



Combined Degree Program: PharmD/MPH

INTRODUCTION

The School of Public Health and Health Professions and the School of Pharmacy and Pharmaceutical Sciences jointly offer a five-year program leading to the doctor of pharmacy (PharmD)/Master of Public Health (MPH) degree. The joint program reduces by one year the usual pattern of a four-year PharmD program and a two-year MPH program. Each candidate must meet all the degree requirements of each school, except for the reduction in total credit hours.

The dual degree in pharmacy and public health provides a valuable set of knowledge, skills and attitudes necessary to tackle some of the challenges in the current dynamic health care environment. The combination of strong clinical knowledge and skills focused in the area of patient drug therapeutic management obtained from the doctor of pharmacy curriculum would complement and enhance the strong knowledge and skills for enhancing and promoting public health and health promotion. Graduates of this program assume leadership positions in health departments at the local, state, national and international levels as well as serve as excellent faculty members for schools of public health, health professions and pharmacy.

The PharmD/MPH program prepares students for public health positions in:

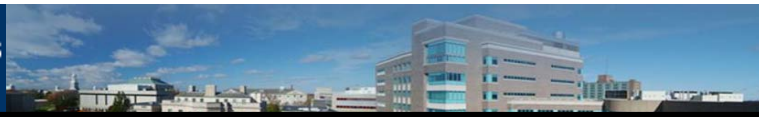
| | |
|--|--|
| Local, county, state, or federal government agencies | Genetics research |
| Community health and immunology | Insurance and managed care organizations |
| Emergency response | Family and juvenile health |

Example pharmacy roles and activities related to public health for which a practicing PharmD/MPH graduate would be prepared:

- Conduct and participate in screening programs
- Patient education and counseling related to disease prevention and health promotion (e.g., smoking cessation, wellness education, poison prevention) in pharmacies or other settings, such as elementary schools
- Provide pharmacy-based immunization programs
- Participate in disease surveillance of adverse drug events, potential drug interactions, patterns of over/underuse, and disaster preparedness
- Provide accurate information on public health issues (including provision of literature)
- Critically evaluate research studies, drug information, and pharmacy websites
- Make decisions related to inclusions/exclusions from drug formularies
- Design benefit programs, reimbursement systems, and prescription drug plans
- Design and provide disease management programs
- Participate in program planning, implementation and evaluation, such as evaluating appropriateness of prescribed treatment regimens, medication refill reminders and other compliance programs
- Participate in public health programs sponsored by health departments, for example, disaster preparedness, and administering vaccinations
- Advocate and develop policies for the pharmacy profession, for example scope of practice, regulation of pharmacy practice, and insurance reimbursement
- Conduct epidemiologic investigations (pharmacoepidemiology)

ADMISSION REQUIREMENTS FOR ADMITTED PHARM D STUDENTS

- Baccalaureate degree
- Cumulative grade point average (GPA) of 3.0/4.0 in the required courses of the PharmD program at the end of the second professional year (P2)
- Application to the Graduate School by **January 15th** of the P2 year. Late applications will be reviewed on a space available basis.
- Graduate Record Examination (GRE) completed by the end of the first semester of the P2 year and within 5 years of application to the MPH program. The GRE is waived persons with an MD, PhD or equivalent doctoral degree from an accredited American university.
- Two letters of recommendation stating the student's interest in the MPH program – preferably at least one should be from a former faculty person who can address the applicant's record.
- Personal statement of career goals
- GRE combined verbal and quantitative score of 1050 or better



- International applicants: TOEFL examination with a minimum acceptable score of 600 on the paper-based test, 250 on the computer-based test, or 100 on the internet-based test; or demonstration of proficiency in the International English Language Testing System (IELTS). The required minimum IELTS score is 7.5 overall. The IELTS score must be dated within two years of the time the student will enroll. Only the official original IELTS score report is acceptable; photocopies are not acceptable.
- Biostatistics - applicants who do not have at least two semesters of successful course work in calculus will be required to take additional courses in mathematics before being admitted. Prior coursework in advanced calculus and statistics is desirable, but not essential.
- One health-related science course (anatomy, microbiology, or physiology)
- For PharmD admission requirements, please visit www.pharmacy.buffalo.edu/admissions_pharmd.shtml

APPLICATION PROCESS

Students wishing to pursue the dual degree program should submit an application to the program during their second professional (P2) year of the PharmD program. Applications and instructions to the MPH program can be found at <http://sphhp.buffalo.edu/mph/applying.php>. Applications must be submitted by **January 15th** prior to the third professional (P3) year of the PharmD program. PharmD students must select the Clinical Research Track during their P2 year within the PharmD curriculum.

