A Vision for Optometry in The National Health Service Corps

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ABSTRACT

Less than 17 percent of community health centers in the United States have an eye care provider on staff. The Patient Protection and Affordable Care Act has made additional funding available to community health centers for facility and program expansion in 2014. The National Health Service Corps has traditionally redistributed practitioners to areas which are underserved by health care providers. The re-inclusion of optometrists in the student Loan Repayment Program of the National Health Service Corps will add to the primary health care services offered by community health centers thus creating a new revenue stream for the facility and help to relieve the increasing debt burden of recent optometry school graduates. Patients will benefit from having on-site primary eye care practitioners to correct vision disorders and to diagnose and manage eye disease.

Key Words: National Health Service Corps, Loan Repayment Program, Community Health Centers, optometry, eye care, eye care workforce

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LIST OF ABBREVIATIONS

AOA	American Optometric Association
ASCO	Association of Schools and Colleges of Optometry
CHCs	Community Health Centers
EU	European Union
HRSA	Health Resources and Services Administration
NECO	New England College of Optometry
NHANES	National Health and Nutrition Examination Survey
NHSC	National Health Service Corps
NRHA	National Rural Health Association
OD	Doctor of Optometry
PPACA	Patient Protection and Affordable Care Act of 2010
UHC	United Health Care
US	United States

I. Introduction

The passage of the Consolidated and Further Continuing Appropriations Act in late 2014 called for the inclusion of optometrists in the National Health Service Corps (NHSC) by way of a demonstration project (Consolidated and Further Continuing Appropriations Act, 2015). The NHSC was created in 1972 in order to recruit primary care providers to practice in underserved areas of the United States. These recruits would commit to service in exchange for a reduction of student debt through the Loan Repayment Program (Redman, 1973). Inclusion of optometrists in community health is not a new concept. In 1969 the New England College of Optometry's faculty and students began to provide eye care at the Dorchester House Multi-Service Center, one of Boston's neighborhood health centers (New England College of Optometry, 2014). By 2013 this relationship has grown to 17 community clinics in the Boston area (American Optometric Association's [AOA] Health Center Committee: Kalaczinski, L., Chu, G., Cooper, J., et al., 2013). However, nationwide in 2013, less than 17 percent of Community Health Centers (CHCs) offered eye care on site (Health Resources and Services Administration, 2013). Optometrists as primary eye care providers play an important role in the diagnosis, treatment and prevention of visual disorders and systemic disease. Their inclusion on a health care team enhances the overall health of the community they serve.

Establishing an integration strategy of optometrists into CHCs by way of participation in the NHSC will achieve several goals. It will expand the primary care services offered by CHCs and therefore introduce a new revenue stream for CHCs. There will be a redistribution of optometrists to areas of need. It will help relieve the debt burden of new optometry school graduates who are otherwise discouraged from pursuing practices in rural and underserved areas

(ASCO, n.d.; Primary Eye Care in Rural America, 2007). Finally, patients' quality of life will increase due to eye care providing simple spectacle correction and eye disease diagnosis and management, making possible the life-long preservation of vision and reduction of vision disability (Khandekar, Gogri & Al Harby, 2013; Leske, Heijl, Hussein, Bengtsson, Hyman, & Komaroff, 2003; Milne, Johnson, Tennant, Rudnisky, & Dryden, 2012).

II. Methods

A literature review of scholarly works and grey literature spanning 1971- 2015 was performed from May 2014 through March 2015 to examine the history of optometry and the NHSC. The AOA provided reference materials and the opportunity to interact with personnel who volunteered information about their personal history and about current legislative efforts to include optometrists in the NHSC. The Health Center Committee of the AOA has designed and published a guide for CHCs providing details about how to add optometry services, the costs involved, and the projected revenue to be generated. In addition, an on-line search of tuition costs of optometry schools was conducted in June 2014. Other topics researched were Community Health Centers, the Patient Protection and Affordable Care Act of 2010 (PPACA), eye care workforce studies, geographic distribution of optometrists in North Carolina, and other federal student loan forgiveness programs available for optometrists. Personal professional experiences working in Swain County, North Carolina and in Earle, Arkansas during the summer of 2014 contributed to the research methods used for this paper.

III. Purpose

The passage of the Consolidated and Further Continuing Appropriations Act in 2014 instructed the Health Resources and Services Administration (HRSA) to evaluate a demonstration project for optometry (primary eye care) to be considered "primary care services" for purposes of the NHSC, which would then make optometrists eligible for participation in the Loan Repayment Program of the NHSC. In order for the optometry demonstration project to be successful there must be positive engagement of stakeholders including the CHCs, schools and

organizations of optometry and patients. This paper will illustrate the NHSC benefit for new optometrists, the benefit for CHCs through additional services and revenue, and also the benefit for patients who are in need of optometric care. It will outline the plan to track and evaluate the advantages of having optometrists in CHCs by way of their inclusion in the NHSC's Loan Repayment Program from which they have been previously excluded.

