Patient Statistics: What You Really Need to Know

Ellen M. Grady

Every orthodontic practice relies on certain numbers for establishing goals and then analyzing the success of the efforts taken toward the objectives. Analysis of financial data is only part of the statistical information that should be gathered and reviewed routinely. Patient statistics are equally essential in evaluating many areas of practice performance. The patient statistical categories, and desired achievement ratios, detailed in this article provide useful data for managing and marketing the orthodontic practice. (Semin Orthod 2011;17:309-319.)

Over the years, this author has heard many orthodontists say that "I love the patients, my team, and the treatment we provide, but I would rather not have to manage the business; numbers are not why I entered orthodontics." To those orthodontists, do not let the title of this article scare you away. Much of what is detailed here can be gleaned from data already recorded in the orthodontic management software programs most orthodontists now use.[1]

As Peter F. Drucker[2] said, "management by objective works—if you know the objectives. Ninety percent of the time you don't." The purpose of this article is to help ensure that the reader has sufficient information on which to establish and analyze objectives and goals on the basis of patient statistics. Orthodontics is a desirable and gratifying profession, even though the complexities of maintaining a successful practice have increased. To add to the problem, many orthodontists have not received training in running a business because it was not part of the university curriculum. This is now starting to change, with more courses and guest lecturers appearing in the residency programs.[3]

Almost every orthodontist works with an accountant who advises the owner on the financial health of the practice. An important function of the accountant is to ascertain whether the financial numbers make sense, expenses are within standards, and profitability fits the investment and effort of the orthodontist owner. However, the financial statistics are only one-half of the statistical data needed to evaluate many areas of performance.

By contrast, currently <25% of orthodontists[1] have periodic advice from experienced orthodontic consultants who specialize in management and marketing, as well as the numbers useful to measuring outcomes. This author analyzes such numbers on behalf of clients because most orthodontists do not consider this an enjoyable aspect of practice.

This article describes basic patient (not financial) statistics, as well as ratios and percentages that the orthodontist and team seek to achieve. Many of the suggestions included have also been recommended by others in orthodontic management. However, because this author has found that many practices do not routinely record or analyze such important data, it was decided to review essential patient statistics in this article. Every practice should determine goals appropriate to the individual doctor owner and office(s). Plans and results need to be measured, and accurate statistical data used by both the orthodontist and team members are useful tools.

Clinical Assistant Professor, Herman Ostrow School of Dentistry, University of Southern California, Los Angeles, CA.

Practice Management Consultant, Ellen M. Grady & Associates, Pacific Palisades, CA.

Address correspondence to Ellen M. Grady, BA, PO Box 576, Pacific Palisades, CA 90272. Phone: (310) 459-3013; E-mail: egrady@linkline.com; grady@usc.edu

1073-8746/11/1704-0$30.00/0

doi:10.1053/j.sodo.2011.07.011

Whether the orthodontist is just starting out in practice (new or purchase) or has been an owner for many years, the value of keeping patient statistics is relevant to analyzing performance and achievement of objectives. In addition, certain statistics will add or subtract value when a practice is for sale,[4] so it is never too late to establish a reliable reporting system.

It is recommended that all statistics be analyzed by the orthodontist on a year-to-date basis; the use of only 1 or 2 months of data is deceptive and can provide a false sense of security or alarm. Throughout this article, all statistical results are determined by year-to-date numbers so the orthodontist has an accurate measure of practice performance against objectives.

New Patients—The Lifeblood of a Practice

Advisers on orthodontic management and marketing have long stressed the importance of recording statistics on new patients. There are several new patient statistics that should be monitored throughout every year. These statistics affect core management and marketing elements, with major impact observed on gross income, new treatment starts, patient scheduling, and referral evaluation.

As defined in this article, a new patient is one that has not been previously examined at the office. Therefore, adolescents returning for growth and development reexamination are not considered new patients. Please note that this author does not use the term "recall" when discussing patients not yet in treatment but who return for monitoring visits. A common definition of "recall" implies that something is defective and needs to be returned for repair or change. Such an image is not complimentary to the patients and families treated in orthodontic offices. In the sections to follow, the following specific categories of new patient statistics are recommended.

