



Curriculum Design in Kurdistan: Meeting Present and Future Needs

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Background

Health care is a dynamic field with changes occurring daily. These changes are evident across all of the healing arts – including pharmacy. In an effort to address critical gaps in its higher education system, resulting from more than 30 years of wars and embargos, the Kurdistan Minister of Higher Education initiated a partnership with Appalachian State University (ASU) to provide advice on curriculum development in 10 areas. The program director at ASU contacted the Tennessee Independent Colleges and Universities Association (TICUA) for assistance in identifying curriculum advisors in areas not offered at ASU. Subsequently, Belmont was contacted by TICUA to provide help with pharmacy curricula.

The initial step in the program was the development of electronic discussions between Kurdish and U.S. pharmacy faculty. The support required one faculty member, Dr. Webster, to travel to the Kurdish Independent State in Iraq for three weeks while Dr. Turner provided support from the BUSOP Drug Information Center.

The curriculum reform committee recognized that a curriculum must be designed in such a way that it provides students with skills and abilities they will need to address the present and future needs of Kurdistan and the Republic of Iraq. Working as a team, the committee addressed several topics related to curriculum reform. Our approach involved four steps: identify current and future needs for pharmacy practice and education; evaluate the current curriculum; identify needed updates; and recommend curricular changes to the Minister of Higher Education.

Identifying Needs

Our discussions about contemporary pharmacist qualifications led us to identify the capabilities for a pharmacist practitioner and the needs of Kurdistan. Specific characteristics of a contemporary pharmacy practitioner are as follows:

- Information specialist
- Oral and written communication skills
- Knowledge of health care system
- Evidence-based, patient-centered, pharmaceutical care
- Interdisciplinary team member
- Development and administration of disease management programs

The following are current unique needs of Kurdistan:

- Clinical laboratory practice
- Community pharmacy practice
- Pharmaceutical industry

Curricular Evaluation

The current Iraqi Bachelor of Science in pharmacy curriculum (BSc) was evaluated by benchmarking against three U.S. pharmacy curricula (Belmont, University of the Sciences in Philadelphia, St. John

Fisher) and one in Jordan. We quickly identified that the topics in the current curriculum were approximately 30 years old. The courses were offered on an annual course system (not semester based) which severely restricted flexibility. With its age, the curriculum was woefully lacking numerous contemporary topics.

Curricular Change

The first significant change we recommended was a move from annual course offerings to a semester based schedule allowing for more flexibility in course development. We kept about 60% of the old curriculum, if in name only, to soften the perception of change. All of the courses need to be updated, but it is easier to accept needing to update what is currently being taught vs. having to create everything new. In Iraq the faculty are not the generators of their own syllabi. In this “top down bureaucracy”, syllabi are generated at the council of deans’ level and agreed upon for implementation in every program in the country. The syllabi are then provided to the faculty who teach it. We obtained benchmark syllabi to the level of the daily schedule for each course in the new proposed curriculum. A summary of the change in credit hours is provided in Table 1.

Table 1. Overview of Changes to Curriculum for BSc in Pharmacy

Credit Hours	Current Curriculum	Proposed Curriculum
Total	170	165
Laboratory	48	26
Experiential	8	10
Clinical	2	19

In addition to the five year Bachelor of Science degree in pharmacy we developed a co-curricular Doctor of Pharmacy (Pharm.D.) degree program. All students take the same curriculum for the first nine semesters. In the tenth semester students in the BSc program take a number of laboratory courses and practice rotations to support the requirements for community, industrial and clinical lab practice then graduate. In the tenth semester of the Pharm.D curriculum, students take advanced clinical coursework in pharmacokinetics, therapeutics, epidemiology, informatics and nutrition. This is then followed by ten monthly clinical rotations in the sixth year prior to graduation.

Discussion

The streamlined acceptance of the committee recommendations was due to the strong support of the Minister of Higher Education. In the presentation of the proposal to the school of pharmacy deans, the Minister stated his approval and specifically directed that the proposal be incorporated this fall. Another critical part in convincing all of the deans to agree on a change was the availability of benchmarking syllabi from U.S. pharmacy schools.

While the updated BSc program will continue to meet Kurdistan and Iraq’s needs in the areas of community pharmacy practice, clinical laboratory practice, and pharmaceutical manufacturing, the Pharm.D. students will provide for the future of the profession. These graduates will go on to create needed drug information centers, poison control centers, and clinical pharmacy disease state management programs. These students will open the door to the future of practice of pharmacy in the region.

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