IV. Logic Model

Logic Model for Optometry inclusion in Community Health Centers through the National Health Service Corps
Situation:
1. Community Health Centers underserved by optometrists.
2. Recent inclusion of optometrists in the National Health Service Corps.
3. Rising debt burden for recent optometry school graduates steering new grads away from underserved communities.

Priorities:
1. Educate Boards of CHC about importance of eye care and expansion of services to include eye care
2. Recruit recent graduates for NHSC
3. Educate optometry school career counselors/professors about CHC mode of practice

Inputs	Outputs		Goals		
	Activities	*Participation*	*Short*	*Medium*	*Long*
-Student Loan Repayment Program of the NHSC for optometrists -Affordable Care Act grants to CHCs for program expansion and building upgrades	-Educate CHCs about OD services through CHC conferences or marketing strategies: good for patient care and new revenue for the CHC -Educate CHC primary care providers about the role optometrists play in patients' health -Select # of CHC to participate in optometry expansion -State AOA or AOA call for donations of equipment to CHCs (tax deductible)	-New graduates apply for NHSC -Optometrists looking for a different practice opportunity -Schools of optometry teaching about CHC mode of practice -Patient awareness of optometry services (children's eye care is one of the 10 essential benefits of ACA)	**1-2 years** -Licensing requirements -Education of CHC Boards and medical staff -Selection of new graduates for NHSC -Placement of optometrists into CHCs	**2-5 years** -Track metrics for patients seen, dz diagnosed and income for CHC -After 1-2 cycles of 2 year NHSC placements, track if ODs are staying in communities	**5-10 years** -Increase the number of CHCs which now offer optometric care -Begin residency programs in optometric community health practice -Begin optometry student rotation sites in CHCs -Continue to track ODs' practice locations

Goals
1. Expand CHC services to include optometric care.
2. Relieve optometry school graduates of heavy debt burden.
3. Redistribute optometrists to areas of need
4. Incorporate optometry into the health care of all patients

Outcomes
1. Patients have more accessible eye care.
2. Early diagnosis of eye dz and consistent management of eye dz; reducing the potential for visual impairment
3. Increased quality of life for patients
4. Optometry services providing positive cash flow for CHCs.

V. Implementation

Designing public policy to include NHSC optometrists in CHCs first requires identification of stakeholders willing to contribute to project planning and implementation efforts. Besides the administrators of the NHSC, stakeholders would include CHCs along with their board and current providers; schools of optometry including students and professors; patients living in underserved communities; funders of CHCs including insurance payers and other charitable organizations; and organized optometry including the AOA and specifically the AOA Health Center Committee. Representatives of the stakeholder organizations/communities need to be informed of and educated to recognize the purpose, scope and length of the demonstration project. The HRSA would need to communicate the intended amount of funding, time-line and metrics that are standard when new professions are added to the Loan Repayment Program. These standards would be adaptable to the specific practice of optometry. The HRSA needs to develop an education program for CHCs which incorporates information and data generated by the AOA Health Center Committee (Appendix) about starting an optometry service. Disseminating this information to CHCs with follow-up from persons who are well-versed in the practice of optometry will help CHCs decide to add an optometrist to their staff. The boards of CHCs are mandated by the HRSA to be responsible for program planning, operations, finance, general policies and patient satisfaction (Health Resources and Services Administration, n.d.). The financial projections developed by the AOA Health Center Committee will be useful to the boards and other funders of CHCs. Generating data which accounts for the number of patients and potential billing income which was *referred out* of the CHC for reasons such as dilated diabetic eye exams, glaucoma management and children's vision examinations will quantify a portion of the financial benefit of staff optometrists. (The PPACA has made

children's vison care one of the 10 essential benefits for small group and individual plans including Medicaid [HealthCare.gov, 2014]). Once the boards have understood the benefits of including eye care as a primary care service and the initial investment and projected earnings from eye care, they may choose to make the financial commitment to physical space, equipment lease or purchase and staff training as detailed by AOA Health Center Committee (Appendix).

