

# DOCTOR OF PUBLIC HEALTH (DRPH)

## Program Overview

The Doctor of Public Health (DrPH) (<https://publichealth.jhu.edu/academics/drph/>) degree is a professional doctoral degree for early to mid-career public health professionals with an MPH or health-related master's degree. It is well-suited to professionals seeking leadership roles in domestic or international public health agencies and organizations. Graduates are able to: (1) synthesize and translate knowledge to practice, (2) communicate with and convene diverse partners to effect change across a range of public health settings, and (3) advance programs, policies, and services through evidence-based public health practice. Alumni hold mid to senior-level positions in a variety of settings, including government agencies, non-profit organizations, academia, and healthcare.

In addition to the standard School application materials, DrPH applicants should also possess: (1) an MPH or public health-related master's degree; and (2) a minimum of 3 years of professional, full-time public health experience in a relevant area. Students apply to and matriculate into a concentration, which offers specialized training in a specific area of public health.

The DrPH program is built around a set of required courses that offer the opportunity to achieve foundational competencies in health policy, public health practice, professional skills (i.e., leadership, strategic planning, communication), data analysis, education, and workforce development. Students develop specialized expertise through the completion of coursework for their chosen concentration or track. In addition to coursework, the program requires applied practice experience (i.e., practicum) and a dissertation.

The DrPH program is a flexible, part-time program with courses offered during regular terms and weeklong intensives. The program can be completed fully online. Students are required to register for a minimum of 1 credit per term. Most students complete the DrPH in 5-7 years; part-time students have up to 9 years to complete the program.

## Concentrations (Tracks)

- Custom Track
- Environmental Health (Environmental Health; Health Security)
- Health Equity and Social Justice
- Global Health: Policy & Evaluation
- Health Policy and Management (Healthcare Management & Leadership; Public Health Informatics; Health Policy; Quality & Patient Safety)
- Implementation Science
- Women's and Reproductive Health

## Program Requirements

The program includes core requirements, foundational coursework, concentration coursework, an applied practice experience (practicum), a comprehensive written examination, and a dissertation. Students will be required to successfully complete a minimum of 64 term credits, including 57 didactic credits, 7 credits from dissertation proposal development, and credits from dissertation research combined. Dissertation work includes preliminary and final oral examinations,

a public seminar, and an integrative learning experience. Of the 57 didactic credits, 30 are earned through foundational courses and 27 are earned through concentration courses. Each concentration has required and elective courses. After completing required courses, students must complete elective courses to meet the minimum requirement for concentration credits.

Course location and modality is found on the BSPH website (<https://publichealth.jhu.edu/courses/>).

## Prerequisite Requirements

The following courses are prerequisites for the DrPH program. If students have not taken these courses or equivalent ones within the past 5 years (for a B or higher), they will be required to take them after matriculation. Students who take the prerequisite coursework after matriculation cannot apply the credits toward the minimum credit requirement for the DrPH degree. For biostatistics, the prerequisite can be fulfilled with a course in statistical methods or with two courses in statistical reasoning.

When students matriculate into the DrPH program, their prior coursework will be reviewed and considered for fulfillment of the prerequisite coursework. Students will be asked to submit course descriptions and syllabi for prior coursework in order to evaluate the comparability of topics and learning objectives. Students will be informed about which prerequisites they need to address through coursework or waiver exams. The coursework and/or waiver exams may be completed during the DrPH Program; they do not need to be completed prior to matriculation.

Code	Title	Credits
<b>Epidemiology</b>		
PH.340.721	Epidemiologic Inference in Public Health I	5
<b>Biostatistics: Statistical Reasoning</b>		
PH.140.611	Statistical Reasoning in Public Health I	3
PH.140.612	Statistical Reasoning in Public Health II	3
<b>Biostatistics: Statistical Methods</b>		
PH.140.621	Statistical Methods in Public Health I	4

## Foundational Course Requirements

Foundational course requirements are designed to ensure students achieve DrPH Foundational Competencies established by the Council on Educational for Public Health (CEPH). Students earn 1 credit from DrPH Seminars, 12 from problem-solving courses, 11 from professional skills courses, and a minimum of 6 from data analysis courses, totaling to 30.