New Patient Calls

New patient analysis begins by monitoring the number of people who call to inquire about a new patient visit. Every call must be recorded, even if the family does not schedule an appointment. The details of the patient's information, such as zip code, age, and other demographics can be useful in analyzing marketing strategies and techniques. The percentage of callers that schedule a new patient visit is affected by many factors, including the team member speaking with the patient/family. The percentage of new patient callers that schedule during the initial telephone call should be at least 90%. The calling family should at least want to investigate the practice for their orthodontic care. If the percentage is lower, investigate the communication that occurs during the call, the questions asked by the family, and the reason(s) given by the caller for not scheduling an appointment.

New Patients Seen

The number of new patients who actually keep the scheduled first appointment should also be high; at least 90%, even if some families reschedule the appointment more than once. The total number of new patients seen is one part of a ratio that is important to determining the number of new patient visits required to achieve a specific goal of treatment starts.

Today's busy and distracted families will require more than one reminder of the scheduled appointment, whether by telephone, text, e-mail, or a traditional letter with office information and a map. These reminders are even more crucial if the family is to complete any introductory or medical history forms before arriving at the office. The family should have enough information to easily locate the office for an on-time arrival, and be ready to enjoy the orthodontic visit. This first appointment should be a great foundation for a friendly and caring relationship.

Recording the number of adult new patients versus adolescent new patients is also useful. It has been observed that many adult new patients need more explanation before making a treatment decision. Often the orthodontist needs to consult with the patient's general dentist as orthodontic care is part of a multidisciplinary treatment. All of this requires more time of the orthodontist; fees should be higher, and appointments will often take more time.

New Patient Outcome

The result of the new patient visit is critical to patient starts and affects current and future income to the practice. Four outcomes must be monitored.

New Patients Ready for Treatment Now and Who Proceed With Treatment

This statistic is necessary for accurate conversion statistics. Only those new patients that the orthodontist recommends could benefit from treatment right away is the number used to compare with treatment starts. If the patients that are placed in pretreatment observation or "pending decision" are included, then the ready new patient (RNP) to start ratio (RNP to Start) will be artificially low. For example, Dr Smiles has 350 new patient visits during 1 year. Twenty-five percent (25%) of the new patients are placed into pretreatment observation after the new patient visit to await further dental and/or skeletal development. This leaves 262 patients who could start treatment soon after the new patient visit.

In this example, Dr Smiles initiates treatment on 210 patients from the 262 "ready-to-treat" new patients. If the new patients placed in observation are not included, the RNP to Start ratio is 80.1% (210 divided by 262), which speaks very well of the communication and systems follow-up by the practice. If the 88 patients placed in observation had been included before calculating the RNP to Start ratio, then the conversion rate would have been 60% (210 divided by 350). Over the years, this author has found an RNP to Start ratio of 60% common, although not a desirable ratio. Assuming no external deterrents, such as a challenging regional economy, most offices can increase the "ready to treat" RNP to Start ratio. A 60% conversion rate is often indicative of a need to improve communication so that the family understands how the office can assist them. Many practices have a team member who consistently works with the orthodontist and new patients. This individual is often a treatment coordinator (TC), business office team member, or clinical team member with specific new patient responsibilities. The new patient conversion statistics will help to more accurately evaluate the performance of that person.

Pretreatment Observation Status

As noted previously, younger new patients may not be ready for treatment immediately after the new patient visit. These future patients are placed in a special program to observe their growth and development. The specific statistics recommended for these children are outlined separately in this article.

Family Pending Decision

Every practice will have patients who are ready for treatment but postpone the decision. These patients are statistically counted as Will Call Back (WCB); other terms commonly used for these patients are Suspense or Pending Decision. The reasons for delaying treatment are varied and can include insurance effective dates, financial concerns of affordability, waiting until a sibling's treatment is finished, and many others. In the current economic cycle, and depending on the location of the practice, there may be a larger number of patients waiting to decide about treatment. The success of achieving an eventual treatment start is largely determined by the team member staying in contact with the family. This is often the responsibility of a TC because the family established rapport with the TC during the new patient visit. To assist in measuring the TC's effectiveness, a separate statistic for measuring this new patient outcome is desired. It is recommended that the office track the number of WCB new patients, as the family has not yet made a decision to initiate treatment.