Creative start-up funding efforts may be developed to lessen the cost of purchasing the requisite initial equipment since the instruments needed for an optometry practice are expensive. The AOA, through the state and armed forces affiliates, could organize a virtual equipment drive. A data base could be created by the AOA with listings and descriptions of equipment that are available from donors so CHCs could shop for instruments. Once a device is selected, the donor ships the instrument to the CHC. If it is acceptable to the health center, the CHC issues a receipt of donation. Ophthalmic device manufacturers and optical suppliers need to be contacted to negotiate discounts for purchases or donation of equipment.

The education of the medical and support staff of CHCs needs to detail the role that vision and eye care play in the public's health. According to a 2014 poll on behalf of Research!America and the Alliance for Eye and Vision Research, Americans from diverse racial and ethnic backgrounds rate losing their vision as one of their greatest health fears (Zogby Analytics, 2014). Vision loss or impairment is associated with mental health issues, including suicide (De Leo, Hickey, Meneghel, & Cantor, 1999). Informing CHC colleagues about the practice of optometry and how the overall health of their patients can be enhanced will increase the staff's awareness and engagement of optometric care. The basic messaging is that optometrists are primary health care professionals who diagnose and treat disorders of the eye and visual system ranging from spectacle and contact lens prescription, visual motor disorders

requiring vision training to ocular health conditions which warrant the use of pharmaceuticals, minor surgical procedures, and laser surgery as allowed by state law.

Optometrists observe details of the eye and visual system which can lead to the diagnosis of systemic health problems. In 2011 and 2012, United Health Care (UHC) commissioned Optum™ to examine UHC claims data involving eight chronic systemic diseases and identified the number of those diagnoses that were detected by eye care practitioners. "Impact of Eye Exams in Identifying Chronic Conditions" is the resulting white paper which concluded that eye care professionals are responsible for the initiation of an average of 5.6 percent of these diagnoses (Optum™, 2013, p. 8). The diseases studied with the percent of eye care provider diagnosis are as follows (these are listed from highest to lowest volume): Multiple Sclerosis (15.1%), diabetes (15.0%), Juvenile Rheumatoid Arthritis (12.0%), Crohn's Disease (5.0%), Grave's Disease (4.8%), rheumatoid arthritis (4.3%), hypertension (4.1%) and hypercholesterolemia (3.9%) (Optum™, 2013, p. 8). The study points out that eye care practitioners are involved not only in the early diagnosis of chronic disease but also with disease management which can lower health costs and improve health outcomes (Optum™, 2013). The diagnosis and treatment of eye diseases such as glaucoma and diabetic retinopathy keep patients working rather than suffer the costs and disability of vision impairment and decreased quality of life (Leske, et al, 2003; Milne, et al, 2012).

Although optometrists can be involved with the diagnosis of systemic disease, optometrists typically treat ocular conditions such as glaucoma, uveitis, strabismus, allergies, eye injuries and infections. Optometrists diagnose eye diseases such as cataracts and macular degeneration and make appropriate referral for surgical intervention. Brain tumors, genetic conditions and learning disabilities are also detected by optometrists and referred for proper

diagnosis and care. But the bulk of an optometrist's day is spent correcting refractive error. Data extrapolated from the National Health and Nutrition Examination Survey (NHANES) concluded that over half of the population of the United States had refractive error that was clinically important (Vitale, Ellwein, Cotch, Ferris & Sperduto, 2008). Further, it has been reported that simple spectacle correction enables children to be more successful in school (Khandekar, et al, 2013). Several studies have looked at the correlation between poor vision (from disease or refractive error) and concluded that a decrease in acuity may be a contributing factor to poorer cognitive functioning, including the progression of Alzheimer's Disease in the aging population (Daien, Pérès, Villain, Colvez, Delcourt, Carrière, 2011; Elyashiv, Shabtai, Belkin, 2014). As health care professionals, CHC staff optometrists will communicate their findings and concerns for patients to their CHC medical care provider, thereby providing coordinated care to patients and also reinforcing the importance of eye care to medical staff members. Consequently, the NHSC will be a catalyst in the integration of optometry into the overall health care of patients.

Workforce

In order to meet the need for eye care in CHCs through the NHSC, there needs to be an adequate number of optometrists in the workforce to start, along with a number of new optometrists interested in pursuing a community based practice location. Several eye care workforce studies have attempted to project the future number of practitioners required for a given population. In 1995, Lee and colleagues studied the number of ophthalmologists and optometrists. They concluded that there was a projected surplus of optometrists if ophthalmologists were the preferred provider of eye care and a surplus of ophthalmologists if optometrists were the preferred provider (Lee, Jackson & Relles, 1995). In 2000, the AOA

