Pharmacy Education in Asia and the Asian Assoc of Schools of Pharmacy

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Asian Association of Schools of Pharmacy (AASP)

- Established in April 2001 with >100 Asian Educators from 16 countries.
- Registered in Singapore
- Started with 10 BOD members in 2001 → 20 BOD members (14 countries) by 2008

Objectives of AASP

1. To promote cooperative advancement of pharmacy education & research among all member schools.
2. To stimulate the exchange, and dissemination of ideas and information of education, science and practice among pharmaceutical/other health care educators.
AASP Activities

- 2-3 BOD meetings per year
- Publication of AASP Newsletter
- Faculty and students exchange among member schools
- Holding of Biennial Conferences
  1st Conference, Beijing, China, 2004
  2nd Conference, Bangkok, Thailand, 2005
  3rd Conference, Makati, Philippines, 2007
  4th Conference, Penang, Malaysia, 2009 and
  5th Conference, Bandung, Indonesia, 2011

Current Plans of AASP for Asia

- Establish database of current basic information on Pharmacy Education and Pharmacist Licensure System in Asia
- Design the minimum core curriculum of Pharmacy Education in Asia
- Make and conduct strategic plans for the next 10 years starting 2010
- Encourage and increase individual and institutional members
- Organize international educational workshops for the Asian academy
- Promote inter-continental collaboration
- Seek financial support for the above plan of activities

Number of Schools of Pharmacy in Asia

- From a total of 39 countries in Asia
- There are 486 Schools of Pharmacy in 2008
  - In India alone, total no. of schools reported is 87
    - Schools of 4 year BS course: 600+
    - Schools of 2 year Diploma course: 520+
  - In China, reported was 77
    - About 280 including Pharmaceutical Dept.
      in Chemistry Universities, etc.
Diversity of Pharmacy Education in Asia

- Entry level 6 year or 2+4 year curriculum
- 5 year curriculum
- 4 year curriculum
- 3 year curriculum
- 2 year curriculum (Diploma program, postgraduate degree)

With specialization:
- Major in Pharmacotherapy or Pharm. Science

Diversity of Requirements for Pharmacist Licensure

<table>
<thead>
<tr>
<th>Country</th>
<th>License Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>4 year BS Pharm or 2 yr M Pharm + 1 year (2000 hrs) pre-registration training followed by State-based Pharmacy Board examination. National Board examination and registration for future implementation.</td>
</tr>
<tr>
<td>China</td>
<td>4 year BS Pharm + 3 year work experience + National Exam</td>
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<tr>
<td>Hong Kong</td>
<td>3 year + 1 year internship at hospital</td>
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<tr>
<td>Indonesia</td>
<td>4 year Sarjana Farmasi (BS Pharmacy)+1 year Pharmacist education &amp; training terminated by University Exam approved by Pharmacist Association</td>
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<tr>
<td>Japan</td>
<td>6 year + National Board Exam</td>
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<tr>
<td>Korea</td>
<td>2 + 4 year + National Board Exam</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4 year B Pharm + Provisional Registered Pharmacist, national license exam (1 yr) + 3 year compulsory government service</td>
</tr>
<tr>
<td>New Zealand</td>
<td>4 year accredited Bachelor of Pharmacy Degree + 1 year accredited pre-registration program</td>
</tr>
<tr>
<td>Philippines</td>
<td>minimum 4 year BS Pharmacy + 960 hrs internship in hospital / community / manufacturing pharmacy</td>
</tr>
</tbody>
</table>

Pharmacy in Japan

- Pharmacy Program, 6-year
  - Graduates can apply for Pharmacist Licensure Exam
- Pharmaceutical Sciences program, 4-year
  - Graduates cannot apply for Pharmacist Licensure Exam
  - Graduates are expected to go to graduate school (researcher path)
Total No. of Students enrolled in 2009

<table>
<thead>
<tr>
<th></th>
<th>6 yr Ph'cy</th>
<th>4 yr Pharm.Sci.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public U</td>
<td>706 (17U)</td>
<td>764 (17U)</td>
<td>1,470 (17U)</td>
</tr>
<tr>
<td>Private U</td>
<td>11,294 (57U)</td>
<td>550 (13U)</td>
<td>11,844 (57U)</td>
</tr>
<tr>
<td>Total</td>
<td>12,000 (74U)</td>
<td>1,314 (30U)</td>
<td>13,314 (74U)</td>
</tr>
</tbody>
</table>

Employment of New Graduates at Private and Public Universities

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No. of Registered Pharmacists by Types of Practice (As of Dec 2006)

