



# A Life Course of Healthy Vision:

## A Critical Priority for the 21st Century

# Opening Letter

The aging of the global population is one of the mega-trends defining the 21st century. This demographic shift is unlocking enormous potential for innovation but also placing mounting pressures on our societies. Increasingly, healthy aging is our goal and maintaining “functional ability” the benchmark of successful longevity. In recognition of this changing landscape, the World Health Organization (WHO) has launched ambitious new initiatives, including the upcoming Decade of Healthy Ageing (2020-2030), the recent High-Level Meeting on Non-Communicable Diseases (NCDs) at the 73rd United Nations General Assembly, and a highly anticipated first World Report on Vision, expected to be released later in 2019.

Well-researched efforts to integrate eye health into aging strategies and aging into eye health strategies have begun to move the needle on avoidable vision loss, but an effective response will require nothing short of a co-ordinated, cross-sector effort and widespread recognition that vision loss should not be accepted as a normal consequence of aging. This paper aims to reframe our understanding of vision loss in older adults and underscore both the opportunity and urgency of this moment. Now is the time for WHO member states and stakeholders from across healthy aging to align efforts for a shared priority for eye health. Healthy vision is a critical component of healthy aging, and our changing demographics demand that we must take action now to reverse the growing global burden of avoidable vision loss.

**Michael W. Hodin, PhD**

CEO

Global Coalition on Aging

The Global Coalition on Aging aims to reshape how global leaders approach and prepare for the 21st century's profound shift in population aging. GCOA uniquely brings together leading global corporations across industry sectors with common strategic interests in aging populations, a comprehensive and systemic understanding of aging, and an optimistic view of its impact. Through research, public policy analysis, advocacy, and communication, GCOA shapes the dialogue and advances solutions to ensure aging is a path to health, productivity, and economic growth.

GCOA thanks Novartis for its support on this important issue and the participants of our December 2018 Life Course of Healthy Vision roundtable, whose invaluable insights guided the creation of this report:

<b>Shiri Azenkot</b> Associate Professor, Cornell Tech	<b>Danny Haddad</b> Chief of Programs, Orbis	<b>Maja Pašović</b> Manager, International Programs and Disability Advocacy, National Alliance for Caregiving and International Alliance of Caregiver Organizations
<b>Kira Baldonado</b> Vice President, Public Health and Policy, Prevent Blindness	<b>Brian Hofland</b> President, Research to Prevent Blindness	
<b>Lindsay Clarke</b> Vice President of Health Programs, Alliance for Aging Research	<b>Joerg Jenewein</b> Director of Global Public Affairs, Novartis	<b>Nick Padula</b> Vice President, Strategic Solutions—North America, Philips Healthcare
<b>Mark Brennan-Ing</b> Senior Research Scientist, Brookdale Center for Healthy Aging (Hunter College)	<b>Scott Kirk</b> Senior Director, EyeMed	<b>Bob Perkins</b> Managing Partner, EmotionInc
<b>Michael Buckley</b> Vice President of Public Affairs, BrightFocus Foundation	<b>Nick Kourialis</b> Vice President, Eye Health, Helen Keller International and Board Member, IAPB	<b>Richard Soden</b> Director of Health Care Development, SUNY College of Optometry
<b>Patricia Conboy</b> Head of Global Ageing and Advocacy, HelpAge International	<b>John Lahr</b> Vice President and Medical Director, EyeMed	<b>Cynthia Stuen</b> Representative to the UN, International Federation on Ageing
<b>Tara Cortes</b> Executive Director, Hartford Institute for Geriatric Nursing	<b>Didier Leclercq</b> Managing Director, Nestlé Skin Health SHIELD	<b>James Tsai</b> President, New York Eye and Ear Infirmary of Mount Sinai
<b>Christina Fasser</b> President, Retina International	<b>Stephanie Lederman</b> Executive Director, American Federation for Aging Research	
<b>Louise Gillis</b> President, Canadian Council of the Blind	<b>Shatho Nflia</b> Associate Social Affairs Officer, Programme on Ageing Unit, UNDESA	

