Transition to Pharm.D. Model

**Presenters:**
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  University of Colorado Skaggs School of Pharmacy, Aurora, CO USA
- Sandy (Jeong Yeon) Rhie, Professor, PharmD, PhD  
  College of Pharmacy, Ewha Womans University, Seoul, South Korea

**Moderator:**
- Nisreen Mourad, PharmD, MSc  
  Clinical Associate Professor, Experiential Education Coordinator  
  Lebanese International University, Bekaa, Lebanon
Learning Objectives

By the end of this session, the learner will be able to:

1. Discuss the education movement of transition to 6-year pharmacy education in Korea as a global effort in advancing the pharmacy profession;
2. Share how and why mid-career, international pharmacists are succeeding and meeting their patient-centered practice goals in a US-based, distance-delivered PharmD program;
3. Discuss educational challenges and considerations in the offering of both PharmD programs presented.
Global *Mid-Career* Transition to the PharmD: The University of Colorado’s (CU) International Trained PharmD (ITPD) Program Experience

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*Director, Distance Degrees and Programs*  
*Associate Professor*  
*Nov. 5, 2020*

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Learning objectives

By the end of this session, the learner will be able to:

- Provide a brief synopsis of patient-centered pharmacy education around the world, including challenges to achieve it;
- Describe how one program's foundations were used to build a globally-delivered PharmD program;
- Discuss common goals of the international mid-career pharmacist and how the PharmD degree is meeting those;
- Share how international mid-career pharmacists are faring in a US- and distance-based PharmD program;
- Consider how each of us may facilitate the transition to the PharmD.
BACKGROUND

*Global* patient-centered pharmacy education:

*Why* transition?

*Considerations* in doing so...
Outcomes: Global Vision, WDGs & Statements

Global Vision for Education and Workforce

Presented at the global conference on pharmacy and pharmaceutical sciences education

2016

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Nanjing Statements

Statements on Pharmacy and Pharmaceutical Sciences Education

2017

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1. Academic Capacity
2. Foundation Training
3. Quality Assurance
4. Advanced and Specialty Development
5. Competency Development
6. Leadership Development
7. Science, Frontiers and Workforce Gaps
8. Working with Others
9. SDS Strategies
10. Gender and Diversity Balances
11. Workforce Impact
12. Workforce Intelligence
13. Workforce Police Formation

Workforce Development Goals
Global educational support

The FIP Global Competency Framework – Version 2 - 2020

Planning for transition: Needs-based education

Planning for transition: Challenges

Local practice needs
- Patient needs
- Clinical sites
- Other

Academic capacity
- Trained faculty
- Preceptors
- Curricular support
- Other

Structure
Advocacy
Buy-in

Fig. 1. A conceptual framework depicting the dynamic relationships between practice, regulation and education. International Pharmaceutical Federation 2014, adapted with permission.

Types of pharmacy education

- PhD
- PharmD + PGY 1 +/- PGY2
- MS Clinical Pharmacy
- BS – 5 yr; MPharm
- BS – 4 yr
- DPharm
Pharmacy degrees of the world

- PharmD
- BS – 4 yr
- MPharm, MS Clin Pharm, PhD
- BS – 4,5 yr
- DPharm, BS – 4 yr
- BS – 5 yr, MS Clin Pharm
- PGY1
- ~PharmD
CU’s
International Trained PharmD Program
ITPD Program development

A dream over breakfast....

https://atlantichotelnewquay.co.uk/events-specials/breakfastconferences/; accessed Nov. 3, 2020
International Trained PharmD (ITPD)
Advanced standing **entry-level** degree
Distance-based
**ACPE-accredited**
2014

North American Trained
*(Non-traditional)* PharmD (NTPD):
Post-BS
Distance-based
1998

Entry-level PharmD
Traditional, on-campus

**ITPD Program development**
Admission criteria

- Baccalaureate degree in Pharmacy, 1+ years’ experience
- Goals to **advance patient-centered pharmacy care** in home country
- Professional sponsor letter and 3 letters of recommendation
- Live interview

- 2 Foundational competency exams
  - Biomedical sciences
  - Pharmaceutical sciences
  - Or pass **US-FPGEE**

- English proficiency
ITPD Design

Overview of program

Approximately 3 years / 9 semesters

- **LONGITUDINAL PORTFOLIOS**
  - Professional skills development (including Expanding PCPC)
  - Drug information

