Failed Appointments: A Review

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Failed appointments disrupt office operations. Most studies involved hospital clinics with low socioeconomic populations, which have shown fail rates between 19 and 28 percent. Family practice centers report fail rates which vary from 5 to 11 percent. Young adults, adults with young children, and patients in low socioeconomic groups tend to increase the fail rate. Sex and race are probably not a factor. Reasons for failing appointments include communication problems, the absence of a sense of urgency for keeping the appointment, and the lack of a personal physician. An interval greater than two weeks between appointment scheduling and the appointment date places patients most at risk for failing the appointment. Mail and telephone reminders significantly reduced the fail rate and are cost efficient. Incentives are also used in reducing the fail rate. By examining the process, the patients, the provider, and the environment with respect to appointment keeping behavior, a more quantitative approach to research on the subject can be effected.

Appointments neither kept nor cancelled are failed appointments. Such failed appointments disrupt office operations. They waste the time of the professional personnel and burden staff with extra paperwork in repetitious handling of charts.[1] They may interrupt the care of other patients. Further, the failed appointment may be a significant measure of the physician-patient relationship.

This paper presents a survey of fail rates of clinics in the Northwest in conjunction with a review of the literature on failed appointments. Some general recommendations toward reducing failed appointments are suggested. In addition, the authors propose an analysis which could be used in developing further research.

Local Survey

Several clinics in the Northwest were surveyed by contacting program directors or managers. The response rate was 100 percent. For 1976, the total number of patients seen and the number of failed appointments among new and returning patients were requested. The data were obtained from managerial records and are shown in Table 1. Group Health Cooperative of Puget Sound (GHCPS) is a large multispecialty health maintenance organization (HMO). University Hospital (UH) in Seattle is a referral center. The other five are family practice centers (FPC) of the University of Washington Family Medicine Residency Net-

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0094-3509/79/040789-08$02.00

Table 1. Rate of Failed Appointments at Selected Outpatient Clinics and Model Family Practice Centers

Clinic	Patient Visits in One Year	Rate of Failed Appointments %
Group Health Cooperative of Puget Sound (excluding the FPC) Seattle,Washington	930,131	6
University Hospital Medical Clinics Seattle, Washington	135,535	N–10 R–20
Family Medical Center University Hospital Seattle, Washington	15,400 N– 1,263 R–14,137	8
Family Practice Center Boise, Idaho	7,861 N– 1,825 R– 6,036	 N–11 R– 5
Family Medical Center Spokane, Washington	18,024 N– 4,104 R–13,920	 N–11 R–11
Family Practice Center Group Health Cooperative of Puget Sound Seattle, Washington	14,964	5
Family Practice Center The Doctors Hospital Seattle, Washington	15,888	8

N=new patient
R=return patient

work. In the family practice centers, fail rates varied from 5 to 11 percent. The UH Internal Medicine Clinic had a rate of 20 percent for return patients and 10 percent for new patients. GHCPS had an average fail rate of six percent. Thus, in this survey the model family practice centers as well as one large health maintenance organization have fewer problems with missed appointments than do the traditional hospital-based clinics.

Twenty dentists in Seattle were contacted by telephone by one author (JJB) because of their reputation for few failed visits. Seventeen reported a two-percent fail rate while three reported three to five percent. All had a preappointment reminder system, which, as will be noted, decreases the incidence of failed appointments. Furthermore, some dental practices drop patients if they fail one or two appointments.

Literature Review

Failed Appointment Rates

Most of the studies in the literature investigating appointment keeping behavior involve hospital clinics and deal with pediatric, low socioeconomic, and minority populations. Of the 13 studies reviewed,[1-13] ten had fail rates between 19 and 28 percent, while one clinic reported a fail rate of 52 percent.[13]

Little data exist regarding fail rates in private

Table 2. Appointment Keepers Compared to Those Who Did Not Keep Appointments

	Kept Appointment n=38 %	Did Not Keep Appointment n=94 %
Psychiatric Diagnoses	7.5	26.5*
Social Class V	5.7	24.5*
Medical Debts	37.0	66.0*
Found Cost High	3.5	29.0*
Previous Visit Cost More than $11	13.0	31.0*
No Hospital Insurance	15.0	26.0*
Two or More Siblings Less Than Two Years Old	5.0	18.0*

*P<.05
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practice. One survey showed that private pediatricians have a less than five percent failed appointment rate.[2]

Who Fails Appointments?