## 1. DrPH Seminars

During their first year, students are required to take **DrPH First-Year Seminar** (550.611-550.614), a non-credited, monthly course that provides fundamental training in research (e.g., reviewing literature, qualitative vs. quantitative research) and offers an overview of the DrPH program requirements. Students are required to take **DrPH Proposal Planning Seminar** (550.620 – 550.622) in their second or third year; these seminar courses span 3 terms and provides guidance in developing research proposals. Students cannot waive out of either of the seminars.

## 2. Problem-Solving Seminars

Problem-solving seminars offer the opportunity to achieve foundational competencies while learning about today's most pressing public health challenges. A distinct set of selectives is offered each term. At least one of the problem-solving seminars chosen, one must fulfill the Environment,

Ecosystems, and Globalization (EEG) requirement. Students cannot waive out of problem-solving course requirements.

Code	Title	Credits
<b>Problem-Solving 1 Selective</b>		
PH.410.621	The Opioid Crisis: Problem Solving Seminar	3
PH.224.630	Food Systems for Health Problem Solving Seminar: Lessons from American Indian Communities	3
PH.180.641	Climate Change and Public Health Problem Solving Seminar: Global Challenges and Solutions for Mitigation, Adaptation, and Sustainability <small>Fulfills EEG requirement</small>	3
<b>Problem-Solving 2 Selective</b>		
PH.380.633	Promoting Equity for Adolescents and Emerging Adults: Problem-Solving Seminar	3
PH.221.690	Strengthening Primary Health Care Across the World: Problem Solving Seminar	3
<b>Problem-Solving 3 Selective</b>		
PH.221.630	Tackling the Intersectoral Challenge of Antimicrobial Resistance: Problem Solving Seminar <small>Fulfills EEG requirement</small>	3
PH.330.675	Suicide Prevention: Problem Solving Seminar	3
PH.330.607	PREVENTION of MENTAL DISORDERS: PUBLIC HEALTH InterVENTIONS	3
PH.380.777	Global Population Change and Local Public Health Needs: Problem Solving Seminar	3
<b>Problem-Solving 4 Selective</b>		
PH.340.610	The One Health Approach to Epidemiology and Global Public Health: Problem Solving Seminar <small>Fulfills EEG requirement</small>	3
PH.223.630	The Practice of Public Health Through Vaccine Case Studies: Problem Solving Seminar	3
PH.301.650	Crafting Effective Solutions to Gun Violence: Problem Solving Seminar	3

### 3. Professional Skills Courses

Professional skills courses cover communications, leadership, teaching and learning, and strategic planning. Students can request to waive out of a professional skills course requirement based on previous coursework or professional experience. Students who waive a professional skills course must take a higher-level course that offers training in the same area.

Code	Title	Credits
<b>Communications Selective</b>		
PH.308.604	Effective Writing for Public Health Change	3
PH.308.701	Media Interviews and Applied Public Health Communications	3
PH.410.651	Health Literacy: Challenges and Strategies for Effective Communication	3
PH.300.650	Crisis and Response in Public Health Policy and Practice	3
PH.260.715	Unleash Your Writing Superpower: Crafting Clear, Concise and Persuasive Prose	3
<b>Leadership Selective</b>		
PH.312.700	Leading Organizations	3
PH.312.701	Strategic Leadership and Decision Making	3
PH.312.702	Leading Change: Building and Empowering Teams	3

PH.221.636	High Performing Organizations in Lmic Settings	3
PH.221.607	Essential Skills for Women's Leadership in Global Health	3

#### Teaching & Learning

PH.300.750	Teaching, Learning and Leading – in the Classroom, in the Workplace and in the Community	3
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#### Strategic Planning

PH.312.720	Designing a Strategic Plan	2
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## 4. Data Analysis Series

Students are required to complete a series of data analysis courses in qualitative methods, quantitative methods, or mixed methods. There are two sequences of courses to choose from for quantitative methods and two for qualitative methods. Students who opt to complete the mixed methods series must complete a qualitative methods sequence, a quantitative methods sequence, and a required course in mixed methods.

