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Delivered at the annual meeting of the Philippine Academy of Ophthalmology, December 2007, Manila, Philippines.

The challenges of ophthalmic-residency education in the Philippines

TODAY, we remember and honor Dr. Jose Protacio Mercado Rizal Alonzo y Realonda. As Filipinos, we are proud of his literary artistry and his political convictions. As ophthalmologists, we feel a special sense of pride knowing that Dr. Rizal shared our passion for sight and prevention of blindness. We are inspired to know that he was the second Filipino to be trained in ophthalmology and the first to practice his profession in the Philippines.

Rizal’s entry into ophthalmology
Rizal enrolled in medicine and philosophy at the University of Santo Tomas (UST) at the age of 16. Contrary to popular belief, he did not complete his medical studies in the country nor did he go abroad solely to pursue further training in ophthalmology. He enrolled in Medicine and Philosophy at the Central University in Madrid.

During his first year in Europe (1882), he read a scientific article written by Dr. J. Garau Alemany, a military doctor, which discussed the successful treatment of hemerolopic xerophthalmia through the ingestion of mammal and fish livers. The disease, later known as hypovitaminosis A, was prevalent and the main cause of blindness in the Philippines. A personal encounter with the author convinced Dr. Rizal of the need to reduce the prevalence of blindness in the Philippines. Having learned of the failing eyesight of his mother, Dr. Rizal took a decisive step to seek further training in ophthalmology. His illustrious preceptors in Europe included Don Santiago de Albitos in Madrid, Dr. Louis de Wecker and Xavier Galezowski in Paris, Dr. Otto Becker in Heidelberg, Dr. Karl Theodore Schweigger in Berlin, and Dr. Ernst Fuchs in Vienna.1,2

Rizal and the socio-political issues of his era
Like most educated Filipinos of his time, Rizal pondered on a greater challenge: the emancipation of the Filipinos from Spanish rule. As his medical and surgical skills grew, his nationalistic fervor intensified as well. Before he returned to the country in 1887, he had published his first novel, the Noli Me Tangere. His political drive inspired him to rise beyond aspiring for a lucrative

Keywords: Ophthalmology, Ophthalmic education, Residency training, Board of ophthalmology

practice in medicine. It was true that he wanted to reduce physical blindness, but the threat of blindness caused by ignorance seemed more pervasive and fatal. Education was the response to the challenge, and creative literature was his method of expression.

More than a century has passed since Rizal’s death, and our country faces problems of various kinds and varying magnitude. We are now a republic independent from foreign rule, but still helplessly bound to local adversities and struggles within the political, social, professional, and economic arenas. Global changes affect us in more subtle ways, positively or otherwise. Following the example of our national hero, we must know how the current problems affect our society and our profession. It remains our duty to face and respond to them.

Today, my task is clear. Being a member of the Philippine Board of Ophthalmology (PBO) and aware of the role that the PBO plays in the development of eye specialists, I shall identify the challenges and assess the system of ophthalmic-residency education in the country.

THE PAST

The turn of the century brought to light the lack of medical personnel in the face of a growing population. In 1950, there were only 3 medical schools for a population of 20.3 million. The addition of 4 new schools within the next decade brought the number to 7, to serve a population of 27.4 million (Sanchez FS, unpublished data). The addition of centers of medical and/or ophthalmic training was founded on the need to serve the progressively increasing population (Figure 1).

The increase in medical and ophthalmic training institutions after 1971 was prompted by the persistent shortage of medical personnel. This shortage was traced to the social instability and anxiety of the turbulent 1960s and 1970s from which apprehensive medical graduates fled. The opening of residency training to foreign medical graduates further aggravated the situation, resulting in “brain drain.”

Issues faced by the Philippine Board of Ophthalmology

The lack of eye specialists was perceived as early as 1945 with the organization of EENT practitioners. The PBO was created on November 12, 1971 to look into the following manpower problems:¹

Lack of ophthalmologists

There were 305 eye practitioners for a population of 40 million. It was estimated that between 1970 and 1974, less than 100 new ophthalmologists were added, while the population grew by 10 million. The reasons included the lack of training programs and training centers. Moreover, 66% of the 305 eye practitioners were in Metro Manila, leaving 35 out of 65 provinces without any eye physician.²

Lack of residents

There were only 15 residents distributed among five training hospitals and there was difficulty in attracting applicants to the program.⁴⁻⁵

Lack of quality training programs

The existing programs were mostly combined EENT programs except those of the Manila Central University and the University of the Philippines–Philippine General Hospital (UP–PGH). The teaching style was mainly preceptorship with emphasis on surgery. The lack of a structured program led to a weak exposure in basic subjects and inadequacy of cognitive knowledge. The lack of equipment and technology compounded the problem.⁶⁻⁷

Achievements of the PBO

In response to these issues, the PBO sought to:

• Increase the number of ophthalmologists;
• Create a standardized program for residency training and accreditation of training centers; and
• Administer examinations to qualify for diplomate status.