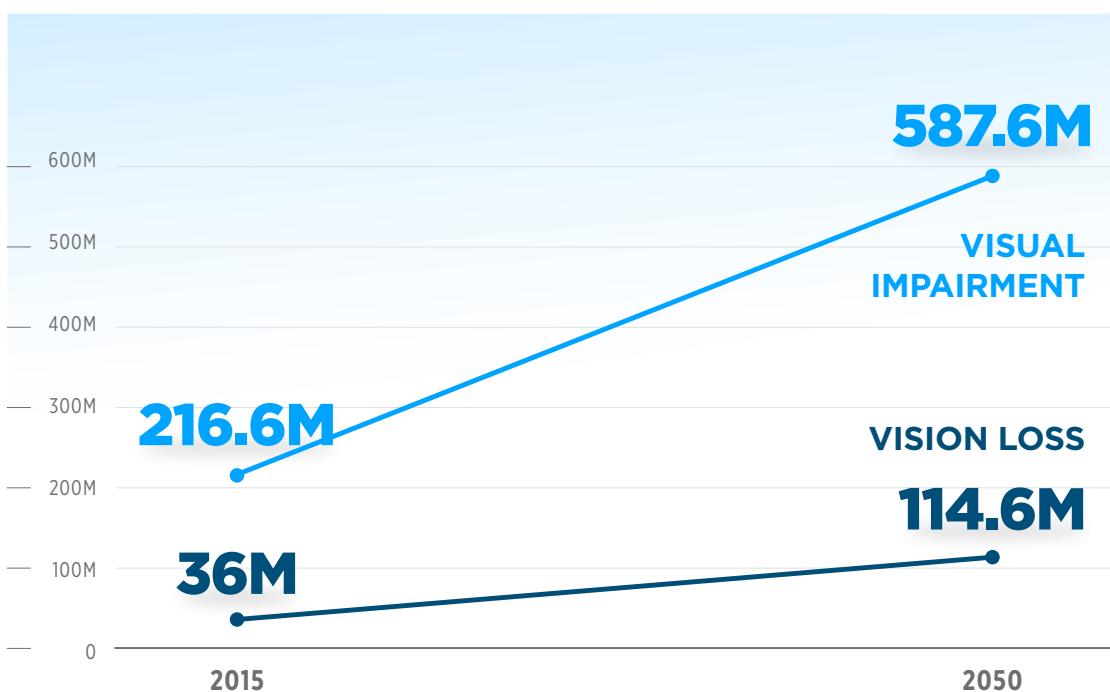
## I. Introduction: A Crossroads For Vision

Severe visual impairment and vision loss are widespread, largely avoidable, and poised to skyrocket if we fail to motivate action on eye health for older adults.

We have reached an unprecedented moment in history: the global population is rapidly aging. In most industrialized nations, older adults are the fastest growing age group, with those over age 60 expected to number 2 billion by mid-century.<sup>1</sup> As a result of this profound demographic transformation, today we stand at a crossroads for visual impairment and vision loss, conditions nearly perfectly correlated with growing old.

Severe visual impairment and vision loss are already widespread, and the numbers are poised to skyrocket. In 2017, 253 million individuals worldwide were considered visually impaired, and 81% of those were age 50 or older.<sup>2</sup> With the population of older adults quickly outpacing children and young adults across countries in Europe, Asia, North America, and Australia, without changes in the way we address eye health, the number of those with vision loss will triple by 2050, from 36 million in 2015 to an estimated 114.6 million, and the number of people with vision impairment will rise from 216.6 million in 2015 to a projected 587.6 million in 2050.<sup>3</sup>

**As a result of this profound demographic transformation, today we stand at a crossroads for visual impairment and vision loss, conditions nearly perfectly correlated with growing old.**



