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INTEGRATING ACADEMIA WITH COMMUNITY-BASED HEALTH PRACTICES: THE SAN BERNARDINO COUNTY COMMUNITY-BASED PEDIATRIC VISION OUTREACH SYSTEM

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In humans, sight is the most powerful of the five senses. Recent research has demonstrated that preschoolers and school-age children are most at risk for developing visual problems.[1,2] Regular school screenings, comprehensive eye examinations, and appropriate surgical interventions are all necessary to safeguard the integrity of the visual system. However, a child's access to eye care services is largely dependent on the health insurance status of the family.

The Census Bureau has calculated that 38.7 million people living in the United States lack health insurance.[3] In California, 18.7% of the population was without health insurance in 2000, the seventh highest uninsured rate in the nation.[4] Poor uninsured children in California are in far worse overall health than poor children on Medicaid or low-income children covered by health insurance.[5]

In California, many individual counties are faced with the growing problem of providing health care services for large uninsured populations. For instance, San Bernardino County is the largest county in the contiguous United States and home to approximately 185,000 children ages 0–5 years.[6] It has been estimated that as many as 19% of children ages 0–18 years living in the county are uninsured.[7]

For poor families, accessing low-cost health care and preventive services can dramatically influence positive health outcomes, especially in children. However in San Bernardino County, geographic isolation, poverty, high exposure to violence, and impoverished residential environments have limited many residents' access to preventive care services and have generated huge health disparities.[8,9] Periodic physical examinations, routine dental care, vaccinations, and dilated eye examinations are among the preventive health services that are necessary for the health of our children.[10] Yet in the area of comprehensive vision care, there are very few options for financial aid available to children without health insurance if they live in San Bernardino County.

In the fall of 1999, four community activists living in the city of San Bernardino (including present author EH) became involved in creating a system whereby low-cost or no-cost vision services could be provided for needy children. An innovative approach to the problem clearly was necessary. A course for MPH students offered by the Department of Health Promotion and Education (DHPE), School of Public Health, Loma Linda University, gave the initial program planners a systematic method for gathering the necessary needs assessment data, planning a system of care, and implementing and evaluating the program in the target communities. The San Bernardino County Community-Based Pediatric Vision Outreach System (PVOS) evolved out of these circumstances.

The Role of Academia

Community Programs Laboratory, a graduate-level course, was instituted by the School of Public Health during the early to mid 1990s. Overall, the goal of the course is to provide students with their first "real world" health education experience. The Lab extends through three academic quarters. Students work on a community program throughout the year, beginning with a needs assessment in the fall, continuing with program planning during the winter, and concluding with implementation and evaluation during Spring Quarter. Active learning techniques are employed in order to effectively teach students the process of assessing the resources, health needs, and assets of their target populations. This results in student-designed health intervention demonstration programs that help to improve the well-being of people living in San Bernardino County. In the past, students have chosen topics rang-

ing from type II diabetes self-management program for African American and Latino seniors to pediatric asthma education and prevention strategies for Head Start parents.

According to the course instructors, students are first presented with a choice of several health topics and corresponding target populations. Student workgroups are formed around particular topics and populations of interest. Community liaisons are then assigned to each student group. Community liaisons aid the students in understanding the cultural, economic, and historical demarcations that exist within their target populations. Together with their community liaisons, student groups are guided in their efforts to assess the health problems and perceived needs of their target populations. The data gleaned from each group's community needs assessment is used to develop an appropriate health education intervention program. Afterwards, all student-generated programs are pilot-tested and evaluated in their target communities.

The Community Programs Laboratory course framework was directly responsible for inspiring the creation of the PVOS. In tandem with the classroom assignment, the student planner conducted a rudimentary community needs assessment. Underinsured and uninsured families needing vision care for their children were surveyed. Five barriers that low-income families faced in order to access basic vision care services for their children were discovered. These include: (*a*) lack of family resources to pay for vision care services or insurance deductibles, (*b*) lack of vision care coverage, (*c*) illegal residency, which causes families to be ineligible for state-sponsored medical insurance, (*d*) a shortage of eye care providers who examine young children, and (*e*) lack of knowledge or language barriers that prevent needy families from accessing vision care assistance funds from local agencies.