The formative years of the PBO (1972–1986) under Dr. Emmanuel Almeda were marked by the following milestones:⁸

• Induction of the first diplomates in 1973;
• Conduct of the first written and oral examinations in 1977;
• Adoption of a standard residency-training program in 1976 which was approved by the Philippine College of Surgeons and the Philippine Medical Association in 1977. It included guidelines on the scope and objectives of training, specific programs of activities for each year level, performance criteria, physical plan and staffing of the training center, and steps in accreditation.
• Establishment and accreditation of eye residency training programs in 1977;
• Accreditation of the Basic Course and Seminars on
Ocular Diseases and Surgery conducted by the UP-PGH.

The next 10 years (1987–1996) under the leadership of Dr. Romeo V. Fajardo were witness to the following developments:

- Development of new models of residency training in ophthalmology (Outreach, Inverted T, Extended E);
- Accreditation of the Modified Residency Training Program of the Department of Health, Institute of Ophthalmology, and Helen Keller Foundation;
- More revisions of standards regarding the residency training programs and preceptorship;
- Abolition of the private-practice type of training method;
- Revision of policies regarding written and oral examinations;
- Increase of eye-training programs from 14 to 32;
- Increase in eye-residency positions from 46 to 152.

It was during the chairmanship of Dr. Romeo B. Espiritu that the standards of examination, credentialing, and accreditation processes were upgraded. These procedures are presently being implemented by the Board:

- Revision of the PBO guidelines for accreditation in 1999 and 2005;
- Documentation of individual resident’s training activities through a logbook;
- Mandatory submission of an annual report by training institutions;
- Creation and distribution of the PBO Syllabus (curricular content) for eye-residency training;
- Revision and standardization of the oral and written examination format;
- Workshops for examiners on test construction and methods of oral examination.

THE PRESENT

In the 2005 revised guidelines for accreditation, the PBO training objectives included the following:

- To produce ophthalmologists with a well-rounded clinical and surgical competence. They shall be qualified to practice ophthalmology in the local setting and capable of a global type of ophthalmology practice.
- To train ophthalmologists to possess the capability to undertake research and teaching.
- To inculcate among ophthalmologists the duty and the need to aspire for continuing professional growth and development.
- To make ophthalmologists aware of their ethical and social responsibilities.

Distribution of eye MDs in the Philippines

In its 1997 blindness-prevention program, the World Health Organization (WHO) set as a goal for countries to have “at least one ophthalmologist per 250,000 population.” The organization hopes to reach a ratio of 1:100,000 for Asia in 2010 and 1:50,000 by 2020. Although the Philippines achieved this goal 8 years ago, there is still a maldistribution of eye specialists in favor of the capital region. The most poorly served areas are regions 5, 8, 9, 12, 13, and ARMM. (Table 1)

Distribution of PBO–ophthalmic services

The number of PBO diplomates increased by almost 17% between 2002 and 2007. Correlated with the 2.4% increase in population, the PBO eye MD:population ratio exhibited a slight improvement in regions 5, 6, 11, 12, Cordillera Autonomous Region (CAR), and National Capital Region.

Table 1. Population-to-ophthalmologist ratio per region (2002).

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of Eye MDs</th>
<th>Population (in million)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,267</td>
<td>79.5</td>
<td>1:62,698</td>
</tr>
<tr>
<td>Region 1</td>
<td>51</td>
<td>4.2</td>
<td>1:82,362</td>
</tr>
<tr>
<td>Region 2</td>
<td>20</td>
<td>2.8</td>
<td>1:140,658</td>
</tr>
<tr>
<td>Region 3</td>
<td>76</td>
<td>8</td>
<td>1:105,670</td>
</tr>
<tr>
<td>Region 4</td>
<td>131</td>
<td>11.8</td>
<td>1:90,028</td>
</tr>
<tr>
<td>Region 5</td>
<td>21</td>
<td>4.7</td>
<td>1:222,612</td>
</tr>
<tr>
<td>Region 6</td>
<td>53</td>
<td>6.2</td>
<td>1:117,146</td>
</tr>
<tr>
<td>Region 7</td>
<td>57</td>
<td>5.7</td>
<td>1:100,019</td>
</tr>
<tr>
<td>Region 8</td>
<td>22</td>
<td>6.6</td>
<td>1:300,471</td>
</tr>
<tr>
<td>Region 9</td>
<td>14</td>
<td>3.1</td>
<td>1:220,801</td>
</tr>
<tr>
<td>Region 10</td>
<td>20</td>
<td>2.7</td>
<td>1:137,379</td>
</tr>
<tr>
<td>Region 11</td>
<td>53</td>
<td>5.1</td>
<td>1:97,912</td>
</tr>
<tr>
<td>Region 12</td>
<td>9</td>
<td>2.6</td>
<td>1:288,690</td>
</tr>
<tr>
<td>CAR¹</td>
<td>14</td>
<td>1.4</td>
<td>1:97,516</td>
</tr>
<tr>
<td>NCR²</td>
<td>452</td>
<td>9.9</td>
<td>1:21,916</td>
</tr>
<tr>
<td>Caraga</td>
<td>8</td>
<td>2.1</td>
<td>1:349,228</td>
</tr>
<tr>
<td>ARMM³</td>
<td>8</td>
<td>2.4</td>
<td>1:301,520</td>
</tr>
</tbody>
</table>