As startling as this prospect is, this moment presents an incredible opportunity to bend the curve on vision loss and the associated costs. **A full 80% of visual impairment and vision loss is considered avoidable.**<sup>4</sup> Yet vision loss presents a paradox: Americans rank losing their eyesight among their biggest health fears. Loss of vision or significant impairment can have an immediate and devastating impact on an individual's independence,

**Our collective failure to prioritize eye health will have catastrophic consequences for us all.**

functional ability, health, and quality of life. In fact, 9 out of 10 participants in an Australian study report that they value sight above any of their other senses.<sup>5,6</sup> However, this acute fear of vision loss has failed to motivate action—either at the individual level or at the system level—to protect this most valued of our senses.

Ageism is a major culprit of this inaction. From providers to the general public to older adults themselves, a dangerously pervasive view persists that vision loss is simply an inevitable consequence of living longer and does not warrant attention, action, or investment. Therefore, it should come as no surprise that uptake of eye care is low, contributing to under-reporting, poor diagnosis, and under-treatment. In Germany, only one-third of the population makes regular visits to an eye care provider, and half of those with an eye disease or at risk due to age, fail to get an annual exam.<sup>7,8</sup> In the US, this number is as high as 86%.<sup>9</sup>

Age-related macular degeneration (AMD)—a serious yet often treatable eye condition that, as the name suggests, is closely correlated with aging—presents a particularly telling example. Untreated AMD is a major contributor to the global burden of avoidable vision loss, yet a full 32% of AMD patients do not continue the full treatment plan recommended by their physicians, with treatment dropout increasing over time.<sup>10</sup> This is true for glaucoma, as well. Glaucoma is one of the leading causes of irreversible vision loss and contributes significantly to reduced quality of life, primarily through the loss of functional ability. Further, those most at risk of developing glaucoma are also the least likely to continue treatment, lending additional complexity and urgency to the need for solutions.<sup>11</sup>

Our collective failure to prioritize eye health will have catastrophic consequences for us all. Because of chronic and pervasive ageism within health care systems, provider interactions with patients, and national guidelines, we are robbing seniors of the ability to see. And the loss of a critical ability like sight has enormous repercussions for older adults themselves, their caregivers, and for our health systems.<sup>12</sup> Further, because of population aging, this failure is simply unsustainable. We must take action now to interrupt the current trajectory and elevate vision loss as a high priority on the public health and economic policy agendas. We cannot afford not to.

## II. Costs To Individuals And Society

Everybody pays for our failure to adequately address and prevent visual impairment and vision loss.

Globally, our failure to prevent vision loss comes with a hefty price tag, with direct healthcare costs connected to eye health estimated to top \$3 trillion.<sup>13</sup> Only a portion of the associated costs is due to the expenses of treatment. Our expenses compound when factoring in the costs of rehabilitation, hospitalizations due to falls or other injuries, and long-term care. And the indirect costs of visual impairment—including for informal care and costs due to loss of productivity—are projected to rise from \$652 billion in 2010 to \$760 billion by 2020.<sup>14</sup>

Widespread screening or other early intervention and prevention measures have frequently been dismissed as inefficient or too costly to the health system,<sup>15</sup> but lack of early investment in eye health leads to higher costs later for our health systems, elder care systems, and for society. In Australia, an early intervention and prevention initiative is projected to save the country AU\$911 million, a 4.8-fold return on their initial investment.<sup>16</sup> And with the development and widespread implementation of innovative new technologies, such as artificial intelligence and remote care tools, prevention and early diagnosis at scale is expected to become even more cost-effective.<sup>17,18</sup>

### CAREGIVER INVESTMENT



## RISKS RELATED TO POOR EYE HEALTH

**9.5X**

GREATER RISK  
OF ALZHEIMER'S  
DISEASE



**2.4X**

GREATER RISK  
OF FALLS



**200%**

INCREASE  
IN DEPRESSION



Of course, the costs of vision loss extend far beyond the immediate financial impact on health and care systems and businesses and economies. Lack of attention and action to prevent vision loss exacts the greatest toll on individuals themselves. Visual impairment and vision loss are associated with significantly lower quality of life, including a 200% increase in the risk of clinical depression,<sup>19</sup> loss of independence and functional ability, and related morbidities that further hamper healthy and active aging.