This NP WCB statistic will then be compared with the number of WCB patients who actually initiate treatment. This is to evaluate the effectiveness of the contact maintained with these patients. The follow-up communication should be personalized according to the family's reason(s) for hesitating about treatment, and the contact should be sequential over a reasonable period of time. This will usually involve telephone calls, e-mails, or letters inquiring of possible interest as well as any questions that the practice can answer. It is important that none of the communication pressure the family into treatment, as cooperation would certainly be negatively affected. It has been noted by this author that many of these WCB patients are willing to initiate treatment with the practice

that maintained periodic, friendly and caring contact, even though the family was initially unwilling to proceed with recommended treatment.

No Treatment

There are some patients who choose not to seek treatment. The percentage of new patients refusing treatment has increased in areas in which the local economy is struggling. In addition, the orthodontist may elect not to treat a few of the new patients because of philosophical or treatment differences with the parents of the adolescent patient.

Pretreatment Observation Patients

This author's work with orthodontists in numerous countries has concluded that few orthodontists keep accurate statistics on the younger children who should become treatment starts once appropriate development has occurred. These young patients should be expected to initiate treatment if consistent contact is maintained after the new patient visit. Because the observation visits have provided a history of the patient's growth and development, there should be no reason for the family to go to another practice for treatment when there is already a good history with the current orthodontist.

Most offices accurately place the young children into "observation" from the new patient visit. However, the observation patients who start treatment, and/or those that are no longer reachable (moved away or treated elsewhere) are never removed from the observation count. It has been found that if the observation statistics are not accurate, the number of these patients who actually initiate treatment is only 25% of the total number of observation patients included in the count. This is a disappointment for the orthodontist who uses the observation patients to increase treatment starts. This is also a concern when an orthodontist wants to sell the practice and states that there are many "built-in future starts" available for a new owner. Unfortunately, when the error is found, it brings into question whether other data used for the evaluation was accurate, and the practice value can change.

Observation patient counts can be reliable if updated each month as shown in Fig. 1. If using computer software, scheduling codes for "observation patients" provide the necessary data in an "Observation" report at month-end. Alternatively, a simple list kept manually and summarized in an Excel spreadsheet will provide the necessary information.

Two additional hints for monitoring these younger children for future treatment starts include the following:

a. Phase I retention patients should not be counted as Observation patients. Phase I patients have had some treatment and may still have an appliance holding space. These patients should be a separate category of the retention patient count so that these future Phase II starts are not lost.
b. Track the number of observation patients seen each month that remain in the observation program. This is shown as a separate line in Fig. 1 because these patients do not change the total number of observation patients.

The observation patients are useful for augmenting treatment starts and planning the number of monthly observation visits that should be reserved in the scheduling system. These patients

Month-End Observation Patient Count	# of patients
1. Previous total Observation patient count (line 5 from last month)	
2. **ADD** New patients entering Pre-TX Observation (from the new patient visit)	
3. **SUBTRACT** Observation patients **initiating** treatment at next visit	
4. **SUBTRACT** Observation patients unreachable or treated elsewhere	
5. Total updated Observation patient count for _____ (month) _____ (year)	

_____ Observation patients seen and remaining in observation (no change in patient count)

Figure 1. Monthly observation patient calculations.

Type of Start	Current Month	Current Year-to-date	Last Year Same Month	Last Year Year-to-date
a. Full Treatment				
b. Phase I with FxA				
c. Phase I Interceptive (appliance only)				
d. FxA + orthognathic surgery				
e. Aligner treatment				
f. ***Subtotal new starts (RNP to Start Ratio from this total)***				
g. Phase II (previous Phase I patient)				
h. Total new orthodontic starts (line f+g)				
i. TMJ therapy (no FxA yet)				
j. Any start above from WCB status				

Figure 2. Example format for recording monthly treatment starts. In a multiple office practice, the treatment starts should be totaled separately by office. The information included on each line is described in the text. Abbreviations shown in Figure 2 include: FxA, fixed band/bond appliances; RNP, ready new patient; WCB, will call back patient.

should not be lost; the orthodontist and team have an investment in these families.

