

PRELIMINARY REPORT OF THE COLORADO SCHOOL VISION SCREENING INTERDISCIPLINARY TASK FORCE

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ABSTRACT

An interdisciplinary task force was assembled in Colorado to review the state school vision screening program. This paper reports on the initial meetings of the task force and the school vision screening program that evolved.

KEY WORDS

vision screening, school, interdisciplinary



An interdisciplinary task force was assembled and sponsored by the Adolph Coors Foundation to review the school vision screening program in Colorado. The project impetus came primarily from Foundation President William K. Coors, who believes good vision is critical to a student's ability to learn and to reach his or her potential. Early identification and remediation of vision problems is a key element to learning. In light of this interest and to make a favorable impact in the area of vision and learning, the Foundation's staff and the Colorado Commissioner of Education investigated several alternatives. Becoming aware of the differences of opinion that exist among the professionals involved, a task force to review Colorado's school vision screening programs was convened. The interdisciplinary task force included representatives from the Colorado Dept. of Health, Colorado Dept. of Education, school nurses, ophthalmologists, optometrists, and a foundation staff member. A consulting group was hired to facilitate the meeting.

The proceedings of this meeting and the school vision screening guidelines that evolved are presented. Subsequent papers will report the efficacy of the screening battery once implemented.

BACKGROUND

School vision screening is riddled with a lack of agreement among profes-

sionals involved and there are no rules and regulations to enforce state laws that mandate vision screening. Prior to the task force group meeting in August 1990, facilitators interviewed participants individually to better understand the diverse opinions. Participants were invited to contribute pertinent articles to a background information packet that was distributed prior to the meeting. An agenda listing specific objectives also was drafted. The facilitators' tasks were to keep the group task-oriented, on schedule, and able to reach agreement on each objective. William Coors addressed the group, reiterating the charge and expressing his personal concerns about school vision screening and the role of vision in learning.

COMPREHENSIVE ASSESSMENT OF THE PROGRAM

The first objective was to review current school vision screening guidelines. Although some task force members maintained initially that no problem existed, after considerable discussion, consensus was obtained that a problem existed. Aspects of the problem were explored and a core problem analysis was performed to identify the core problem.

The current Colorado state statute (11B 1408) reads:

School children—sight and hearing tests. The sight and hearing of all children in the kindergarten, first, second, third, fifth, seventh and ninth grades, or children in comparable age groups

referred for testing, shall be tested during the school year by the teacher, principal, or other qualified person authorized by the school district. Each school in the district shall make a record of all sight and hearing tests given during the school year and record the individual results of each test on each child's records. The parents or guardian shall be informed when a deficiency is found. The provision of this section shall not apply to any child whose parent or guardian objects on religious or personal grounds."

The Colorado School Health Guidelines¹ suggest screenings consist of observations and distance Snellen visual acuity for all children screened, and cover test for those in preschool, kindergarten and first grade. School districts may do additional screenings, especially for students being assessed for special education or students referred by a teacher. School nurses usually perform the screenings or train personnel.

The task force identified three specific problems with present vision screening programs:

1. Inadequate vision screening, including inconsistency among school districts which, in Colorado, have local autonomy, lack of personnel, equipment, and funds for screenings, inadequate training of personnel, and under-referrals or over-referrals.
2. Poor implementation of current law, including no existing detailed rules and regulations, inconsistent compliance with present guidelines, incomplete data collection, lack of parental follow-through after screening, and lack of support from school administrators and community professionals.
3. Controversy, including disagreement on the role of vision in learning, the importance of each type of vision problem, and the importance of screening vs. complete examinations. In addition, controversy existed among professionals involved, mainly ophthalmologists and optometrists, but also among education and eye care professionals and among different factions within all professions.

Following careful consideration of the problems identified, the task force agreed inadequate identification and

referral of children and youth with vision problems was the main core problem.

PURPOSE, OBJECTIVES, AND CRITERIA

The next task was to compose a purpose statement and identify specific objectives on how the group could affect the problem. The following purposes, objectives, and criteria were compiled.

Purpose. Development of a school vision screening program that: a) builds on the success of the current vision screening program, b) effectively identifies children and youth with vision problems, c) is acceptable to all concerned--youth, parents, educators, and health professionals, and d) is appropriate for implementation in schools with the potential to develop rules and regulations to operationalize existing state law.

Objectives. Achievement of the goals listed in the purpose statement by: a) identifying which vision problems should be screened, b) developing a vision screening battery, c) developing an implementation action plan that includes possible rules and regulations to operationalize state law, d) agreeing on a uniform reporting system, data analysis, and dissemination, and e) devising marketing strategies.

Criteria. School vision screening should consider: a) cost effectiveness in terms of time and personnel, b) reliability, c) minimizing false positives, d) sensitivity to identify vision problems, e) enforceability, and f) acceptability to optometrists, ophthalmologists, and school personnel.

VISION SCREENING BATTERY

The task force approached developing a school vision screening battery in three phases: identifying which vision problems should be screened, selecting specific tests, and determining pass/fail criteria for tests selected.