CURRICULUM

The dual degree PharmD/MPH program involves the fundamental elements of each program. All students must meet the requirements for admission to the two individual programs. Students complete the first and second professional year in the PharmD curriculum. During this second professional year, students interested in this program must apply to the MPH program. PharmD students interested in the PharmD/MPH must also select the Clinical Research Track during their second professional year. Track selections are made in the second professional year, but students do not begin to take the required electives in this track until their third professional year. At the end of these first two years, students have completed 60 hours of the required PharmD curriculum.

The third year of this combined program involves only courses in the MPH program. Students complete both required and elective courses for a total of 32 hours during this year. In the fourth year of this program, students take courses in both programs. Students complete the required 21 hours and 8 hours of electives related to the Clinical Research Track. Students in the Clinical Research Track must take the following electives: PHM 516, PHM 616, PHC 543, PHM 506 (8 Hours). Pharmacy students in the Clinical Research Track do not need to take PHM 608 (2 hours) or 609 (2 hours) Pharmacy Project because they are required to complete a research project while in this track and these projects are more intensive than general Pharmacy Projects conducted by other students. Students take 3 hours of a required course in the MPH program. Two pharmacy courses, specifically PHC 517 (2 Hours) and PHC 543 (1 Hour), together substitute for a 3 hours MPH concentration area elective course. As such there are 6 credit hours toward the MPH. The total number of hours at the end of the fourth year in the PharmD program (required and electives) are 89 hours and in the MPH program (required and electives) are 38 hours. In the fifth year, students complete their advanced pharmacy practice experiences for a total of 36 hours. One advanced pharmacy practice experience rotation (6 Hours) overlaps for SPM 544/STA 544 Field Training (6 Hours) and a second advanced pharmacy practice rotation overlaps for SPM 630/ STA 630 Integrative Project (2 Hours). These two rotations are considered a component of the two research rotations for the Clinical Research Track. The research project for these students should include elements relevant to the two degree programs and students may be mentored by either a graduate faculty member in either school.

The total number of hours for a student in each program at the end of this degree will be 125 hours for the PharmD degree and 46 hours for the MPH. This represents an 11 credit hour overlap or 7% overlap of courses in the two programs.



A. Year One

| Fall | Credits | Spring | Credits |
|--|-----------|--------------------------------------|-----------|
| BCH 403 Biochemical Principles | 4 | MIC 301 Fundamentals of Microbiology | 3 |
| PGY 451 Human Physiology I | 3 | PGY 452 Human Physiology II | 3 |
| MCH 311 Chemistry of Drug Action | 3 | PHC 312 Physical Pharmacy | 3 |
| PHM 311 Pharmaceutical Calculations | 3 | PHM 430 Pharmacy Law | 3 |
| PHM 315 Pharmaceutical Care I | 3 | PHM 316 Pharmaceutical Care II | 3 |
| PHM 111 All School Conference | 0 | PHM 111 All School Conference | 0 |
| Introductory Pharmacy Practice Experience (IPPE) | 1 | IPPE | 1 |
| Total | 17 | | 16 |

B. Year Two

| Fall | Credits | Spring | Credits |
|--|-----------|---|-----------|
| PHC 531 Introduction Pharmacokinetics and Biopharmaceutics I | 4 | PHC 532 Introduction Pharmacokinetics and Biopharmaceutics II | 2 |
| BCP 511 Principles of Pharmacology | 4 | BCP 512 Principles of Pharmacology II | 4 |
| PHM 531 Professional Practice I | 3 | PHM 532 Professional Practice II | 3 |
| PHM 510 Pharmacotherapeutics I | 4 | PHM 511 Pharmacotherapeutics II | 4 |
| PHM 517 Pharmaceutical Care III | 1 | PHM 518 Pharmaceutical Care IV | 1 |
| PHM 111 All School Conference | 0 | PHM 111 All School Conference | 0 |
| IPPE | 1 | IPPE | 1 |
| Total | 17 | | 15 |

C. Year Three

| Fall | Credits | Spring | Credits |
|---|-----------|---|-----------|
| SPM 501 Principles of Epidemiology | 4 | SPM 549 Environmental Health | 3 |
| STA 527 and STA 527-R Introduction to Medical Statistics | 4 | STA 506 Introduction to Statistical Computing for Public Health Practitioners | 3 |
| SPM 533 Principles of Public Health | 3 | SPM 590 Graduate Seminar | 0 |
| SPM 590 Graduate Seminar | 0 | Three (3) courses in concentration area | 9 |
| SPM 507 Introduction to Health Care | 3 | | |
| MPH concentration area course, elective or required for concentration | 3 | | |
| Total | 17 | | 15 |