Treatment Start Statistics

The value of accurate statistics on patients initiating orthodontic treatment cannot be overstated. Treatment start details will confirm financial production and income and offer a reliable determination of actual growth or decrease of the patients in the practice.

It is no longer sufficient to record patient starts as either comprehensive (one stage of full 2 arch banding/bonding) or limited (any type of partial appliance therapy). Most orthodontic offices have several major categories of treatment, with different fees. To properly analyze income and patient types, more specific "start" data should be recorded. Consultants have their favorite statistics, and the recommendations made here are not to replace individual counsel that an orthodontist is receiving. Some offices will track even more detailed "start" data; please consider the following start statistics to be the minimum classifications recommended:

a. Full comprehensive treatment (one-time only in fixed appliances [FxA])
b. Phase I with FxA; this includes some bands, brackets, and archwires. It can also include an auxiliary appliance, such as an expander.
c. Phase I interceptive (removable appliance only, or a fixed device such as an expander). No brackets and wires are used during the interceptive treatment.
d. Phase II; the patient had Phase I treatment in the same practice.
e. FxA + orthognathic surgery.
f. Lingual FxA, or removable clear aligner treatment from one of the companies offering the aligners, such as Invisalign (Align Technologies in San Jose, CA), AOA (Allesee Orthodontic Appliances headquartered in Sturtevant, WI), or others.
g. Temporomandibular (TMJ) therapy only; no FxA. If orthodontic treatment occurs later, the appliances are counted as a Full treatment start.

Refer to Fig. 2 for an example of how a practice can summarize the current month and year-to-date treatment starts in each category, as well as compare the statistics to the same period of the previous year.

As shown in Fig. 2, line f totals the starts that occurred from the ready new patients. This is the "start" statistic used to calculate the RNP to Start ratio, as well as the Retention to Start ratio described in another section of this article. Phase II (line g) and TMJ (line i) are tallied separately so as not to skew the ratios; new patients are not needed for a Phase II start, even though these patients produce income, and TMJ patients are not part of the orthodontic treatment. If TMJ therapy is a major component of the practice (>20% of income), the TMJ new patient outcome should be totaled separately as the orthodontist has a subspecialty within the orthodontic office. However, for most orthodontists, the number of patients receiving TMJ care is not usually significant.

Using the previous example of Dr Smiles, the new patients ready for treatment (RNP) total 262. The total new treatment starts (not includ-

ing Phase II) are 210. This results in an RNP to Start ratio of 80.5% (210 divided by 262). Ideally, this percentage would be even greater, but this conversion rate is certainly above the national average of 56% to 64% that this author often hears expressed by others at major orthodontic meetings, and which has been noted in an article by Hamula et al.[5]

Some of the starts will be the result of follow-up with the WCB families. Count these starts in the appropriate category, but also keep a statistic on the number of WCB patients that initiate treatment (line j in Fig. 2). The WCB patients do not increase the number of starts but provide data for another ratio of RNP WCB to Start WCB. This statistic is useful to judging the success of office follow-up with those patients who did not commit during the new patient appointment. If the RNP WCB to Start WCB ratio is >60%, the assigned team members are considered very effective in communicating with these patients.

A separate analysis of the patients generating the starts and their associated fees is quite revealing and will vary year-to-year. In a struggling economy, this author has observed fewer comprehensive (Full) starts, even if the total number of treatment starts remains constant. The negative financial consequence of such a shift to a greater number of limited/partial treatment starts is felt one year later. The limited/partial patients have paid their total fee, and the smaller number of Full or Phase II starts results in lower contracts receivable (future monthly payments), which is the traditional stable cash flow for an office. Being aware of such a trend, when it occurs, assists a practice in making adjustments ahead of time, rather than being surprised when it is too late to alter some expenses for the lower income.