contracted with Abt Associates to study the optometric workforce only. They concluded that there was growing excess in the number of optometrists primarily based on the number of optometrists retiring and the number of optometrists graduating from school which yielded a ratio of 1:2 (White, Doksum & White, 2000). The AOA and the Association of Schools and Colleges of Optometry (ASCO) engaged the Lewin Group to study the projected need for optometrists beyond 2014. The "Eye Care Workforce Study: Supply and Demand Projections" forecasted an adequate supply of optometrists and a future oversupply if "excess capacity" was considered in the calculations. Excess capacity was defined as the amount those optometrists reported wanting to increase their patient care time, meaning wishful thinking rather than reality (Lewin Group, 2014). In conflict with this study is a 2014 report from The Conference Board which studied a vast array of labor markets in the United States (US) and the European Union (EU). Their conclusion was that the aging population in the US is going to cause an increased demand for health care professions. "Among doctors, optometrists and podiatrists are the specialists most at risk of shortage, with the general physicians and surgeons category not far behind." (The Conference Board, 2014). I had separate discussions with Michael Dueñas, OD, the Public Health Officer at the AOA and David Heath, OD, EdM, President of State University of New York College of Optometry about their interpretations of the Lewin study. Geographic distribution data of optometrists were missing from the study. Both Dr. Dueañs and Dr. Heath agreed that this important data point is a key argument to the inclusion of optometrists in the NHSC.

A search of demographic data compiled by the Cecil G. Sheps Center for Health Services Research at the University of North Carolina-Chapel Hill revealed that 13 counties in North Carolina had **zero** optometrists in 2012 including Swain County (Sheps Center, 2012). I

experienced this finding when I participated as an optometrist in the 2014 Appalachian Medical Care Mission to Swain County. The Health Department of Swain County was chosen as a site for a Department of Defense Innovative Readiness Training exercise where military reservists in medical, dental, veterinary, mental health and optometry set up mobile workstations in order to train for disaster and humanitarian medical missions. In the two week mission to Swain County, the optometry section provided care for 1,202 patients (personal communication with Brady Spencer, MHA, 2014).

The inclusion of optometrists in the student Loan Reduction Program will encourage new optometrists to pursue practice opportunities in areas of need. This in turn will cause the eye care workforce to distribute geographically and fill the gaps of coverage that exist.

Optometry Students

A policy brief by the National Rural Health Association (NRHA) in 2007 identified the issue of optometry school debt as one of the reasons dissuading new optometrists from setting up a practice in rural America (NRHA, 2007). Average optometry tuition data obtained from the National Center for Education Statistics showed an increase in 1989 to 2008 from $9,469 to $22,125 per year (National Education Center for Education Statistics, n.d.). This is an increase of 133 percent in tuition while the US Consumer Price Index only rose 74 percent for the same 19 year time period (United States Department of Labor, n.d.). More recent data from the Association of Schools and Colleges of Optometry (ASCO) showed a continued increase in the average one year tuition from 2010 to 2013 from $30,088.85 to $34,668.90 (ASCO, 2011, p. 1.2; ASCO, 2014). This is a 15 percent increase in tuition which outpaced the 6.8 percent rise in the Consumer Price Index for the same time period (United States Department of Labor, n.d.).

Optometry school is a four year curriculum after a bachelor's degree. The preceding numbers do not account for living expenses for the four years in optometry school nor do they include debt from an undergraduate degree. The average student debt from undergraduate school was $29,400 in 2012 (The Institute for College Access & Success, 2014). Adding up optometry school tuition, four years of living expenses and undergraduate debt, totals can easily approach $200,000 for new graduates. New graduates are interested in pursuing loan reduction through a service agreement. In 2009, a survey was conducted of recent University of Missouri-St. Louis optometry graduates (classes 2006, 2007, 2008) to gauge interest in potential new graduate participation in the NHSC. "Eighty-one percent stated that if student loan forgiveness were offered, they would have sought practice in a CHC (Community Health Center)…" (Wingert, McAlister & Coleman, 2009).

Needs Assessment

Shin and Finnegan of the George Washington University's School of Public Health and Health Services conducted a survey in 2008 of a random sample of 300 of 1,040 CHCs in the US which assessed the eye care needs and workforce of CHCs. They found that there were some impediments to adding eye care in the CHC setting. These included investment money for initial set up of eye care facilities; presumed low reimbursement from insurance; lack of knowledge as to the business, financial and physical requirements for an eye care service; and patients' insufficient understanding of the importance of primary eye care (Shin & Finnegan, 2009).

