

A Personal Perspective on Developing an Online Remote VT System

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INTRODUCTION

Being nestled within interior British Columbia, Canada surrounded by lakes, mountains and wide open spaces has lifestyle benefits that are difficult to match anywhere in the world. Getting away from it all is easily achievable, allowing inhabitants of this beautiful area to separate from the hustle and bustle of daily life on a moment's notice. Providing Vision Therapy in a region such as this however presents logistical challenges if your goal is to ensure that anyone who visits your clinic for evaluation has access to weekly training to better both their visual systems and lives.

These challenges have been accentuated by COVID-19, the story of which is still being written. Our approach has been guided in part by the Stockdale Paradox which is well-summarized by Jim Collins in his book, *Good to*

Great.¹ The name refers to Admiral Stockdale, the highest-ranking United States military officer in a prisoner-of-war camp during the height of the Vietnam War. Stockdale did his best to create conditions that would increase the number of soldiers who would survive unbroken. He instituted strategies to help people make the best of their circumstances and to maximize communication.

Interviewed about his bleak conditions and the uncertainty of his survival, Admiral Stockdale told Collins: "I never lost faith in the end of the story. I never doubted not only that I would get out, but also that I would prevail in the end and turn the experience into the defining event of my life, which in retrospect, I would not trade."

Paradoxically, the people who had the most difficult time surviving were the unrealistic optimists. Admiral Stockdale added: "This is a very important lesson. You must never confuse faith that you will prevail in the end – which you can never afford to lose – with the discipline to confront the most brutal facts of your current reality, whatever they might be."

COVID-19 has thrust many optometric vision therapy providers into new and uncharted territory, essentially holding patients and staff hostage to the uncertainties created by this opportunistic infectious disease. With the restrictions on providing in-office therapy, transitioning a full and active in-office client base to online training would test the resilience of just about any team – with ours certainly not exempt. Fortunately, we have been providing high-quality online vision therapy services for the past four years which has made this transition more manageable than it would have been otherwise. With an encachment area of 125,000 square kilometres, we have previously explored and investigated nearly every tool on the market for providing remote services. The initial phases of COVID-19 accelerated this process of research and implementation. We do not want to overwhelm readers with an exhaustive list and analysis of tools we have

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used and experiments that have gone by the wayside. Our aim is to provide general guidelines on what has worked well in order to build confidence in those providers who are still hesitant to take the leap into remote vision therapy.

Rising to the Challenges of Providing Remote VT

We suggest a variation on a component of Pareto's Principle, namely the 80/20 rule, to serve as a useful construct. Do not think of remote vision therapy as equivalent to in-office therapy services. Remote VT is decidedly different, so set a target goal at the outset that you want to replicate 80% of the in-office experience, and to capture 80% of your therapy patient base. Although you will find that you need to make certain compromises initially, ultimately there may actually be benefits to providing therapy successfully in the home environment. Therefore, in developing your model of remote VT systems, consider how you would answer these three key questions:

- 1) What do 80% of my patients need in the way of tools and software?
- 2) How can I simply and reliably connect with 80% of my patients remotely?
- 3) How can I effectively connect with and educate my team?

Once you have answered these three core questions, a well-trained team can hit the ground running and use ingenuity, experience and instincts to close the 20% gap. Let's look at these areas in a bit more detail.

Connecting with Patients

Depending on your location and internet stability, you may find that certain tools for remote connectivity are better than others. HIPPA or PIPEDA compliance are key. However, you also want to factor in ease of user adoption with any program that you choose. While we don't strongly advocate for any one of the plethora of tools for video consultation, we

Table 1. Characteristics of patients enrolled in the telehealth service

Patient characteristics	n (%)
Age (years)	
5-10	26 (28.9%)
11-20	11 (12.2%)
21-30	7 (7.8%)
>30: 46	46 (51.1%)
Gender	
Male	39 (43.3%)
Female	51 (56.7%)
Non-strabismic vision disorders*	
Accommodative Dysfunction	
Accommodative excess	36 (40.0%)
Vergence Dysfunction: 21 (23.3%)	
Convergence insufficiency	13 (14.4%)
Convergence excess	8 (8.9%)
Oculomotor Dysfunction: 23 (25.6%)	23 (25.5%)
Strabismic vision disorders	
Exotropia, Intermittent	8 (8.9%)
Esotropia, Constant	2 (2.2%)

* Some patients had more than one diagnosis

would encourage assessing whether meetings can be sent easily and instantaneously to any email account, and whether there is a simple and reliable option to share your screen. From there, the only limit to what can be achieved will be your own creativity. The group *VTODs on Facebook*, as well as the *Remote VT Forum on Facebook*, have useful discussions sharing experiences with various patient communication platforms.

