

Article • A Review of Patient Care Platforms for Vision Therapy

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ABSTRACT

Currently, there are three platforms that can be used for home therapy logs and patient education: Binovi, NeuroVisual Tracker, and Anteo. Some of these platforms also allow for home testing and computer-aided therapy modules. All three require doctor-prescribed therapy. These apps can be used to aid in patient weekly visits, and some doctors/therapists choose to use them for remote/distance therapy.

Keywords: Anteo, Binovi, NeuroVisual Tracker, remote vision therapy, vision therapy

Binovi

The Binovi platform was designed to help vision therapy (VT) teams move toward a paperless process for the delivery of home therapy activities, therapist training, education, and the planning of weekly in-office vision therapy. Binovi requires the use of two applications: Binovi Pro for the doctors and therapists

and Binovi Coach for the patient. Those practitioners offering VT know that compliance can be difficult with home treatment options. It can be difficult to obtain optimal compliance, and oftentimes, simple barriers can deter a family from following a plan. Binovi's applications are intended to reduce some of the barriers. The platform makes use of engaging videos, instructions, and log sheets to help facilitate home therapy.

In order for an office to use the Binovi Pro application, the office must use an iPad. Binovi Pro allows for the therapist or treating doctor to manage home therapy. The office dashboard is displayed in Figure 1. Each patient has a unique plan. The home screen lists all of the patients within the given practice. Adding a patient is simple, and after the form is complete, the patient is active (Figure 2). Each name has a black circle with the patient's first initial. The circle provides a quick view of patient compliance and duration. The outer blue ring represents how far along a patient is in the program. For example, a patient 20 weeks into a 40-week program of care would have half of the outermost ring around the circle. The inner red ring indicates whether the patient has logged in or not (Figure 3).

A patient can be selected from the list. Once selected, a patient-specific profile page appears (Figure 4). The profile page gives an overview of sessions and total time. The therapist/doctor can then select one of the circles that represents a week and see what was assigned in that specific week. The profile page also lists the average time for sessions and the duration of the last session. On the left column, there is a menu. The patient's home therapy plan can be edited. Once in edit mode, a list of available activities appears. Binovi has a large library of premade activities. Each procedure that has been provided has an overall detail tab. The therapy activity is given a category or categories. A purpose for each particular activity is provided. The materials needed are listed on this page, as well as a description. The premade activities also come with photos and a professional video demonstration. If an activity is unavailable, the doctor or therapist can upload their own and type in procedure criteria, such as purpose, instructions,

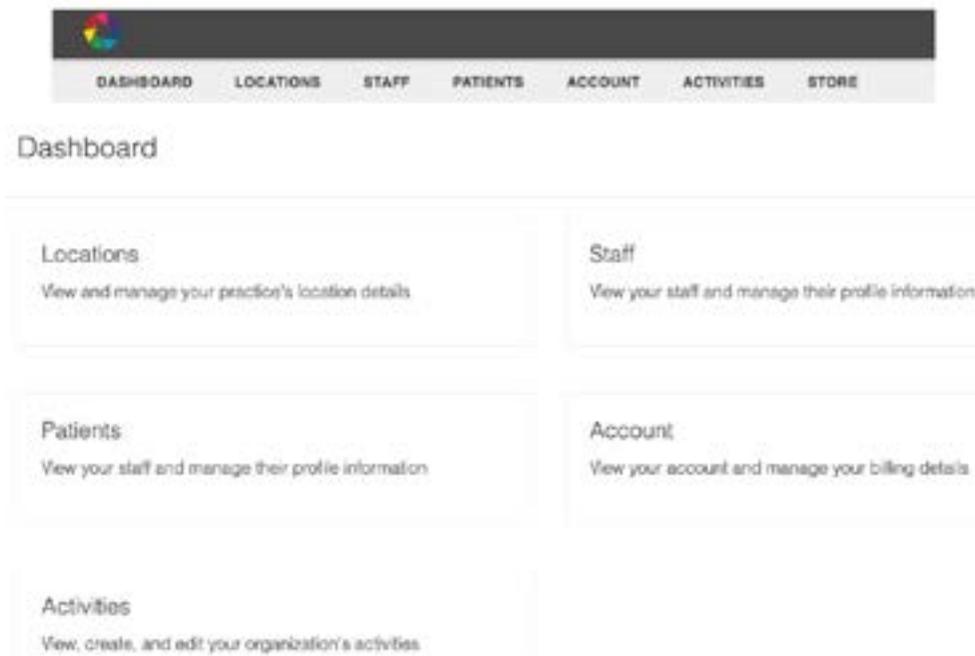


Figure 1. The Binovi app dashboard (doctor/therapist view)