Students must complete at least 6 credits in data analysis. Those who wish to substitute a specific course must take a similar course at a higher level to meet the credit requirement. After meeting the 6 credit requirement, students may be able to apply additional credits toward their concentration credit requirement if the course is listed as an elective for their concentration.

Code	Title	Credits
<b>Quantitative Methods Sequences</b>		
<i>Statistical Reasoning</i>		
PH.140.613	Data Analysis Workshop I	2
PH.140.614	Data Analysis Workshop II	2
PH.140.620	Advanced Data Analysis Workshop	2
<i>Statistical Methods</i>		
PH.140.622	Statistical Methods in Public Health II	4
PH.140.623	Statistical Methods in Public Health III	4
<b>Qualitative Methods Sequences</b>		
<i>Qualitative Methods in Global Health</i>		
PH.224.690	Qualitative Research Theory and Methods	3
PH.224.691	Qualitative Data Analysis	3
<i>Introduction to Qualitative Methods</i>		
PH.410.671	Introduction to Qualitative Research Methods	3
PH.410.618	Using Software in Qualitative Research and Analysis	1
PH.410.673	Introduction to Qualitative Data Analysis for Public Health	2
<b>Required Course in Mixed Methods</b>		
PH.330.621	Mixed Methods for Research in Public Health	2
<i>Quantitative Methods</i>		
PH.140.613	Data Analysis Workshop I	2
PH.140.614	Data Analysis Workshop II	2
OR		
PH.140.622	Statistical Methods in Public Health II	4
<i>Qualitative Methods</i>		
PH.224.690	Qualitative Research Theory and Methods	3
PH.224.691	Qualitative Data Analysis	3
OR		
PH.410.618	Using Software in Qualitative Research and Analysis	1

PH.410.671	Introduction to Qualitative Research Methods	3
PH.410.673	Introduction to Qualitative Data Analysis for Public Health	2

## Custom Track

The Custom track allows students the flexibility to tailor the DrPH program to their academic and professional goals. Students may choose to specialize either in a cross-cutting topical area (e.g., child health and welfare, substance use), in a public health field (e.g., mental health, surveillance, nutrition), or in another applied area not reflected in the other concentrations/tracks. This track is well-suited to those seeking leadership positions in agencies and organizations concerned with planning and implementing projects designed to meet a wide variety of public health needs. Students are required to complete: (1) the required courses listed below, (2) courses identified as meeting their individualized competencies, (3) additional elective courses in their area of study, and (4) 2 credits of **DrPH Custom Track Seminar**.

Code	Title	Credits
<b>Required Courses</b>		
PH.410.885	DrPH Custom Track Seminar	0.25
PH.221.654	Systems Thinking in Public Health: Applications of Key Methods and Approaches	3
PH.410.620	Program Planning for Health Behavior Change	3
<b>Program Evaluation Selective (Choose One)</b>		
PH.380.611	Fundamentals of Program Evaluation	4
PH.221.645	Large-scale Effectiveness Evaluations of Health Programs	4

## Environmental Health Concentration

The goal of the Environmental Health concentration is to train professionals to provide leadership and management in a wide variety of environmental health issues. Graduates should be able to analyze and assess complex environmental risks, emergencies, and problems; and should also be able to offer guidance for the reduction of these risks and the resolution of environmental problems. They will also work toward becoming practitioners who can comprehend and integrate the many dimensions of environmental health sciences, define the disciplines that can best be applied to a problem, make sound and critical judgments, and interpret their recommendations clearly in the decision-making processes of policy formulation in industry, government, or academia. In addition to the listed courses, students are required to complete 2 credits of **DrPH Environmental Health Concentration Seminar**.

### A. Environmental Health Track

The **Environmental Health** track emphasizes the skills necessary to: (1) assess needs for occupational and environmental health services at regional, national, and international levels, and (2) develop and monitor policy and regulatory frameworks.

