The Economic Cost of Missed Appointments and the Open Access System

by

Ty Ulmer and Cathy Troxler

Introduction

Over the last decade, the rising price of medical care in both urgent and primary settings has necessitated a search for ways to decrease costs. One contributing factor to increased costs is missed appointments. Patients who miss appointments, also called no-show patients, increase the costs of medical care and add to an inefficient system by decreasing the quality of care for themselves. No-show patients increase waiting times and operational costs for all patients. One proposed solution which attempts to minimize missed appointments is a new type of scheduling system called open scheduling, in which appointments are not scheduled in advance, but are instead made on a day to day basis as needed. By reducing delays and stress on the part of both patients and providers, open scheduling systems have been shown to decrease no-show rates.

Literature Review

No-show rates

No-show patients are, according to Tuso, Murtishaw & Tadros, "patients who neither kept nor cancelled scheduled appointments" (1999). These missed appointments reduce scheduling capacity, contribute to inefficiency, lower the quality of care, and negatively affect the working environment for providers and staff.

There are a variety of demographic and lifestyle characteristics that are associated with nonattendance. These include the patient's age, the referral source, illness, linguistic capacity, marital status, and a variety of others (Barron, 1980; Tuso, Murtishaw & Tadros, 1999; Vikander, Parnicky, Demers, Frisof, Demers & Chase, 1986). Other structural barriers include a lack of transportation, lack of a telephone, being a single mother, long wait times, low socio-economic status and use of Medicaid (Gruzd, Shear & Rodney, 1986; Neal, Lawlor, Allgar, Colledge, Ali, Hassey, Portz & Wilson, 2001; Paul & Hanna, 1997; Pestata, Pallija & Webb, 1999; Specht & Bourget, 1994; Weingarten, Meyer & Schneid, 1997).
The rates of missed appointments documented in the literature vary greatly. One national study in 1999, which surveyed 468 family practice residency programs in the U.S., obtained a 60 percent response rate. This study, possibly the most comprehensive one available, found that over a third of those practices surveyed had a no-show rate of over 21 percent. However, these data reported were only estimates from 17.7 percent of those clinics that responded (Dixon, Chapman & Nuovo, 1999). Another study found that both no-shows and cancelled appointments together amounted to 31.1 percent of all appointments made and 32.2 percent of the total time that is scheduled in a given work day (Moore, Wilson-Witherspoon & Probst, 2001). Another study with relatively similar results found that 25 percent of appointments scheduled resulted in missed appointments (Xakellis & Bennett, 2001).

Other studies have attempted to determine which no-show rates should be considered relatively "high". One such study stated that a no-show rate of over 20 percent should be considered to be relatively high (Dixon, Chapman & Nuovo, 1999). One study concluded that 60 percent of all scheduled appointments are missed (Smoller, McLean, Otto & Pollack, 1998). Thus, the range of estimates is great.

Rates of missed appointments correspond to the week of the month, as noted in a 1999 study that took place in a pediatric clinic. The first and last weeks of the month had a higher no-show rate than the remaining two weeks. It is speculated that this difference is due to financial constraints that occupy patients' families with necessities such as paying bills when funds arrive at the beginning of the month. When funds are depleted at the end of the month, families are unable to pay for doctors' appointments (Pesata, Pallija & Webb, 1999).

There are a variety of factors that contribute to these missed appointments. One theory states that patients may schedule multiple appointments for the same medical problem, in order to ensure themselves of access to care (Tuso, Murtishaw & Tadros, 1999). It is also believed that automatic and inappropriate scheduling of follow-up appointments, which may be unnecessary, or are perceived as such, contributes to nonattendance (Stone, Palmer, Saxby & Devaraj, 1999). In addition, some patients who miss an appointment are then automatically reassigned a new appointment, often without a follow-up contact to determine the reason that the first appointment was missed (Barron, 1980). Double-booking on the part of some patients, in addition to unnecessary or unexplained follow-up appointments, both contribute to inefficiency in the scheduling system.