Connecting with and Educating the Team

An essential aspect of providing remote patient care, particularly at times when it becomes the predominant mode of delivery in your practice, is how your clinic staff stays in contact with one another. Quick messaging, document storage and the ability to assign and monitor tasks are critical to ensuring a steady and productive work flow. Our team has successfully used Basecamp (www.basecamp.com) as our corporation's organizational hub for a number

of years – simple to use, and vastly superior to disorganized email threads and office notes. Basecamp is certainly not the only option available mind you – there are many platforms available for this purpose. A quick search of “remote team tools” will yield dozens of great options that can be explored and catered to nearly any budget.

Educational opportunities are flooding the market now more than ever – making this a great time to learn! Perusal of our profession’s continuing education organizations right now will present you with an overwhelming number of options for distance-based learning. Colleges of Optometry have also become active with online continuing education offerings. If you or your team wants to avail yourselves of continuing education opportunities, there are listings posted through VTODs on Facebook. As an example, the [iHeartVT.org](https://www.iHeartVT.org) offerings are very well done, and OEP has moved its educational seminars online.

VT Tools and Kits

At our clinic we are ardent supporters of “kit-based care”, with this recommendation extending to both in-office and remote patients. Whether you follow a grid system, or a categorized treatment flow, a few hours of brainstorming should easily allow clinics to develop a cost-effective collection of supplies and materials that will be appropriate for all patients. For example, downloadable print materials can be used as part of the patient’s low tech supplies at home (see Figure 1 and Figure 2). A link on your website can be provided to the patient, as has been added to Dr. Rollett’s site for Figures 1 and 2: <https://bit.ly/VTTools>

While there is certainly room for individualization based on diagnoses, try to focus on bigger picture tools that can be used in a variety of different ways for a wide array of clients. The initial presentation of a kit cements the perception of professionalism and confidence in a proposed care regimen and

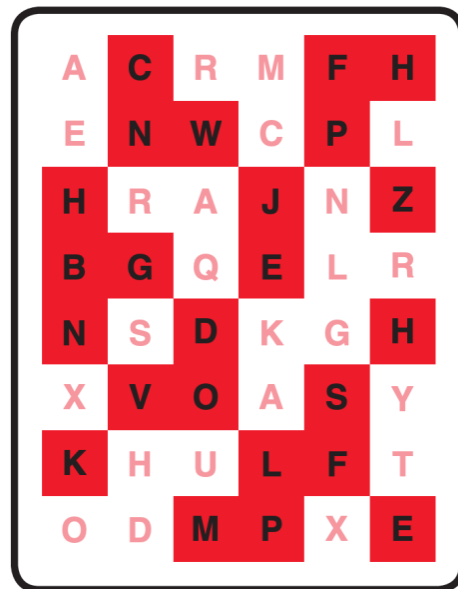


Figure 1: Small size anaglyphic letter chart.