- **ONLINE coursework (by categories)**
  - Integrated clinical sciences (eg, Pharmacotherapies)
  - Pharmacy and healthcare (eg, Public health and Health economics)
  - Interprofessional education / ethics
  - Professional communications & informatics (eg, Evidence-based medicine, Instructional methods)

- **ON-CAMPUS SESSION I**
  - Pharmacy and healthcare foundations
  - Patient-centered communication

- **ON-CAMPUS SESSION II**
  - Advanced Introductory Pharmacy Practice Experience
  - Professional skills development

- **Advanced Pharmacy Practice Experiences**

- **Introductory Pharmacy Practice Experiences**

- **Online foundational competency exams**

- **Admission**

- **90 sem. credit hours + entrance exams**

- **Hybrid (online + live) delivery**

- **Flexible**: Designed for working pharmacists

- **Up to 10 students accepted each year**
Evaluation: ITPD admissions criteria to curricular success

- **Course categories**
  - Professional communication & informatics (Comm)
  - Pharmacy and healthcare (P&H)
  - Foundational integrated clinical sciences (f-ICS)
  - ICS
  - Advanced ICS (a-ICS)
  - Introductory pharmacy practice experiences (IPPEs)
  - Advanced pharmacy practice experiences (APPEs)

- **Individual courses**

- **Grade-point averages (GPA)**
  - Mean course
  - Mean cumulative GPA (cGPA)
  - Scale of 4.0

Demographic Results (2019)

- N=23 students
  - 14 countries, 4 continents
  - 54.1 credit hours (mean; range 12.5-90)
  - 8 graduates

- Professional experience: 5.6 years (mean; range 0-19 yrs)

- Post-graduate degree: n=6

- Joint Commission-accredited institution: n=6

- US Board certification: n=2

- Residency or fellowship training: n=0
## Admission criteria to course categories

<table>
<thead>
<tr>
<th>Admission Criterion</th>
<th>Course categories &amp; cGPA</th>
<th>Individual courses <em>(Significant)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>FPGEE</td>
<td>NS all, except f-ICS and cGPA <em>(R=0.921 and 0.975; P=0.026 and 0.0048, respectively)</em></td>
<td>Clinical skills fund., 3 pharmacotherapies, Pharmacogenomics, Interprof. educ, Public health, Health econ, Law</td>
</tr>
<tr>
<td>Biomedical exam</td>
<td>NS all</td>
<td>Neg. to Pharmacy Practice Fundamentals</td>
</tr>
<tr>
<td>Pharm Sciences exam</td>
<td>NS all, except cGPA <em>(R=0.514; P=0.035)</em></td>
<td>Clinical skills fund., 2 Pharmacotherapies Public health, Evidence based medicine</td>
</tr>
<tr>
<td>Interview</td>
<td>NS all</td>
<td>Clinical reasoning and decision-making</td>
</tr>
<tr>
<td>Total admission score</td>
<td>NS all</td>
<td>Interprofessional education, Instructional methods</td>
</tr>
<tr>
<td>Duration past experience</td>
<td>NS all, except Pos. to APPE – HS; Neg. to Comm, and Phcy &amp; Healthcare, Interprof. Educ. <em>(R=(-)0.443, (-)0.471 and 0.743; P=0.342, 0.023 and 0.22, respectively)</em></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Mean cGPA (4.0 scale)</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>3.66 (n=23; 3.0 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td>3.65 (n=23; 2.92 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>Pharmacy and healthcare</td>
<td>3.69 (n=23; 2.95 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>Foundational ICS</td>
<td>3.84 (n=23; 3.09 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>Integrated clinical sciences</td>
<td>3.39 (n=23; 2.27 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>Advanced ICS</td>
<td>3.51 (n=15; 2.33 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>IPPEs</td>
<td>3.89 (n=23; 2.0 – 4.0)</td>
<td></td>
</tr>
<tr>
<td>APPEs</td>
<td>3.78 (n=9; 2.0 – 4.0)</td>
<td></td>
</tr>
</tbody>
</table>

**Individual courses:**
- Pt. Comm’n
- DI Fund.
- Fundamentals
- EBM
- Instructional methods
- Informatics

**Learning results**
EVALUATION: Course reflections

Longitudinal portfolios
- 10 of 14 students; mean of 5.1 (of 9 required) reflections.
- 6 continuing students, 4 graduates.
- 7 countries (Qatar, Saudi Arabia, Sudan, Ethiopia, India, Japan, Canada)