Since 2008 there has been a reduction of several of the barriers to adding eye care to CHCs. To counter the low funding issue, in June 2014, Mary Wakefield, Ph.D., R.N., administrator of the HRSA, announced that there was $300 million of the PPACA for program

and facility expansion of CHCs (Wakefield, 2014). The PPACA has made children's vision coverage one of the 10 essential benefits that must be included in health insurance plans (HealthCare.gov, 2014). Additionally there are some states such as Kentucky and Missouri which mandate eye examinations before a child starts kindergarten or first grade (Kentucky Revised Statutes, 2000; Missouri Revised Statutes, 2014). According to the Kaiser Family Foundation 92 percent of children had health insurance coverage in 2013 (Kaiser Family Foundation, 2013). (It is beyond the scope of this paper to discuss the various children's vision funding sources and importance of eye examinations during a child's development of visual and perceptual skills. These are important aspects furthering the need for optometrists but their analyses are outside the scope of this paper.) To alleviate the concern about the perceived low reimbursement rates, Medicaid reimbursement rates for typical eye exam codes (92004- new patient and 92014- returning patient) in North Carolina in 2014 were $99.66 and $81.31 respectively (NC Department of Health and Human Services, 2015). The AOA's Health Center Committee estimates the first year utilization of eye care services to be 70 percent (Appendix). Nationwide, the average optometrist sees 1.1 patients per hour (Management and Business Academy for Eye Care Professionals, 2012, p. 5). For the customary eight hour workday, 5 workdays per week and 50 weeks per year, this yields $153,476.40 in exam fees generated by an optometrist assuming all patients in the first year are new patients and the 70 percent utilization rate. To inform CHC about finances and a business model for eye care services, the AOA's Health Center Committee has created a business plan and inventory list for CHCs to use as a template in order to incorporate eye care into their system (Appendix). To counter the patient lack of knowledge of the importance of eye exams, education needs to be targeted at multiple levels of influence. Primary medical care providers need to educate individual patients and

parents; CHC's need to educate their community; and organized optometry at the state and national level need to educate the public at large and continue to be involved with public policy regarding eye care.

For an individual CHC to assess their need for primary eye care, the AOA's Health Center Committee has a questionnaire designed for CHCs to guide them in determining if their eye care needs are being met or are even being recognized (Appendix).

VI. Monitoring and Evaluation

The original purpose of the NHSC was to redistribute primary care providers to underserved areas of the country (Redman, 1973). According to the retention survey conducted in 2012 by the NHSC, overall short-term retention defined as practitioners remaining in an underserved area one year after service obligation, was 82 percent. Overall long-term retention (10 years) was 55 percent (US Department of Health and Human Services, 2012). The expectation of optometry retention would be similar.

Other methods of program evaluation need be used to determine the success of the optometry inclusion. Issel identifies efficacy, effectiveness and efficiency as approaches to program evaluation. Efficacy uses randomized clinical trials to determine the maximum effect under ideal conditions, which would be cumbersome, expensive and nearly impossible in a CHC setting. Effectiveness would be more realistic in a CHC setting since it measures an outcome when an intervention is introduced. One working hypothesis is that rates of vision disability in a community with eye care would decrease, and rates of eye disease diagnosis would increase. Community data regarding not only eye disease but also quality of life could be compared with

other CHCs which do not have vision care on site. Efficiency would be the easiest to measure as it is the number of outputs per input. (Issel, 2009, p. 290) The optometrist is the input and various outputs could be measured such as the number of patients seen, the volume and categorization of disorders and diseases diagnosed and the number of eye diseases medically managed or referred by optometrists. Business income data needs to be tracked by the CHC to demonstrate the return on their initial investment in order to show the financial profit from an optometry department. Other evaluation methods such as surveys of patients and CHC administrators may reveal satisfaction of having an optometrist present in a community.

It would take 10 to 20 years of follow-up to determine the total impact of optometry in CHCs, but the investment to include optometrists in the NHSC Loan Repayment Program is worth the overall short term, mid-range and long term community benefits.

VIII. Impact

In August 2014, I participated in another Department of Defense Innovative Readiness Training exercise in rural Arkansas. During humanitarian missions, patients arrive before daylight to get in line in order to receive medical care. Thousands of people showed up and waited in line all day. We are extremely busy in optometry since vision care is usually an additional rider on insurance plans – if offered at all – and glasses cost money after the exam establishes the prescription.

There is no optometrist in Earle, Arkansas. Earle is a dying town surrounded by fields of corn, milo and cotton. The road sign said the population was 3,500, but the mayor's office said it was closer to 2,400. Corporate agriculture has replaced family farming in this area and

younger people are leaving for jobs in bigger cities. Those who remain are poor and cannot afford an eye exam and a pair of glasses.