The number of patients who pay in full when treatment begins increases current cash flow, but this number can be deceptive. Whether the patient paid in full (PIF) or obtains credit from another company that pays the orthodontist directly, the result will be lower future monthly payments. The concept of patients paying in full at the beginning of treatment is appealing, and increased income is always useful; however, if there is a decrease in starts, then the decline in monthly income is compounded, often resulting in a cash flow problem.

On the basis of one's practice business model and available cash reserves, the orthodontist should establish a maximum number of yearly PIF patients. This author normally recommends that the maximum number of starts who pay in full be <20% so the monthly payments are still high enough to cover most routine office expenses. In working with many orthodontists (of all ages), it has been noted that the vast majority rely on the patient's monthly payments for normal cash flow; unfortunately, very few offices put the PIF monies in savings and then extract the equivalent of monthly payments over the patient's treatment time.

It is also suggested that the practice tally the number of patients who use outside lenders for paying the orthodontist in full at the beginning of treatment; without this statistic the orthodontist will not know whether the vendor relationship (and fee taken from the total amount billed) is worth the cost.

Active Treatment Finished and Retention

It is an exciting day for the patient when appliances are removed. Make it a fun event, and be sure to record the completion. Treatment completion and retention data is just as important as the initial treatment statistics. It has been commonly assumed that an orthodontist should complete active treatment on the same number of patients started. For the established practitioner in a stable practice, this benchmark ensures that treatment is progressing normally. However, for the younger practice, or one that is experiencing rapid growth, a better yearly objective is to finish the number of patients that started treatment 20-24 months previously. If a practice does not finish a planned number of treatments each year, the result is an excess of active patients. These patients have paid their fee, are adding to costs, and using chair time that could be available for new starts. Perhaps even more important to extended treatment is the refrain uttered by families that "the treatment took so long." The negative marketing of extended treatment affects potential patients and professional referral sources. This should not be allowed to happen. During patient visits, one of the several techniques to monitor the length of treatment should be used. Each ortho-

dontist should use the technique that will be recorded consistently by both the doctor and the clinical team.

The orthodontist should also review the "finish" statistics at least quarterly. Active treatment completions should be sorted into 2 or 3 categories, depending on the treatment performed most often by the orthodontist. The minimum categories suggested are:

1. Phase I and Interceptive patients will be future Phase II starts. The practice should know how many children are in this category. These are future starts without the necessity of new patients.
2. The remainder of the patients with FxA can be retained in a single "full retention" category as it is not expected that further active treatment will be required.
3. Some practices keep their aligner patients in a separate retention category so that it does not distort the number of FxA treatment that is finished each year. If the aligners are also the retainers, remember to record the "entering retention" status so that both active treatment and retention patient counts are up-to-date.

The yearly Start to Finish ratio should be 85%-90%. This statistic is calculated by dividing the actual number of year-to-date completed treatments by the number of yearly starts. For example, Dr Smiles' growing practice started treatment on 200 patients 24 months ago, and finished 180 patients this year. This results in a Start to Finish ratio of 90%, which shows excellent treatment control. By contrast, if Dr Smiles completed treatment on 250 patients this year, then the Start to Finish ratio is 125%. If the ratio is >100% year after year, it indicates a reduction in treatment starts. If the Start to Finish ratio continues to average <80%, then the length of treatment should be reviewed. Is the treatment time estimated realistically achievable? Is the orthodontist being accurate when estimating treatment time? Extended treatment has marketing, financial, and clinical management implications that should not be ignored.

This author suggests that the orthodontist randomly review 20% of all the patients finished during the year. As long as the patients reviewed are randomly selected, this small percentage provides enough information for the analysis to be meaningful of the average length of treatment in the office. This review is educational for all orthodontists, whether an owner or associate. Records should be available so that key diagnostic and treatment planning notes can be reviewed; in this increasingly digital age, the original examination notes and x-rays can be accessed with just a "mouse click."