No-show patients inconvenience providers, clinic staff and patients who keep their appointments. Their behavior contributes to a lower quality of care for all patients. Providers may have negative attitudes towards no-show patients. Some providers may choose not to accept Medicaid patients, or other patients who resemble the stereotypical no-show patient (Lamberth, Rothstein, Hipp, Souder, Kennedy, Faccenda, Casher, Kratz & Homeier, 2002). The attitudes of providers toward frequent no-show patients, or "repeat offenders", depends on a variety of factors, such as the hospital setting, the perception of the risk of a negative outcome and billing practices (Smoller, McLean, Otto & Pollack, 1998). These negative attitudes toward repeat offenders may result in a
disruption of the patient-provider relationship, a decrease in communication, a lack of
empathy, and thus decreased quality of care (Pestata, Pallija & Webb, 1999).

There are many other notable disadvantages to high no-show rates for both patients who
keep appointments and those who miss them. These disadvantages include a longer
waiting time for appointments (which may worsen the no-show rate further), and
discontinuity of care, which leads to the inappropriate use of more expensive forms of
medical care, such as urgent care clinics and emergency rooms (Pestata, Pallija & Webb,
1999; Tuso, Murtishaw & Tadros, 1999). Emergency room visits are more costly and
provide little preventative care (DeSalvo, Rest, Nettleman, Freer & Knight, 2000).

The economic cost of no-shows is substantial. One clinic documented that during 1996, a
total of 14,000 appointments were not kept, resulting in an estimated loss of over one
million dollars (Pesata, Pallija & Webb, 1999). Another study found that over one year,
with 31.1 percent of appointments either cancelled or missed, the cost to the clinic
amounted to a loss of between 3 and 14 percent of the clinic's total yearly income

Due to the financial costs, stress, and frustration on staff and physicians and the negative
effects on the health of patients, there have been a variety of attempts to decrease no-
show rates. One such strategy uses different types of reminders before a scheduled
appointment, such as phone calls or mailings. Others have implemented various financial
penalties for missed appointments. Some use incentives, such as waiting room amenities
and childcare (Pesata, Pallija & Webb, 1999). However, others have recommended
against such strategies, in particular threats and penalties, because they may not be
effective and could in fact have the opposite effect as that desired by discouraging
attendance ((Rust, Gallups, Clark, Jones & Wilcox, 1995 in Pesata, Pallija & Webb,
1999). Some clinics have provided either transportation to and from appointments, or
vouchers for such transportation. Efforts have been made to decrease waiting times, to
explain the importance of the next scheduled visit to patients and to expand clinic hours
by adding night and weekend visit times (Pesata, Pallija & Webb, 1999).

Another strategy to reduce no-show rates involves changing the scheduling system.
Different scheduling systems are designed to alleviate a variety of barriers to attendance,
such as long waiting times in the clinic and for appointments. While the literature agrees
that these alternative scheduling systems do alleviate some of the difficulties, they are not
a cure-all.

Scheduling systems

The three most common types of scheduling systems utilized are the traditional model,
the carve-out model/first generation open access and open access (Murray & Tantau,
2000). The traditional scheduling model is the most commonly used system in the U.S. It
operates under the assumption that each morning, the schedule is full (saturated) with
routine cases. Urgent cases are accommodated by double booking, overtime or running
behind (Murray & Tantau, 2000). Under this system, the average waiting time for a
medical appointment in the U.S. is at least 3 weeks (Forjuoh, Averitt, Cauthen, Couchman, Symm & Mitchell, 2001). The traditional scheduling system accommodates the demand for appointments with a restrictive and complex categorization system. According to Murray and Tantau, the motto of these systems is, "Do last month's work today." (Murray & Tantau, 2000).