Code	Title	Credits
<b>Required Courses</b>		
PH.180.616	DrPH Concentration Seminar in Environmental Health	0.25
PH.180.628	Introduction To Environmental and Occupational Health Law	4
PH.183.631	Fundamentals of Human Physiology	4
PH.317.600	Introduction to the Risk Sciences and Public Policy	4

PH.187.610	Public Health Toxicology	4
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### Occupational Health Selective (Take 1)

PH.188.680	Fundamentals of Occupational Health	3
PH.182.623	Occupational Health Management	3

### Electives

PH.180.600	Public Health Implications of Health as a Human Right	2
PH.180.601	Environmental Health	5
PH.180.606	Case Studies in Food Production and Public Health	4
PH.180.609	Principles of Environmental Health	4
PH.180.620	Introduction to Food Systems and Public Health	4
PH.180.623	Infectious Disease Threats to Global Health Security	3
PH.180.624	Biotechnology and Health Security	3
PH.180.626	Environmental Justice and Public Health Practice	3
PH.180.632	Introduction to Molecular Toxicology	3
PH.180.634	Public Health Emergencies: Risk Communication and Decision Science	3
PH.180.640	Molecular Epidemiology and Biomarkers in Public Health	4
PH.180.647	The Health Effects of Indoor and Outdoor Air Pollution	3
PH.180.670	Introduction to Public Health Emergency Preparedness	3
PH.182.615	Airborne Particles	4
PH.182.621	Introduction to Ergonomics	4
PH.182.625	Principles of Occupational and Environmental Hygiene	4
PH.185.600	One Health Tools to Promote and Evaluate Healthy and Sustainable Communities	3
PH.187.625	Animals in Research: Law, Policy, and Humane Sciences	3
PH.187.645	Toxicology 21: Scientific Applications	3
PH.187.650	Alternative Methods in Animal Testing	3
PH.187.655	Evidence-Based Toxicology	3
PH.317.610	Risk Policy, Management and Communication	3
PH.340.666	Foundations of Social Epidemiology	3
PH.340.680	Environmental and Occupational Epidemiology	4
PH.550.630	Public Health Biology	3

### B. Health Security Track

The **Health Security** track prepares students to prevent, detect, and respond to health security threats and public health emergencies, such as COVID-19, Zika, and Ebola.

Code	Title	Credits
<b>Required Courses</b>		
PH.180.616	DrPH Concentration Seminar in Environmental Health	0.25
PH.317.600	Introduction to the Risk Sciences and Public Policy	4
PH.317.610	Risk Policy, Management and Communication	3
PH.180.634	Public Health Emergencies: Risk Communication and Decision Science	3
PH.180.623	Infectious Disease Threats to Global Health Security	3

PH.180.624	Biotechnology and Health Security	3
PH.185.600	One Health Tools to Promote and Evaluate Healthy and Sustainable Communities	3
<b>Electives</b>		
PH.221.613	Introduction to Humanitarian Emergencies	3
PH.180.665	Planetary Health Law: Global Health Security and a Changing Environment	4
PH.180.633	The Sociocultural Dimensions of Disasters	3
PH.330.621	Mixed Methods for Research in Public Health	2
PH.317.605	Methods in Quantitative Risk Assessment	4
PH.180.670	Introduction to Public Health Emergency Preparedness	3
PH.221.615	Health Emergencies in Large Populations (H.E.L.P.)	5
PH.221.639	Health Care in Humanitarian Emergencies	3
PH.317.615	Topics in Risk Assessment	2
PH.300.650	Crisis and Response in Public Health Policy and Practice	3
PH.180.627	Lessons Learned in 1918 Pandemic Flu	1
PH.301.692	The Role of Community-Based Organizations (CBOs) and Non-Governmental Organizations (NGOs) in Improving Global Public Health	3
PH.260.606	Major Global Infectious Diseases: Prospects for Control	2
PH.340.668	Topics in Infectious Disease Epidemiology	3
PH.223.684	Vector-Borne Diseases in the Tropics	4
PH.340.658	Critical Reading of Epidemiologic Literature	1
PH.340.636	Epidemiology in Evidence-Based Policy	2
PH.340.666	Foundations of Social Epidemiology	3
PH.185.803	Health Security Journal Club	1
PH.550.610	Using Generative Artificial Intelligence (AI) to Improve Public Health	1
PH.340.646	Epidemiology and Public Health Impact of HIV and AIDS	4
PH.340.770	Public Health Surveillance	3
PH.260.656	Malariology	4
PH.221.623	Water, Sanitation and Hygiene in Humanitarian Emergencies	2
PH.300.712	Formulating Policy: Strategies and Systems of Policymaking in the 21st Century	3
PH.550.604	Qualitative Reasoning in Public Health	2
PH.188.688	Global Sustainability & Health Seminar	1