Armed with the results of the survey, the program planners sought to identify which pediatric age group would benefit the most from their proposed program. Research from the California Endowment has documented that low-income uninsured and underinsured children ≤18 years of age have the greatest number of unmet health care needs due to lack of access to medical care.[9] Thus the program planner theorized that this population might also be living with the added burden of having an undiagnosed or uncorrected vision problem.

After completion of the needs assessment, the professor concluded that the program could be realistically implemented in the community. The next collaborative effort by the professor and the student planner produced a service, referral, and financial resource model (see Figure). As the model illustrates, a Regional Coordinator works with family advocates to blend private, state, and federal vision care resources. The model and the subsequent referral/diagnoses diagram proved crucial, as visually based tools would be needed to aid in the processing of financial aid applications by future community volunteers.

Program Description

The PVOS is a community-based grassroots organization. Essentially, the PVOS was designed to improve access to pediatric eye care by providing person-to-person links among funding agents, families, and vision care specialists. PVOS community volunteers are referred to as Family Advocates and are supervised by a Regional Coordinator. Their primary responsibilities include processing financial aid applications, coordinating local vision care funds, contacting the appropriate funding agencies, arranging for the needed eye care services, negotiating professional discounts, and paying for services after they are delivered to the child.

Community volunteerism forms the core of the program. Each month Family Advocates meet to review and process the financial aid applications. Children needing vision care services are matched to an appropriate specialist who meets their needs as they relate to language, age, or the geographic location of their home. At times, significant medical conditions such as glaucoma, cataracts, or tumors are recognized during the comprehensive eye examination. When an optometrist or ophthalmologist finds evidence of a serious eye or health condition, the case is immediately referred back to the PVOS Regional Coordinator for review. Any type of emergency case is always given priority. Although most funding sources are income-dependent, no child will ever be turned away from receiving necessary restorative treatment.

The PVOS Family Advocates process approximately 72 requests for financial aid per month. Requests are primarily generated from school nurses, parents, and social workers. Thus, since its inception in 1999, the PVOS has made it possible for 578 children to received free eye exams and glasses. In addition, 44 children received tertiary care services such as cataract surgery (including implants), strabismus surgery, and specialty contact lens for amblyopia, medication and follow-up care for pediatric glaucoma, and low-vision aids for significant visual impairments.

Currently, the PVOS is intensifying its outreach efforts into the Chinese, Vietnamese, and Latino communities. Community members who lack legal residency documentation are unable to obtain state-sponsored health insurance. The project is also making strides in

Figure. Theoretical model for the San Bernardino County Community-Based Pediatric Vision Outreach System (PVOS)

STEP 1		**PVOS Family Advocates**	*STEP 2*	**PVOS Regional Coordinator**	*STEP 3*
PRIMARY LEVEL VISION CARE SERVICES		• Process financial aid requests • Procure needed financial aid from local agencies • Negotiate discount and arrange for vision services • Notify family of arrangements	**SECONDARY LEVEL VISION CARE**	• Reviews all diagnoses that require ophthalmology services • Contacts ophthalmologist for consultation about suspected condition • Arranges financing for appointment • Notifies family of arrangements • Blends public and private vision care funds	**TERTIARY LEVEL VISION CARE**
Local agencies	**Target population**		**Optometric services** Eye exams, glasses, contacts, vision training, amblyopa treatment, and low vision assessments, etc. **Significant medical conditions** Suspected diagnoses reported to Regional Coordinator for review.		**Ophthalmologic services** All referrals are evaluated on the basis of secondary level diagnoses or suspected diagnoses. Services include: medication, cataract surgery, strabismus surgery, glaucoma identification, etc. A treatment plan and cost estimate is submitted and evaluated.
Elks Vision Screening Program	3–5 years				
PVOS Vision Outreach Clinic	0–18 years				
School nurses	5–18 years				
Low-cost public health clinics	0–18 years				
Regional Center (disabled clients)	0–18 years				
Local optometrists	0–18 years				
Social workers	0–18 years				