In an attempt to improve the traditional model of scheduling, a "carve-out" model, also known as a "first generation open access" system, was developed (Murray & Tantau, 2000). Under this model, scheduling is based on "holding" a quantity of urgent care appointments. The quantity held is based on the predicted demand for these types of appointments. The motto of this system is "Do some of today's work today." (Murray & Tantau, 2000). The disadvantages of this carve-out model are many. Although it does accommodate some urgent care needs, it often cannot accommodate those patients who need a visit "today". In addition, instead of simplifying the appointment scheduling system, yet another category of appointments is created (those patients who can not wait weeks for an appointment, but can not be accommodated in the schedule "today"), thus creating even more time-consuming paperwork. It can also be difficult to correctly predict the number of urgent care slots that will be needed on any given day. Studies have also found that in some cases, staff may miscommunicate with patients, instructing them not to make an appointment in advance, but to call when the appointment is needed. This method disrupts attempts to predict demand for urgent care slots. Staff may also be pressured to "steal from" spots held in the future, in order to fit in patients who do not seem to fit into the complex system (Murray & Tantau, 2000). For these reasons, yet another innovation in scheduling systems arose.

The third type of scheduling system, open access, is also known as advanced access or open scheduling. Open access removes the distinction between urgent and routine visits, following the motto, "Do all of today's work today." This system requires a substantial paradigm shift and transition period, which may be difficult for providers, staff and some patients. Under the open access system, about 35 percent of each work day's appointments are booked in advance, comprising the "good backlog". This system redefines access. The traditional definition of patient access is the "ease with which care [can] be obtained by those with medical insurance" (Murray & Tantau, 1999 in Forjuoh, Averitt, Cauthen, Couchman, Symm & Mitchell, 2001, p. 263). The new definition of access is "the ability to seek care from the provider of choice at the time a patient chooses." (Murray & Tantau, 1999 in Forjuoh, Averitt, Cauthen, Couchman, Symm & Mitchell, 2001, p. 263).

Open access

Open access instructs staff to offer any patient calling for an appointment an appointment slot for that same day, regardless of the urgency of the medical problem. Routine and follow-up appointments are not made in advance. Instead, patients are asked to call on the day the appointment is needed (Jacob, 2001). In this system, rather than overbooking or postponing appointments days or even weeks, the scheduling capacity is increased because few slots are held (Murray & Tantau, 2000).
The success of this system depends on a variety of factors, one of which is the balance of supply and demand, known as the panel size, or ratio of patients to doctors (Murray & Tantau, 2000). The demand for same-day appointments is predicted and this prediction is used to determine need according to time of year, day of the week and time of day (Forjuoh, Averitt, Cauthen, Couchman, Symm & Mitchell, 2001). In addition to close monitoring of demand, open access also requires that the schedules of the providers be protected by preventing one doctor's overloaded schedule to overflow into the schedule of another (Murray & Tantau, 2000).

There are five basic steps to implementing an open access system. First, the decision must be made to make the somewhat difficult and uncomfortable transition. Second, the "appointment debt" or backlog of appointments left over from the previous system must be "worked down" and eliminated. Often this process involves overtime and may take weeks or even months. Third, in conjunction with eliminating the backlog of appointments, the categorization of appointments must be simplified and reduced to only three types: 1. Personal (a patient seeing his or her usual provider), 2. Team (a patient seeing another provider in the absence of his or her usual provider) and 3. Unestablished (a patient without a usual provider) (Murray & Tantau, 2000). Fourth, contingency plans should be created, to deal with situations in which there is an overload of urgent care visits. Fifth, the demand for unnecessary visits must be reduced. The fifth step may be accomplished through a variety of strategies, including eliminating advance scheduling of follow-up appointments (Murray & Tantau, 2000).

There are many advantages of the open access system, including increased patient satisfaction and greater continuity of care between doctor and patient. There is also a resulting decrease in the demand for "after hours" care and a reduction in nurses' work load due to less time spent on the telephone with patients (Forjuoh, Averitt, Cauthen, Couchman, Symm & Mitchell, 2001). Open access also provides financial benefits. This system diverts primary care patients from the more costly emergency room. An emergency room visit for a non-urgent complaint cost over three times as much as a similar visit to a family doctor. In addition, the patient will receive better care in a more appropriate setting (Phelps, Taylor, Kimmel, Nagel, Klein & Puczynski, 2000). There are other benefits to treating primary care issues in a timely manner, such as an overall reduction in expensive and severe health problems, and increased patient satisfaction. After the transition period, open access decreases work stress on both providers and staff (Tuso, Murshaw & Tadros, 1999).