Various demographic and sociologic factors are associated with failed appointments. Some observers found no association with sex[3,5,14] or race.[1,5,6,14,15] Jonas reported a significantly higher fail rate for blacks and Hispanics compared to whites in a primary care clinic.[16] However, he did not consider that more than 50 percent of the white population was over 65 years, while more than 50 percent of the blacks and Hispanics were under age 35. Other authors also found increased fail rates among blacks as compared with whites but also did not standardize their rates for age.[2,17] Indeed, Gates and Colborn found that their 15 to 34-year age group had over twice as high a fail rate as the over 35-year-olds.[3] Others have found increased fail rates among families with children less than one year of age.[15,17]

Data on the association between patient income or social class were inconsistent, with some[2,17] showing an increased rate of failed appointments for those in Social Class V (low socioeconomic class),[18] and others finding no association.[19] Motil found no difference in fail rates between a group of patients on public assistance and a group with private insurance.[1]

Level of education was shown to influence appointment keeping behavior. Stine et al showed a significantly increased incidence of failed appointments in patients who did not complete high school compared to a group of high school graduates.[12]

People who fail appointments tend to repeat this behavior. Hansen found that 14 percent of her population of patients accounted for 42 percent of the failed appointments.[6] Further, one fourth of the failed appointments were concentrated in only four of 72 families.

Alpert found that patients who failed appointments had significantly more psychiatric diagnoses, greater medical debts, less medical insurance, and larger families than those who kept appointments (Table 2).[2] Finally, Stine et al also

Table 3. Patient No-Show Rate by Appointment Source[21]

Appointment Source	Number of Scheduled Patients	No-Show Rate %
Emergency Ward	97	34
Same Clinic, Mail or Telephone	987	25
Different Clinic	178	24
Same Clinic, in Person	2,288	19
Hospital Discharge	134	16

noted that patients from rural areas had fewer broken appointments than those from urban areas.[12]

Why Do Patients Fail Appointments?

Interval Between Appointments

Several explanations have been offered as to why patients fail appointments. Length of time between scheduling and the appointment date is one suggestion. One study showed that patients scheduled three to four weeks in advance had a fail rate of 35 percent compared to 20 percent in the population as a whole.[3] Another study showed appointments made four to five weeks in advance had a fail rate of 67 percent, compared to 44 to 50 percent in those made 12 to 28 days in advance.[13] Hagerman found significantly more failed appointments in a family practice center for those patients scheduled more than one week in advance.[20] Hofmann and Rockart reported that only 26 percent of a control group's appointments were made more than two months in advance; the figure for the no-show group was 35 percent.[21] Of the no-show group who had "forgotten" their appointments, 59 percent had made them more than two months in advance. All are significant at the .01 level in a chi-square contingency. Further, the interval between the date the appointment was issued and its actual date was two weeks longer for the no-show group than for the control group. Additional reports have found no association between appointment interval and failed appointments.[2,4,5]

Source of Appointment

Hofmann and Rockart also found differences depending on the source of the appointment (Table 3). Patients scheduled through the Emergency Room had a fail rate of 34 percent. This was significantly higher than that of patients scheduled through other sources. In contrast, the fail rate for patients who had been recently discharged from the same clinic was below the average. This is not surprising, for Emergency Room patients are likely to be transients, seeking immediate care, and are less likely to sustain a continuing association with a hospital or clinic. On the other hand, patients who have just been treated at a particular clinic or who have just recovered from an illness serious enough to require hospitalization remain more apt to expect or require follow-up care and therefore can be expected to keep their appointments.

Urgency of Appointment

Ambuel et al examined urgency as a factor in clinic attendance.[4] He defined urgent as "should be reviewed within 48 hours," eg, acute otitis media, lacerations, severe diarrhea. Intermediate was defined as "medical harm unlikely if visit deferred one to two weeks," eg, strabismus; and routine as "two to four weeks delay possible," eg, well-child care, immunization. Table 4 depicts the differences in failed appointments between urgent, intermediate, and routine visits as being significant, with urgent appointments kept more often

Table 4. Relation of Urgency of Appointment to Broken Appointment Rate

Urgency of Appointment	Number of Appointments	Number of Broken Appointments	Broken Appointment Rate %
Urgent	418	42	10
Intermediate	1,723	328	19
Routine	798	237	30

The differences are significant beyond the .001 level of confidence χ^2 test.

Reprinted with permission from American Medical Association, Copyright 1964: Ambuel JP, Sebulla J, Watt N, et al: Urgency as a factor in clinic attendance. Am J Dis Child 108:394-398, 1964

than the intermediate or routine appointments. When they divided the group into good, medium, and poor appointment keepers, the same trend held.

Was the Urgency of the Return Appointment Communicated to the Patient?