<table>
<thead>
<tr>
<th>Types of Practice</th>
<th>No. of Pharmacists</th>
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</thead>
<tbody>
<tr>
<td>Community Pharmacy</td>
<td>49.6%</td>
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<tr>
<td>Hospital/clinic</td>
<td>19.4</td>
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<tr>
<td>Industry (D,R,MR)</td>
<td>11.9</td>
</tr>
<tr>
<td>Drug sales (drug store)</td>
<td>6.1</td>
</tr>
<tr>
<td>University</td>
<td>3.5</td>
</tr>
<tr>
<td>Hygienic institute</td>
<td>2.4</td>
</tr>
<tr>
<td>Others</td>
<td>7.2</td>
</tr>
</tbody>
</table>

Total number of pharmacists: 252,533
(Total number of physicians: 277,927)
### 6-year Curriculum Timetable

<table>
<thead>
<tr>
<th></th>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
<th>4th year</th>
<th>5th year</th>
<th>6th year</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Humanities &amp; Communication</td>
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<tr>
<td>B: Introduction to Pharmacy</td>
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<tr>
<td>C: Professional Subjects</td>
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<tr>
<td>Physical Pharmacy</td>
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<tr>
<td>Chemical Pharmacy</td>
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<tr>
<td>Biological Pharmacy</td>
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<tr>
<td>Health &amp; Environment</td>
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<tr>
<td>Medicine &amp; Disease</td>
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<tr>
<td>Pharmacology / Manufacturing</td>
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<tr>
<td>Pharmacy &amp; Society</td>
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<tr>
<td>D1: Pharmacy Practice Education</td>
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<td>D2: On-site Practice</td>
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<tr>
<td>E: Graduation Thesis Research Training Education</td>
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<tr>
<td>F: Prepharmacy Education</td>
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<tr>
<td>G: Advanced Pharmacy</td>
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* 1st Semester, ** 2nd Semester

CBT (Computer Based Testing), OSCE (Objective Structured Clinical Ability Exam)

### Common Exam for Student Pharmacists

- Prior to their 20 weeks of on-site training and practice, student pharmacists must demonstrate their qualifications through:
  - **CBT** (Computer Based Testing) for content and
  - **OSCE** (Objective Structured Clinical Ability Exam) for communication and professional skills
- Since 2005, all medical and dental schools have been administering their own Common Exam
Pharmacy in India
- D. Pharm (Diploma in Pharmacy)
  2 yr program at 520 institutions
- B. Pharm (Bachelor of Pharmacy)
  4 yr program at 600+ institutions
  graduates: 40,000/yr
- Pharm.D. (Doctor of Pharmacy)
  6 yr Entry level or
  3 yr post BS at 31 institutions, 900 graduates/yr
- M. Pharm at 140 institutions, 6,000 graduates/yr
- Ph.D.

Pharmacy in Indonesia
- Population of Indonesia: 220 million
- Number of pharmacists: ~ 23,000 (~13,000 working as community pharmacists)
- Ratio community pharmacist: citizen 1:10,000
- Schools of Pharmacy: 63 (vary in quality)
- Pharmacy graduates: 3,000
- 4 year Program (BSc in Pharmacy);
  Pharmaceutical Science and Technology (product oriented)
  Community and Clinical Pharmacy (patient oriented)
- PreRegistration Training (Pharmacist Program)
  for 1 year after graduating with BS

Pharmacy in Malaysia
- Population: 27 million
- Schools of Pharmacy: 13 (5 public and 8 private u.)
  After 4 yr at BPharm program, 1 year of provisional registration + 3 years of compulsory government service
- Registered pharmacists: 5,700
  70% are in community pharmacy, 15% in hospital pharmacy, 5% in commercial pharmacy, 5% in regulatory and enforcement, 5% industrial pharmacy, academics, research institutes
Pharmacy in Thailand

- Total No. of pharmacists is 22,000+
- Ratio to population: 1:3,400
- No. of graduates: 1,200; New enrollment is 2,200+
- 6 year program (Pharm D) all schools shift by 2010 with clerkship rotations (2000 hr)
- 5 year program (BS)
- Post graduate training program
- Board Certification in Pharmacotherapy: 4 yr
- MS/PhD programs in Clinical Pharmacy coursework+rotation+advanced rotation for thesis
- MS / PhD in Pharm Sci

Pharmacy in Taiwan

- Population of Taiwan: 23 million
- Number of pharmacists: ~33,000, (~21,000 R.Ph.; ~80% work in health delivery system, 28% in hospital, 28% in community pharmacy, 24% in private clinics)
- Ratio of pharmacist: citizen = 1:1,125
- Schools of Pharmacy: 7 (vary in quality)
- Graduates: ~ 1000/yr
- Passing Rate of licensure Exam: 30%/exam; 50%/year

Pharmacy Education Overview in Asia

- Length of program differs from country-to-country, but increases beyond four years
- Great deal of similarity in content in many countries including increased focus on clinical pharmacy
- Graduate destinations differ from country-to-country, among community pharmacy, hospital and manufacturing pharmacy
- All countries require some competency-based assessment and government licensure
Thanks!