There are also disadvantages to this system. The transition period is difficult because providers must work down their backlog of appointments. In addition, open scheduling may not be embraced by skeptical physicians, who prefer to know in advance the types of appointments that they will have each day (Jacob, 2001). It is also noted that elderly patients, in particular, may be resistant to the change because they prefer to make appointments in advance rather than waiting until the same day (Jacob, 2001). Predicting patient demand for services can be difficult as well (Jacob, 2001).

Open scheduling at Eastside Community Practice
The focus of this research is an evaluation of an open scheduling system at the Shands Eastside Community Practice (ECP) in Gainesville, Florida. According to the budgetary plans created in 1997 when the clinic was being planned, the service mission of ECP is to provide primary care to the residents of the service area. The clinic provides medical and dental services, functions as a site for student education and other multidisciplinary community projects. The paradigm for patient services at this facility includes the following components: participation of multiple professional disciplines, provision of quality patient services, including continuity of care, management of follow-up cases and 24-hour telephone triage. In addition, the clinic retains an emphasis on prevention of disease, service to all paying and non-paying residents of the community, a variety of educational opportunities and low-cost care.

With a no-show rate of 24.1 percent in the three months prior to implementing the new system, one of the primary reasons that ECP chose to make this change was to reduce the no-show rate and to divert ECP no-show patients from the Shands emergency rooms. It was also speculated that the new system might alleviate some stress and frustration with the no-show rate on the part of providers and staff at ECP. It is hypothesized that open scheduling will reduce no-show rates at ECP. It is also hypothesized that open scheduling will decrease the use of the emergency rooms by ECP patients for primary care services. In addition, the attitudes of the providers and staff at ECP will be explored.

Methods

Patient population and sample selection

ECP is the regular medical provider for many residents of the East side of Gainesville. The clinic was constructed in 1997 to provide care to an underserved area of the community. According to the 1997 budgetary plans, the target population consists of residents on the east side of Gainesville within the service area of the practice. A conservative estimate of this population is about 53,000 people, which is approximately 30 percent of the population of Alachua County. The racial composition of this population is about 44.7 percent Caucasian and 54.6 percent African-American. There is a slightly higher percentage of residents under 17 years of age in this service area (27 percent) than in Alachua County (21 percent) or in all of Florida (21 percent). Within the service area, the median household income, determined by the 1990 census data is $18,909, which is less than that for Alachua County ($22,000), for Florida ($27,483) or for the United States ($30,056).

The patient sample is comprised of those who were no-shows on at least one occasion at ECP during April, May and June of 2001 (just prior to the transition) and those who were no-shows on at least one occasion at ECP during April, May and June of 2002 (just after the transition).

The ECP no-shows who used a Shands emergency room between April and June of 2001 and April and June of 2002 constituted the starting point for the sample of ECP no-shows
who utilized a Shands emergency room. However, it was necessary to determine which of these emergency room patients were using the emergency room for a "legitimate", non-primary care medical need. Those individuals would not be taken into account in subsequent comparisons. Therefore, based on the diagnoses made for each patient upon arrival at the emergency room, decisions were made about which patients should have been at ECP and which should have been at the ER.

Decisions about the nature of the diagnosis (either primary care or urgent care) were made based on criteria used in the literature by a study conducted at the same setting. The following diagnoses require urgent care, and were therefore excluded from our comparison: motor vehicle accidents, trauma, contusions, fractures, sprains, chest pain, toxic effects of drugs and rape (Davidson, Giancola, Gast, Ho & Waddell, unpublished). In addition, this study also included accidents or falls, open wounds, seizures (convulsions) and heart attacks in the category of urgent care issues. All other diagnoses were considered to be more appropriate for a primary care setting, such as ECP, and were thus included in our comparison.