Gleason SE et al. Pharmacists’ perception of international PharmD (ITPD) training to meet local patient care needs; presented at SNOW 2019. Program evaluation results not considered generalizable.
EVALUATION: Plans to use the degree

- Pt comm'n & family educ
- Providing PCPC
- Educate peers / students
- Systems activities
- Evidence-based medicine
- Ethics, pt advocacy, cultural awareness
- Implement new services
- Pharmacoeconomic considerations

Longitudinal portfolio submissions:
- Each semester
- Reflection on impactful courses
- Plans for use

N=128

Gleason SE et al. Pharmacists’ perception of international PharmD (ITPD) training to meet local patient care needs; presented at SNOW 2019.
PharmD transition: What can WE do?
Other transition ideas

- **Partnerships**
  - APPEs: Sites, students
  - Programs/degrees
  - Curricular development expertise

- **Train-the-trainer**
  - PharmaBridge (FIP): Faculty development
  - Educational programs

- **Residencies: Partnerships**

- **Advocacy**
Conclusions

• Global pharmacy education is advancing toward preparing pharmacists to provide patient-centered pharmacy care, with the Doctor of Pharmacy (PharmD) degree being one way to do so.

• CU’s ITPD program delivers global- and distance-based PharmD education to mid-career professionals aiming to advance the profession.

• International mid-career pharmacists are faring well in a US and distance-based, ACPE-accredited PharmD program.

• International mid-career pharmacists are meeting their personal and professional goals through a US-based, distance-delivered PharmD program.

• Consider how each of us may facilitate the transition to the PharmD.

• Advancement of pharmacy education faces challenges, but can be addressed through collaboration and partnership.
Transition to a Pharm.D. Model in Korea

Sandy (Jeong Yeon) Rhie, Professor, PharmD, PhD
College of Pharmacy, Ewha Womans University, Seoul, South Korea
In this presentation, the audience will be introduced to the following:

- **Background** of the transition to (2+4) year PharmD program in South Korea
- **Process** of implementation of the (2+4) year education system and the pharmacy curriculums
- **Challenges** in educational and cultural *adaptation* in Korean society
- **Another educational reform** to 6-year PharmD program and *continuous journey* in pharmacy with 4th industrial revolution in Korea
Content

I. Beginning of the (2+4) PharmD program in Korea
II. The educational system and curriculum
III. Challenges and efforts
IV. Another beginning of the 6-year PharmD program
IV. Future preparation
The main changes of the new curriculum was the introduction of “Pharmacotherapy” and “Experiential clinical practices”

• To be ready for entering the pharmacy profession with the appropriate level of aptitude
• To be ready to contribute the public health improvement
• To have professional ethics and confidence
• To compete on an international level
# The (2+4) year pharmacy curriculum

<table>
<thead>
<tr>
<th>Pharmacy School</th>
<th>P6</th>
<th>APPE (15 weeks)</th>
<th>Select one from below</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Community Pharmacy (15 weeks)</td>
<td>Hospital Pharmacy (15 weeks)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmaceutical industry/administration (15 weeks)</td>
<td>Research lab (15 weeks)</td>
</tr>
<tr>
<td></td>
<td>IPPE (18 weeks)</td>
<td>Community Pharmacy (5 weeks, 3 credits)</td>
<td>Hospital Pharmacy I (5 weeks, 4 credits)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hospital Pharmacy II (5 weeks, 4 credits)</td>
<td>Pharmaceutical industry/administration (3 weeks/0.5 weeks)</td>
</tr>
<tr>
<td>P5</td>
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<tr>
<td>P4</td>
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<td>P3</td>
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<td>P2</td>
<td></td>
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</tr>
<tr>
<td>P1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pre-requisite courses (before pharmacy school)**

**Graduation with PharmD degree**

**Lee SY. 실무실습교육의 현황과 문제점. Pharmacy Education Newsletter. Korean Association of Pharmacy Education. 2016 (9). file:///C:/Users/user/Downloads/%EC%95%BD%ED%95%99%EA%85%90%EC%9C%A1%EC%86%8C%EC%88%8D%EC%A7%80%EC%A0%9C%ED%98%8B.pdf**
# Common pharmacy course