On domestic missions, the Navy brings their mobile optical fabrication laboratory. Optometrists determine a patient's prescription and opticians measure and fit patients for a pair of glasses. These orders are sent to the Navy's lab and two days later glasses are delivered back to our makeshift clinic.

While we were in Earle, I saw a patient who was a man in his mid-30s accompanied by his wife and two small children. He let his wife and kids go first to see me. None of them needed glasses, but his wife quietly remarked to me that she hoped that I could help her husband with his vision. I told her that I would do my best. I diagnosed him with a substantial astigmatism prescription. He said that he had broken his glasses long ago and was having trouble getting the money together for some more. (His lenses would be expensive because of his astigmatic prescription.) He said he had even tried the over-the-counter reading glasses at Wal-Mart but those did not help. He could not renew his driver's license without glasses so it had expired. I asked what he did for a living and he said that he was a truck driver. He was an unemployed truck driver.

Two days later the Navy delivered the shipment with his new glasses. His whole family came back to see daddy get his new glasses. (His wife was driving.) I remember him looking out the window across the street at the field of corn. He said he could count every ear. Then he turned to me and said, "Ma'am, you have no idea what you have done for me and my family." Providing this man with an eye exam and a pair of glasses is going to enable him to get a driver's

license again. Hopefully this will lead to him rejoining the workforce, providing for his family and paying taxes rather than he and his family relying on limited unemployment benefits.

VII. Conclusion

Looking 10 years ahead, the first NHSC optometrists will be the ones expanding their departments to include residency programs and optometry school interns. As of 2015 there are only two residency programs in Community Health Optometry out of the over 400 optometric residency positions nationally. Both are affiliated with the New England College of Optometry (NECO) in Boston. I spoke with Doug Hoffman, OD, Director of Residencies for NECO and he explained that residents in the community health optometry program not only spend time in the optometry clinic, but also rotate through other services and engage in a range of community based activities. He stated that although all departments are influenced by fiscal and budgetary considerations, accountable for income and productivity, administrators are committed to the educational mission that includes residents and students who help to staff the eye department. The residency in Community Health Optometry is devoted to community based optometric care with an emphasis on public health and cultural issues that impact care. The resident also participates in community health initiatives that target underserved and at-risk populations. Dr. Hoffman adds, "Residents in Community Health Optometry have a clear career path as part of a patient-centered multidisciplinary team. Numerous former residents staff community health center eye care services throughout the Boston area. These Boston residency programs are successful training models that merit strong consideration for CHCs across the country."

CHC optometry programs across the nation may develop along the same pathway as the optometry programs at the Boston Neighborhood Health System. The labor cost for students and

residents is minimal, yet more patients can be evaluated under the supervision of a seasoned CHC optometrist. Students will get firsthand experience while rotating through a CHC during their fourth year of internships, educating them to the practice of CHC optometry and their highly valued service to the communities they serve.

The Loan Repayment Program that includes optometrists is a small investment for the taxpayers of the United States. The return on investment will yield a higher quality of life for patients and their families, as well as a reduction in vision disability. The re-inclusion of optometrists in the NHSC is the required first step in establishing new graduates in a community practice setting and redistributing optometrists to underserved areas which was the original intention of the NHSC (Redman, 1973).

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APPENDIX
American Optometric Association Health Center Committee Data

American Optometric Association

Key Questions:

Assessing Need for Eye Care at a Community Health Center

January, 2011

1. All patients
   - How are you assuring that your patients are receiving comprehensive eye exams, including dilations, and that a report of their eye exam is received by their PCP?
   - How are you assuring that your patients have access to an optical dispensary to fill eyeglass prescriptions and to have eyeglasses replaced, repaired or adjusted?
   - Does your pharmacy have all the eye care medications that your patients need?

2. Pediatric Eye care

   Infants/toddlers
   - Is a dilated eye examination being done in this age group as part of routine care?

   School-aged children
   - How are you assuring that your children receive comprehensive vision care to diagnosis vision and eye problems that could affect learning? (such as refractive errors, focusing problems, eye turns, and eye coordination problems)

3. Refractive Errors
   - How are you determining if your patients need eyeglasses?
   - Do you have a process in place for patients who need glasses to obtain them?

4. Racial Disparities
   - Are you referring at risk individuals for annual eye exams, such as African-Americans who have a higher prevalence of glaucoma and Latinos who have a higher prevalence of diabetic retinopathy as compared to Whites?
   - How do you track results and need for follow up eye care in high risk patients?

5. Diabetes and Hypertension
   - How are you assuring that all patients with diabetes and hypertension have annual dilated eye examinations?
   - Are you getting regular reports back on findings both negative and positive?
   - How do you track results and need for follow up eye care in high risk patients?