Analyses

The frequencies of ECP no-shows for the 2001 period were compared to that of the 2002 period. An analysis of variance test was conducted using the Statistical Package for the Social Sciences (SPSS), version 11.0. Next, the frequencies of ECP no-show patients' illegitimate ER visits were compared for the two periods. An analysis of variance test was conducted using the SPSS, version 11.0 to determine if there is a statistically significant difference between the emergency room no-show rate in 2001 and 2002. In addition, data collected from the qualitative survey questions were analyzed and inspected for themes in the data.

Provider/Staff Survey

The survey targeted all providers and staff at ECP. The survey solicited the attitudes and experiences of providers and staff towards the traditional and open scheduling systems (please see Appendix B). It is approximately one and a half pages in length and is both confidential and anonymous. Any provider or staff member who had not been employed by ECP prior to January 2002 was not considered eligible to complete the questionnaire, because these individuals would not be familiar with the working conditions that existed prior to the open scheduling system. All surveys were initially distributed and collected through internal office mailboxes. Other analyses were conducted on the survey data collected. In addition, data collected from the qualitative survey questions were analyzed.

Results/Discussion

ECP no-shows

For the six months under study, there are a total of 1,619 no-show occurrences at ECP. Of these, 49.2 percent of the sample, or 796 no-show visits, occurred in 2001 and 50.8
percent of the sample, or 822 no-show visits occurred in 2002. 1196 unique individuals made no-show visits. In terms of unique individuals, versus "repeat offenders", in 2001 there were 796 no-show instances at ECP and 643 of these were unique people (153 repeated no-show instances). In 2002, there were 822 no-show instances at ECP and 666 unique individuals, with 156 repeated no-show instances.

Using SPSS, an analysis of variance (ANOVA) test was conducted to determine if there was a statistically significant difference, at the .05 level, between the ECP no-show rate in 2001 and 2002. The ANOVA test resulted in a p-value of .924 and an F-value of .009. Therefore, it can be concluded that there is not a statistically significant difference in the no-show rate at ECP between the two samples of 2001 and 2002 patients. It is believed that this result reflects the transitional state of open scheduling at ECP, rather than the failure of the new system.

Emergency room usage

The emergency room data show that there were 160 ECP no-show patients who made a total of 213 emergency room visits during the two three month periods to the five emergency rooms associated with the Shands Hospital system. These sites are Shands at the University of Florida (UF), Shands at Alachua General Hospital (AGH), Shands at Lake Shore, Shands at Live Oak and Shands at Starke (please see Appendix A, Table 1). The vast majority of these visits were made to the Shands at UF emergency room.

In 2001, 49.3 percent, or 105 of these 213 visits occurred and 50.7 percent, or 108 visits, occurred in 2002. Of these 213 emergency room visits, it was determined that 169 of them (or 79.3 percent) were for a legitimate emergency, non-primary care medical need. Using the criteria previously outlined, it was determined that 58 (or 34.3 percent) of these legitimate ER visits by ECP no-show patients occurred in 2001 and 111 (or 65.7 percent) of these legitimate visits occurred in 2002. Once the legitimate, non-primary care emergency room visits are eliminated from the sample, only 44 non-primary care visits remain, or 20.7 percent of the total visits made by ECP no-show patients.

The ANOVA test performed on the emergency room data yielded a p-value of .456 and an F-value of .560. Therefore, there is not a statistically significant difference in the ECP no-show emergency room usage rate between the 2001 patient group and the 2002 patient group at the .05 level. This result is not believed to indicate the failure of the open scheduling system at ECP, but rather to reflect the difficulties of the transitional stage, which has not yet ended. In addition, there are other potentially confounding factors that may have contributed to this result. There are a number of other factors that play into emergency room usage, such as education, transportation and a variety of other factors that may influence emergency room usage.

Provider/Staff Survey

The provider/staff survey conducted at ECP yielded only 13 returned surveys, out of 35 that were initially distributed, for a response rate of only 37 percent (see Appendix A,
Figure 3). Approximately half of the surveys collected were collected through internal mail. The remaining surveys were distributed and collected on an individual, face-to-face basis.