networking with agencies to serve mentally, physically, and visually disabled children so that their vision needs are not overlooked. Finally, the PVOS is in the midst of changing program objectives to incorporate the new national Healthy People 2010 vision objectives.[11]

Implications for Public Health Practice

According to the National Eye Institute, "Visual impairment is associated with developmental delays and the need for special and vocational education, and increases reliance on social services."[12] In fact, an uncorrected or undiagnosed visual problem is one of the most frequent causes of childhood disability in the United States. Healthy People 2010 identifies visual impairment as one of the most preventable threats to a child's health.[11]

In line with this, Healthy People 2010 established a new national vision goal to "improve the visual health of the nation through early detection, prevention, treatment and in severe cases, vision rehabilitation."[12] To help meet this goal, the PVOS will increase the number of children within the target population who have dilated eye examinations before kindergarten. The program will strive to reduce the number of untreated visual problems in children ≤18 years of age by providing cash grants for vision care services directly to needy families. Also, priority funding will be extended to children who are found to suffer from sight-threatening conditions such as amblyopia, strabismus, glaucoma, and congenital cataracts, but who are unable to afford care. Finally, the PVOS will provide financial assistance for appropriate low-vision adaptive devices to high school seniors who have been diagnosed with an untreatable, severe visual impairment.

National Recognition

The PVOS Regional Coordinator was selected to attend the 6th National Eye Health Education Conference sponsored by the National Institutes of Health (NIH). The PVOS was the only community-based organization in attendance. Representatives from NIH were extremely interested in how social advocates from

San Bernardino County had collectively joined forces to improve children's visual health. The PVOS Regional Coordinator used case histories, children's pictures, and parent letters to document how caring volunteers were successful in providing needy children with access to vision care.

Since the conference, the PVOS was invited to join the Healthy Vision Consortium. The consortium consists of 350 national and 250 state agencies that pledge to work together to improve the visual health of the nation. Currently the PVOS is the only volunteer, community-based organization listed with the consortium. Additionally, the PVOS Regional Coordinator was also selected to attend the 6th National Eye Health Education conference sponsored by the National Eye Institute.

CONCLUSION

In conclusion, the PVOS believes that "[t]he ability of community projects to collaborate with new partners is critical in building healthy communities, building credibility, bringing specific services to the community, and creating a path for sustainability."[13] As a volunteer community-based organization, the PVOS is committed to assisting needy children with their vision care needs and to being an example of how ordinary people can work together to build healthier communities.

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The San Bernardino County Community-Based Pediatric Vision Outreach System (PVOS) acknowledges the local professionals and organizations whose participation is integral to the success of this program. Without their continued commitment to the children of San Bernardino County, the PVOS would cease to exist. Lawrence E. Young, OD, and Terra J. Barnes, OD (Fontana, CA) donate 56 eye exams and pairs of glasses annually to the PVOS through the Fontana Vision Project. More than 130 children have directly benefited from their generosity. The Optometric office of Laura Nguyen, OD, and K.T. Lee, OD (San Bernardino, CA) has seen dozens of PVOS children. Their combined expertise covers the examination of very young children, some with multiple developmental disabilities and many with very limited language skills. Finally, the authors recognize the Vision Service Plan (Sacramento, CA) and its Sight for Students Program. Requests for funding are channeled through the program's local granting agencies. This program has become PVOS's main financial source for pediatric vision care, and Vision Service Plan has improved the lives of many children in the community.

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