18, 1977, was revised and accepted for publication April 27, 1977

rate. Various methods have been reported: Schroeder utilized four groups—a control group which was not contacted about an appointment reminder, a group whom the nurse called, a group whom the physician called, and a group who received a postcard. All three of the contacted groups kept more appointments than the non-contacted group.¹³ Postcards, telephone calls, and personal visits have been used in many health-centers which have a target population of a low-income group with varying degrees of success in increasing the kept appointment rate.^{14, 15} More intensive educational approaches and including the patient more centrally in decisions about the necessity and frequency of follow-up care has produced even more striking results.^{16, 17}

The third factor is related to the type of appointment system the health care facility utilizes. The responsibility of the health care facility is to operate consistently with an appointment system which reinforces appointment-keeping behavior. To do otherwise is to assume that patients are ignorant of the type of appointment systems utilized, a contention which has been refuted.^{16, 20} A philosophical stance is that it is the responsibility of the clinic staff to adjust its operation to meet the needs of the patient population, as much as possible. Appointment-keeping problems seem to be reduced when a health care facility takes the time to rearrange its appointment system so that appointment-keeping behavior is reinforced.^{19, 21} The block method of appointments, where all patients are asked to arrive before the start of a clinic session, is one which fails to reinforce appointment-keeping behavior, while an individualized appointment system tends to reinforce appointment-keeping behavior, as long as walk-in patients are not put ahead of appointment patients. After an initial adjustment period, the introduction of an individual time appointment system results in a lowering of the broken appointment rate, a decrease in waiting time of patients, and the ability to predict and control the idle time of physicians.^{2, 14, 18, 23}

Most of the traditional approaches to the problem of appointment-keeping behavior have ignored these organizational factors that may be implicated in differentially high broken appointment rates. Rather, the conclusion that low-income patients break appointments more frequently than others has become accepted in such a way that in many articles dealing with health care delivery to lower income patients, an implicit assumption is made that the broken appointment rate will be high. This alleged tendency of low-income patients to break appointments is explained in a variety of ways, including ethnic background, low education levels, cultural barriers, low harmony in family relationships, social disorganization, and other factors related to urban living. Too few researchers have carefully analyzed the relationship between the type of health care most often delivered to these low-income population groups and the facility's impact upon broken appointments. The most traditional appointment mechanisms for the large, hospital-based outpatient clinic that serves a low-income population is the block method, which acts as a further confounding variable of higher broken appointment rates, and which only serves to further support the myth related to the appointment-keeping behavior of low-income patients.

Studies by Alpert,⁶ Hurtado,¹⁰ Stine,⁹ and others that emphasize institutional weaknesses as a contributing factor to broken appointments note that some restructuring of health care services is necessary to get low-income populations accustomed to a source of health care that will replace the fragmented and uncoordinated patterns of often impersonal care that these groups have too often received.

OEO funded Neighborhood Health Centers and the later Model Cities Health Centers have made efforts to replace uncoordinated sources of ambulatory care for mostly low-income target populations with comprehensive primary health care. This article describes the efforts of a Model Cities Health Center to create a health facility that expects all patients to make and keep appointments and reinforces this behavior through an individualized appointment system.

Description of the Health Center

Holyoke, Massachusetts Model Cities Health Center is one of 22 Holyoke Model Cities projects funded through the Department of Housing and Urban Development (HUD). The Health Center is located in Ward One of the city, and has a target population of 5,000. It was founded in November 1970. The agency is a non-profit organization administered by a board of directors, 51 per cent of whom are neighborhood residents. The director is responsible to the board for the daily operation of the Health Center. He is assisted by two part-time medical directors, and one part-time dental director.

The Health Center has always been open to the entire city but primarily serves low-income groups and welfare recipients. The three ethnic groups utilizing the facility are White, Puerto Rican, and Black; two-thirds of the clientele are on Medicaid and one-third are slightly above the poverty line. Payment is on a sliding scale fee schedule based on income and size of family. Only two per cent of the patient population pay the full Health Center fees.

The medical staff is comprised of 14 part-time physicians, five of them pediatricians, and 22 part-time dentists. The facility conducts four adult medical clinics, three pediatric clinics, and one psychiatric clinic each week. Dental clinics are conducted daily. Prior to seeing the physicians, the patients' folders are pulled from the files and the laboratory reports are checked. The patient is interviewed by an aide, who records blood pressure, temperature, and chief complaint. Appointment-keeping behavior is reinforced in this interview as part of the medical history.

A modified form of the Problem-Oriented Medical Record (POMR) method of charting is used. The four basic components of the POMR are Data Base, Problem List, Plan, and Progress Notes. The patient plan has three parts: diagnostic, therapeutic, and patient education. Patient education consists of providing a brief outline of the illness to the patient who is informed about the problem and advised of the suggested therapy. This information is discussed with the patient by the physicians, as well as the nurse or the health assistant.

An individual time appointment system which allows

patients to see specific requested physicians has been used for some time. Postcard reminders are mailed five days prior to the appointment. In some cases, when the staff deems it necessary, home visits are made to those who break their appointments. Home visits are utilized as many of the patients do not have telephones.

Methodology and Data Collection

Data were collected for the adult medical clinics for a 12-month period of time between April 1, 1974 and March 31, 1975, on number of appointments kept and broken, sex, age, ethnic group, and payment mechanism. Chi-square was utilized at a significance level of 5 per cent to test for the existence of relationships between these variables.