The practice should design a form that includes much of the basic treatment history on the patient. A grade should be given for the patient's cooperation during treatment in each of the following areas: (1) oral hygiene; (2) appliance wear; (3) elastic compliance; (4) number of broken/lost brackets/bands & archwires; and (5) the number of appointments canceled or missed. The patient's original estimated treatment months should have been recorded so that it can be compared to the actual number of months taken to complete treatment. If the practice uses the concept of "patient managers," the assigned team member(s) should fill out the form for the orthodontist's review. The doctor will add any treatment issues that occurred; examples might include growth problems, missing teeth, borderline extraction, general patient motivation, etc. This review can provide insight on what influenced the length and quality of treatment. The goal is to reduce the number of patients that are more than six months over the estimated treatment time.

Finally, active retention patients need to progress to inactive retention in a systematic method. By definition, "inactive retention" means that the office no longer tracks the patient to return for periodic retention visits. Although these patients are always welcome in the office, the orthodontist considers treatment and follow-up to be finished, and further monitoring is the responsibility of the patient and his/her dentist. Conversely, active retention patients are those that do require follow-up to ensure that the patients are seen according to the orthodontist's desired interval.

Active Treatment and Active Retention Patient Counts

As shown in this article, if the "start" and "finish" statistics are recorded consistently, then the practice's total number of active treatment and active retention patients will be reliably accurate.

As most offices use computer software for recording each patient's "status," it is not difficult to track the number of active treatment or active retention patients. If an office has not been using "status" codes to differentiate the patients, it is time to activate this part of the computer software. Once the codes are defined, it will take no more than 3-4 months to update the status of the active patients. This is easily done when the patient is checking out and scheduling the next appointment.

Are the active patients increasing in the office? If so, compare it with the treatment start data; if the starts are not rising, then the length of treatment is increasing and/or the patient's status for "finish" is not being properly recorded. Knowledge of the number of active patients is critical for determining if an office has enough treatment days for the patient volume.

These total patient counts are instrumental to many analyses useful to the orthodontist and any consultant. Therefore, to maintain active patient counts, be sure to:

- add new treatment starts;
- add treatment patients transferring into the practice;
- subtract patients that have completed active treatment; and
- subtract active patients dismissed (cannot find the patient), moved away, etc.

The count of patients in active retention should be maintained by:

- adding new retention patients;
- subtracting retention patients now considered inactive; and
- subtracting retention patients no longer reachable or moved away.

If the active retention count is increasing more than growth of the practice it would indicate that patients are not being moved to an Inactive status. This will eventually clog daily patient flow and add to expenses.

Patient Scheduling System Affected by Patient Counts

This article is not a primer on how to develop a scheduling system, but the patient statistics outlined are also used to ensure that the office scheduling system remains effective. Such planning is essential to realizing start and finish goals within the number of treatment days available for patients. If basic statistics have been recorded, after performing necessary calculations, it can be determined whether additional treatment days are needed, or that an office can treat more patients. There are many scheduling parameters that can be adjusted, but without routine statistics, inaccurate estimates lead to major problems often requiring many months to solve.

For example, treatment starts provide valuable information for scheduling, as well as the number and type of visits necessary each month to maintain the appointment interval desired by the orthodontist. Even with all the advances in technology, patients still need to be seen at regular intervals so that treatment progresses according to the orthodontist's plan.

The goal is to always have planned visits available for important major functions—and no other function should be scheduled in the reserved time blocks. Of course, if a saved time block remains unfilled near the actual treatment day, an appointment substitution is made to prevent empty units. For example, an unused new patient appointment might be changed into a conference or observation check four days before the actual day, whereas an unused long bonding appointment substitution could occur 2-3 weeks before the treatment day. Keep in mind that the appointment substitution should be similar to the original amount of the doctor's time planned to occur during the prereserved appointment. This helps to ensure that the doctor and team stay on time with all patients throughout the day.

If time is not prereserved for major visits, the day quickly becomes filled with adjustments and checks, leaving few units available for starts or new patients. Therefore, at a minimum it is advised to reserve specific appointment times for the following functions 3-4 months before the treatment day:

- new patient visits;
- observation checks;
- diagnostic records;
- banding/bonding start visits; and
- debonding and initial retainer delivery visits.