**(...)untreated poor  
vision is associated  
with a 9.5 times  
greater risk of  
Alzheimer's disease.**

Perhaps unsurprisingly, moderate to severe visual impairment leads to a 2.4 times greater risk of falls, which often sets off a cascade of deteriorating health.<sup>20</sup> Less well known, however, is that untreated poor vision is associated with a 9.5 times greater risk of Alzheimer's disease,<sup>21</sup> and the negative impacts of vision

loss extend even to the families and caregivers of those affected.<sup>22</sup> Each year, caregivers offer their time, support, and care for those with severe visual impairment, an investment valued at over \$47,000 per year.<sup>23</sup> A UK study found that the impact on caregivers is profound: nearly one-quarter reported taking time off of work to support patients with their eye treatments, and 10% lost income as a result of their care responsibilities. Further, these caregivers also reported greater anxiety and depression related to their care recipients' vision loss.<sup>24</sup>

These compounding negative costs, both financial and in terms of quality of life, like vision loss itself, are largely avoidable, but several key barriers have made it difficult to motivate action on eye health.

### III. Barriers To A Priority For Eye Health

There is a gap between today's view of vision loss as a major health issue and action to prevent it. Challenges persist on the societal level, the system level, and the individual level that contribute to this gap, hampering both the demand for and access to eye care. As a result, even in settings where treatment is available, many continue to lose their sight unnecessarily due to a range of barriers that lead to widespread undertreatment. In this section, we outline a few of the leading factors that contribute to this global epidemic of undertreatment.

**Ageism.** While aging presents the biggest risk for visual impairment, vision loss should not be dismissed as just a normal consequence of growing older. It ought not be accepted as such by individuals or our health care systems. Yet, deeply entrenched ageism—both institutional and internalized—has led to a failure to provide, seek, or

**(...)deeply entrenched ageism—both institutional and internalized—has led to a failure to provide, seek, or continue vision care.** In care settings, older adults often have a different clinical experience than those in other age groups, with symptoms dismissed by providers who perceive them to be an expected consequence of aging rather than an indication of a clinical problem warranting attention.<sup>25</sup> This attitude can also extend to general public. In the US, 44% of older adults do not believe they even have a need for eye care.<sup>26</sup>

**Health System Silos.** Often, the structure of our health systems creates barriers to prevention and early intervention. Many health systems—including in the US, Australia, France, Germany, and the UK—segregate eye care from the rest of the system.<sup>27,28,29</sup> These so-called silos fail to meet older adults where they are, even those in frequent contact with the health care system as they manage chronic conditions that may be co-morbid with deteriorating vision, such as diabetes. Those with visual impairment are more likely to suffer from 13 major chronic conditions, including hearing impairment (1.9 times more likely), kidney failure (2.3 times more likely), and stroke (2 times more likely).<sup>30</sup> This segregation in how our systems are organized creates missed opportunities for earlier diagnosis and a more comprehensive, coordinated, and person-centered approach to health and wellbeing.

**Treatment Burden.** Treatment for eye disorders can be resource-intensive, creating disincentives to providing, reimbursing, and continuing care and straining our ability

to do so. For example, in many settings, AMD must be treated by an ophthalmologist, creating bottlenecks in care and barriers to treatment. For patients, AMD treatment is time intensive, with the average total commitment for a single treatment estimated at nearly 12 hours, when accounting for pre-appointment preparation, travel time, wait time, time for the treatment itself, and recovery.<sup>31</sup> Unsurprisingly, patients report higher satisfaction with fewer doctor visits and frequently fail to complete treatment.<sup>32</sup> Nearly 40% of AMD patients in Germany drop out of their treatment after two years,<sup>33</sup> and a US study found that only 40% continued treatment after the first year.<sup>34</sup> And despite widespread undertreatment and treatment drop-off, most clinics already have full schedules, and pressure to see the growing number of new patients, who are more time intensive than existing patients, stresses clinic capacity.<sup>35</sup>