## Global Health: Policy & Evaluation Concentration

The concentration focuses on evidence-based interventions in public health to improve population health and health access globally. Students will learn methodologies related to policy and evaluation in low- and middle-income countries (LMICs) through the application of interdisciplinary tools and approaches to study processes in complex global health systems. Some of the many global challenges students will address include sustainable development, environmental degradation and climate change, globalization, migration, displaced persons, diseases prevalent in LMICs, epidemics, vaccine access, injuries, emerging and reemerging diseases, and risk factors such as obesity and smoking. This concentration is well-suited to those seeking leadership positions

in domestic and international agencies concerned with planning and implementing projects designed to meet global public health needs, particularly in LMICs. In addition to the listed courses, students are required to complete 2 credits of **DrPH Global Health: Policy & Evaluation Concentration Seminar**.

Code	Title	Credits
<b>Required Courses</b>		
PH.220.861	DrPH Concentration Seminar in Global Health: Policy and Evaluation	0.25
PH.221.646	Health Systems in Low and Middle income Countries	3
PH.221.650	Health Policy Analysis in Low and Middle income Countries	3
PH.221.645	Large-scale Effectiveness Evaluations of Health Programs	4
PH.221.663	Globalization and Health: Framework for Analysis	3
<b>Health Equity Selective (Take 1)</b>		
PH.221.656	Conceptual Foundations of Health Equity and Social Justice (or)	3
PH.410.605	Fundamental Tools for Promoting Health Equity (or)	3
PH.340.667	Health Equity Research Methods to Address Social Determinants of Health	4
<b>Burden of Disease Selective (Take 1)</b>		
PH.180.623	Infectious Disease Threats to Global Health Security	3
PH.221.620	Applying Summary Measures of Population Health to Improve Health Systems	3
<b>Evaluation Selective (Take 1)</b>		
PH.221.705	Monitoring and Evaluation of Health Systems Strengthening in Low and Middle income Countries (or)	3
PH.223.632	Methods for Planning and Implementing Evaluations of Large-Scale Health Programs in Low and Middle income Countries	4
PH.313.790	Introduction to Economic Evaluation	3
PH.313.601	Economic Evaluation I	3
PH.313.602	Economic Evaluation II	3
PH.313.603	Economic Evaluation III	3
<b>Electives</b>		
PH.221.617	Behavioral Economics in Health Decisions	2
PH.221.639	Health Care in Humanitarian Emergencies	3
PH.221.652	Financing Health Systems for Universal Health Coverage	3
PH.221.654	Systems Thinking in Public Health: Applications of Key Methods and Approaches	3
PH.140.622	Statistical Methods in Public Health II	4
PH.140.623	Statistical Methods in Public Health III	4
PH.223.680	Global Disease Control Programs and Policies	4
PH.220.624	Monitoring and Evaluation in Global Health for the Real World: Addressing Gender Inequity for Change that Counts	3
PH.380.603	Demographic Methods for Public Health	4
PH.550.601	Implementation Research and Practice	3

PH.302.675	Crisis Response in Public Health Practice: International Perspectives	2
PH.221.609	Introduction to Financing in Global Health	2
PH.221.612	Confronting the Burden of Injuries: A Global Perspective	3
PH.221.725	Commercial Determinants of Health	3
PH.221.629	Prospective policy analysis for health policy and systems research: methods and applications	2
PH.221.657	Disease and Program Costing in Global Health Programs	3
PH.221.676	Migrant Health Policy in LMICs	2
PH.221.619	Introduction to Global Health Economics	3
PH.221.623	Water, Sanitation and Hygiene in Humanitarian Emergencies	2
PH.221.624	Urban Health in Developing Countries	3
PH.221.640	Design and Implementation of Incident Management Systems in Low- and Middle-income Countries	2
PH.221.674	Donor Transition and Sustainability: Implications for the Future of International Health	2
PH.221.682	The Role of the Private Sector for Sustainable Development in Global Health	3
PH.221.692	Reforms in Primary Health Care Across Low-and Middle-Income Countries	2
PH.223.626	Special Topics in Global Digital Health	1
PH.224.690	Qualitative Research Theory and Methods	3
PH.224.691	Qualitative Data Analysis	3
PH.330.621	Mixed Methods for Research in Public Health	2
PH.410.635	Applications of innovative Methods in Local and Global Health Equity Research	4
PH.221.710	Designing Innovation and Access for Technologies in Global Health	3