D. Year Four

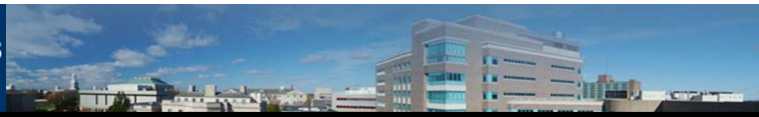
Total MPH Credits – 38 Hours

Total Pharmacy Credits – 89 Hours

| Fall | Credits | Spring | Credits |
|---|-----------|--------------------------------------|-----------|
| SPM 590 Graduate Seminar (optional) | 0 | SPM 527 Study of Health Behaviors | 3 |
| PHM 512 Pharmacotherapeutics III | 4 | SPM 590 Graduate Seminar (optional) | 0 |
| PHM 519 Pharmaceutical Care IV | 2 | PHM 616 Clinical Research Methods II | 1 |
| PHC 533 Applied Clinical Pharmacokinetics I | 2 | PHM 513 Pharmacotherapeutics IV | 4 |
| PHC 517 Principles of the Human Genome, Pharmacogenomics and Bioinformatics | 2 | PHM 508 Pharmacy Informatics | 2 |
| PHM 572 Managed Care Pharmacy | 2 | PHM 520 Pharmaceutical Care VI | 1 |
| PHM 111 All School Conference | 0 | PHM 509 Patient Assessment | 2 |
| PHM 516 Clinical Research Methods I | 3 | PHM 506 Biometry | 3 |
| | | PHM 111 All School Conference | 0 |
| IPPE | 1 | IPPE | 1 |
| Total | 16 | | 17 |
| Between Fall and Spring PHC 543: Pharmaceutical Genetic Methods (counts in Spring Semester) | 1 | | |

Notes

- Students must be in the Clinical Research Track and must take the following electives: PHM 516, PHM 616, PHC 543, PHM 506 (8 credits)
- PHC 517 (2 credits) and PHC 543 (1 credit) together substitutes for a 3 credit MPH concentration area elective course
- PharmD Students in the Clinical Research Track do not need to take PHM 608 (2 credits) or 609 (2 credits) Pharmacy Project



E. Year Five

Fall and Spring Semesters

Students must complete six experiential rotations over the course of the academic year. Each rotation is six weeks in length and each is worth 6 credit hours. The total credit hours for the experiential year are 36 hours. One advanced pharmacy practice experience rotation (6 credits) overlaps for SPM 544/STA 544 Field Training (6 credits) and a second advanced pharmacy practice rotation overlaps for SPM 630 /STA 630 Integrative Project (2 credits). These two rotations are considered a component of the two research rotations for the Clinical Research Track).

Notes

- One advanced pharmacy practice experience rotation (6 Hours) overlaps for SPM 544/STA 544 (6 Hours) and a second advanced pharmacy practice rotation overlaps for SPM 630 /STA 630 Integrative Project (2 Hours).
- Total Pharmacy Credits for all Years: 125 Hours
- Total MPH Credits for all Years: 46 Hours
- Total Credits: 171
- Total Overlap: 11 Credits
- Percentage Overlap: 7%

CURRICULUM AND APPLICATION TIMELINE

Professional Year 1:

- First professional year of the PharmD program

Professional Year 2:

- Second professional year of the PharmD program
- Complete the Graduate Record Examination (GRE)
- Apply to the MPH program by January 15
- Select Clinical Research Track, which allows them to develop their skills as clinical research practitioners.
- Must have a GPA of at least 3.0
- Select one of the concentration areas in the MPH program: biostatistics (the application of statistical techniques to scientific research), environmental health science (study of environmental influences on population health), epidemiology (the study of factors which influence the determination and distribution of diseases), health behavior (the study of the actions of individuals, groups and organizations which promote health and prevent disease and injury) and health services administration (the area involving public health management, practice and policy). For questions about a specific concentration, contact the appropriate Director of Graduate Studies: Dr. Gary Giovino (Health Behavior), Dr. Lili Tian (Biostatistics), Dr. Bill Scheider (Environmental Health), Dr. Jean Wactawski-Wende (Epidemiology), or Dr. Carl Li (Health Services Administration).

Professional Year 3:

- First year of the MPH program
- Begin Clinical Research Track

Professional Year 4:

- Both PharmD and MPH programs

Professional Year 5:

- Experiential year for both programs
- PharmD and MPH degrees awarded

TUITION

First professional year: Undergraduate Tuition

Second professional year: PharmD Tuition

Third and fourth professional year: MPH Tuition

Fifth professional year: PharmD Tuition

For current tuition rates and fees, visit: <http://src.buffalo.edu/studentaccount/tuition.shtml>

NOTE: Curriculum and all requirements may change.