**Strained Capacity.** For care that meets deeper needs, a shortage of specialists and overburdened workload contribute to low access. In countries across Europe, there are too few ophthalmologists to provide needed specialty care (.38 per 10,000 in the UK, .81 per 10,000 in Germany, .92 per 10,000 in France, and 1.15 per 10,000 in Italy), and these numbers are worse in low and middle income countries.<sup>36</sup> The relatively low number of specialists to provide this care points to an opportunity to empower providers across the eye care ecosystem—retina specialists, ophthalmologists, specialized nurses, and optometrists—to redistribute responsibilities and maximize efficiencies across the eye care ecosystem. This should include training and empowering a wider range of providers in the use of optical coherence tomography (OCT) scans, a critical tool in determining eye health. The scope of optometry practice varies by country, but movement towards the US model in terms of education, standards of care, and scope of practice would be an important first step towards more efficient delivery of high-quality care across the care continuum.

**Policy.** Policies themselves can create additional barriers. For example, the manner in which care is financed, and by whom, may contribute to low uptake of eye care. Adults in the US, Hong Kong, and China cite lack of insurance or insufficient coverage as a barrier to making an appointment.<sup>37</sup> In the US, care to treat or prevent vision loss is not reimbursed along with chronic diseases,<sup>38,39,40</sup> creating a disincentive to provide care and an inability to pay for care, all while signaling to older adults that their eye health is less important than the health of their other major organs. Further, policies such as “step therapy” in the US can undermine treatment by forcing patients to fail on less expensive drugs before they can access the drug preferred by the eye care provider.<sup>41</sup>

The challenges to meaningful action on eye health are surmountable, but overcoming them will require coordinated and sustained efforts across sectors and stakeholders. The impacts of vision loss extend far beyond the health system, and it follows that commitment and action must also reach across sectors to bring all stakeholders to the table.

## IV. An Opportunity For Action

As the World Health Organization (WHO) prepares to release its first World Report on Vision in 2019 and to launch the Decade of Healthy Ageing in 2020, member states and their policymakers, the eye health and aging communities, and the private sector all have the opportunity to come together today to begin to interrupt the status quo on vision loss in older adults through targeted and coordinated action along five key pillars:



### ACCESS & CAPACITY

- Support greater eye health literacy and update training and care standards across the care ecosystem to increase opportunities for prevention and earlier diagnosis of eye disorders at each touchpoint, particularly for older adults.
- Update clinical practice guidelines at regular intervals to align with the most recent recommendations for best practices and optimal patient outcomes.
- Introduce mechanisms to ensure greater communication and coordination care across the care ecosystem, including with related specialists (eg. neurologists, endocrinologists).
- Introduce training and care standards across the care ecosystem that encourage a person-centered approach to care that considers the whole health of the individual, including eye health.
- Empower all eye care providers to ensure a holistic approach that leverages expertise across the eye care continuum to maximize efficiencies.
- Build holistic eye care centers that make the full continuum of eye care available under one roof.



## FINANCING

- Introduce reimbursement and funding mechanisms that align incentives across the care ecosystem to expand access to eye care and to motivate prevention and earlier diagnosis and treatment.
- Introduce reimbursement and funding mechanisms that align incentives across the care ecosystem to encourage a person-centered approach to care that considers the health of the whole individual.
- Support policies that increase access to the right treatment at the right time and advocate for the inclusion of preventive eye exams in care coverage.



## RESEARCH

- Invest and create incentives to invest in research into innovative treatments, particularly those that reduce the burden associated with ongoing treatment.
- Invest and create incentives to invest in research into strategies to improve treatment adherence.
- Invest and create incentives to invest in research to improve and advance community-level public health interventions for eye health.