6. Chronic Eye Problems
   - If patients are diagnosed with chronic eye conditions (e.g. dry eye, glaucoma) needing regular follow up and treatment, how are you assuring this is being done?

7. Low Vision Eye Care
   - How are you assuring that elders and those at risk for permanent vision loss are receiving comprehensive and preventive eye services?
   - Are you assessing older patients in the area of falls prevention and providing them with falls prevention education?

Prepared by the American Optometric Association

Notes to Business Plan
American Optometric Association
Date: August, 2013

This business plan developed by the American Optometric Association is presented with conservative assumptions. There are additional ways to assure a new program's success which have not been factored into this model. Possible additional services and approaches which could strengthen the financial performance of a new eye care service include, but are not limited to the following:

1. This is a conservative business model. For example, some states reimburse a Medicaid eye visit at the same rate as a medical visit.
2. Each state and each health center has a different payer mix. Assumptions are currently set at 38% Medicaid, 38% Uninsured, and 24% "Other" payers.
3. This model does not include PPS Encounter Rates or Medicaid wrap-around reimbursement rates.
4. Depreciation, occupancy costs and other operational expenses are not included.
5. Coding of visits – the model includes only basic levels for coding eye visits. Other relevant codes, such as the use of the medical "99" evaluation and management (E&M) codes should be used when appropriate and consistent with how other physicians would code such visits. In addition, coding for fundus photography, visual field testing, and other procedures related to the diagnosis and management of ocular disease will need to be factored into the billing and coding for reimbursement.
6. Frame mix – the success of the eye service is dependent on a revenue stream from both professional visit fees and eye wear. We encourage a wide range of price points so that patients have the freedom to choose fashionable eye wear and the latest in ophthalmic eye wear technologies, such as progressive addition lenses, scratch coatings, anti-reflective coatings, high index lenses, sportswear, etc. *(Also, many frame manufacturers will consign frames rather than requiring an upfront purchase. This enables all parties to benefit and keep the costs of an optical inventory to a reasonable level.)*
7. Contact lenses – the model does not include revenues from contact lenses. This service can be added once the optometrist is in place and assesses need/demand for contact lenses from patients.
8. Consultative ophthalmology – the plan does not presently include on-site consultative ophthalmology. We recommend that whenever possible this billable service is added so that patients have access to advanced medical and surgical care consultations, creating a 'bridge to care' that encourages patients to keep appointments that need to occur outside of the health center.
9. Future potential for GME funding for optometry residents – optometry is not presently eligible for GME funding. However, leaders and policy makers in optometry are exploring the value added of seeking optometry's eligibility for such funding. If optometry becomes eligible for GME funding, then this would further benefit health centers financially, due to reduced personnel costs.

Developed by the AOA Community Health Center Committee

Revised: August 2013

Optometry (OD) Practice
2013 Eye Service Business Model
Eye Clinic = Exam Rooms, Special Testing Rm, Optical/Waiting, Office

Note: For the areas of the spreadsheet shaded in orange, you may enter numbers which are relevant to your region. Due to Federal Trade Commission rules and regulations, we are supplying these financial numbers only as examples. *The ASSUMPTIONS sheet is linked to the OPERATIONS sheet so that changes to the assumptions will be reflected on the operations profit/loss summary of the eye service.*

Example of Revenues	**Year 1**	**Year 2**	**Year 3**
Professional Visit Average Payment (example)	$72	$73	$75
Ophthalmology Visit Average Payment			
Other Visits Average Payment			
Eyeglasses Average Payment			
Example of Forecasting Visits			
Total Health Center Visits	30,000	33,000	36,300
Comprehensive Visits (10% of Total Health Center)	3,000	3,300	3,630
Ophthalmology Visits			
Other visits (walk-ins, consults, etc)	1,200	1,320	1,452
Example of Forecasting Growth of Visits			
Projected % Utilization	70%	80%	100%
Projected Comprehensive Eye Visits	2,100	2,640	3,630
Projected Ophthalmology Visits			
Projected other visits	840	1,056	1,452
Total Visits	**2,940**	**3,696**	**5,082**
Example of Forecasting Eyeglass Purchases	1,260	1,584	2,178
Example of Forecasting Revenue Based on Insurance Status Mix			
Uninsured Visits	1,117	1,404	1,931
Reimburseable Visits	1,823	2,292	3,151
Total Visits	2,940	3,696	5,082
Example of Net Revenues Generated from Above Insurance Status Mix			
Uninsured reimbursement	$17,250	$22,110	$30,990
Professional Service Fee Payment	$93,700	$120,200	$168,600
Eyeglasses	$0	$0	$0
Total Net Revenue*	**$110,950**	**$142,310**	**$199,590**
EXAMPLE OF OPERATING EXPENSES			
Optometrist (OD)	0	0	0
Optometry Resident			
Certified Ophthalmic Assistant	0	0	0
Billing Clerk	0	0	0
MD (Ophthalmologist consultant)	0	0	0
Optical Assistant/Receptionist	0	0	0
Total Payroll	**0**	**0**	**0**
Benefits eligible payroll	0	0	0
Benefits	0	0	0
Utilities			
IT/Data			
Maintenance/Janitorial			
Cost of Goods Sold	0	0	0
Clinic Supplies	11,500	11,845	12,200
Credit card fees			
Occupancy Cost			
Total Expenses	**11,500**	**11,845**	**12,200**

