

THE CUTTING EDGE

(Editor's Note: This quarterly column is compiled by JCO Technology Editor Ronald Redmond. To help keep our readers on The Cutting Edge, Dr. Redmond will spotlight a particular area of orthodontic technology every three months. Your suggestions for future subjects or authors are welcome.)

In this month's column, Dr. Mark Perelmutter suggests a new version of an old concept. His customized Aligner Treatment Chart greatly facilitates notation and reference during Invisalign therapy, which can be cumbersome and time-consuming to record on a standard chart.

I'm sure custom charts were designed by many orthodontists during our "paper" days, but I first used them in the early '90s, thanks to the innovation of Orthotrac (Ortho Management Systems). Orthotrac's digital treatment chart allowed the orthodontist to customize the on-screen "look" to meet the requirements of the treatment. For example, I had one chart for traditional orthodontic cases and another for TMJ treatment, which, like Invisalign therapy, is different enough to warrant its own entry system. This customization certainly did make life easier.

Today, Advanced Ortho Systems is ideally positioned to provide treatment chart options because it is one of the few true "online" orthodontic management systems. There are no servers within the orthodontic practice; all the orthodontist needs is a reliable Internet connection and a contract with AOS. The company can easily customize your programs, including your choice of charting systems, because the software resides not in your office, but on remote "server farms". Microsoft has led the way in this arena with the release of Microsoft Office in an online version, greatly facilitating updates and bug repairs.

I commend Dr. Perelmutter for sharing his Aligner Treatment Chart. If you can adapt it to your practice, your Invisalign treatment visits will be even shorter and far less confusing for both staff and doctor.

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The Aligner Treatment Chart

As practitioners worldwide treat more of their adult orthodontic patients with removable plastic appliance systems such as Invisalign,* the need for adequate and efficient documentation takes on more importance. The charts used by most orthodontists, with columns for wire sizes and bracket information, do not necessarily work for aligner treatment. There are no columns in which to track the aligners delivered, attachments placed, or other pertinent information without writing the data by hand in the general notes area of the chart. These shortcomings add time to appointments and may lead to oversights.

If your office still uses paper treatment records, you can simply substitute a customized aligner treatment chart for your fixed appliance chart. If, however, like more than one-third of the orthodontists responding to the 2005 JCO Orthodontic Practice Study,¹ you enter your treatment records by computer, the obstacles may be more daunting. Orthodontic software companies need to develop applications that will accommo-

*Trademark of Align Technologies, 881 Martin Ave., Santa Clara, CA 95050.



Dr. Redmond



Dr. Perelmutter

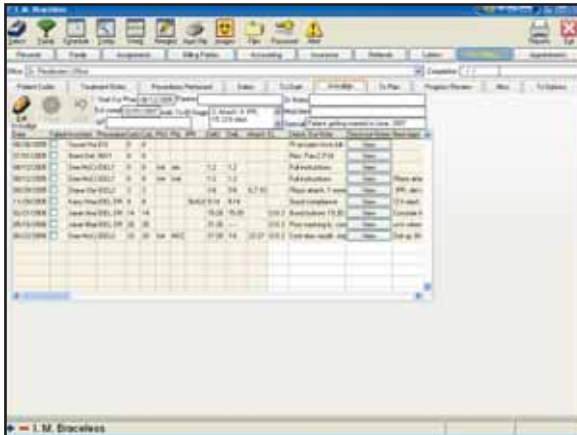


Fig. 1 Customized aligner treatment chart made with Advanced Ortho Systems software.



Fig. 2 Invisalign chart and fixed appliance chart displayed side by side, showing simultaneous code tracking in both windows.

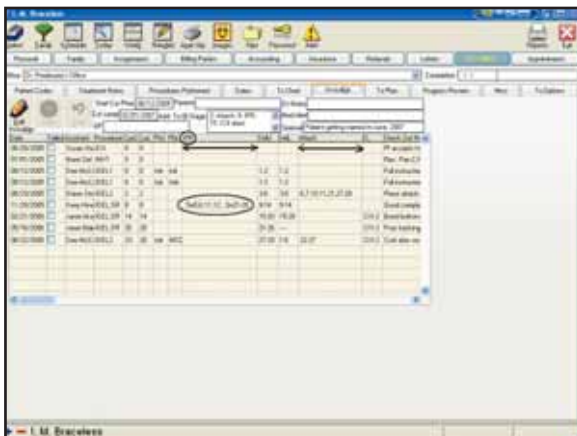


Fig. 3 Interproximal reduction (IPR) and appointment columns expanded on screen.

date multiple treatment charts while allowing system-wide procedure and status tracking.

Invisalign Treatment Chart

The advantage of Advanced Ortho Systems** software is that it lets you customize your data-entry screens. When my practice converted to this program in 2003, we designed an Invisalign treatment chart (Fig. 1), as well as a customized fixed appliance chart, treatment plan screen, exam chart, and dental findings page, to name only a few. An even more important feature is that when our appointment codes and other tracking information are entered into one treatment chart, they are automatically integrated into the other screens (Fig. 2). This is especially helpful in cases with both fixed appliance and Invisalign phases. The AOS software also allows us to expand several columns on one screen, which reduces the chance of overlooking an entry by neglecting to scroll across (Fig. 3).

Our Invisalign chart includes columns to identify each patient's treatment progress at a glance. Since treatment progress often varies from one arch to the other, it is important to separate upper-arch from lower-arch treatment for each parameter. Conveniently, the columns after the procedure code show the aligner stages the patient is currently wearing. If a patient shows up for an appointment wearing stage 12, but should be in stage 15, this information can be valuable in planning future aligner delivery.