There are substantial differences among physicians in the rate of scheduling return appointments.[4] Some may request them more out of interest in the patient's progress than from actual medical necessity. If the patient perceives the return appointment as not especially important, he/she might be inclined to break it.

Ambuel et al also examined the status of physician-patient communication. Interviews were conducted with mothers after their children had been examined and the mothers had received instructions for their care. Return appointments for only these visits were rated for urgency. In 38 percent of the cases mothers accurately estimated the medical situation as seen by the physician. In 28 percent of the cases, the mother underestimated the seriousness of the illness. Of those mothers willing to respond, only 53 percent had a clear picture of the severity of the present illness, while the rest either over or underestimated its gravity. The authors concluded that better communication of the urgency of the medical situation will increase the number of appointments kept.

Is Lack of Patient Education a Factor in Compliance?

Glogow set up a prospective study on glaucoma patients using four different protocols in educating the patient about the disease and the need for a follow-up appointment.[22] There were no differences in compliance rates between groups. A fifth group was also involved in this study. This was a "traditional referral method" group. Appointments were scheduled through the secretary and no information was imparted or obtained. This group broke significantly more appointments than the four others. Glogow felt it was a "tender loving care" factor which accounted for this difference, as everyone in the first four groups received at least three to five minutes of close personal contact with a nurse. The fifth group received no such attention.

Does Having a Personal Physician Increase Compliance?

Rockart and Hofmann found a failed appointment rate of 27 percent in patients unassigned to a physician and 22 percent in those assigned.[10] This was not statistically significant. Hansen found that patients seen by three or more physicians had a significantly greater number of failed appointments than those seen by less than three.[6] Alpert found that 79 percent of those who kept appointments, compared to 63 percent of those who failed, had a physician with whom they could talk.[2] Also, of those who kept appointments, 77 percent felt physicians in general were interested in their patients, compared to 64 percent of those who failed. Alpert also gave a subjective analysis of his interviewing. He found that the patients who failed appointments perceived coming to the clinic as upsetting; they could not understand what the doctor said; and they showed more dissatisfaction with medical care and doctors in general than the other group. He suggested that more personal care

Table 5. Patients' Reasons for Failing To Keep Their Appointments[21]

Reason	Percentage of No-Show Patients*†
Communication problem	34
Too sick to come	18
Forgot appointment	14
Did not have enough money	12
Takes too long to see doctor	12
Felt better	11
Too far from hospital to come	8
Being treated by own doctor	7
Unable to get transportation	7
Weather was bad	6
Member of family was sick	5
Patient hospitalized or in nursing home	4
Miscellaneous	15

*436 Respondents
†Patients could choose more than one reason for not keeping an appointment. There was an average of 1.5 responses per individual.
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might improve patient compliance. Curry, in responding to complaints by his patients, felt that the assigning of specific physicians to care for a patient reduced failed appointments.[23]

Alpert also surveyed several clinics of private pediatricians. He found fail rates ranging from less than one percent in a family health clinic, which provided continuing preventive and curative care to families through a single physician, to 44 percent in a well-baby clinic which did not provide continuity of care.

Surveys

Several authors reported surveys of patients asking why they missed appointments.[1,2,6,21,24] For example, Hofmann and Rockart found a variety of explanations for missed appointments (Table 5). The most common excuses were (1) "I thought the appointment was cancelled"; (2) "I did not know about the appointment"; (3) "I thought the appointment was for another time." In addition, a number of patients simply forgot their appointments. These communication problems, not necessarily the fault of the patient, produced about half the missed appointments.

Alpert found similar results: 23 percent never intended to come back; 38 percent had forgotten or were indifferent; 29 percent gave family reasons (no sitter, an illness, no transportation, inadequate finances); 9 percent claimed hospital error in appointment arrangement.[2] Some studies showed that extremes in weather can increase the fail rate.[15,17]

Curry changed his clinic's schedule so that individuals had appointments that were scheduled, rather than seeing patients on a first come-first seen basis. This decreased waiting time in the office as well as crowding. He felt that this reduced the number of his failed appointments.[23]

Reducing the Fail Rate: Reminders

Most authors who have tried to reduce the fail rate in a practice use either a telephone or mail reminder or both.[3,7-9,11,13,20] All but two[7,20] found significant decreases (30 to 75 percent) in the fail rate. Reminders were used on appointments that were made at least one to three weeks in advance

of the date of the appointment. They were timed to be received from one to five days prior to the appointment day. There were no differences in reduction of the fail rate between telephone or mail reminders. Hagerman's study is particularly interesting in that he examined a model family practice unit with a low baseline failed appointment rate of 6.05 percent.[20] He did not achieve a statistically significant reduction in rate using a mailed reminder. However, his analysis included patients who scheduled appointments as little as one week in advance.