¹ Cordillera Autonomous Region
² National Capital Region
³ Autonomous Region for Muslim Mindanao

Figure 2. PBO–ophthalmic services in the Philippines (2002 and 2007).
Capital Region (NCR). A minimal reduction was noted in the other regions. The Autonomous Region for Muslim Mindanao (ARMM) and Caraga presented a two- to threefold deterioration in ratio because the number of PBO diplomates drastically decreased by almost 50% in 5 years (Figure 2).

**Distribution of training centers and learning facilities**

As a result of innovative training schemes, accredited eye training programs expanded to 45 in 2002, graduating 60 to 70 residents per year and raising the ratio to 1 ophthalmologist for every 63,000 Filipinos. In 1979, 60% of the provinces had no ophthalmologist; in 2002 only 20% did not have eye-care services. These provinces were either economically deprived and/or had peace-and-order problems.11

At present, there are 40 accredited residency-training programs in ophthalmology in the country. Twenty-two are located within Metro Manila, while 18 are scattered throughout the archipelago. There are about 50 to 55 graduates per year, most of whom still come from the NCR.

The absence of training centers in certain regions is associated directly with the poor distribution of eye practitioners and PBO diplomates in the area. It follows that the absence or lack of eye specialists in the area precludes the establishment of a training program in the regional hospital.

The training institutions undergo regular evaluation every 3 years. Each institution is requested to submit an annual report that contains the roster of faculty, residents per year level, number of patients in the OPD and OR, conferences and research output. The centers are visited by at least 3 board members. The facilities and infrastructure are inspected and the senior residents observed and assessed in a cataract procedure. Deficiencies and improvements are noted and comments provided.

**Accredited training centers and facilities**

All the training centers possess the necessary basic facilities such as an outpatient department and operating room, hospital laboratory and radiological facilities. All the centers also have refracting units, slitlamps, and operating instruments for cataract and glaucoma surgeries. Collectively, 13 centers lack equipment such as visual-field apparatus, biometer, ultrasound, fluorescein angiography (FA), argon and Yag lasers. The PBO considers it acceptable for deficient training centers to access these equipment in neighboring hospitals.

Conferences are considered an essential component of a residency training program. There must be at least 12 department conferences a year. The university-based centers are the most active, followed by the private medical centers.

**Number of patients (2005 – 2006)**

There were more patients, both in number and variety, in government centers than in private hospitals. University-based government centers handled the most patients (Table 2).

**Number of active faculty and specialists**

An active consultant is defined as one who holds a specific teaching assignment, participates in the training of the residents for a total of 6 hours per week, and attends at least 50% of department conferences. He should receive a satisfactory rating from the chair who is solely responsible for the evaluation of his performance.

There were more active consultants in the Metro Manila training centers than in the provinces (Table 3). In Metro Manila, university-based hospitals had an average of 15 consultants, while government hospitals had 6, and private hospitals had 2 consultants. A minimal reduction was noted in the other regions. The Autonomous Region for Muslim Mindanao (ARMM) and Caraga presented a two- to threefold deterioration in ratio because the number of PBO diplomates drastically decreased by almost 50% in 5 years (Figure 2).

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### Table 2. Accredited training centers and average number of OPD patients.