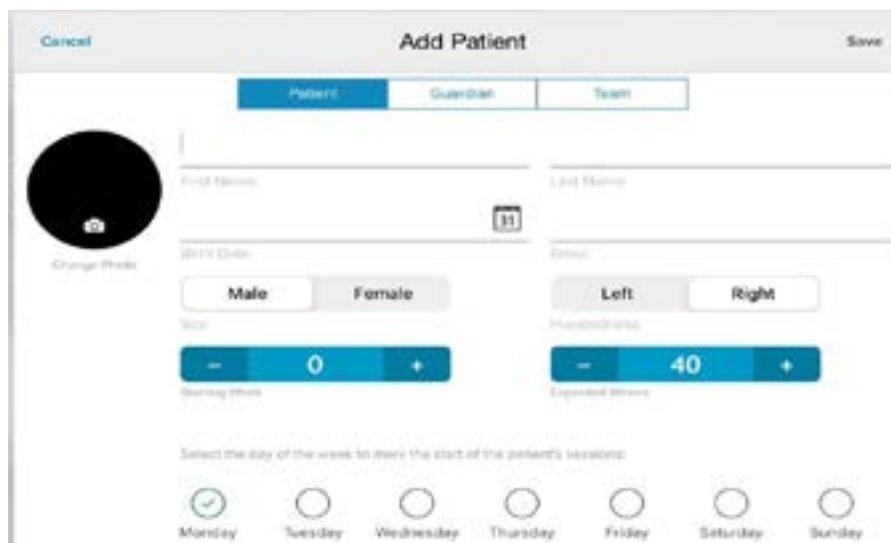


Figure 2. Adding a patient in Binovi



Figure 3. Ring representation of progress in the Binovi therapy program



Figure 4. Patient profile

and materials needed. The therapist can select any activities from a pre-populated list or add custom or office-specific activities. Variables can be changed, such as the length of the therapy procedure and the number of repetitions. Notes can also be made by the therapist to the patient. The left column has a menu option for internal notes and messages. The patient can send messages in a HIPAA-compliant manner to the therapist or doctor.

Binovi Pro plots compliance in a chart form. The practitioner is able to see how often the patient is doing the home therapy. The patient can select from a spectrum of emojis to represent how they felt during specific activities.

Binovi Coach is the patient platform. A user has to be invited by a treating therapist or doctor. Registration is simple, and an email invitation directly sends the patient to the app store to download the application. Once in the database, the patient selects the home therapy assigned to them. An example of the patient home screen on the app can be seen in Figure 5. Directions for each activity are provided, as well as demonstration videos. A timer and metronome are provided within the app for activities in which the