The Likert-scale portion of the survey data, displayed in Appendix A, Figure 4, are analyzed according to the scale provided on which a score of 5 indicates strong agreement, 4 indicates agreement, 3 indicates neutral feelings, 2 indicates disagreement and 1 indicates strong disagreement. All 13 respondents completed the first five questions, while one respondent did not complete the last item. The first item, "I am satisfied with open scheduling" yielded a mean response of 3.15, indicating a rather neutral feeling. The second item, "I was satisfied with the previous scheduling system" yielded a mean response of 2.69, indicating relatively neutral feelings, tending towards dissatisfaction. The third item, "The patients are satisfied with open scheduling" yielded a mean response of 3.23, which is rather neutral. The fourth item, "The transition to open scheduling was difficult" yielded a mean response of 3.88, which is the most positive response to any of this group of questions and is indicative of a negative experience with the transition to open scheduling. The fifth item, "Working with the new open scheduling system has become easier since the initial transition" yielded a mean response of 2.77.

The next group of items on the survey comprise numbers 7, 8, 9 and 12 and ask the respondent to indicate one of three possible answers: "increased, decreased, or stayed the same" in response to each question (please see Appendix A, Table 2). For item number 7, which asks if "The number of patients I see/interact with each day has" increased, decreased or remained unchanged since open scheduling. 38 percent (or 5 respondents) indicated that they now see more patients, 8 percent (or 1 respondent) indicated that he or she now sees fewer patients and 54 percent, or 7 respondents indicated that there has been no change. Respondents to item number 8, "Since starting open scheduling, the number of other caregivers' patients I see" generally indicated that they had experienced no change (5 respondents or 72 percent), while 14 percent (or one respondent) indicated that the number has increased and one other respondent did not respond to this question. This question stated that it was intended only for doctors and nurses.

Item number 9, which refers to "the chronically late or no-show patients' attendance", also indicated little change, with 9 respondents (69 percent) indicating no change, 1 respondent (8 percent) indicated an increase and 2 respondents (15 percent) indicated a decrease. One of the 13 respondents skipped this question. Item number 12, "Since beginning open scheduling, my daily workload, aside from seeing patients, has" indicated that most respondents have experienced an increase (6 respondents or 46 percent), none had indicated a decrease and 5 individuals, or 38 percent indicated no change. Two respondents, or 16 percent, did not answer this question.

The third group of questions on the survey, items 10, 11, 13 and 14, asked respondents to indicate either "yes" or "no" to each question (please see Appendix A, Table 3). For item 10, which asked "Do you treat chronically late/absent patients differently from punctual
patients?" 10 respondents (77 percent), indicated that they do not treat these patients differently, 2 respondents (15 percent) said that they do and one respondent (8 percent) did not answer the question. For item number 11, "Do you feel that you are able to provide the same quality of care/service to you add-on patients compared to your scheduled appointments?" 6 respondents (46 percent) said "yes", 4 (31 percent) said "no" and 3 (23 percent) did not respond to this question. Item 13 asks "Since beginning open scheduling, do you have any new tasks?" with 6 responses (46 percent) for "yes", 4 responses (31 percent) for "no" and three non-responses. For item 14, "Has open scheduling eliminated any of your old tasks?" 10 respondents (77 percent) indicated "no", no respondents indicated "yes", and 3 respondents (23 percent) did not answer this question.

Qualitative data from this survey were also analyzed. These rather sparse comments reflect some level of frustration over the new scheduling system, in terms of patient confusion, a lack of daily openings for patients and one response that it is "too soon" to tell if open scheduling has improved efficiently. Interestingly, four individuals also commented that there are fewer no-show patients since open scheduling, which is an erroneous belief. Other comments indicate that tasks have changed and that some of the problems with open scheduling have not yet been solved. These data are arranged in Appendix C.

The survey responses indicate that the main drawback of open scheduling for the staff and providers at ECP is an increase in time spent on the phone to schedule follow-up appointments, locate medical records, deal with insurance companies, etc. Also, respondents indicate that some patients are confused about what the open scheduling policy means and how it works. Some patients think it means ECP is a walk-in clinic and some think that they should always be able to be seen on the day that they call, which is not always the case. Also, staff and providers feel that it may be difficult to treat add-on patients equally to scheduled patients because of a lack of scheduled time and because the patients' medical records may not be available at the time of the appointment.

