

# Reframing the US Preventive Services Task Force Recommendations on Screening for Glaucoma

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**B**RAV AND ASSOCIATES FIRST REPORTED THE results of glaucoma screening in the United States of 10 000 Philadelphia factory workers in 1951.<sup>1,2</sup> More than 60 years later, published recommendations of the US Preventive Services Task Force (USPSTF) concluded that sufficient evidence does not exist “to determine the potential benefits and harms of glaucoma screening for adults who do not have signs or symptoms of glaucoma or other vision problems.”<sup>3</sup> In the last year, members of the American Academy of Ophthalmology and the American Optometric Association have debated the implications and meaning of the recommendation, and many practitioners are still not certain how to interpret the findings.<sup>4,5</sup>

Understanding how key terms are used in the report helps both eye care specialists and general health care providers to translate the recommendations into practice. The US National Library of Medicine defines “screening” for the purpose of public information on the Medline Plus website as: “Screenings are tests that look for diseases before you have symptoms. Screening tests can find diseases early, when they’re easier to treat. You can get some screenings in your doctor’s office. Others need special equipment, so you may need to go to a different office or clinic.”<sup>6</sup> The UK National Screening Committee further comments: “Screening is a process of identifying apparently healthy people who may be at increased risk of a disease or condition. They can then be offered information, further tests, and appropriate treatment to reduce their risk and/or any complications arising from the disease or condition.”<sup>7</sup> These definitions are particularly relevant to the USPSTF recommendations that are limited only to screening for glaucoma provided by a primary care professional. Primary care professionals are defined as doctors and nurses who provide general health care. The USPSTF recommendation does not discuss care provided by vision specialists, such as ophthalmologists and optometrists, who conduct comprehensive eye examinations. The recommendations specifically apply

to adults aged 18 and older and are limited to those who may have primary open-angle glaucoma.

Although the lack of sufficiently sensitive and specific test(s) to detect glaucoma, low disease prevalence, and low positive predictive value of such screening tests does not compellingly support the continuation of this practice in the general population, the USPSTF recommendation is not inconsistent with the current Centers for Medicare & Medicaid Services (CMS) policy on glaucoma screening.<sup>8</sup> This agency provides funding for glaucoma screening in defined high-risk populations by ophthalmologists and optometrists. Under the CMS guidelines, once every 12 months individuals with diabetes, with a family history of glaucoma, who are of African-American ancestry over age 50, or who are self-identified as Hispanic-American aged 65 and older may undergo glaucoma screening. This consists of “a dilated eye examination with an intraocular pressure measurement; and direct ophthalmoscopy examination, or a slit-lamp biomicroscopic (examination).”<sup>9</sup>

Screening for any disease is most likely to be useful in populations with high disease prevalence.<sup>10</sup> Certain United States subpopulations may benefit from a detailed CMS glaucoma screening by ophthalmologists and optometrists. Americans of Haitian ancestry may comprise one such high-risk group. Based on estimates of the US Census Bureau in 2009, 830 000 people with Haitian ancestry were living in the United States, or 0.3% of the total population.<sup>11</sup> Newsome and associates in a study of eye disease in the nation of Haiti determined a high prevalence of visual acuity loss and high intraocular pressure (IOP) in patients older than 40.<sup>12</sup> In a 5% population survey of 50 000 residents of the province of Leogane, 10.2%, 12.5%, 14%, and 27.9% of individuals aged 40–49, 50–59, 60–69, and 70 years and older, respectively, had IOP of 25 mm Hg or greater when measured with a handheld applanation tonometer. The IOP range and prevalence of higher IOPs is much greater among Haitians living in Haiti than previously reported for African Americans in the Baltimore Eye Survey whose median IOP was 20 mm Hg.<sup>13</sup> The proportion of patients in Haiti with visual acuity of less than 6/60 in the better eye attributable to glaucoma was 3.75%, and was second only to cataract as a cause of visual loss to a level of less than hand motions in the eye with the better visual acuity. The proportion of patients with either optic neuropathy

Accepted for publication Aug 5, 2014.

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or visual field changes consistent with primary open-angle glaucoma is not known. Whether combining frequency-doubling technology perimetry, as used in screenings sponsored by Prevent Blindness America, with the required elements of the CMS glaucoma screening examination would have more effectively identified Haitian patients with asymptomatic glaucoma is not known.<sup>14</sup> The possibility of further enriching the efficiency of screening could likely have been achieved by selecting patients with a family history of primary open-angle glaucoma in first-degree relatives, as suggested by Quigley.<sup>15</sup>

The USPSTF's failure to find sufficient evidence of either the potential benefits or harms of screening for glaucoma in a general population if conducted by primary care professionals should not be interpreted as an outright rejection of an attempt to identify asymptomatic patients in high-risk groups who may have already have measureable optic nerve injury or visual field loss. A real concern is that primary care providers may erroneously interpret the USPSTF recommendations that glaucoma screening is of

no value and fail to refer high-risk patients who have been previously identified by CMS for evaluation. With respect to the prevalence in glaucoma within certain population subsets in the United States, the distribution pattern may more likely resemble that of a mosaic rather than a uniform "melting pot" (Eve Higginbotham, SM, MD, personal communication, June 12, 2014). Whether the prevalence of primary open-angle glaucoma in the black population in East Baltimore can be generalized to other patients of African ancestry remains to be determined.

Glaucoma screening as defined by CMS may be of considerable value in minority immigrant populations that have long been underserved and have had limited access to health care. They may be most likely to benefit from selective and aggressive screening for glaucoma. Not having the evidence-based literature to either support or reject the glaucoma screening should not be taken as an excuse for not pursuing appropriate care for patients who are known to be at high risk.

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THE AUTHOR HAS COMPLETED AND SUBMITTED THE ICMJE FORM FOR DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST. Financial disclosures: Center for Haitian Studies Board of Directors, Miami, Florida, USA (Member, Board of Directors—unpaid volunteer), Alcon Laboratories, Inc (Consultant), Alimera Sciences, Inc (Member, Scientific Advisory Committee and Stock Options), Aerie Pharmaceuticals, Inc (Member, Scientific Advisory Board and Stock Options), AqueSys, Inc (Stock Options), Glaukos Corporation (Stock Options), InnFocus, Inc (Member, Scientific Advisory Board and Stock Options). Funding/support: National Eye Institute E215R21EY022700-02 Advanced Imaging in Glaucoma Study Optic Disc Reading Center Principal Investigator. Supported by National Institutes of Health Center Core Grant P0EY014801, Research to Prevent Blindness Unrestricted Grant, and Strobis Glaucoma Foundation, Inc. The funding sources had no role in the design or conduct of the study; collection, management, analysis, or interpretation of the data; or preparation, review, or approval of the manuscript. Contributions of author: Richard K. Parrish II is responsible for entire content and authorship.

The author acknowledges Dale K. Heuer, MD, Medical College of Wisconsin, Milwaukee, Wisconsin, and Eve Higginbotham SM, MD, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, for editorial suggestions.

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