Cost

Meller and Anderson calculated that it cost them $80 to buy and mail 566 cards.[11] Shepard and Moseley did a more elaborate analysis.[9] The cost of scheduling, preparing, and tracing each broken appointment was $1.12. Volunteers require 1½ minutes per appointment using postcards, 4½ for telephone calls. Total cost was estimated to be 20 cents per appointment using postcards and 40 cents using telephone calls.

Incentives

Incentives may be used in certain settings. Some offices subtract a given amount from the bill for serial care without failed appointments. Others use calendars which are given to the patients with the appointment date added on by the office. Outreach transportation may be developed for those with travel problems. Negative reinforcement has been used by certain dentists in Seattle. They either refuse to reschedule missed appointments or allow one failed appointment and make it clear another will not be tolerated. Some offices charge a fee for a missed appointment. Others discuss the problem of compliance directly with the patient.

Discussion

Appointment keeping behavior is part of the general problem of "patient compliance." The label "patient" attached to "compliance" or "failure" implies that the patient is the cause of the problem. This is not always the case. The subject of compliance can be analyzed using the following variables—the process, the patient, the provider, and the environment. This method of analysis can be used as a research tool when looking at appointment keeping behavior as well.

Process

The process involves the administrative actions along the way to seeing the provider: scheduling, office waiting time, personalization of services. Increases in office waiting time or long periods between appointment scheduling and actual visit will increase the failed appointment rate. A concerned, courteous, efficient, and, if needed, bilingual front desk will have the opposite effect.

Patient

Patient factors have been studied in the most detail. Communication problems, especially misunderstandings or forgetfulness about appointment time, are prominent. Other examples are difficulties in obtaining babysitters, money problems, and language or cultural differences.

Provider

Providers are often overlooked as a factor in appointment behavior. A patient who feels that the physician is not concerned or is not convinced of the necessity of an appointment is unlikely to keep it. Continuity of the provider seems to be a key incentive to keep an appointment.

Environment

Finally, the environment may affect the fail rate: the time of day, the weather, or even parking.

Once the reason for the failed appointment has been identified, a plan for increasing compliance is sought. This review found marked improvement in appointment keeping behavior in hospital clinics using a reminder system. The authors recommend sending a postcard to any patient who has scheduled an appointment more than two weeks in advance of the appointment date. The postcard mailer was found to be as effective in decreasing the failed appointment rate as a telephone reminder, but was much more cost efficient. This action would improve the communication between the process factor and the patient and, perhaps, the provider and the patient. They are easily carried out and cost effective. An alternate plan would be

to select a subset of patients who are known to frequently fail appointments, such as those with children under one year of age, and include them in any reminder system. This area needs further research. The reporting and utilization of incentives by various clinics is anecdotal and must be viewed with caution.

It should be emphasized that most of the studies upon which these recommendations are based were conducted in hospital clinics with largely indigent populations. This points to a need for further research in the area of primary care in the private practice sector. Analyzing the problem with reference to the process, the patient, the provider, and the environment promotes a more comprehensive and rational approach which will yield significant quantitative research.

Conclusions

Hospital clinics tend to have higher fail rates than private group practices. Young adults, those with small children, patients in lower socioeconomic classes, and those with less than a high school education tend to have higher fail rates. Sex and race are probably not factors.

Communication problems are major reasons for missed appointments. Continuity of care and an expression of urgency about the appointment improve appointment keeping behavior. Prolonged intervals between the scheduling of an appointment and the day of appointment increase the fail rate.

A mailed reminder to patients who have scheduled appointments more than two weeks in advance is an easy and cost efficient way of decreasing the failed appointment rate. Subsets of those who fail could be selected for a reminder system. Various incentives can also be used to decrease the failed appointment rate.

An analysis has been presented on appointment keeping behavior. This involves examination of the process, the patient, the provider, and the environment. With an understanding of these factors, research can be directed more quantitatively at this subject, in large and small group practices as well as hospital clinics.

Acknowledgement

The authors gratefully acknowledge the helpful cooperation of the Program Directors and Managers of the clinics surveyed in the Northwest. We are indebted to Drs. Merrill N. Werblun and T. J. Phillips in the Department of Family Medicine, University of Washington, for their thoughtful review of this manuscript. We would also like to acknowledge the excellent library assistance of Katherine Barber, librarian for the King County Medical Society.

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