Vision Problems Screened. Much discussion and compromise was necessary to agree on which problems to be screened, the most difficult task. The task force began with a long list of potential vision problems that could be screened, but only those vision problems that were consistent with the stated purpose and criteria made the final listing. Examples of vision problems considered but later eliminated

were oculomotor development and accommodative dysfunction, which were dropped primarily due to controversy concerning their importance and lack of agreement on incidence. Fear of over-referrals generated by screening for these vision problems also was a strong factor. Although some task force members felt strongly that these vision problems were quite important and prevalent, the consensus was that if a large segment of the eye care providers do not accept these entities as significant vision problems and thus do not test for them, a situation of over-referral and confusion would result by including them in the screening. The consensus was a screening should not surpass a routine examination. The group agreed these vision problems should be screened:

- a) external eye abnormalities
- b) refractive errors such as myopia, hyperopia and astigmatism
- c) amblyopia and organic diseases masquerading as amblyopia
- d) binocular dysfunction such as strabismus and convergence insufficiency
- e) color vision defects

Battery of Tests. Once the group decided on which problems to be screened, putting together the test battery and determining pass/fail criteria were, in comparison, easier tasks. The task force reviewed several references, including a textbook chapter,² several published articles,³⁻⁶ and vision screening guidelines from the American Optometric Association⁷ and the National Association of School Nurses.⁸ Many tests were considered but only those that met the group's stated purpose and criteria were maintained. There were two tests that were considered but eliminated. Near visual acuity was eliminated because a lack of evidence exists that it would significantly help the overall screening. Contrast sensitivity was eliminated because it is too new, not well understood by many practitioners, and its efficacy as a screening tool is not well established.

Pass/Fail Criteria. After the select battery of tests was determined, pass/fail criteria was established for each test. Criteria were, for the most part, extracted as conventional wisdom from published reports of previous screening guidelines.³⁻⁸ Screening battery and pass/fail criteria includes:

- a) Observation/ history: as described in the Illinois program as the ABCs.⁴

- b) Monocular distance visual acuity: failure is inability to see 20/30 in each eye or if one eye sees 20/20 and the other 20/30.
- c) Plus lens hyperopia test: failure if able to clear 20/30 (or equivalent) at 20 feet through a +2.50 diopter lens.
- d) Nearpoint of convergence: failure if unable to converge to 6 inches (15 cm).
- e) Cover Test: alternating cover test with distance fixation, any consistent movement of the eyes is a failure.
- f) Stereo Test: failure if unable to achieve 100 seconds of arc.
- g) Color Vision: failure as dictated by specific test.

The battery of tests is intended to be administered to the same grades as present guidelines dictate (K,1,2,3,5,7,9), with the exception of color testing, which should be done only for grade two. Tests will be modified for preschool, kindergarten, and first grade students. Detailed guidelines for the testing battery were written by a committee and are intended to become the rules and regulations to support the state statute for vision screening. A copy of the guidelines is available from the Community Nursing Section, Colorado Dept. of Health.

DISCUSSION

To ensure continued activity and follow-through with the projects initiated, the task force outlined a committee structure and elected committee personnel and co-chairpersons. Future meeting dates were set and a plan was outlined to achieve implementation of the new screening battery. The plan included a detailed flow chart. Data collection and analysis of the efficacy of this screening battery is planned and will be reported in future articles. The significance of the vision screening battery derived from this task force is its development from an interdisciplinary group, addressing the concerns of the Dept. of Education, Dept. of Health, school nurses, ophthalmologists, and optometrists. This screening battery might be criticized by some as too brief and by others as too extensive. However, considering the diverse opinions contributing to the screening battery, compromise was necessary and practical. The screening is a workable compromise, practical for immediate implementation. It is intended to

be a major step toward improving present vision screening guidelines with the ultimate goal of helping detect children with vision problems.

REFERENCES

1. Colorado school health guidelines, 2nd ed. Denver, Colo: Colorado Department of Education and Colorado Department of Health, 1986.
2. Leske MC, Hawkins BS. Screening: relationship to diagnosis and therapy. In: Duane TD. Clinical ophthalmology. Vol. 5. Philadelphia, Pa: JB Lippincott, 1989.
3. Cohen AH, Lieberman S, Stolzberg M, Ritty JM. The NYSOA vision screening battery--a total approach. J Am Optom Assn, 1983, 54 (11): 979.
4. Larson MR. Comprehensive vision screening program: Illinois' approach. J Am Optom Assn, 1988; 59 (1): 26.
5. Ehrlich MI, Reinecke RD, Simons K. Preschool vision screening for amblyopia and strabismus: programs, methods, guidelines. Surv Ophthalmol, 1983, 28 (3): 145.
6. Peters HB et al. The Orinda vision study. Am J Optom Arch Am Acad Optom, 1959, 36 (9): 455-469.
7. Petric E, Tumblin JC, Miller SC. The American Optometric Association guidelines on vision screening. St Louis, Mo: Am Optom Assoc, 1979.
8. Vision screening guidelines for school nurses. Scarborough, Maine: National Association of School Nurses, 1985.

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ADDENDUM

Since the initial publication of this report this school vision screening program was endorsed and supported by the Colorado Ophthalmological Society, Colorado Optometric Association, Colorado Department of Health, and Colorado Department of Education. A detailed instruction manual, "Guidelines for School Vision Screening Programs," was completed and published by the Colorado Department of Health, and an instructional video was produced under the sponsorship of the Coors Foundation.

Regional instructional meetings were held throughout the state and every school district was given a copy of the manual and instructional video. Most school districts are now in compliance with the new screening program.

Copies of the manual and video are available from the Colorado Department of Health, School Health Nurse Consultant, 4210 East 11th Ave., Denver, Colorado 80220. The Coors Foundation received the American Optometric Association Apollo Award for their initiative and support of this successful project.

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