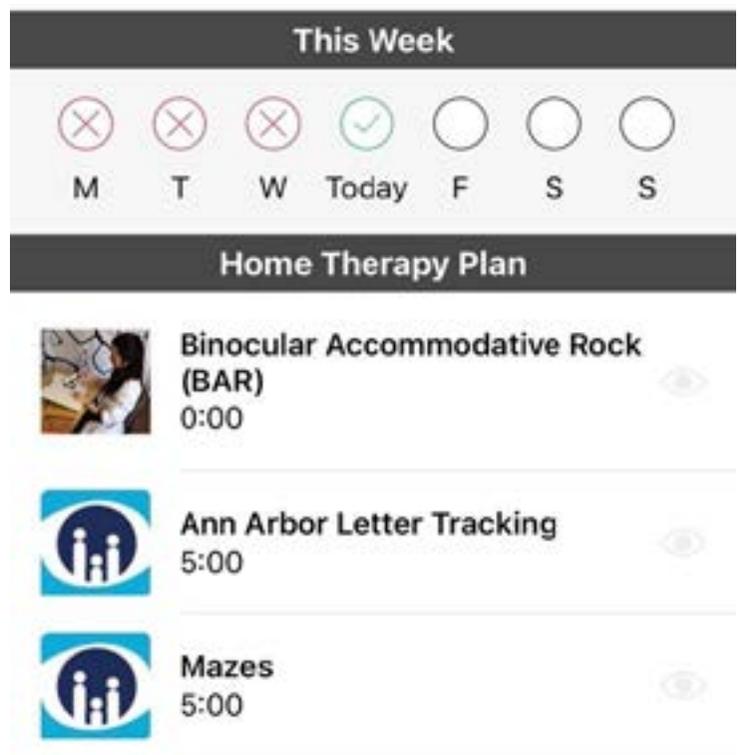


Figure 5. Patient home screen (Binovi Coach)

doctor or therapist chooses to assign one. The timer is particularly useful for patients and parents, as it allows them to keep track of how long each activity lasts.

The Binovi platform can be a great tool for remote therapy planning, as well as a tool to increase compliance by limiting barriers. Since the therapy sessions at home are automatically recorded, once the patient has started them, there is less risk of a patient reporting that they had high compliance but forgot to write it down. The application also eliminates the need for lengthy handouts, which are environmentally unfriendly, that can be left lying around or in a binder in a disorganized manner.

Activities assigned to the patient for a particular week are easy to access. However, although written instructions are available to the patient, it can be difficult for patients to find them within the program. Patients can view photos and videos of activities, if they exist. Patients can log activities at home in two ways. They can open the application and begin therapy, and Binovi will track the time worked on each activity. Binovi offers another option by which patients can log the therapy after the fact. A patient does not need the application open during the home therapy session to do this. They can simply indicate how much time was devoted to each activity and how each activity felt.

Binovi also has a doctor-education component. Modules include Sanet Seminars and Primitive Reflex Training with Patty Andrich. For an extra fee, these modules are available to clinics.

Anteo

Anteo is a web-based platform that was designed to expand your practice in-office and remotely. Anteo can be used by patients through the company's app or web-based program. Currently, doctors only have access to the web-based program. The patient app is available in both the Apple and Google stores. Anteo's platform is intended to streamline home VT and make remote VT more accessible. Patients can conveniently follow their treatment plan with homework, reminders, education, and tracking between office visits. Anteo also provides tools to create your own customizable symptom questionnaire to measure patient progress.

Doctors currently must use a web-based browser to add or modify a patient's account. The dashboard can be seen in Figure 6. The main menu allows an office to choose patients and programs and to view the library of activities. In the patient module, patients are categorized as active, invited, or inactive.

The inactive patients are those designated as such by the practice or those who were invited but who did not complete the registration process within a reasonable time.

Within the patient module, the doctor can see a patient's progress in a weekly calendar (Figure 7), edit the care plan, view any care notes, and view any responses to symptom and quality-of-life questionnaires. Activities can be added weekly, or a program of care can be designed in advance and patients added to one of the programs. Modifications can be made weekly. A sample patient profile page can be seen in Figure 8. The activities assigned in previous weeks are collapsed, and a toggle button allows the doctor or therapist to see the specific activities assigned that week. As opposed to Binovi, the entire Anteo library also appears on this page on the right-hand side (Figure 9). When adding activities, a pop-up window appears with specifics such as repetitions, duration, equipment, etc. (Figure 10).

An email invitation is sent to the patient. Registration is easy for both patient and doctor and can be completed online or in the app. Once the patient is enrolled, an email notification is sent to