## EDUCATION

- Launch a coordinated and sustained education campaign to change the narrative around eye health and the right to sight for older adults along multiple touchpoints and multiple media platforms, including at the doctor's office, in public ad spaces, on social and traditional media, via public health systems, and in the workplace.
- Launch a coordinated and sustained education campaign to increase literacy about basic eye health and the need for dilated eye exams, especially for older adults, along multiple touchpoints and multiple media platforms, including at the doctor's office, in public spaces, on social and traditional media, via public health systems, and in the workplace.

- Increase professional education about the connection between eye health and other common health conditions—including heart disease, stroke, depression, and diabetes—and encourage improved communication across providers in different specialties.



## WORKPLACE

- Introduce vision screening in the workplace to support wellness and earlier diagnosis and treatment of eye health disorders.
- Insert questions about eye health into employers' health risk assessments, and, in that process, collect valuable data about the prevalence of unaddressed visual impairment and insights into meeting employee needs.
- Leverage existing workplace wellness programs to increase eye health literacy and motivate action in eye health among employees.
- Adopt age-friendly workplace policies to ensure that employees with visual impairments can remain productive and employed and flexible work arrangements for employees with caregiving responsibilities.
- Ensure that employee health benefits include preventive care for eye health and access to necessary treatment.

# Conclusion

A life course of healthy vision is possible and within reach. Momentum is growing across the public, non-governmental, and private sectors and within WHO member states to prioritize eye health. Today, let us build on this momentum, embedding eye health into parallel global initiatives on aging, vision, and NCDs, and work together to ensure a future where healthy vision and healthy aging are a reality for all.

## ENDNOTES

- <sup>1</sup> United Nations Department of Economic and Social Affairs, World Population Prospects The 2017 Revision: Key Findings and Advance Tables. New York: United Nations, 2017.
- <sup>2</sup> World Health Organization, Blindness and vision impairment. Geneva: World Health Organization, 2018.
- <sup>3</sup> Bourne, et al., Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and meta-analysis. Cambridge: Lancet Global Health, 2017.
- <sup>4</sup> World Health Organization, Blindness and vision impairment. Geneva: World Health Organization, 2018.
- <sup>5</sup> American Optometric Association, Survey: Loss of sight is a top concern for Americans. St. Louis: American Optometric Association, 2014.
- <sup>6</sup> Vision 2020 Australia, Eye Health Report Card: The state of Australia's eye health. Melbourne: Australian Government, 2013.
- <sup>7</sup> Schuster, et al., Who visits an ophthalmologist and how often? Results of the German nationwide adult health survey. Mainz: Springer Medicine, 2018.
- <sup>8</sup> Schuster, et al., Who visits an ophthalmologist and how often? Results of the German nationwide adult health survey. Mainz: Springer Medicine, 2018.
- <sup>9</sup> Lighthouse International, Those who are the most at risk of losing their vision do not get an annual eye exam. New York: Lighthouse International, 2010.
- <sup>10</sup> Ehlken, et al., Association of treatment adherence with real-life VA outcomes in AMD, DME, and BRVO patients. Freiburg: Dove Press, 2018.
- <sup>11</sup> Morse, et al., Improving Medication Adherence to Reduce Vision Loss in Patients with Glaucoma: Low Hanging Fruit? Madison: American Academy of Ophthalmology, 2015.
- <sup>12</sup> National Academies of Sciences, Engineering, and Medicine, Making eye health a population health imperative: Vision for tomorrow. Washington: The National Academies Press, 2016.
- <sup>13</sup> AMD Alliance International, The Global Economic Cost of Visual Impairment. Sydney: Access Economics, 2010.
- <sup>14</sup> International Federation on Ageing, The High Cost of Low Vision. Toronto: International Federation on Ageing, 2013.
- <sup>15</sup> Christina Fasser, A Life Course of Healthy Vision Roundtable. New York: Global Coalition on Aging, 2018.
- <sup>16</sup> Taylor, et al., Costs of Interventions for Visual Impairment. American Journal of Ophthalmology, 2007.
- <sup>17</sup> James Tsai, A Life Course of Healthy Vision Roundtable. New York: Global Coalition on Aging, 2018.
- <sup>18</sup> Brian Hofland, A Life Course of Healthy Vision Roundtable. New York: Global Coalition on Aging, 2018.
- <sup>19</sup> International Federation on Ageing, The High Cost of Low Vision. Toronto: International Federation on Ageing, 2013.
- <sup>20</sup> Saftari and Kwon, Ageing vision and falls: a review. Ulsan: Journal of Physiological Anthropology, 2018.
- <sup>21</sup> Rogers et al., Untreated Poor Vision: A Contributing Factor to Late-Life Dementia. Ann Arbor: American Journal of Epidemiology, 2010.
- <sup>22</sup> Kathleen Melissa Ke, The direct, indirect and intangible costs of visual impairment caused by neovascular age-related macular degeneration. The European Journal of Health Economics, 2010.
- <sup>23</sup> International Federation on Ageing, The High Cost of Low Vision. Toronto: International Federation on Ageing, 2013.