Business Plan for Community Health Center Eye Care Service

START UP/FIRST YEAR EXPENSES EYE CARE SERVICE	Estimated unit cost (linked to optometry equipment)
STARTING CAPITAL AND IMPROVEMENTS (ONE TIME)	
Ophthalmic Equipment	$185,794
Other handheld equipment	$7,486
Optical (cabinets, inventory, etc)	$57,735
Buildout/Lease Hold Improvements (estimated)	$50,000
SUB-TOTAL ONE TIME START UP COSTS	$301,015
OPERATIONAL EXPENSES	
Optometrist (with benefits)	$150,000
Certified Ophthalmic Assistant (with benefits)	$35,000
Optical Assistant/Receptionist (with benefits)	$43,750
Billing Clerk	$35,000
Clinic Supplies	$11,500
TOTAL EXPENSES Year 1 with Start Up Costs	**$576,265**

Note: Assumptions and Business Operations Tabs Need Additional Information from individual CHC to complete plan.

Date: August 2013

Developed by the AOA Community Health Center Committee

Revised: August 2013

Optometry (OD) Practice
Eye Service Business Plan Assumptions

Eye Clinic = Exam Rooms, Special Testing Rm, Optical/Waiting, Office

For the areas of the spreadsheet shaded in orange, you may enter numbers which are relevant to your region. Due to Federal Trade Commission rules and regulations, we are supplying these financial numbers only as examples.
Note: ASSUMPTIONS sheet is linked to the OPERATIONS sheet so that changes to the assumptions will be reflected on the operations profit/loss summary of the eye service.

Assumptions	
60%	= % Visits resulting in eyewear purchase
38%	= Uninsured Care % of patient pool
62%	= Fee for Service % of patient pool
30%	= Average payment reimbursement for Uninsured Care
3%	= Rate of annual salary increases
	= OD base salary
	= Base salary of Certified Ophthalmic Assistant
	= Monthly cost for MD (Ophthalmologist consultant)
	= Base salary for Billing Clerk
	= Base salary for Receptionist / Optical assistant
$11,500	= Utilities in year 1
25%	= Benefits as a function of payroll
50%	= COGS as a function of eyeglass sales
11,500	= Cost of standard supplies
11,500	= Cost of fax machines, computers, copier, printers
1.2%	= Credit card fees as a function of sales
50%	= % Sales that will use credit cards
$25	= Build out cost per square foot
3%	= Annual increase in operating expenses
2%	= Annual rate increase for professional visit average payment
$11,500	= Annual occupancy cost
$10,300	= First year utility cost
2,000	= Gross square feet

Example of comprehensive eye exam payer mix Reimbursement								
Medicaid		38.0%	1			0.38	$96.50	$36.67
Private pay		14.0%	1			0.14	$100.00	$14.00
Other public		3.0%	1	0.1 $51.00	K33		$51.00	$1.53
Medicare		7.0%	1			0.07	$143.00	$10.01
Uninsured		38.0%	1			0.38	$46.50	$17.67
		100.0%				1.0		$79.88
								$79.88
Uncollectible/bad debt/denials								10%
Average payment per patient visit								$71.89

Notes:
1. Based upon average reimbursement for the CPT codes 92004/92014 (new/established patients)
2. Average payment derived from weighted average of each payer's per cent contribution to the final net payment
3. Does not include wrap around payments to FQHCs due to variability of payments schedules from state to state
4. See separate notes page which accompanies this model for other assumptions and caveats

Payer Mix using 2010 Uniform Data System, Bureau of Primary Health Care, HRSA, DHHS. As enrollment in Medicaid programs continues due to the Affordable Care Act and Health Care Reform, the payer mix will be seen to shift seen as shifting downward in percentages for the uninsured.