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Manila</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>15,911</td>
<td>16,765</td>
</tr>
<tr>
<td>Government</td>
<td>15,747</td>
<td>13,214</td>
</tr>
<tr>
<td>Private</td>
<td>3,171</td>
<td>3,368</td>
</tr>
<tr>
<td>Provincial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>4,215</td>
<td>4,435</td>
</tr>
<tr>
<td>Government</td>
<td>4,586</td>
<td>4,544</td>
</tr>
<tr>
<td>Private</td>
<td>1,138</td>
<td>1,500</td>
</tr>
</tbody>
</table>

### Table 3. Accredited training centers and faculty (2007).

<table>
<thead>
<tr>
<th></th>
<th>Retina</th>
<th>Glaucoma</th>
<th>PL-Orbit</th>
<th>ED-Cor</th>
<th>Uveitis</th>
<th>Pedia/Mot.</th>
<th>Refractive</th>
<th>N-O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Manila</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>4.16</td>
<td>2</td>
<td>1.83</td>
<td>3.16</td>
<td>1</td>
<td>0.8</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>Government</td>
<td>1.66</td>
<td>1.44</td>
<td>1.55</td>
<td>1</td>
<td>0.22</td>
<td>0.44</td>
<td>0.11</td>
<td>0.44</td>
</tr>
<tr>
<td>Private</td>
<td>3.28</td>
<td>1.85</td>
<td>1.57</td>
<td>2.42</td>
<td>0.57</td>
<td>1.57</td>
<td>1.28</td>
<td>0.57</td>
</tr>
<tr>
<td>Provincial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>0.8</td>
<td>0.2</td>
<td>0.28</td>
<td>0.28</td>
<td>0</td>
<td>0.28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Government</td>
<td>1</td>
<td>0.33</td>
<td>0.75</td>
<td>0.5</td>
<td>0</td>
<td>0.16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Private</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
The average number of active consultants in the provinces was much lower in each category: 6 among university-based centers, 5 among government hospitals, and 8 in the single private training center.

Number and distribution of residents

The total number of residents taken across all training institutions did not change much from 2006 to 2007. An average of 50 to 55 residents graduated each year in the last 5 years.

Accredited training centers and number of diplomates

The PBO has always emphasized the importance of the annual diplomate examinations as a measure of the effectiveness of each training program. Thus, the PBO periodically encourages training institutions to prepare their residents for this important evaluation. Having written and oral phases allow the board to ascertain the applicants’ cognitive understanding and skills acquired during training.

The number of resident graduates for the past 10 years had reached 727 (Table 4). However, only 57% or 411 had been certified as PBO diplomates. Among the 316 non-diplomates, 185 failed the examinations while 131 did not apply for certification. Metro Manila graduates appeared to perform better in the examinations than graduates from the provinces. The graduates from university programs in either Metro Manila or provinces were more successful in passing the exams. The graduates of private hospitals approximated the success rates of university-based centers.

CORRELATION OF DATA

A 1995 report concluded that Metro Manila graduates performed better because of more access to university conferences and better library facilities. It added that university-based institutions fared better than the government or private hospitals because of exposure to an academic atmosphere where there was better supervision by the faculty, more scientific conferences, and available technological equipment. Today, our data reflect the same observations.

First, Metro Manila graduates have an overwhelming advantage over their counterparts in the provinces. Mention is made about exposure to more university conferences, better library facilities, and better technology. This may still be true when we compare the universities and the government centers, but not the private centers which are actually more technologically endowed. Library facilities are no longer very necessary with the advent of the Internet and audio-video teaching materials. Learning facilities do not seem to be too different from one institution to the other, although government centers constantly suffer the disadvantage.

Second, the belief that more patients meant better training does not appear to be true. The government centers reported more patients than the private hospitals, but this did not improve their PBO examination performance. As a matter of fact, it could have contributed negatively by demanding more service and work from the residents at the expense of individual study and supervised training.

Third, there may be a significant correlation where faculty is concerned. The PBO has long emphasized the need for a devoted faculty. The PBO guidelines emphasize the availability of 1 active faculty member for every resident. Visiting consultants are appreciated provided that they comply with their teaching duties.

The greater number of active consultants in university-based and private hospitals is directly related to the number of their successful examinees (Figure 3). It also correlates closely with the number of department conferences. It appears that the presence of more faculty members produces an educational atmosphere that brings about better interaction and supervision of the residents.

