“Unlocking the Secrets of Vision and Public Health”
Presentation by Dr. Stephen Ryan
Prevent Blindness America Vision Symposium
Wednesday, April 18, 2007
Marriott Learning Complex/Ronald Reagan Building
1300 Pennsylvania Avenue, Washington, DC
8:35 -8:45 am

Thank you, Hugh, for your gracious invitation to provide the keynote address this morning.

My comments, entitled *Unlocking the Secrets of Vision and Public Health,* are meant to provide a larger context in which to consider the presentations to follow, which will characterize the major and growing public health problem of vision impairment and eye disease and its associated cost burden to the United States. I am honored to be part of a faculty that includes the best and brightest of the vision health and disease prevention research community.

More importantly, however, I will use this overall context to issue a challenge to our community to use, and even develop further, these data to ultimately create cogent, cost-effective reasons to support public and private programs that will ensure the vision health of all Americans.

In that regard, I wish to commend PBA for its leadership in working with the Centers for Disease Control and Prevention, the National Eye Institute within the National Institutes of Health, and the entire vision community to develop the report being released today, *The Economic Impact of Vision Problems: The Toll of Major Adult Eye Disorders.* As we will learn throughout the morning, these data will add significantly to our understanding of the impact of the direct and indirect costs associated with the four major age-related eye diseases—age-related macular degeneration, or AMD, diabetic retinopathy, cataract, and glaucoma—as well as refractive errors, vision impairment, and blindness. With the addition of these data, we will move one step closer to making the strongest case possible for the cost-effectiveness of comprehensive vision care in the United States, which we can use to support our community’s goals of:

- Appropriate federal funding for vision research conducted by the NEI and other entities, such as the Department of Defense and Veterans Administration;

- Appropriate federal funding for eye disease prevention research conducted by the CDC.

- Timely and rational product approval decisions by the Food and Drug Administration, as well as appropriate coverage and payment

policies for services and products by the Centers for Medicare and Medicaid Services, as well as private insurers; and

- Expanded access to vision health services across all age ranges, especially with preventive eye care practices.

Let me provide a recent, relevant example. On March 27, I testified for increased Fiscal Year 2008 NIH/NEI funding in my role as Board President of the National Alliance for Eye and Vision Research before the House Labor, Health and Human Services, and Education (LHHS) Appropriations Subcommittee. In preparation, I watched C-Span's coverage of the March 19 Senate LHHS Appropriations Subcommittee hearing with NIH Director, Dr. Elias Zerhouni. In his opening statement at that hearing, Chairman Tom Harkin asked Dr. Zerhouni—and, by inference, the entire medical research advocacy community—to provide him the tools he needed to make the strongest case possible with his Congressional colleagues for the value of the federal investment in NIH-funded research—specifically, cost-effectiveness, whether measured in terms of lives saved, reduced disability payments, enhanced quality of life, or any other useful metrics. Dr. Zerhouni proceeded to highlight the dramatic decreases in cancer and heart attack mortality, and the concomitant data on lives and cost saved, in comparison to the per-person, per-year investment in the NIH over the past thirty years.

With the release of today's report, our vision community must now move forward in using these data to ensure that NIH Director Zerhouni and NEI Director Dr. Paul Sieving have both <u>qualitative</u> and <u>quantitative</u> answers to the question, "What has been the return on the $1.20 per-person, per-year investment in the NEI over the past 30 years?"

Granted, Dr. Zerhouni in his verbal and written testimony, Dr. Sieving in NEI's FY2008 Congressional Justification, and I, in my recent testimony, have all had a strong story to tell about the <u>qualitative</u> value of NEI's collaborative research, including:

- How it addresses NIH's public health challenges, such as an aging population; health disparities; the shift from acute to chronic disease; and the co-morbid conditions associated with chronic diseases, such as diabetes.

- How it meets Dr. Zerhouni's goal for NIH research and clinical practice for the 21st century— that is, preemptive, predictive, preventive, and personalized.

- And, specific examples of those 4Ps in relation to NEI-funded aging eye research, specifically the breakthrough discovery of gene variants associated with the incidence of AMD; the first

generation of FDA-approved ophthalmic drugs to treat "wet" AMD and potentially macular edema associated with diabetic retinopathy; and the preventive effect demonstrated by minerals and antioxidant vitamins against progression to advanced AMD within the first phase of NEI's Age-related Eye Diseases Study, or AREDS.

The vision community can also provide strong qualitative examples of new developments in vision research and patient care. For example, yesterday afternoon I spoke before Congressional staff about the new generation of non-invasive imaging technologies, including Optical Coherence Tomography, or OCT, that are enabling practitioners to view key physiological structures within the eye to determine how changes over time relate to eye disease and vision impairment. By analyzing changes in the cross-sectional images of the layers of the retina over time, we will be able to evaluate and potentially prevent the onset or progression of both the "wet" and "dry" forms of AMD through early intervention, or use this technology to personalize treatment regimens. We can also analyze the optic nerve head to better assess the early signs of glaucoma which, as you know, is now more fully understood as a complex neurodegenerative disease. We can also more fully evaluate cataract patients pre- and post-operatively.

The eye research community can even provide a strong qualitative answer to a new question raised at several of these NIH-related appropriations hearings this year—that is, how is NIH-funded research helping veterans returning from Iraq and Afghanistan. NIH, DOD, and VA-funded research has, indeed, had a tremendous impact, in terms of corneal healing and infection control, improvements in corneal transplantation, and the potential promise of restored sight through development of retinal implants. This is important, as 16 percent of all current war injuries involve damage to the eye, and 30 percent of all traumatic brain injuries affect vision. These acute injuries can often result in chronic conditions that will result in a lifetime of care and governmental expense. Additionally, the VA health system is without a doubt treating one of largest patient populations with age-related eye diseases, due to veterans from World War II, Korea, and Vietnam.

So, where do we stand in turning these dramatic qualitative examples into hard-hitting, quantitative cost effectiveness arguments? Through NEI-sponsored epidemiological studies, CDC incidence statistics, and data from the NEI/PBA report issued in 2000, *Vision Problems in the US*, we know that age-related eye disease is a fast-growing public health problem with a disproportionate incidence in minority populations. Through NEI-funded research and downstream, private-sector commercialized drug and device diagnostics and treatments, we now have a greater set of tools to predict, prevent, preempt, and treat, on a personalized basis, age-related eye disease, much as that envisioned in Dr. Zerhouni's "4Ps".

With the release of today's study, we now have additional incidence data and the extremely important concomitant direct and indirect costs.

Here is my challenge to all of us today, and I'll issue it in the form of a fifth P – for Power, the power of cogent, quantitative, cost-effective examples of the increasing burden of eye disease and vision impairment to support public and private investment in programs that will ensure the vision health of all Americans. Even with their limited resources, I ask the NEI and the CDC to join with the vision research community in more fully characterizing and expressing this burden. I ask the leaders of the various vision organizations represented here today to commit to supporting this effort, and to urge your colleagues not in attendance to do so. When the NAEVR Board meets in early May, I will ask it to adopt a resolution to fully support these collaborative efforts, and for NAEVR Executive Director Jim Jorkasky to work with Hugh Parry and his team to explore how this community can develop the strongest possible arguments to support our goals of the best possible vision for all Americans.

We all have far too much to lose by not proceeding further, including our own best vision health.

Thank You.