<table>
<thead>
<tr>
<th>Division</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Science</td>
<td>Pharmacy Biochemistry</td>
</tr>
<tr>
<td></td>
<td>Pharmacy microbiology</td>
</tr>
<tr>
<td></td>
<td>Anatomy</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Preventive pharmacy</td>
</tr>
<tr>
<td></td>
<td>Pathophysiology</td>
</tr>
<tr>
<td>Industrial pharmacy</td>
<td>Pharmacy analysis</td>
</tr>
<tr>
<td></td>
<td>Organic chemistry</td>
</tr>
<tr>
<td></td>
<td>Physical pharmacy</td>
</tr>
<tr>
<td></td>
<td>Pharmacognosy</td>
</tr>
<tr>
<td></td>
<td>Biopharmaceutics</td>
</tr>
<tr>
<td></td>
<td>Medicinal chemistry</td>
</tr>
<tr>
<td></td>
<td>Pharmacopeia</td>
</tr>
<tr>
<td></td>
<td>Pharmacokinetics</td>
</tr>
<tr>
<td>Clinical pharmacy and practice</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td></td>
<td>Medication preparation and dispensing</td>
</tr>
<tr>
<td>Social pharmacy, pharmacy law</td>
<td>Pharmacy law</td>
</tr>
<tr>
<td>Pharmacy Lab</td>
<td>Pharmacy lab</td>
</tr>
</tbody>
</table>

The above coursework was used from the Ewha Womans University as a sample. Lee SY. 실무실습교육의현황과문제점. Pharmacy Education Newsletter. Korean Association of Pharmacy Education. 2016 (9).
### Curriculum of community pharmacy rotation

<table>
<thead>
<tr>
<th>Class</th>
<th>Content</th>
</tr>
</thead>
</table>
| IPPE (5 weeks) | • Preparation and dispensing  
                • Patient counseling  
                • Prescription medication  
                • OTC medication and health maintenance  
                • Herbal and dietary supplement  
                • Drug information and drug use evaluation |
|             | • Medical device  
                • Cosmetics  
                • Animal medication  
                • Administration and insurance  
                • Community outreach activity  
                • Visiting pharmacist |
| APPE (15 weeks) | • Additional,  
                 • Chronic metabolic disease pharmaceutical care  
                 • Herbal medication and pharmaceutical care |
## Curriculum of hospital pharmacy rotation

<table>
<thead>
<tr>
<th>Class</th>
<th>Content</th>
</tr>
</thead>
</table>
| **IPPE** (Two of 5 weeks) | - Inpatient prescription review and medication preparation  
- Outpatient medication preparation and dispensing  
- Parenteral prescription review  
- Patient counseling  
- TPN order review and preparation  
- ADR monitoring and reporting  
- High risk medication order review and preparation  
- Hospital pharmacy operation and administration  
- Medication purchasing  
- TDM service |
| **APPE** (15 weeks) | - Drug information  
- TPN  
- Chemotherapy  
- Patient counseling  
- Transplantation  
- Clinical trial research  
- Oncology care  
- Nephrology care  
- Endocrinology care  
- ICU care (SICU, MICU, CCU, PICU, NICU)  
- Pulmonology care  
- Cardiovascular care  
- Neurology care  
- Pediatric care  
- Geriatric care  
- TDM service |
**Curriculum of pharmaceutical industrial rotation**

<table>
<thead>
<tr>
<th>Class</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPPE (3 weeks)</td>
<td>• GMP pharmaceutical process&lt;br&gt;• QA management&lt;br&gt;• Dosage formulation manufacturing</td>
</tr>
<tr>
<td>APPE (15 weeks)</td>
<td>• Marketing&lt;br&gt;• Research facility&lt;br&gt;• Clinical trials</td>
</tr>
</tbody>
</table>

* 2 weeks of rotation at manufacturing facility and 1 week of online/offline lecture
## Curriculum of administrative rotation

<table>
<thead>
<tr>
<th>Class</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IPPE (20 hr)</strong>*</td>
<td>• Ministry of Health and Welfare</td>
</tr>
<tr>
<td></td>
<td>• Food and Drug Administration</td>
</tr>
<tr>
<td></td>
<td>• Health Insurance Review and Assessment Service/Health Insurance</td>
</tr>
<tr>
<td></td>
<td>• Patent office</td>
</tr>
<tr>
<td></td>
<td>• Public health local clinic</td>
</tr>
<tr>
<td><strong>APPE (15 weeks)</strong></td>
<td>• On-site rotation at the above sites</td>
</tr>
</tbody>
</table>

* Lecture (online and offline), site visit, site rotation and combination of any
## Qualification of pharmacy school entrance