<table>
<thead>
<tr>
<th></th>
<th>Graduates 1995-2006</th>
<th>Diplomates</th>
<th>Did Not Take Exams</th>
<th>Failed</th>
<th>Nondiplomates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro Manila</td>
<td>597</td>
<td>374 (63 %)</td>
<td>91</td>
<td>132</td>
<td>223</td>
</tr>
<tr>
<td>University</td>
<td>223</td>
<td>169 (76 %)</td>
<td>23</td>
<td>31</td>
<td>54</td>
</tr>
<tr>
<td>Government</td>
<td>214</td>
<td>97 (45 %)</td>
<td>52</td>
<td>65</td>
<td>117</td>
</tr>
<tr>
<td>Private</td>
<td>160</td>
<td>108 (68 %)</td>
<td>16</td>
<td>36</td>
<td>52</td>
</tr>
<tr>
<td>Provincial</td>
<td>130</td>
<td>37 (28 %)</td>
<td>40</td>
<td>53</td>
<td>93</td>
</tr>
<tr>
<td>University</td>
<td>40</td>
<td>21 (52 %)</td>
<td>5</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Government</td>
<td>89</td>
<td>16 (18 %)</td>
<td>34</td>
<td>39</td>
<td>73</td>
</tr>
<tr>
<td>Private</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>727</td>
<td>411 (57 %)</td>
<td>131</td>
<td>185</td>
<td>316 (43 %)</td>
</tr>
</tbody>
</table>

Figure 3. Average number of faculty vs. successful examinees.
Fourth, because of the need to expose our residents to the widest area of ophthalmic learning, the need for subspecialists within the faculty has also been underscored. After the 2004 and 2007 written examinations among the PBO examinees, many cited the lack of preparation, alluding to the inadequate learning opportunities in the residency program. Insufficient exposure in pediatric ophthalmology, motility, retina, and uveitis directly reflects the lack of consultants to guide them.

THE CHALLENGES

We have a strong contingent of eye specialists as of 2007. We have achieved our goal of an ideal ophthalmologist-to-population ratio, except in 6 regions. We are relieved that 80% of our provinces have eye MDs. We are satisfied that our residency training programs are still able to provide around 50 to 55 graduates per year.

Nevertheless, we feel uneasy about several volatile situations within our ranks. The persistent maldistribution of eye MDs continues to disturb us. Economically deprived provinces without any ophthalmic care contrast glaringly with abundantly served areas.

Applicants in medical schools are fewer, as many are attracted to other professions like nursing. This translates into fewer medical graduates, and consequently, fewer applicants in our residency programs. Migration has depleted our number of applicants and forced eye specialists to consider other careers.

Growing at a rate of 2.4%, our population was projected to reach 88.7 million in 2007. This corresponds to an increase in the elderly population, which comprises the majority of eye patients.

A dilemma arises. The policy to establish more training centers is appealing. It was implemented by the board in 1980 to 1990 to keep up with the population growth. Moreover, with the encouraging discovery that regional graduates eventually stay in their place of training, it is logical that the planned training centers be established in underserved regions. However, the performance level of the regional centers in the PBO examinations leaves much to be desired. Only 28% of regional graduates have become diplomates versus 63% of Metro Manila graduates. With this scenario, opening more training centers, especially in underserved regions, may further compound the numbers of non-diplomates, unless their test performance rates improve.

The first challenge, therefore, is to work out a rational distribution of ophthalmic personnel and services.

Population and affluent lifestyles amid persistent poverty denote changing morbidities. There continues to be an extraordinary explosion of new information and technology in the field of ophthalmology. As educators, we realize that this new information and newly acquired skills must be added to the already long list of residency requirements. Technology has also empowered our patients to be aware of these new developments. This situation amplifies the pressure on each one of us to maintain an acceptable level of competency because of the heightened expectation of the public. The promotion of medical tourism by the government suggests keener competition among countries in Southeast Asia. To become competitive in the global arena of ophthalmology and offer the same quality of care, ophthalmic training and practice must meet global expectations.

We have focused on quantity and distribution that we may have disregarded the assurance of quality. The present PBO is greatly concerned with the increasing number of non-board-certified eye practitioners.

Faced with this dilemma, the next challenge is to assure the competence and professionalism of all eye-residency graduates. The goal of equitable distribution must be complemented by honest efforts to educate our residents. At the end of a 36-month training period, the graduates ought to be willing and be prepared to pass the diplomate examinations, and to be able to practice their craft in an ethical manner anywhere in the Philippines or abroad.

PROPOSALS

The task of reforming our eye-residency training program to assure competence and professionalism is formidable. There are short- and long-term strategies.

Short-term solutions

Workshops in evidence-based medicine (EBM) have been sponsored by the Philippine Academy of Ophthalmology (PAO) to call attention to the present thrusts in global practice. It encourages residents to practice critical thinking and logical decision-making by using available facts in the literature. Complementing this effort are the workshops in research methodology sponsored by the PAO. By stimulating the inquisitive minds of the residents, a search for answers to scientific problems allows important data to be collected and added to our pool of local knowledge.

The PBO realizes that these 2 endeavors are both a means and an end. The efforts enable us to gather Philippine data useful for teaching and learning in the local setting. They also serve to promote habits of lifelong learning and professional growth which is one of the major objectives of the PBO training program. The PBO has supported these efforts by noting their importance and including the principles of EBM and research in the written examination.