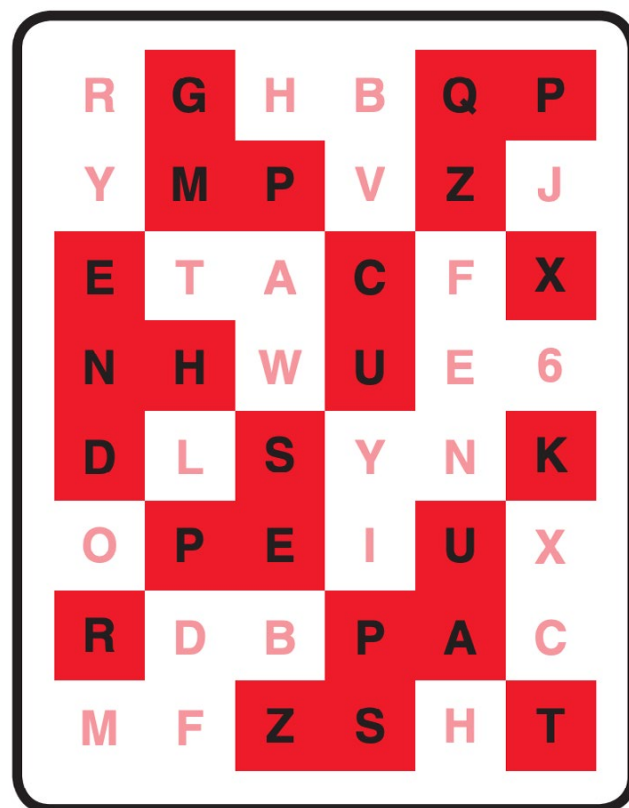


Figure 2: Small size anaglyphic letter chart.

also aids greatly with inventory management and training of new team members. There is nothing worse than asking a remote patient to pull out a particular tool, only to learn that it’s not there! Confidence in your approach will immediately waiver if you as a provider don’t know exactly what the patient on the other end of the call has directly on hand. Bernell

Tools & Kits

OVT Approach

Market Options & Considerations

Red/Green Basic Kit
This is what it comes with:

OKANAGAN VISIONTHERAPY OPTOMETRY

iheartVT

Paul Rollett

Figure 3: iHeartVT presentation by Dr. Rollett showing OVT materials.

Tools & Kits

OVT Approach

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1. OVT Branded Homework Bag
2. Green Folder (with VT's business card and OVT rack card)
3. Box Container for loaned gear
4. Black Dry Fine Point Marker
5. **Poly Project clear page cover** (to write on and erase)
6. Patch
7. Flipper: Under 40yo: **0.75 & 2.00**
8. Brock String (**Cara & Co Beads**)
9. Bean Bag
10. **NeuroVisual Trainer Glasses & AmblyoPlay** (as needed)
11. Marsden Ball & Hook
12. Peripheral Awareness Card
13. Prisms: **4D & 12D**
14. Red/Green BAR Readers (x2)
15. Red/Green Glasses
16. Anaglyph Image Charts (x2)
17. Sports Fixation Card
18. Syntonic: 2 glasses & Penlight
19. Foam Shapes (Parquetry)
20. Printables (**NeuroVisual Trainer**)

OKANAGAN VISIONTHERAPY OPTOMETRY

iheartVT

Paul Rollett

Figure 4: iHeartVT presentation by Dr. Rollett showing list of OVT procedures.

(bernell.com) and Emergent (emergentvt.com) have been leading commercial suppliers of kit-based materials.

For further reference, we encourage you to review Dr. Rollett's presentation during the iHeartVT program (www.iHeartVT.org) on April 8, 2020 titled *Online VT – Tools & Tips*

for Managing Online Vision Therapy Patients (see Figures 3, 4, and 5).

Evolution of Online VT Software

Along with tools and materials, reliable VT-specific software that patients can access at home, and that practitioners can monitor

Sessions

OVT Approach

Neurovisual Trainer
by OcuDigital

Assigned to: Amir Karim

Exercise instructions:
Hi Paul!

Please work through the prescribe activities in order:

For video exercises, please first view the videos provided and modify slightly based on my notes

- Window Reading
- See 3 Coins - High Level
- Monocular Prism Jump
- Ball Games - Circles Around Head

Market Options & Considerations

Assigned: Body Life Level 3 Contrastual Measurement

PURPOSE

To measure a level of contrast adaptation and visual processing

PROCEDURE

1. The user will be presented with a series of images of a person's face. The user will be asked to identify the person's face. The user will be asked to identify the person's face. The user will be asked to identify the person's face.