<table>
<thead>
<tr>
<th>KOREA</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-requisite course</strong></td>
<td>1 or 2 among chemistry, biology, physics and math</td>
</tr>
<tr>
<td></td>
<td>• Biochemistry, Physiology, Molecular biology also recommended</td>
</tr>
<tr>
<td><strong>Entrance exam</strong></td>
<td>PEET (Pharmacy Education Eligibility Test)</td>
</tr>
<tr>
<td></td>
<td>• Language</td>
</tr>
<tr>
<td></td>
<td>• Biology</td>
</tr>
<tr>
<td></td>
<td>• Chemistry</td>
</tr>
<tr>
<td></td>
<td>• Physics</td>
</tr>
</tbody>
</table>
# Pharmacy licensure test

<table>
<thead>
<tr>
<th>Previous subject</th>
<th>Current subject</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Biochemistry</td>
<td>1. Life pharmacy (100 questions)</td>
<td>• Structure and function of biomolecules</td>
</tr>
<tr>
<td>2. Microbiology</td>
<td></td>
<td>• Infection and immunology</td>
</tr>
<tr>
<td>3. Pharmacology</td>
<td></td>
<td>• Principle of medication action</td>
</tr>
<tr>
<td>4. Environmental</td>
<td></td>
<td>• Health promotion and disease prevention</td>
</tr>
<tr>
<td>and Preventive</td>
<td>2. Industrial pharmacy (90</td>
<td>• Organic disease and pathophysiology</td>
</tr>
<tr>
<td>pharmacy</td>
<td>questions)</td>
<td></td>
</tr>
<tr>
<td>5. Quantitative</td>
<td></td>
<td>• Physical pharmacy</td>
</tr>
<tr>
<td>analysis</td>
<td></td>
<td>• Medication design and development</td>
</tr>
<tr>
<td>6. Qualitative</td>
<td></td>
<td>• Medicinal analysis</td>
</tr>
<tr>
<td>analysis</td>
<td></td>
<td>• Pharmaceutical formulation</td>
</tr>
<tr>
<td>7. Pharmacognosy</td>
<td>3. Clinical Experiential</td>
<td>• Pharmacognosy and traditional herbal medicine</td>
</tr>
<tr>
<td>8. Inorganic</td>
<td>pharmacy (77 questions)</td>
<td></td>
</tr>
<tr>
<td>pharmacy</td>
<td></td>
<td>• Diseases and pharmaceutical care</td>
</tr>
<tr>
<td>9. Organic</td>
<td></td>
<td>• Prescription review and preparation</td>
</tr>
<tr>
<td>chemistry</td>
<td></td>
<td>• Dispensing and counseling</td>
</tr>
<tr>
<td>10. Pharmaceutics</td>
<td>4. Public management and</td>
<td>• Manufacturing and quality assurance</td>
</tr>
<tr>
<td></td>
<td>pharmacy law (83 questions)</td>
<td>• Pharmacy administration and management</td>
</tr>
<tr>
<td>11. Pharmacopeia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Pharmacy law</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

file:///C:/Users/user/Downloads/%EC%95%BD%ED%95%99%EA%B5%80%EC%9C%A1%EC%97%84%EC%9D%80%EC%A2%88%EC%AD%9C%ED%81%B8.pdf
Challenges in experiential learning program

- Hospital pharmacy
  - Limited availability of hospital sites
  - Short labors and spaces
  - Inflexibility of schedule
  - Long weeks of rotation (10-week or 15-week period, not a 5-week block)

- Community pharmacy
  - Different learning exposure depend on sites

- Pharmaceutical industry and administrative
  - Online or lecture style of IPPE

- APPE
  - About half of students had research rotation
  - Different learning exposure depend on sites

- Rotation fee
Challenges in social adaptation

- **Social Burden**
  - Cost: private PEET school, labor waste
  - Science major schools become prep-schools for pharmacy schools?