The PBO has endorsed the in-service examinations or
the ophthalmology-proficiency examination (OPEX). Started in 2004, this annual examination is given by the UP-PGH to all residents in the country. The percentile results enable the chair to compare his residents with the overall national rating. Thus, they act as tools to assess whether the resident can be promoted or not. Taking the examination not only enhances the cognitive aspect of the residents’ training but, likewise, sharpens their test skills prior to the PBO examination.

The PBO encourages all residents to participate in the postgraduate courses organized by the various training centers. A minimum number of CME units will be required.

Postresidency/preboard review classes have been around for quite a while. Sponsored initially by pharmaceutical companies using diplomate members as reviewers, the program has been reformatted. Attendance in the course has been statistically correlated with an improved performance in the PBO examination.

The PBO has encouraged training centers to consider consortiums, linkages, merger, and affiliations as a strategy to enhance their training programs. It allows institutions to identify their weaknesses and search for partners who can solve the problems. A clear example is a government facility with an abundance of patients but lacks faculty and technological resources. The ideal complement can be a private hospital with few patients but enough faculty and ophthalmic equipments. Links can also be forged between training institutions and private eye centers which offer cutting-edge technology.

The active faculty must be composed not only of comprehensive ophthalmologists but also subspecialists. The teaching of the residents needs proper supervision when patients with specialty problems are referred for treatment. Consequently, the PBO has mandated that subspecialists shall become part of the faculty plantilla.

To assist the various centers in acquiring their specialists, the PAO has established an ad hoc committee to plan and organize a body that can supervise and standardize the local fellowship programs. The latter is envisioned to augment the pool of specialists who can be equitably distributed among the different training centers.

There are plans to revise the residents’ logbook. Changes shall include a more systematic listing of surgical and laser procedures and complications. The role of the training officers will be emphasized in the logbook through updated reporting of the performance of the resident from structured checklists.

Long-term solution

A long-term solution is our attempt to meet global demands. Consistent with Dr. Rizal’s advocacy, educating the ophthalmologist is our long-term solution. The objective is to establish a competency-based residency training program through the development and enforcement of a relevant and practical curriculum.

In general, ophthalmic-residency education involves the interaction of the resident-learner, consultant-teacher, and curriculum.

The resident–learner is an adult. Hence, the application of the principles of andragogy, broadly referred to as learner-focused education, is encouraged over pedagogy which embodies teacher-focused education. The resident, faced with a rapidly increasing body of knowledge and technology, duty-bound to gain surgical competence and pressured into a lifelong process of education will have to be educated within a community of adult learners.

Malcolm S. Knowles (father of adult learning) asserted 5 components of adult learning:15

1. Motivation: adults need to know WHY they are learning something new;
2. Self-directed learning: adults want control over their learning experiences;
3. Needs-assessment driven: adults are aroused by a relevant problem;
4. Context: prior personal experiences influence learning;
5. Application in “real world”: adults need to know HOW learning can be used.

The teacher is primarily a competent eye doctor but must be equally adept as an educator. According to David Kolb, he should be an expert, a strong motivator, an able facilitator, and a role-model. He transcends his clinical expertise by being a skilled educator who creates a positive learning environment, clarifies the purpose for the learner, and shares feeling and thoughts, but does not dominate or intimidate the learner. As a role-model, he displays hard work, honesty, kindness, and other examples of righteous social behavior.15

This is the most essential aspect of our new residency training program. Our analysis of the local residency problems points to our lack of qualified and dedicated teachers—those who can and are willing to temper their clinical practice with effective mentoring.

We were fortunate that St. Luke’s International Eye Institute recognized the problem and organized a workshop entitled “Educating the Educators” on October 15-16, 2007. As specified in the course objectives, the participants:

- were able to develop a step-wise approach to curriculum development for residency training programs including surgery, wet lab and lasers;
- learned techniques to improve teaching effectiveness in residency training programs;
- gained the knowledge and tools to assess the residents for new domains on resident competency;
- understood the intricacies of program accreditation...
and individual certification in the USA and other countries. A curriculum is a planned educational experience. It is a learning plan containing philosophy, content, approach, and assessment. It is a formal document that includes structure/process of programmatic learning. It is an educational plan with goals/objectives, topics covered, and methods for learning, teaching and evaluation. We need a plan because there is so much to teach and learn, but limited time and resources.

A curriculum is subdivided into knowledge base, core competencies, learning experiences, and assessment tools. Bearing in mind that ophthalmic education involves developing cognitive knowledge and surgical skills, we expect our residency curriculum to be a practical and efficient blend of the aforementioned contents and our needs in the Philippine setting.