The following columns identify various phases of treatment. Although the majority of patients will be in their originally planned series of aligners, some cases require midcourse corrections (MCC), with new impressions and sets of aligners. At times, additional aligners may be fabricated at the end of treatment for detailing, space closure, correction of residual crowding, or other finishing requirements.

Another column records any interproximal reduction (IPR) performed at each appointment

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*Align Technologies, 881 Martin Ave., Santa Clara, CA 95050.

(Fig. 3). Although the use of IPR to create space is not unique to Invisalign cases, the precision is greater than in fixed appliance treatment because the doctor can determine the timing, location, and amount of IPR with the ClinCheck* software, which digitally illustrates all tooth movements in an Invisalign case.

Entries following the IPR column allow us to record the aligner stages delivered to the patient at that appointment, similar to the archwire changes in a fixed appliance case. The next column indicates the placement of any composite attachments for individual tooth movements (Fig. 3). Another column identifies the size and direction of elastics—interarch (Class II, Class III, midline, crossbite) or intra-arch (extrusions, rotations)—which are frequently used in Invisalign cases.

The Checkout Notes section is used for entering additional information regarding poor aligner fit, appliance modifications, patient compliance, and so on (Fig. 4). The View button is a feature of AOS that allows unlimited text entry as needed for each appointment (Fig. 5). The Next Appointment column, which can be expanded using the scroll bar at the bottom of the screen, is used to describe the plan for the patient’s next visit (Fig. 6). Another special feature that we often employ is the drop-down menu for frequently repeated entries (Fig. 7).

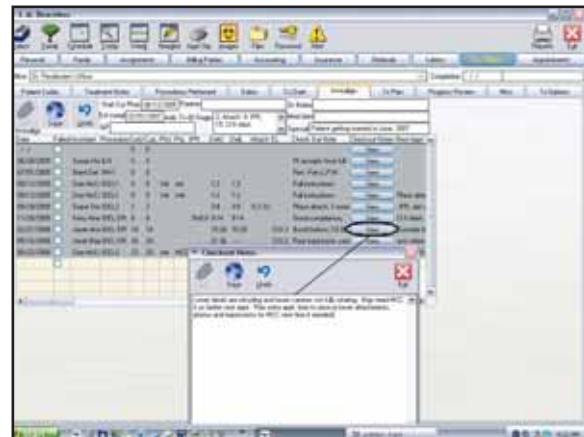


Fig. 5 View button allows unlimited text entry.

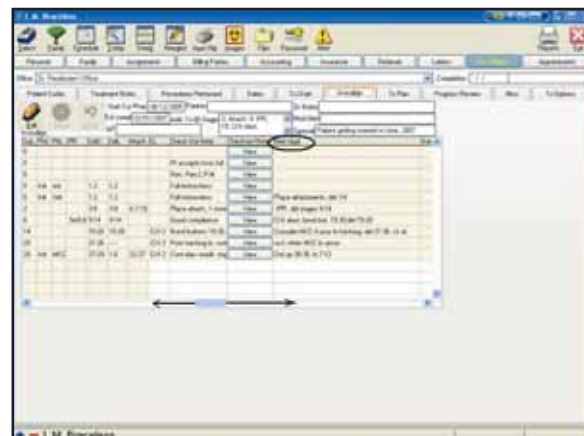


Fig. 6 Next Appointment column describes plans for succeeding visits.

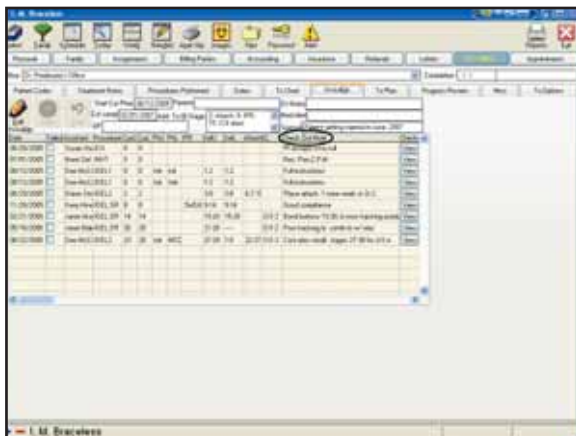


Fig. 4 Checkout Notes column shows additional information about each appointment.

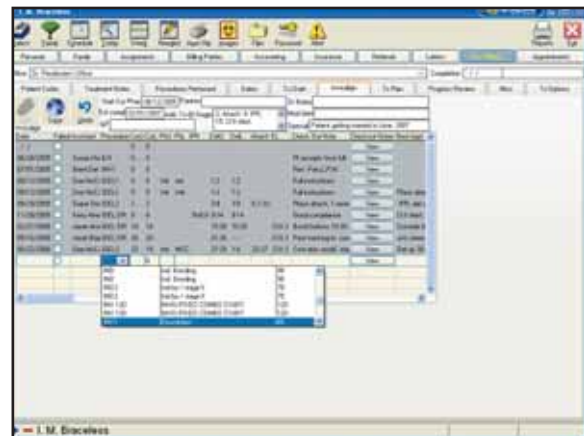


Fig. 7 Drop-down menus display choices of frequent entries.

Conclusion

Our customized Invisalign treatment chart allows us to more precisely document every appointment and streamline each patient's visit. The software's ability to minimize confusion is a practice builder, while the time saved during appointments is a profit builder. Considering the extra setup and manufacturing costs associated with laboratory-fabricated aligners, the only way to maintain reasonable fees for these patients is by improving chairside efficiency. The customized Invisalign treatment chart is one step toward that goal.

REFERENCES

1. Keim, R.G.; Gottlieb, E.L.; Nelson, A.H.; and Vogels, D.S. III: 2005 JCO Orthodontic Practice Study, Part 1: Trends, *J. Clin. Orthod.* 39:641-650, 2005.

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