Please silence all mobile devices and remove items from chairs so others can sit. Unauthorized recording of this session is prohibited.
Disclosure Statement:
Nothing to disclose
Project PAVE

• Providing Access to the Visual Environment
• Founded by Dr. Ann Corn in 1992
• Vanderbilt University Peabody College of Education and Human Development
Support

- Tennessee Department of Education
- Lions Clubs of Tennessee
- Vanderbilt University Medical Center, Department of Ophthalmology and Visual Sciences
- Tennessee School for the Blind
What is a TVI?

- Teacher of Students with Visual Impairments
- (not necessarily) Orientation and Mobility Specialist
- M.Ed.
- Vanderbilt Program

- Provide instruction through appropriate modifications
- Complete assessments (FVA, LMA, etc.)
- Read and write Braille
ACVREP

Academy for Certification of Vision Rehabilitation and Education Professionals

- CLVT – Certified Low Vision Therapist
- COMS – Certified Orientation and Mobility Specialist
- CVRT – Certified Vision Rehabilitation Therapist
- CATIS – Certified Assistive Technology Instructional Specialist for People with Visual Impairments
Historical Model

- Referrals from school systems/TVI
- Outside OD low vision specialists in conference with PhD PI
- Children all come on one day (60+)
- “off-site” clinics held in remote areas, similar to Iowa program
- TVI trains in the local schools
Current Model

- Three full-time TVI; one based in East TN
- 0.1 FTE for PI
- All clinics held in VEI peds
- Contract with local low vision OD in East TN
- Admin support covered by VEI

- 90 children with documented low vision (by OD or MD)
  - TN residents
  - Ages 3-21
  - Students only
  - TEIS for younger than age 3
  - OD/MD remains primary eye-care provider
Referrals

• School systems
  – TVI
  – special ed teachers
• Optometrists
• Ophthalmologists
• Parents
• Pediatricians

Photo by Joe Howell
## Causes of pediatric VI

<table>
<thead>
<tr>
<th>Illinois in 2001&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Optic atrophy</td>
</tr>
<tr>
<td>2. Congenital cataract</td>
</tr>
<tr>
<td>3. ROP</td>
</tr>
<tr>
<td>4. Albinism</td>
</tr>
<tr>
<td>5. Degenerative Myopia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brazil in 2015&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Congenital cataract</td>
</tr>
<tr>
<td>2. Toxoplasmosis</td>
</tr>
<tr>
<td>3. Congenital glaucoma</td>
</tr>
<tr>
<td>4. ROP</td>
</tr>
<tr>
<td>5. CVI</td>
</tr>
</tbody>
</table>
PAVE Diagnoses
PAVE Demographics
Clinical Low Vision Evaluation

• History with child, parents, local TVI, PAVE TVI
• Pre assessment survey (FVQ_CYP⁴) if applicable
• Review of medical notes & FVA

Photo by Joe Howell
Visual Acuity

- Fixation Preference Testing
- Allen Symbols
- HOTV match
- Snellen letters
- Berkeley
- EDTRS if needed
Assessment of Refractive Error

• Cycloplegia or not?
• Phoropter v Trial frame refraction
Optical Devices

Near
- Domes
- Stand magnifiers
- Hand-held magnifiers

Distance
- Monocular telescopes
- Bioptics
- O&M considerations
Classroom-based Electronic Devices

• CCTV
• Visiobook
• iPad
Low Vision Plan

- Child and parent input
- Written report sent to all stakeholders
- Implications for IEP/504
- Self-advocacy

- Pitfalls with nomenclature
  - Technology assessment
  - O&M assessment
  - Learning medial assessment
  - School for the Blind
Learning Media Assessment

- Braille
- Large print
- Regular print with specified font size
  - Crowding
  - Contrast
Off-site Clinic

Memphis - SCO

East TN – Dr. Bruce Gilliland

Tennessee's CORE Regions
East Tennessee Model

- Dr. Bruce Gilliand
- 1.0 FTE TVI based in East TN
- Same model as on campus at Vanderbilt
Tennessee School for the Blind