In the United States, the entire 7,800 residency-education programs under the Accreditation Council for Graduate Medical Education (ACGME) are undergoing reform. The reformation is motivated by advocates of change from the consumers (public) who demand accountability and proof of quality; from the government who is concerned with spiraling health expenses; and the market (business corporations and insurance companies) who expect physicians to be aware of basic business principles and systems-based practice. Locally, motivation is more down-to-earth; we are more concerned with the distribution, competency, and professionalism of eye care.

Knowledge base

Initiated by the International Council of Ophthalmology (ICO), a new set of curriculum contents and guidelines has been developed for adoption by interested countries. Adoption means that the curriculum shall fit the prevalence of diseases and standards of medical practice, as well as the cultural, economic, and political conditions in the country.

Five years ago, the PBO circulated among the accredited training programs a syllabus that specified the knowledge to be learned and the technical skills to be developed for each year level of the three-year residency program on the following subspecialty areas:

- Ophthalmic Plastic, Lacrimal, and Orbit
- External Disease
- Cornea, Optics, and Refraction
- Contact lens
- Uveitis
- Ophthalmic Oncology and Pathology
- Glaucoma
- Vitreous and Retina
- Pediatric Ophthalmology and Motility
- Neuro-ophthalmology and Electrophysiology
- Cataract and lens

Similarly, the ICO curriculum is an outline for 3 years of supervised ophthalmic training at progressively more advanced levels. Its contents are more detailed and specific and include extra categories of knowledge in the field of low vision and ophthalmic practice and ethics.

Core Competencies

The PBO is concerned with the increasing numbers of non-board-certified eye practitioners. With many graduates failing or not willing to take the examination, we may draw the conclusion that our training is inadequate. Our long-term proposal is revision and enhancement of the present PBO residency-training curriculum where our ultimate objective is an assurance of the competency and professionalism of our residency graduates. From a content-based curriculum, which espouses exposure to a specific content for a specific time, we will evolve into a competency-based curriculum which defines desired outcomes, namely competency and professionalism. From simply completing a rotation of 1 month in a service, the program assures that the educational objectives within the service have been met.

A paradigm shift is occurring in the field of medical education. The traditional “apprenticeship” (“know how,” “tell how,” “show how”) model of residency education has served us well in the past but needs reinvigoration to meet the challenges of the modern health-care environment. With regard to the focus on learner performance (learning outcomes), the current objective is to apply medical knowledge by “doing.”

The ACGME attests that our residency training programs have met the core educational missions of knowledge and skills transfer; but there is more to being a competent physician than just application of science and technology in medicine. The shift involves a change from apprenticeship to a competency-based program, from teaching what the teacher “wants to teach” to teaching what the learner “needs to know” (Table 6).

The ACGME in the late 1990s determined six core competencies. This present set has been narrowed down from the work of previous commissions tasked to identify domains of curriculum development. The six competencies which have been adopted in turn by the ICO are briefly described. The ICO defines each competency in

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<th>Table 6. Paradigm shift in learning and teaching.</th>
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<td><strong>Old</strong></td>
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<td>Dependent learner</td>
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<tr>
<td>Hierarchal</td>
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<td>Constant oversight</td>
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<td>Teacher directed</td>
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<td>Teach what teacher “wants to teach”</td>
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<td>One time event (eg. lecture or test)</td>
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terms of tasks and skills that the residents shall demonstrate.19

1. Patient care
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. It means “what you do…”.

2. Medical knowledge
Residents must demonstrate knowledge about established and evolving biomedical, clinical, cognate (e.g. epidemiological and socio-behavioral) sciences and the application of this knowledge to patient care. It means “what you know…”.

3. Practice-based learning and improvement
Residents must be able to investigate and evaluate their patient-care practices, appraise and assimilate scientific evidence, and improve their patient care practices. It means “how you get better…” through constant appraisal and assimilation of current medical practices.

4. Interpersonal and communication skills
Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and learning with patients, patients’ families, and professional associates. It means “how you interact with others…”, like patients, their families, and your colleagues.

5. Professionalism
Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. It means “how you act and behave…”.

6. System-based practice
Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide optimal care. It means “how you interact with the system…”, like the Philippine Health Insurance Corporation (PhilHealth), Bureau of Internal Revenue, health-maintenance organizations (HMO), and medical societies.

In 2002, the American Board of Ophthalmology (ABO) added surgical competence as the seventh.20

The overall goal is to integrate the core competencies into each of the knowledge areas enumerated by the PBO and the ICO in order to have a comprehensive training in ophthalmology. The competencies must be developed as the resident rotates among the various subspecialties. As part of the total design of our residency training program, the process of integration will entail the following considerations, foremost of which are three.16

A. Learning experiences/Approaches to learning
Training shall be provided through a combination of lectures, supervised patient care, and graduated, hands-on procedural and surgical experience, research and independent study. Beyond lectures are interactive sessions, small group discussions, and problem-based learning.