<sup>24</sup> Gohil et al. "Caregiver Burden in Patients Receiving Ranibizumab Therapy for Neovascular Age Related Macular Degeneration." 2015.

<sup>25</sup> Lindsay Clarke, A Life Course of Healthy Vision Roundtable. New York: Global Coalition on Aging, 2018.

<sup>26</sup> Center for Disease Control, Many Americans Are Skipping Eye Care. WedMD, 2011.

<sup>27</sup> Einer Elhauge, The fragmentation of U.S. health care: causes and solutions. New York: Oxford University Press, 2010.

<sup>28</sup> Vision 2020 Australia, The Economic Impact of Vision Loss in Australia in 2009. Sydney: Access Economics, 2010.

<sup>29</sup> Lawrence Brown, Comparing Health Systems in Four Countries: Lessons for the United States. American Journal of Public Health, 2003.

<sup>30</sup> Centers for Disease Control and Prevention, Vision Health Initiative: Preventing Vision Loss. Washington: Department of Health and Human Services, 2018.

<sup>31</sup> Prenner et al., Disease Burden in the Treatment of Age-Related Macular Degeneration. American Journal of Ophthalmology, 2015.

<sup>32</sup> Kim et al, Life Satisfaction and Frequency of Doctor Visits. Psychosomatic Medicine, 2014.

<sup>33</sup> Heimes et al., Compliance of age related macular degeneration patients undergoing anti-VEGF therapy : Analysis and suggestions for improvement. Münster: Ophthalmologe, 2016.

<sup>34</sup> Brolucizumab Immersion Deck – Category and market overview (Novartis) p. 28

<sup>35</sup> Brolucizumab Immersion Deck – Category and market overview (Novartis)

<sup>36</sup> Number of ophthalmologists per 10,000 population in Europe in 2017. Statista, 2018.

<sup>37</sup> Colleen Riley, Global Perceptions and Vision Care Realities. Ambler: Contact Lens Spectrum, 2010.

<sup>38</sup> Unite For Sight. Eye Care Policy in the United States. New Haven: Unite For Sight, 2019.

<sup>39</sup> Kira Baldonado, A Life Course of Healthy Vision Roundtable. New York: Global Coalition on Aging, 2018.

<sup>40</sup> Nick Kourialis, A Life Course of Healthy Vision Roundtable. New York: Global Coalition on Aging, 2018.

<sup>41</sup> Letter Expressing Concern Over CMS Policy on Step Therapy for Part B Drugs. Washington: Part B Access for Seniors and Physicians Coalition, 2018.



**For more information contact**

Susan Wile Schwarz

[sschwarz@globalcoalitiononaging.com](mailto:sschwarz@globalcoalitiononaging.com)

[globalcoalitiononaging.com](http://globalcoalitiononaging.com)