• Challenges with diagnosis and continuity of care
• Older children; parents not present
• Electronic devices
• Role of Voc Rehab
Device Delivery and Instruction

• Devices ordered in bulk
• Delivered by TVI to school or home (if homeschooled)

• Pitfalls
  – Privacy and security of schools
  – Neutral locations sometimes needed for families
  – Broken/lost devices
Training by TVI

- Occurs in the child’s specified educational setting
- Not in clinic
- Public & Private Schools
- Home-schoolers
- Institutions (TSB)
- Until student is proficient (usually less than one year)

- Pitfalls
  - “turf” issues in school
  - Parents not always able to be present
TVI training examples
Outcome Measures

Please rate the following Project PAVE services on a 1-5 scale, where 1 is not at all helpful and 5 is very helpful.

<table>
<thead>
<tr>
<th>Service</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helpfulness of the clinical low vision evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Helpfulness of the optical devices prescribed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Helpfulness of the instruction in the use of optical devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Encouragement and support provided to your student in the use of optical devices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>Ease of communication between you and Project PAVE staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n/a</td>
</tr>
</tbody>
</table>

In your opinion, what was the most helpful aspect of having your student participate in Project PAVE?


In your opinion, what was the least useful aspect of having your student participate in Project PAVE?


Table 1: Parent and Teacher Ratings for Effectiveness for PAVE Services

<table>
<thead>
<tr>
<th>Item</th>
<th>Teacher</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helpfulness of the clinical low vision evaluation</td>
<td>4.96</td>
<td>4.93</td>
</tr>
<tr>
<td>Helpfulness of the optical devices prescribed</td>
<td>4.84</td>
<td>4.93</td>
</tr>
<tr>
<td>Helpfulness of the instruction in the use of optical devices for vision tasks</td>
<td>4.92</td>
<td>5.00</td>
</tr>
<tr>
<td>Encouragement and support provided to your child in the use of optical devices</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Ease of communication between you and Project PAVE staff</td>
<td>4.96</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Table 2: Students Ratings for Effectiveness of Project PAVE Services

<table>
<thead>
<tr>
<th>Item</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am able to see more things with my device without needing help from others</td>
<td>2.84</td>
</tr>
<tr>
<td>I can read faster with my optical device.</td>
<td>2.52</td>
</tr>
<tr>
<td>I am more interested in looking at things that are far away with my device</td>
<td>2.84</td>
</tr>
<tr>
<td>Project PAVE helped me understand my eyes better and how I see</td>
<td>2.83</td>
</tr>
<tr>
<td>Project PAVE teachers were helpful in teaching me how to use optical devices for seeing things up close and/or far away</td>
<td>3.00</td>
</tr>
</tbody>
</table>
Outcome Measures

• Validated, pediatric instruments are available\textsuperscript{4-6}

• Need for more self-reported QOL studies\textsuperscript{8}
Follow up

• With educational team and family
• Repeat FVQ_CVP4 (if applicable)
• Complete brief survey
Re-evaluation

• q3 years
• sooner if
  – vision change
  – request from medical team
  – request from educational team
Community Outreach

- State-wide conferences
- Teacher in-services
Pitfalls

• Medical complications

• Parental obstacles
  – Communication
  – Expectations for independence
    (college, driving)
  – Perceptions – child is more disabled than perceived v. less disabled than perceived
More Obstacles

Educational
• FVA and VA do not match
• No local TVI
• Under/overenthusiasm for TSB
• Distance from TSB

• Low vision ≠ vision therapy
• Lack of OT
• Devices not covered by medical insurance
• Out-of-state students
• Funding limits
• Grant renewal
Outcome Measures

- Vision-related quality of life
- Functional Vision
- Visual Function

$VQoL \neq FV \neq VA$
Practice Pearls

Do’s
• Know your local TVIs
• Know your state system
• Know your state school for the blind outreach coordinator

Don’t
• Don’t insist on Braille or large print
• Don’t advise on school setting
• Don’t force glasses (unless for protection)
References


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