- **Student burn out**
  - Lack of motivation after the long exhausting test preparation
  - Increased age at entrance level
  - Reduced engagement with alumni

- **Job creation**
  - Lack of changes in job creation and expansion of roles and opportunity
Challenges in legislation perspectives

- Pharmaceutical Affairs Act
  - Outdated definition of pharmacists’ scope and activities
  - **Not allow** to have pharmacy technicians
- Patient Safety Act in 2016
  - Pharmacists are **not** included in the committee
- Medical laws
  - Pharmacists are **not** considered as providers
- Two licensure system of pharmacist vs Korean oriental pharmacist since 1993
Efforts to overcome
Changes of hospital pharmacy site

- Promote preceptor training
- Registered Board-certified Pharmacy Specialist (BCPS) by Korean Society of Hospital Pharmacists (KSHP) since 2010
  - Cardiovascular, Critical care, drug information, endocrinology, geriatric care, infectious, nutrition, oncology, pediatric, transplantation
- Automation
  - Automatic tablet counter (ATC), automatic dispensing cabinet (ADC), APOTECA Chemo robot
  - Clinical Decision Supporting System (CDSS)
- Drug utilization review (DUR) with AI-based big data analysis
  - ADR, duplication, precaution and contraindication, renal dosing
- Patient counseling with QR code
- Pharmacy reimbursement in Nutrition team-based care in ICU

Utilize pharmacist to clinical roles and widen pharmacist activity
-> Education
Changes of community pharmacy site

- Various specialized pharmacy
  - animal medication, pharmacy cosmetics, herbal and dietary supplement
- Automation
  - Automatic tablet counter (ATC)
- Pharmacy certification program by local pharmacist associations
  - Geriatrics care, diabetes care

Utilize pharmacist to clinical roles and widen pharmacist activity
-> Education
Changes of pharmaceutical industry site

- Need new rotation curriculum
  - May need to develop office-based rotation (e.g., regulatory affairs, marketing, medical liaison, safety, clinical trial research)
  - Opportunity to practice
    - AI based-new drug discovery
    - Public healthcare big data
Changes of school operation

- **Mutual** collaborative affiliations with practice sites
  - Provide education support for preceptors and pharmacy department
  - Help research of outcome analysis of the practice sites
  - Appoint preceptor to adjunct faculty and clinical professors

- Student management

- Program development

Preceptor training in education and outcome analysis of pharmaceutical care
PharmD Program Accreditation

- Korean Association of Pharmacy Education (KAPE) accreditation since 2015
- Pharmacist, researcher, leader
Next movement of 6-year PharmD program
Transition from (2+4) to 6-year PharmD program

- Starting in 2022
- Expected advantages
  - Update pharmacy education comply to the 4th industrial revolution
  - Interlinkage between pre-requisite and PharmD classes
  - Less cost burden for private PEET institution
  - Less stress of parents and students for preparation for pharmacy school
  - Less burnt out and more motivation
  - Less negative impact on basic science major schools
Next moves in education

- Potential introduction of objective structured clinical examination (OSCE)
  - Introduction of outcome-based education (OBE) in April 2018
  - Student-oriented class, flipped-learning class
  - From “what to know” to “what to do”

- Advanced, future-oriented education of special area
  - Creative and convergent professional education
    - Public healthcare big data, artificial intelligence
  - Precision medicine
  - Informatics, communication and technology (ICT), digital healthcare
  - Preventive medicine and remote monitoring using mobile application
  - Communication skill, ethics

- Global level and collaborative opportunity
Transition from (2+4) to 6-year PharmD program

<table>
<thead>
<tr>
<th>Current concept</th>
<th>Future concept</th>
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</thead>
<tbody>
<tr>
<td>• Course-oriented learning</td>
<td>• Competency-based learning</td>
</tr>
<tr>
<td>• Knowledge-based learning</td>
<td>• Outcome-based learning</td>
</tr>
<tr>
<td>• Discipline-centered learning</td>
<td>• Acquisition of skills</td>
</tr>
<tr>
<td>• Discipline by track</td>
<td>• Practical suitability utilizing Knowledge</td>
</tr>
<tr>
<td>• Institution-centered learning</td>
<td>• Interdisciplinary learning</td>
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<td>• Partnership and network with others</td>
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</tbody>
</table>
Introduction of the (2+4) year PharmD program was initiated in 2009. Another transition to 6-year PharmD program will be ready by 2022. PharmD program offers practice-based, collaborative, and professional-ready education. Recognition of the importance of both clinical aspect and science aspect in Korea. The curriculum revisit is in progress to improve the experiential rotation, emphasize research to prepare next generation. Still not allowed for pharmacist to participate certain clinical activity, use technicians, receive service reimbursement....
International Webinar Series Additional Webinars

- Developing Global Partnerships for Pharmacy Education
  When: Jan 7, 2021 from 10:00 AM to 11:00 AM (ET)

- CAPE Educational Outcomes linked with International Pharmacy Education
  When: Feb 11, 2021 from 11:00 AM to 12:00 PM (ET)
Any questions?

Thank you for listening!

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