In terms of staff and provider attitudes towards late or no-show patients, of the three qualitative responses, one admits a bias against this group, saying that they should not be scheduled for another appointment the next day. Another respondent indicates that he or she tries not to treat them any differently and another respondent simply explained the procedure used to schedule an appointment.

In terms of the perceived impact on the patients, there is acknowledgement of frustration and confusion on the part of patients, and an interesting misconception that no-show rates have declined and that more patients are actually being seen since the change to open scheduling.

Conclusions and Recommendations

This study demonstrated that the transition at ECP is not yet over. The clinic is still "working down" the appointment backlog. This results in less time for add-on
appointments, difficult adjustments to new tasks and a level of patient dissatisfaction. In addition, it is believed that the small increase in no-show rates seen since April 2002 is a result of the transitional period. Therefore, the results of this study do not indicate that open scheduling has failed to reduce either the no-show rate or the rate of emergency room use by no-show patients, but rather that it is too early to tell. It is probable that the difficulties of the transition period are masking any positive effect of the new scheduling system. If longitudinal data continue to be collected, the positive results of the change after the transition period should become apparent.

Based on these findings, it is recommended that ECP continue open scheduling in order to reduce the no-show rate. Also, more should be done to educate patients about open scheduling in order to prevent misconceptions and so that they know what is expected of them. In addition, every effort should be made to reduce complication in the telephone system and eliminate the use of automated systems. Scheduling requests should be handled directly by a staff member, rather than a nurse. The survey response rate could also be improved upon through methodological changes such as providing incentives, printing the survey on brightly colored paper and personally administering each survey.

References

Barron, W. M. (1980). Failed appointments. Who misses them, why they are missed, and what can be done. Primary Care, 7(4), 563-574.


**Appendix A: Tables and Figures**

**Figure 1: No-show rates at ECP as a percent of all appointments made**

![No-show rates at ECP as a percent of all appointments made](image)

**Figure 2: Visits of ECP no-show patients to Shands emergency rooms for non-urgent/primary care**

![Visits of ECP no-show patients to Shands emergency rooms for non-urgent/primary care](image)
Figure 3: Occupations of those surveyed

Figure 4: Providers' experiences with open-scheduling*
Number of responses to each of the six items rated according to level of agreement with each statement on a scale where 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree

Table 1: Emergency room usage by ECP no-show patients

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<th>Primary care visits</th>
<th>Urgent care visits</th>
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<td>#</td>
<td>%</td>
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Table 2: Experiences of Providers

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<td>Number of patients seen</td>
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<td>Open-scheduling impact on workload</td>
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Table 3: Providers' attitudes toward open-scheduling and no-show patients

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<th>Percent</th>
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<th>Percent</th>
<th>Total Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you treat late patients differently</td>
<td>10</td>
<td>77%</td>
<td>2</td>
<td>15%</td>
<td>1</td>
<td>8%</td>
<td>13</td>
</tr>
<tr>
<td>Do you provide same care to add-on patients</td>
<td>4</td>
<td>31%</td>
<td>6</td>
<td>46%</td>
<td>3</td>
<td>23%</td>
<td>13</td>
</tr>
<tr>
<td>Since o-s, do you have new tasks</td>
<td>4</td>
<td>31%</td>
<td>6</td>
<td>46%</td>
<td>3</td>
<td>23%</td>
<td>13</td>
</tr>
<tr>
<td>Has o-s eliminated any of your tasks</td>
<td>10</td>
<td>77%</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>23%</td>
<td>13</td>
</tr>
</tbody>
</table>
Appendix B: Survey Instrument

The Community Health Scholars research project would like to ask for 2 minutes of your time to help us by completing this voluntary, short and completely ANONYMOUS and CONFIDENTIAL survey. The information collected will be used in a study exploring the change to an open scheduling system at EPC. We are very interested in your opinions and experiences during this transition.

Please return this survey to the social services mailbox by Monday, June 24.