At present, our residency program utilizes the outpatient department (OPD) for interacting directly with patients. It is one of the most powerful tools for training because all the competencies can be sharpened. Within the OPD, subspecialty clinics are also effective in developing the six competencies and enhancing specialized medical knowledge.

Conferences focus on the domain of medical knowledge, interpersonal communication, and practice-based learning. It is primarily useful for the resident who is presenting a case or topic.

Medical missions can be reinvented for the benefit of all concerned. It can be transformed into community service and utilized as part of resident education.

B. Assessment
The old tools for assessment are written and oral examinations. The written test questions are pooled from all the training centers, are rigorously screened by a panel of experts, and undergo post-test analysis. The PBO oral examinations have evolved from single examiner-constructed test questions in the 1980s to standardized models with uniform rating scales and grading systems with the examinee facing a panel of 4 examiners rather than a single examiner.

Efficient as the system may be, what is measured are only knowledge and skills after residency training. What is lacking and must be developed is a structured in-service evaluation that can provide a formative feedback and allow the training officer to correct deficiencies of the resident before residency ends.

Assessment tools are available and constantly undergoing validation. Because each competency is a concern, it shall be matched to the appropriate assessment tool. Each assessment tool has its advantages and disadvantages which makes it suitable for one competency over another.20-28

Examples include:
• Patient care – structured checklist (eg.OCEX, OCAT);
• Medical knowledge – written and oral examinations (OPEX);
• Practice-based learning, eg. journal club and chart audit – structured checklist;
• Interpersonal skills – $360^\circ$ evaluation (peer, patient);
• Professionalism – 360° evaluation (peer, patient);
• Systems-based practice – 360° evaluation (peer, patient);
• Surgery – logbook, structured checklist (eg. OASIS, GRASIS, ESSAT).

C. Surgical training

It is now considered desirable for supervised surgical training to begin as soon as possible after entry into the ophthalmic educational system. Following the Dreyfuss model of skills acquisition, graduated levels of improvement shall occur, commensurate with the trainee’s education and set of skills. A resident starts as a novice, continues as a beginner and an advanced beginner, before becoming proficient, and finally becomes an expert.28 In addition to acquiring intra-operative skills, the trainee must acquire abilities for pre-operative selection of suitable surgical candidates and in postoperative care.

Didactics prepare the residents through reading programs, lecture series, videotapes, and Web-based system of instruction.29 These are complemented by structured preparatory exercises such as practice surgery on animal and outdated eye-bank eyes, dissection of cadavers, simulations and virtual surgery.30,31 Assisting senior expert surgeons on a regular basis is a time-honored and helpful educational activity for the trainee.32 Constructive feedback completes the elements of surgical training. Videotaping surgery performed by trainees is extremely helpful, both for the surgeon in training and the mentor.

CONCLUSION

As an academic endeavor, ophthalmic education is directed towards a widely diversified audience that includes residents, undergraduate medical students, fellows, and practicing ophthalmologists.

In addressing the advocates of ophthalmic education, the ICO has also developed curricular programs for undergraduate medical students, fellowship training, and for continuing medical education. It urges us to establish an identical approach to training in these areas.18

We are fortunate that the stakeholders responsible for the education of each group are already in place. The Association of Ophthalmology Professors (APOP), organized in 1991, aims to unite the professors involved in the teaching of undergraduate medical students.33 Meanwhile, the PAO has organized a committee to oversee the burgeoning fellowship programs. The PAO committee on continuing ophthalmology education is responsible for updating all practicing eye MDs.

I see the PBO exerting its leadership in mobilizing resources to improve the residency curriculum. It shall ask the UP-PGH Department of Ophthalmology and Visual Sciences to align the Basic Course lectures to current global standards. It shall deputize the St. Luke’s ophthalmology faculty to continue its present endeavor in enhancing the PBO syllabus with the ICO curriculum. It shall mobilize selected training centers to experiment on innovative schemes of teaching and assessment. It shall coordinate with the other stakeholders to promote the grand scheme of educating the ophthalmologist.

It is said that a lectureship is a discourse given by a person who has spent a significant portion of his life in pursuit of answers and solutions on a particular subject. It now appears that the timeline has reversed. A challenge has been posed. The PBO accepts the challenge, remembering the admonition of the great ophthalmologist, Dr. Jose P. Rizal: “It is a useless life that is not consecrated to a great ideal. It is like a stone wasted on the field without becoming a part of any edifice.”

References