The Burden and Future Implications of Adult Visual Disorders in the United States

Presented by
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Burden of Adult Visual Conditions in the United States

Total: $51.4 billion

Costs (in billions):
- Direct medical costs: $16.2 billion
- Other direct costs: $11.2 billion
- Lost productivity: $8.0 billion
- Medical care expenditures: $5.12 billion
- Informal care costs: $0.36 billion
- Health utility costs: $10.5 billion

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Direct Medical Costs Compared to Other Diseases ($2004, billions)

- Heart Disease: $107.4 billion
- Arthritis: $83.2 billion
- Alzheimer's Disease: $35.1 billion
- Diabetes: $34.5 billion
- Depression: $28.7 billion
- Cancer (all other forms): $25.4 billion
- Adult Visual Disorders: $21.3 billion
- Stroke: $17.5 billion
- Pneumonia: $14.2 billion
- Influenza: $10.7 billion
- Breast Cancer: $7.2 billion
- Colorectal Cancer: $6.9 billion
- HIV: $6.5 billion
- Lung/Bronchus Cancer: $5.6 billion
- Prostate Cancer: $5.5 billion
- Asthma: $5.3 billion
- Chronic Liver Disease: $2.0 billion

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Future Trends

- Costs are likely to increase
  - Trends that increase cases
    - Demographics
  - Trends that increase utilization
    - Coverage
    - Screening
  - Trends that increase medical costs per case
    - New treatment technologies
  - Trends that increase the costs of the impacts of blindness
    - Productivity
    - Family size, family mobility
Trends that Increase Cases

- Demographics
  - The aging population = The Elephant in the Bedroom

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2020</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMD</td>
<td>1.8</td>
<td>2.9</td>
<td>61%</td>
</tr>
<tr>
<td>Cataracts</td>
<td>20.5</td>
<td>30.1</td>
<td>47%</td>
</tr>
<tr>
<td>Diabetic Retinopathy</td>
<td>4.1</td>
<td>7.2</td>
<td>76%</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>2.2</td>
<td>3.3</td>
<td>50%</td>
</tr>
</tbody>
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Source: NEI - Eye Disease Prevalence Research Group, Archives of Ophthalmology, 2004
Trends that Increase Utilization

- Coverage
  - Medicare Part D
    - Effectively creates new utilization to millions of additional glaucoma patients
  - Future expansions to cover the uninsured

- Additional public health screening
  - Medicare (Welcome to Medicare, HEDIS glaucoma screening)
  - Community programs
    - Uncorrected refractive error
    - Undiagnosed eye disease
Trends that Increase $/Case

- Medical technologies
  - Anti-VEGF AMD therapies
  - Antioxidant vitamins
  - Corrective IOL’s
  - New generation glaucoma medications
  - New diagnostic equipment
  - Future developments

- New technologies generally increase welfare but at a cost
Trends that Increase The Costs of Visual Impairment and Blindness: Productivity

Labor Force Participation Rate by Age: 1990 and 2006

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1990</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 to 59</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>60 to 64</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>65 to 69</td>
<td>40</td>
<td>50</td>
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<tr>
<td>70 to 74</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>75+</td>
<td>20</td>
<td>30</td>
</tr>
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</table>
Trends that Increase The Costs of Visual Impairment and Blindness

- **Household Characteristics**
  - Shrinking number of people per household (2.6 in 2006)
    - Elderly more likely to live alone
  - Fewer children per family
    - Fewer family members to care for elderly
  - Suburbanization of the elderly
    - Americans live farther from walkable urban centers that can be more easily negotiated by the visually impaired and blind

- **Net effect** – increasing burden on state and federal government
  - Greater need for home and community based services
  - Higher rate of nursing home placement
Conclusions

- The current Economic Burden of Adult Visual Disorders
  - $51.4 billion
  - Substantial in its own right
  - In excess of many other diseases
- With near certainty, this burden will increase substantially in the next 15 years
What Can Help

- Research on cost-effective interventions to identify and treat disease, and to help integrate visually impaired and blind individuals into the community.
  - CDC’s National Vision Initiative
    - Burden of visual disorders
    - RTI Multiple Eye Disease Simulation Models
    - NHANES prevalence data
  - NEI – Extramural Research Programs
  - VA – Innovative initiatives in screening, treatment, rehabilitation and coordination of care