Occupation: ___________________________

Have you worked at ECP since January 2002?

a. Yes
b. No

Please answer the following questions by selecting one of the 5 choices to the right of each item according to the scale provided:

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am satisfied with open scheduling.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I was satisfied with the previous scheduling system.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. The patients are satisfied with open scheduling.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. The transition to open scheduling was difficult.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Working with the new open scheduling system has become easier since</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>the initial transition.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Open scheduling has improved efficiency at ECP. Why or why not?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
7. The number of patients I see/interact with each day has:
   a. increased
   b. decreased
   c. stayed the same

8. (Please answer this question only if you are a doctor or nurse.)
Since starting open scheduling, the number of other caregivers' patients I see has:
   a. increased
   b. decreased
   c. stayed the same

9. The chronically late or no-show patients' attendance has:
   a. increased
   b. decreased
   c. stayed the same

10. Do you treat chronically late/absent patients differently from punctual patients?
   a. No
   b. Yes
   If yes, please explain:

11. Do you feel that you are able to provide the same quality of care/service to your add-on patients compared to your scheduled appointments?
   a. No
   b. Yes
   If no, please explain:

12. Since beginning open scheduling, my daily workload, aside from seeing patients, has:
   a. increased
   b. decreased
   c. stayed the same

13. Since beginning open scheduling, do you have any new tasks?
a. No
b. Yes
If yes, please specify the tasks:

14. Has open scheduling eliminated any of your old tasks?

a. No
b. Yes
If yes, please specify the tasks:

Please provide any additional comments regarding open scheduling and its effects at ECP:

________________________________________________________________
________________________________________________________________
________________________________________________________________

If you have any additional questions or comments, please contact Rhondda Waddell via email at: wadderf@shands.ufl.edu

Appendix C: Qualitative Data from Questionnaire

Numbers in parentheses after each statement indicate the id number of the respondent

Question 6: Open scheduling has improved efficiency at ECP. Why or why not?

Pts are confused- think they can walk in. Estab pt aren't getting f/u like they need (1)

No show rates are down. However, some patients are not being seen in time to renew medications, resulting in more phone calls and wasted staff time. (3)

Doesn't affect pharmacy clinic scheduling, but patients are able to get appointments with other providers more easily (4)

There are still not enough openings daily for pts to be seen (5)

I can't tell any difference as I am only here 1 day per week (7)

We're able to see more patients, and have a lower NS ratio (8)
Not really impacted by open scheduling. Social work has always been kind of open. I've heard no comments from pts re: schedule issues. (9)

I still have about the same number of pts who fuss and who are pleased so I think it is about the same- not much different yet. (10)

More pts (11)

Too soon (13)

Less no shows (12)

Question 10: Do you treat chronically late/absent patients differently from punctual patients? If yes, explain.

Chronically late or nos should not be scheduled the next day (2)

I try not to (5)

If pts is late enough that next scheduled pt is already here, then depending on what pt scheduled for, they are rescheduled or may wait to be seen and work in. (10)

Question 11: Do you feel that you are able to provide the same quality of care/service to your add-on patients compared to your scheduled appointments? If no, please explain.

Time is limited (1)

We try. It depends on how many pts are seen and how much time we have…(3)

Records from AGH ER are never available on the same day you ask for them and if pt is here for ER = F/U then you are flying blind. (10)

Question 13: Since beginning open scheduling, do you have any new tasks? If yes, please specify the tasks.

Sch f/u appts c- estab pts by calling o/c #'s and getting pts schedule (1)

Pulling out the rest of my hair (3)

F/u appts new pts (5)

Call backs after nurse ok's appt and more triages (6)

More ins. To cll (11)
Obtaining records, medication information (dose/mg triage task increased (12)

**Question 14:** Has open scheduling eliminated any of your old tasks? If yes, please specify the tasks.

**Question 17:** (Not numbered on survey) Please provide any additional comments regarding open scheduling and its effects at ECP.

Pt's get a little upset because an appt can not be given to them at the time they call. (6)

For some reason, since open access started, I have had more pts tell me they have had to wait 2 or more weeks to see me. I've not been able to find out why. (10)

More busy! (11)