31:37

Speed

Figure 5: iHeartVT presentation by Dr. Rollett featuring NeuroVisual Trainer approach with Binovi and VividVision considerations.

remotely, is the second major requirement for remote or in-office care. One of us (Dr. Paul Rollett) had been beta testing an online program NeuroVisual Trainer developed by the other (Dr. Cameron McCrodan) for several months prior to the pandemic. NeuroVisual Trainer was born out of a conversation with a patient (of CM) several years ago who was frustrated with the software in use at that time. With a background in the tech industry, he accepted the doctor's invitation, who had a background in engineering, to design something better. Many people in the tech industry want to replace in-person interactions with computer-based treatments. The patient undertook the challenge of creating a system that was accessible, affordable, and met patient expectations, while being responsive to feedback from early adopting vision therapy doctors, therapists, and patients. With input from beta testers, we anticipated a launch of our software in the winter of 2020.

COVID-19 changed everything. With offices closed, some software companies were reducing fees to help people work from

home. It struck us that we were sitting on a tool that could potentially help optometric offices survive the closure and maintain patient progress. Although the software might still contain some pre-launch operational bugs, we determined that it was worth the risk if it helped even just a couple of clinics.

From an altruistic standpoint, we decided that it was important to launch the software at no charge to doctors as a way of supporting our colleagues and community during hard times. Realizing that many clinics wouldn't have the ability to record their own videos due to social distancing, we made ours available to everyone. One of our testing sites (Okanagan Vision Therapy owned by PR) also donated their videos to the cause. Functionally, these videos have the ability to be reviewed by team members, but more importantly, are assignable directly to patients added to the system. In addition to assigning from the growing database of video content, NeuroVisual Trainer allows Vision Therapists and VTOD's to assign interactive exercises (ie: anti-suppression, gross and fine motor,

oculomotor, vergence and visual perceptual activities) directly to those enrolled. Monitoring of results and patient compliance is easily viewable via the user friendly and intuitive web-based platform.

We launched at the end of March and our plan is to maintain free licenses until August 1, or longer for clinics that remain closed due to COVID-19. We are also working on a system to help developing countries and charitable clinics.

Challenges in Developing Online Software

Along the way there have been many challenges that have forced us to learn and adapt. The initial launch always brings bugs that can potentially derail the project and that requires fortitude to fix. Almost everything takes longer and requires more cost to the developers than initially planned. COVID-19 has intensified the rate of development of analogous products, but we view that as a positive sign. Our philosophy is that healthy competition breeds innovation, and demands that developers are responsive, dependable, professional, and reliable.

With the considerable feedback that we have been receiving, the app is evolving quickly. *The primary purpose of NeuroVisual Trainer will always be supporting in-office VT, but the pandemic has provided challenges and opportunities to help facilitate remote VT.* From an operational standpoint we continue to work on the resolution of stimuli as well as on testing protocols to help with progress checks. As offices progress toward a pre-pandemic level of care, we anticipate increased feedback from doctors, therapists and patients collaborating on the optimal balance between in-office and remote VT.

CONCLUSION

COVID-19 thrust us into a position of beginning full scale implementation of online software with all of our patients. Comprised of interactive activities, vergence training and assignable video activities, NeuroVisual

Trainer has been a highly effective approach in keeping our patients motivated, confident, and progressing ever forward.

The ability for NeuroVisual Trainer to store and easily provide patients access to internal worksheets also allows for much greater time management during what can be rather full online sessions. Management of supplies, tools, teams and education are the key factors guiding success, and we are fortunate to have many options at our disposal to optimize experience in all of these areas. We have also been able to design efficient and informative remote progress checks using this software. This has gone a long way toward keeping patients engaged and well-guided throughout the process.

Pandemics of this nature always invite a search for silver linings. From the standpoint of merging Telehealth with vision therapy, it is hard to imagine a more prime situation for the development and incubation of tools to help both remote and in-office patients alike. As the next few months progress ever forward, we are excited to see how our wonderful profession continues to evolve and come together to emerge stronger than ever following these very unique times.

Disclosure

Dr. Cameron McCrodan has a financial interest in NeuroVisual Trainer. Dr. Paul Rollett has served as a Beta-tester for NeuroVisual Trainer.

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1. Collins J. Good to Great. New York: HarperCollins Publishers, 2001. <https://bit.ly/HC-gtg>



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