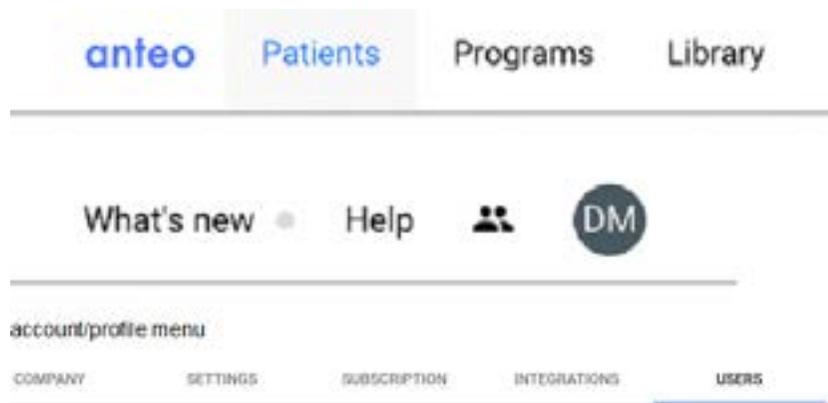


Figure 6. Anteo dashboard (doctor's view)

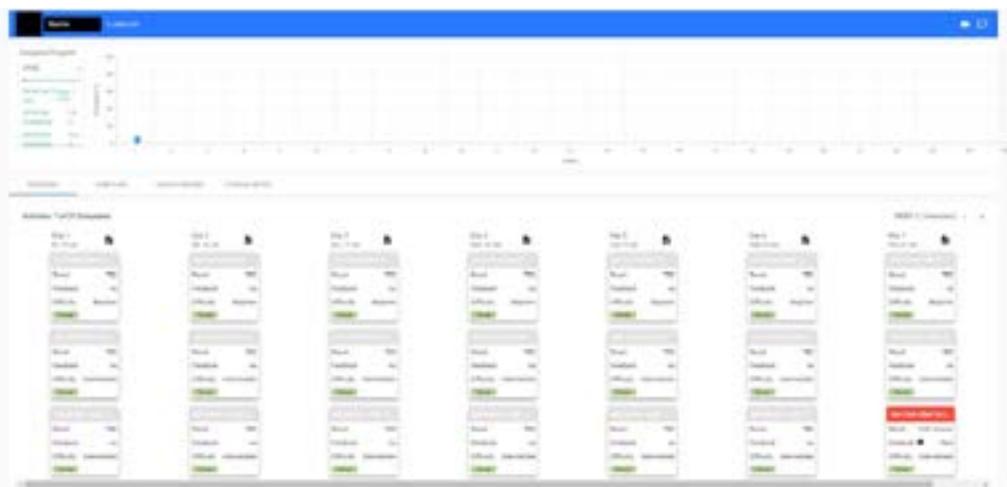


Figure 7. Anteo calendar view of activities

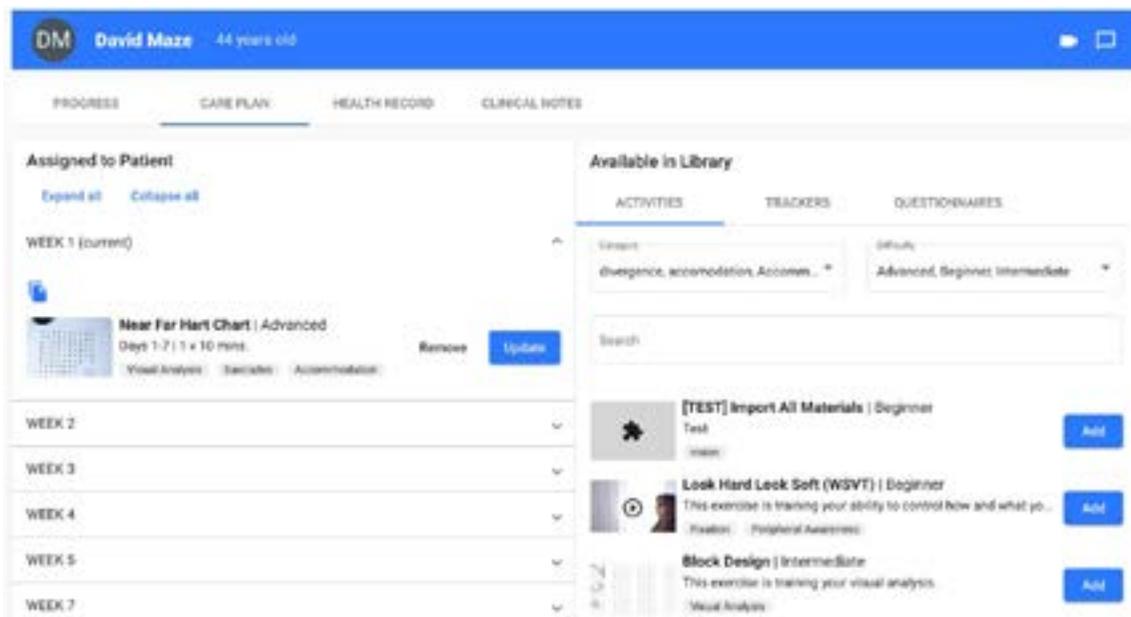


Figure 8. Patient profile page in Anteo

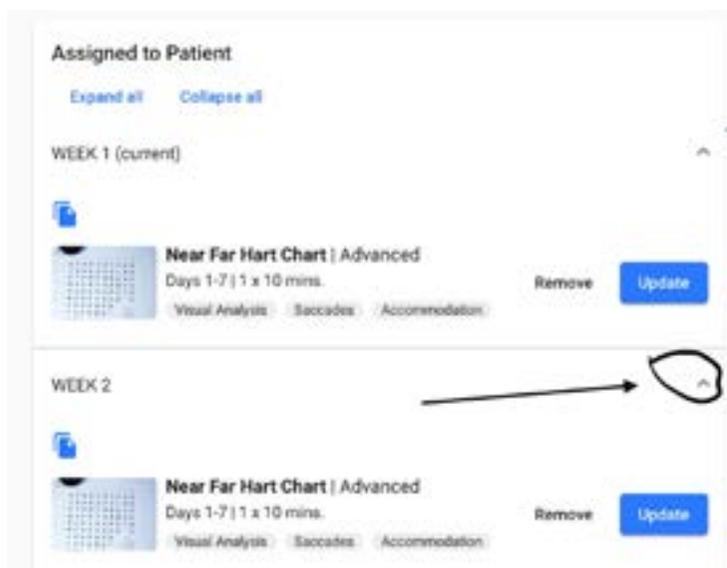


Figure 9. Expansion of weeks to view activities assigned. Also note library available on patient profile page to add to patient's program.

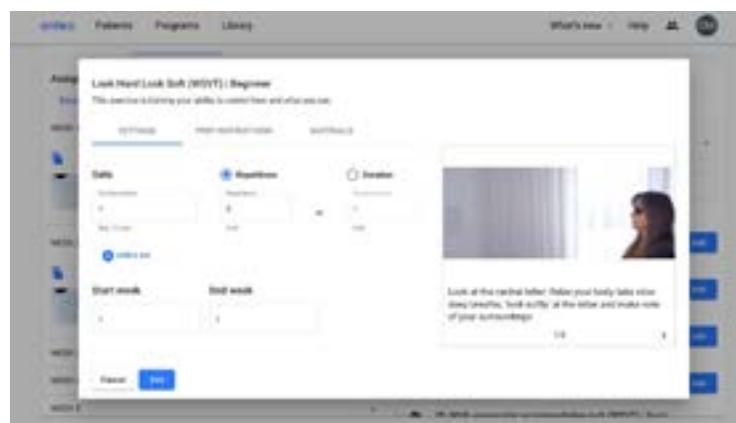


Figure 10. Adding an activity in Anteo

the doctor's office. Anteo comes with a vast library of activities and videos. Each practice can create a customized activity and easily upload a video and photos.

Parents and patients can view the activities assigned to them for that particular week, as well as view overall progress and compliance. Each activity has the written instructions and any accompanying videos. Patients can log therapy in a web browser or by using the app. However, in order for a session to count, the phone must not be "asleep," and the application must be open with the timer running. This can be problematic if a parent or patient is engaged in therapy but wants to log the home progress with the app. After each activity, patients can rate an activity as easy, moderate, or hard and leave notes for the therapist or doctor.

Anteo also has a large library of references related to efficacy of therapy, treatment options, and other vision therapy articles. Anteo is unique in that it offers pre-programmed grids that you can create for your clinic in addition to manually programming home activities. Program content will be automatically made available to patients based on the schedule that you define. However, deviating from the pre-programmed grids can be problematic, as changing one week affects programming for future weeks.