The monthly data for each variable were analyzed. Additionally, a chi-square test on the combined 12 months was calculated. There were a total of 3,172 visits recorded to the adult medical clinic during this time period.

Results

The overall kept appointment rate in the adult medical clinics during the study period was 85 per cent.

Out of the 3,172 adult patient visits, 34 per cent were male and 66 per cent were female. As can be seen from Table 1, there were no significant differences in appointment-keeping behavior between males and females.

The age distribution of the population was broken into two categories using age 44 as the cut-off point. As with other studies,^{3, 8, 9} the data in Table 1 reveal a tendency for older patients to keep appointments better than younger patients. It should be added that the differences with respect

to age are significant for only three months (June, October, and November), but these differences are large enough to contribute to a statistical difference over the entire 12-month period of time.

The majority of the clinic's adult patients are Puerto Rican (69 per cent), with 27 per cent of the patients classified as White and 4 per cent classified as Black. Table 1 also demonstrates that there is a statistical relationship between ethnic group membership and appointment-keeping behavior, with Puerto Ricans having a higher broken appointment rate than either the Whites or Blacks. When these data are analyzed by months, May, June, August, November, February, and March show significant differences. During the months of June and August, neither the appointments secretary nor a bilingual health assistant were present at the Health Center. Both of these persons plan key roles in scheduling Spanish-speaking patients. In November, February, and March the adult clinics were changed from their regular night to other evenings and some afternoons in order to accommodate some of the schedules of the physicians. These changes were not adequately conveyed to the non-English speaking patients. The 18.5 per cent broken appointment rate among this group as compared to the 8.5 per cent broken appointment rate among Whites and the 7 per cent broken appointment rate among Blacks appears to be closely associated with these two events. The clinic's failure to fully communicate with the non-English speaking patient population, the erratic staffing of medical clinics, and the changes in the clinic schedules may well have contributed to the higher rates of broken appointments for the Spanish-speaking population. As can be seen from Table 1, these factors did not affect the English-speaking Black and White populations.

Sixty-five per cent of the Health Center's patient population is on Medicaid. As can be seen from Table 1, there is no relationship between Medicaid status and appointment-keeping behavior.

In order to further clarify the relationship of ethnic status and payment mechanism, the three ethnic groups were classified by their payment mechanism. Table 2 shows that there is an association between ethnic group and kept appointments, but this is stronger among those not on Medicaid. This group possesses the same characteristics as the total clinic sample, and thus reflects the same organizational problems that have been previously cited with respect to language problem.

Summary and Conclusions

The data presented suggest that the difference in the kept appointment rates of different ethnic groups does not reflect a true ethnic difference in health behavior. For the months when there was no significant difference in appointment-keeping behavior between the White and Puerto Rican population, the appointment staff was present, and there were no changes in clinic days or medical staff. During five of the six months when such differences occurred, it was because of the absence of the bilingual appointment staff, the changes made in clinic days, and the physician

TABLE 1—Distribution of Percentage of Kept and Broken Appointments According to Selected Patient Characteristics

Patient Characteristic	N	% Kept (N = 2,683)	% Not Kept (N = 489)
Sex ¹			
Male	1,109	85.39	14.61
Female	2,063	84.15	15.88
Age ²			
< 45	2,683	83.00	17.00
45+	489	90.37	9.63
Ethnicity ³			
Puerto Rican	2,206	81.46	18.54
White	837	91.52	8.48
Black	129	93.02	6.98
Payment Mechanism ⁴			
Welfare	2,229	83.40	16.60
Non-Welfare	943	87.38	12.62
TOTAL	3,172	84.58	15.42

¹X² = 8.54; df = 1; p > .05

²X² = 24.22; df = 1; p < .05

³X² = 53.94; df = 2; p < .05

⁴X² = 8.05; df = 1; p > .05

TABLE 2—Appointment-Keeping Behavior by Ethnic Groups and Payment Mechanism

	Welfare ¹								Not on Welfare ²							
	Puerto Rican		White		Black		Totals		Puerto Rican		White		Black		Totals	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Kept	1486	81.69	282	89.80	91	93.82	1859	83	311	80.15	484	92.54	28	90.32	823	87.36
Not Kept	333	18.31	32	10.20	6	6.18	371	17	77	19.85	39	7.46	3	9.68	119	12.64
Totals	1819	100.00	314	100.00	97	100.00	2230	100.00	388	100.00	523	100.00	31	100.00	942	100.00

¹X² = 20.70; df = 2; p < .05

²X² = 29.94; df = 2; p < .05

staff changes in the clinics—factors which were not adequately communicated to the Spanish-speaking patients.

The second major findings of this study is that patients on Medicaid do in fact keep appointments as well as those not on Medicaid. There were no greater differences than those observed for the ethnic group differences, which may be explained by poor communication.

It is relatively easy to monitor the appointment system by recording kept and broken appointments by ethnic group, age, sex, and payment mechanism. Data collection for this purpose does not require an additional set of forms nor does it create additional tasks for the agency. In most cases, this information is already available, usually from information needed to complete state and federal regulatory forms. With this sort of monitoring, it is possible to collect information to assess appointment-keeping behavior and, more importantly, to correct those factors that are the responsibility of the organization. From our experience, it is obvious that a crucial issue is for the facility to accommodate its functions to the needs of the population it serves, especially with respect to English-language needs. Once the individual time appointment system is taken seriously by the organization and its staff members, the kept-appointment rate increases. The failure of an appointment system can be explained not in terms of inherent differences based on demographic characteristics, but in a breakdown of communication on the part of the organization delivering care.

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