Diabetic Eye Care; Workforce Challenges and opportunities
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How many ophthalmologists in practice and training worldwide?

- Study designed and conducted by ICO in 2010
- Aim: to capture the *dynamics* of the global ophthalmic population, including residents
- Of the 193 countries surveyed, 192 responded (represents 99.99% of the global population)
- Total number of ophthalmologists in the world

204,909

- ranging from 28,338 in China to 0 in some Small Pacific Islands
15 countries concentrate 2/3 of the ophthalmic population
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3,500 O’gists (2%) are serving 12% of Global Population
Figure 1  Cartogram showing the prevalence of blindness by WHO region (using WHO region colours).

Figure 2  Cartogram showing the number of practicing ophthalmologists worldwide by country.
Percentage of Ophthalmologists doing surgery (67 countries)
On average, the ophthalmic population is growing slightly faster than the general population.

<table>
<thead>
<tr>
<th>Ophthalmologists growth rate</th>
<th>1.20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population growth rate</td>
<td>0.77%</td>
</tr>
<tr>
<td>Difference</td>
<td>0.43%</td>
</tr>
</tbody>
</table>
## Ophthalmic Growth Rate vs. 60+ Population Growth Rate

<table>
<thead>
<tr>
<th></th>
<th>All Ages</th>
<th>60+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ophthalmologists growth rate</td>
<td>+ 1.2%</td>
<td>+ 1.2%</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>+ 0.77%</td>
<td>+ 2.9%</td>
</tr>
<tr>
<td>Actual growth rate</td>
<td>+ 0.43%</td>
<td>- 1.7%</td>
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On average, the population aged 60+ is growing more than twice as fast as the number of ophthalmologists.

> ophthalmic population is **declining** 1.7% per year compared to the population aged 60+.
It will take…

• If no additional action taken and assuming a 3% actual growth rate
  • **58 years** to reach 25 O’gists per Mo pop. (MICs)
  • **97 years** to reach the current High Income countries level (80 per Mo pop.)
Training more Ophthalmologists is obviously needed
But training Ophthalmologists only is not the solution
Need to **training eye care teams**, focused on meeting community needs
Need for Training: Principles

• Training in ophthalmology should focus on meeting needs of communities and populations, not just individuals
• Needs are best met by eye care teams, trained together to work as teams
• Comprehensive eye care should be an integral part of the health care system
• Community-level primary eye care should be integrated into primary health care
• Those who are trained need infrastructure, support and continuing professional development
Eye Care Personnel Needed

Teams of:

- Ophthalmologists (surgeons and “eye doctors”)
- Subspecialists (pediatric, retina, etc.)
- Primary physicians trained in eye care
- Mid level eye personnel (MLEP) and nurses
- Optometrists or refractionists and opticians
- Managers and community eye health workers
<table>
<thead>
<tr>
<th>Country</th>
<th>No. of Diabetic patients</th>
<th>No. of O’gists</th>
<th>No. to be screened per O’gist, per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>61 million</td>
<td>11,000</td>
<td>18</td>
</tr>
<tr>
<td>Mexico</td>
<td>10.3 million</td>
<td>3,500</td>
<td>10</td>
</tr>
<tr>
<td>China</td>
<td>90 million</td>
<td>28,340</td>
<td>11</td>
</tr>
<tr>
<td>Brazil</td>
<td>12.4 million</td>
<td>11,350</td>
<td>4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>7.3 million</td>
<td>1,240</td>
<td>20</td>
</tr>
<tr>
<td>Pakistan</td>
<td>6.3 million</td>
<td>1,860</td>
<td>11</td>
</tr>
</tbody>
</table>
Community Population with vision problems
Population with Diabetes

- Camera/Visual Acuity
- Eye Examination Optometrist/Ophthalmologist
- Review in 12 months
- Refractive Error
- Refractive Error Review in 12 months
- Cataract
- Diabetic Retinopathy
- Trichiasis
- Refer requires treatment
- Glasses prescribed

Consultation Ophthalmologist
- Hospital
- Cataract surgery
- Trichiasis surgery
- Laser treatment
Community

Population with vision problems

Population with Diabetes

Camera/Visual Acuity

Eye Examination
Optometrist/Ophthalmologist

Refractive Error

Glasses prescribed

Consultation
Ophthalmologist

Cataract

Refer requires surgery

Hospital

Trichiasis

Refer requires surgery

Glasses prescribed

Laser treatment

Diabetic Retinopathy

Refer requires treatment

Refractive Error

Review in 12 months

Review in annual health check

Glasses prescribed

Cataract surgery

Trichiasis surgery

Population with Diabetes

Population with vision problems
The Patient Journey is like a Leaky Pipe
ICO Diabetes Initiative; Purpose

To engage national and international ophthalmologic societies and individual ophthalmologists in an initiative to reduce vision loss due to diabetes worldwide through education and training and by working in collaboration with other organizations and health professionals to establish integrated systems of eye care for people with diabetes.
Goals

A. Technical Guidelines
B. Education
C. System Evaluation
Education:

- Define the knowledge, skills and other competencies needed by ophthalmologists and other providers
- Early detection and treatment of diabetic retinopathy
- Effective training and continuing professional development programs.
- Promulgate through primary care and specialist networks
- Incorporate into ICO Education Spectrum; Curricula, exams, fellowships, WOC program, CPD, teach the teachers etc
Technical Guidelines:

To develop and promulgate technical guidelines for screening of diabetics and assessment and treatment of people with diabetic retinopathy and other ocular complications of diabetes.
System Evaluation

To develop a framework for the evaluation of public health approaches to detection and treatment of diabetic retinopathy and to stimulate development, strengthening and monitoring of relevant health systems.
Steps

1. Explore collaborations
2. Constitute an ICO Task Force
3. Collate existing guidelines
4. Evaluate and identify gaps
5. Guidelines to cover screening, assessment and treatment that allow for available resources
6. Gain consensus
7. Promulgate through primary care and specialist networks
8. Incorporate into ICO Education Spectrum
   • Curricula, exams, fellowships, WOC program, CPD, teach the teachers etc
9. Participate in global meetings, this workshop, WDC etc