NeuroVisual Tracker (NVT)

NVT is a web-based platform. Doctors and patients log in with a web browser that is also compatible with a tablet browser (e.g., Safari). The interface is easy to interact with, and contrast is customizable depending on your patient's visual sensitivities. A top menu allows the user to edit information, customize exercises, print sheets, and read texts, and it provides access to archived users.



Figure 11. Home page or dashboard of NVT

× Invite new user

Invite a client to use Neurovisual Trainer. They will be sent an email with a link to create an account on Neurovisual Trainer. They may also use the invitation code provided.

This user will only count towards usage for billing purposes when they accept the invitation and create their account.

Don't use this form to invite staff or administrative users, instead use the "STAFF" menu item found under "MY CLINIC".

First Name

Last Initial

Email

Message

Figure 12. Invitation to new users (doctor's view)

An office can upload and manage custom exercises with videos, images, and text. These exercises will be available to all office users and can be assigned just like interactive exercises. NVT allows clinics to use remote therapy services by assigning home therapy activities, as well as diagnostic tools and computerized therapy. Diagnostic tools are located under the "exercises" tab. This can be seen on the homepage/dashboard of NVT in Figure 11.

Similar to Anteo and Binovi, a user has to be invited by a treating therapist or doctor (Figure 12). Registration is simple with an email invitation to set up an account. Once in the database, the patient will see the home therapy activities assigned to them. Directions for each activity are provided, as well as demonstration videos. A timer and metronome are provided for activities when the doctor or therapist chooses to assign one. After the patient completes the activity, a window pops up for patients to give feedback and comments. As patients practice their home activities, it is common for patients to memorize the Hart chart or other letter charts. Consequently, NVT has created customizable charts to prevent memorization.

Of the three reviewed, NVT seems to be the only one to offer computerized therapy within the software. All interactive therapy is customizable, with the ability

to track progress over time. The online activities and tests are divided into six categories: anti-suppression, gross & fine motor, oculomotor, diagnostic testing, vergence activities (base-in and base-out), and visual perceptual testing, which also includes central/peripheral activities. NVT even has "moving window" and reading-related activities similar to VisionBuilder. Currently, the only computerized diagnostic testing is for stereoacuity. A great tool that seems to stand alone in NVT is the vergence activities. Red/green glasses or red/blue glasses are required. The program can be customized to allow for a red lens on either eye. Calibration simply uses the size of a standard credit card to determine screen width. NVT will be expanding their computerized therapy library to include free fusion.

Another feature unique to NVT is the ability to view the application as the patient sees it. Individual patients' home screens can be viewed by going to the doctor homepage, going to the desired patient you would like to view, and clicking the orange icon on the right. This feature can make guiding parents through the application easier.

NVT also has a videos section, which includes a wide range of explanations, from binocular accommodative rock to motor equivalents, syntonics, and primitive reflexes.

Overall Comparison

The use of technology in vision therapy is essential for many practitioners. Tools to eliminate paper and to create a central hub for documentation, assignments, and patient care can help offices become more efficient and effective with treatment. All three of these platforms use different techniques to provide step-by-step instructions for home activities, to encourage patient compliance at home, and to encourage communication between patients and their therapist or doctor. Table 1 shows a side-by-side comparison of each of these applications. Each has its own advantages and disadvantages. Binovi used professional actors on a set with professional

lighting to create their videos. Anteo seems to have the largest library of activities and allows the office to create programs of care, minimizing the day-to-day assignment management. NVT uses vergence training and phoria measurement, eliminating the need for other software such as HTS or VisionBuilder. The free trials are a great way of seeing which software works best with your therapy setup. Anteo, Binovi, and NVT were helpful and responsive with questions and open to suggestions for improvement. Most are understanding if a trial period is not long enough and will be flexible to help you make your final decision as to what platform works best for you and your patients.

Table 1. Comparison of the Therapy Software

	Anteo	Binovi	NeuroVisual Tracker
Patient App	X	X	
Doctor App		X	
Videos for VT Activities	X	X	X
Progress Tracker	X	X	X
Computer Vergence Training			X
Pre-programmed Grids	X		
Chat/Video Feature	X	X	
Patient Feedback on Activities	X	X	X

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