To plan how many of the aforementioned appointments should be available each week, an office needs the patient statistics outlined in this

Cancel or Missed Visit Type	Early AM (≤ 9:30 AM)		Mid-AM (≥ 9:30AM)		Early Afternoon		Afternoon 3-5 PM		Evening (≥ 5:00PM)	
Date tallied:	**Pts.**	**Units**	**Pts.**	**Units**	**Pts.**	**Units**	**Pts.**	**Units**	**Pts.**	**Units**
New patient										
Starting Band/Bond										
Progress Band/Bond										
Debanding/Removal										
Archwire Change										
Active Check/Adjust										
Retainer Check										
S.O.S./Emergency										

Figure 3. Example of an appointment cancel and missed daily statistical form. Appointment categories and time of day statistics for analyzing the patients (and number of appointment units) that cancel or miss their appointments are recorded on a periodic basis to determine unused appointment units that can be filled with better scheduling techniques.

article, as well as other scheduling details. It all begins with a plan and the office scheduling masters should be based on specific goals for starts and finishes for the year. Then, using the number of treatment days planned for the year, along with the statistics and ratios discussed, the orthodontist and team can calculate the total number of new patient visits needed to result in "ready to treat" patients in order to keep the starts filled and new observation patients added to the system. At the same time, plan the number of patients that should finish treatment and reserve these major visits; otherwise, removal of appliance appointments are not available which then disappoints both the orthodontist and the patient. The number of patients in a practice will affect the size of the team, the number of treatment days needed for patient care, etc. A monthly review by the orthodontist of the statistical monitors against plan provides a higher probability of reaching the stated goals. In addition, it is gratifying to see how the plans and actions come together in a positive outcome for the patients, the doctor, and the team.

Unfortunately, not all scheduled patients keep their appointments. Overbooking, defined as scheduling a few extra patients, is necessary to keep the actual number of unused scheduling units to a minimum. However, sometimes all the patients (including the overbooked patients) will arrive for their appointments on a given day, resulting in treating 110% of the number of patients anticipated. This rarely occurs, and it should not deter the practice from employing efficient scheduling techniques.

Overbooking should be based on facts gathered about patients who cancel at the last minute (<48 hours), or miss/fail the appointment without notifying the office. Before overbooking, the practice needs to know the type of visit, as well as the time of day, that the appointment cancellation or failure occurs. Too many offices overbook during the busiest time of day, even if that is not when patients typically cancel or miss.

It is recommended that the office select one week every 2 months and record cancel/missed statistics using the format shown as Fig. 3. This will provide valuable data on appropriate overbooking of the routine visits (archwire, adjustments and retainer checks) that so often leave openings in the schedule. Overbooking lengthy bonding appointments is certainly not recommended. In conclusion, the actual number of cancel/missed patients should be <3% of what is scheduled. If the office averages a 10% cancel/missed rate, then some overbooking is desired. In most offices, the number of additional "overbooked" patients daily is generally no more than 5-7 patients, but this makes a significant difference in keeping sufficient appointment units available for all patients.

Another hint to maintaining effective patient flow is to control late and early patients. Each office should be using the computer software reports on the number of patients who arrive more than 15 minutes early, as well as those

patients who arrive late for their appointments. These statistics are generally available within the scheduling system program, and is a useful tool in analyzing patient flow. It is important to establish and maintain office scheduling procedures. For example:

1. Early patients might not be treated until the scheduled appointment time, especially if it results in the on-time patients not receiving their treatment on time because of the early patients.
2. Late patients may not have all the planned work completed because the amount of time available is now reduced, and other patients are already scheduled.
3. If the patient arrived at the office after the appointment is over, the patient is not late—the patient missed the appointment. Do not let the patient/family, or office team, confuse late and missed patients. The policies for managing each are different and affect the on-time performance of an office.
4. Patients arriving on time should depart on time. The early or late patients should not take precedence over the on-time patients. It sends the wrong message, and families quickly learn that they receive more attention from the office if they arrive late and/or do not call ahead when appliances are broken.

