



Board-certified orthodontist
Dr. Barry Benton is one of the youngest practicing orthodontists to serve as a diplomat on the American Board of Orthodontics.

With his father, they run 2 practices in rural Alabama and monitor more than 1,200 patients with DentalMonitoring.

Introduction

Since implementing DentalMonitoring in 2020, we have seen firsthand how our practice has improved with keeping patients on track, catching emergencies and having no surprises when a patient walks in for an appointment. I've always had a knack for all things tech, so when I was asked to participate in the pilot program for DM Insights, I was curious and excited to see what it would bring to practice operations. DM Insights is a unique data analysis platform with the potential to bridge the data gap in the industry. The platform is designed for those already using DentalMonitoring's remote monitoring software, which provides automated reports on a patient's oral condition based on scans patients send between visits to the practice.

Using DM Insights, we have been able to dive into clinical data to make minor adjustments for major clinical gains. This carries the potential to maximize practice efficiency with improved treatment outcomes and a more standardized treatment process. By focusing on just one data point, we were able to easily remedy a clinical inefficiency in the bracket bonding process.

High Rates of Bracket Breakage at a Specific Tooth.

The pilot program took place over a 4-month period beginning in Spring 2022. We use self-ligating bracket systems and treat a majority of braces patients — around 800. About $\frac{2}{3}$ of our patients are teens. They use the DentalMonitoring app on their smartphone along with the specialized ScanBox^{PRO} hardware to regularly send intraoral scans to the practice.

DentalMonitoring's software and AI is capable of tracking more than 130 intraoral observations based on oral health, tooth movement, fixed appliances activity and removable appliances activity. An automated scan report is then sent to the practice with customizable observations doctors can select to track.

Figure 1

Bracket debonding - Braces monitoring protocol (Damon/OrthoClassic) - Year (last 365 days)

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DM Insights has been absolutely instrumental in evaluating this data to identify areas of improvement.

DM Insights analyzes all patient scan data retroactively, providing us with data from the very start of a patient's treatment. As we looked at our practice data, we noticed a statistical outlier: Over a 1-year period, the lower right 6 tooth (LR6) experienced double the rate of bracket debonding of any other tooth, with 51 occurrences detected (Figure 1). The amount of bracket breakage of the remaining 27 teeth varied from 8 to 34 occurrences, averaging at 15 occurrences.

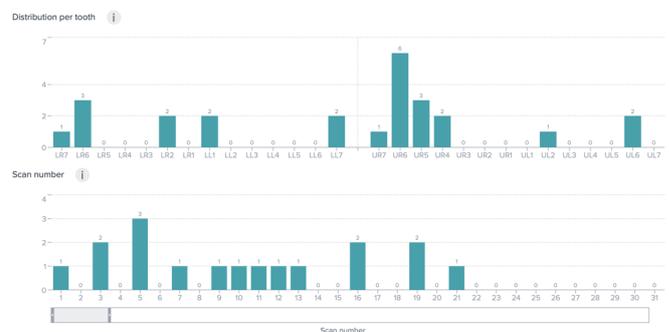
Reviewing this data, we revisited our technique for the bonding process. What we found was fascinating: something as simple as repositioning the chair we sat in allowed us to perform the procedure from a better angle and apply just the right amount of pressure to ensure the LR6 was bonding well.

Over time, breakage rates decreased across the board, and the LR6 breakage rate was reduced to fall in line with normal levels based on the average debonding rates of the other teeth.

Figure 2

Bracket debonding - Braces monitoring protocol (Damon/OrthoClassic) - Month (last 30 days)

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Conclusion

We took advantage of clinical data provided by DM Insights to identify a high rate of bracket breakage that would have otherwise gone unnoticed and untreated. This individual case highlights how data-backed analysis can lead to improved clinical outcomes across the board. By using both DentalMonitoring and DM Insights to transform our workflow, we have optimized our in-person, saving on average 3-4 appointments per patient, improved the quality of care and enhanced training.



DentalMonitoring
Making Dentistry Smarter