Most families will comply with the scheduling policies if they understand that their time is respected, and that the schedule has been designed to progress treatment for all patients while reducing inconvenience as much as possible.

Patient Referral Statistics

It is difficult to evaluate marketing efforts if data on patient referrals are not consistently recorded. To obtain accurate information on how the patient came to the office, it is important to ask questions and record the answers. Increasingly, patients choose a practice for several reasons. It is no longer simply a direct general dentist or friend referral. For example, the office Web site, social media networks, practice brochure, and support of community and school events increasingly play a role in a family's choice of orthodontist. However, unless asked, the office will not be aware of these other elements influencing the family's decision.

This author suggests that "who referred you to our office?" should never be asked; it is not descriptive of the process today's patients take in making a decision. Rather it is suggested that 4 questions be asked during a conversation in the new patient visit: (1) "Who or what first made you aware of an orthodontic concern?" (2) "When did you become aware of it?" (3) "How did you first hear about our office?" and (4) "What made you call our office at this time?" This is not a long conversation, but it allows the office to obtain more insight into what makes the practice visible and interesting to families.

All the sources of referral should be documented. This record should also denote whether the specific source was direct (primary referral) or indirect (one of several elements the family mentioned). Review of all the referral types throughout the year provides insight as to whether the marketing expense of a particular technique is worth the time and effort. Of course, some marketing techniques (such as friendly, caring service) have intangible results and cannot be measured, but other elements (such as a community sponsorship of sport groups) can be analyzed to see whether it was noticed and remembered by patients. Such an analysis is only possible if the number of patients mentioning each element is recorded for analysis.

It is also suggested that dental referral statistics should include more than just the patient's name and whether treatment was initiated. Those basic facts are only a small part of what should be gleaned from studying detailed referral data of the professional referral sources. The patient's age is useful; if the orthodontist only sees the dentist's 16-year-old patients, where does the dentist send the 10- to 12-year-old patients? What is the basic diagnostic classification of each patient? Is the orthodontist only receiving Class III or "high maintenance" patients from the referral source? Where is the general dentist referring the traditional Class I crowded patients? Did the general dentist refer to the orthodontist (defined as a direct referral), or give more than one name? These additional facts provide valuable talking points with the professional referral source.

Conclusions

The patient data outlined may seem like a large amount of information, but it can be easily structured for routine reporting and analysis. Although the patient statistics discussed in this article are not inclusive of all the data that the author advises her clients to monitor, these core elements add greatly to analysis of what is working within the practice.

Each year the practice management computer software programs become more detailed, and offices are usually not using all the tools built into the programs. Once a practice decides what data is desired, then codes can be used so that summary reports are easier to produce. Before today's computer programs, it took many hours to gather data; the result was very little analysis and many decisions were made based on "gut feel." Times have changed and practices can no longer afford costly mistakes; analysis of key data is a necessary part of maintaining a successful practice. Not only has technology advanced treatment goals, but it has made analysis of management and marketing data easier, faster, and more comprehensive.

J.W. Teets, former chairman, President, and CEO of The Greyhound Corporation, is reported to have said, "Management's job is to see the company [practice] not as it is . . . but as it can become."

The patient counts described in this article provide data for decisions and actions that can benefit the entire orthodontic practice.

References

1. Keim RG, Gottlieb EL, Nelson AH, et al: 2009 JCO Orthodontic Practice Study Part I: Trends. J Clin Orthod 43:625-34, 2009
2. Drucker PF: Peter F. Drucker Quotes. Available at: http://www.albertarose.org/articles/quotes/peter_drucker_quotes.htm. Accessed August 2, 2011
3. Sinclair PM, Grady EM: Preparing to practice and manage: A program for educating orthodontic residents in practice management. Am J Orthod Dentofac Orthop 120:2-8, 2001
4. Groesbeck RL: Valuing an orthodontic practice, part 2. PCSO Bull 14-16, 2005
5. Hamula W, Bray R, White C: Orthodontic office design: Examination rooms. J Clin Orthod 34:15-18, 2000