PH.410.630	Implementation and Sustainability of Community-Based Health Programs	3
PH.340.667	Health Equity Research Methods to Address Social Determinants of Health	4
<b>Design and Implementation Selective (Take at least 3 credits)</b>		
PH.330.647	Childhood Victimization: An Overview of Public Health Efforts	1
PH.330.610	Knowledge for Managing County and Local Mental Health, Substance Use, and Developmental Disability Authorities	1
PH.221.625	Evaluation of District-Level Primary Health Care Implementation in Low-and Middle-income Settings	3
PH.330.681	Mental Health and Psychosocial Needs of Refugees After Resettlement in High income Countries	1
PH.188.694	Health of Vulnerable Worker Populations	3
PH.380.768	Selected Topics in Women's Health and Women's Health Policy	4
PH.410.620	Program Planning for Health Behavior Change	3
PH.410.622	Strategic Leadership Principles and Tools for Health System Transformation in Developing Countries	4
PH.180.600	Public Health Implications of Health as a Human Right	2
PH.410.668	Policy Interventions for Health Behavior Change	4
PH.380.663	Gender-Based Violence Research, Practice and Policy: Issues and Current Controversies	3
PH.410.672	Organizing for Public Health with the Six Steps to Effective Advocacy: Turning Public Will into Public Policy	3
PH.380.623	Adolescent Health and Development	3
PH.380.750	Migration and Health: Concepts, Rates, and Relationships	3
PH.221.688	Social and Behavioral Foundations of Primary Health Care	4
PH.221.635	Global Advances in Community-Oriented Primary Health Care	3
PH.380.765	Preventing Infant Mortality and Promoting the Health of Women, Infants and Children	3
PH.380.761	Sexually Transmitted Infections in Public Health Practice	4
PH.221.624	Urban Health in Developing Countries	3
PH.380.725	The Social Context of Adolescent Health and Development	3
PH.224.692	Methods in Formative Research and Human Centered Design for Intervention Development	4
PH.330.680	Promoting Mental Health and Preventing Mental Disorders in Low- and Middle-income Countries	3
<b>Research and Evaluation Selective (Take at least 3 credits)</b>		
PH.410.635	Applications of innovative Methods in Local and Global Health Equity Research	4
PH.309.631	Population Health Informatics	3
PH.313.790	Introduction to Economic Evaluation	3
PH.221.645	Large-scale Effectiveness Evaluations of Health Programs	4

## Health Equity & Social Justice Concentration

This concentration is focused on understanding and addressing the multiple determinants of health, particularly among disadvantaged and marginalized groups. Students learn about innovative epidemiological, social, and behavioral tools to assess population health and influences upon it. Required and elective courses offer the opportunity to learn about the conceptual and philosophical bases of health equity and social justice and also to acquire skills relevant to the design, implementation, and evaluation of health programs designed to benefit poor and marginalized groups. This concentration is well-suited to those seeking leadership positions in agencies concerned with planning and implementing projects designed to meet public health needs. In addition to the courses listed below, students are required to complete 2 credits of **DrPH Health Equity & Social Justice Concentration Seminar**.

Code	Title	Credits
<b>Required Courses</b>		
PH.220.864	DrPH Concentration Seminar in Health Equity and Social Justice	0.25
PH.410.619	Social Justice: Policy, Practice, and Research	4
PH.410.605	Fundamental Tools for Promoting Health Equity	3

PH.380.611	Fundamentals of Program Evaluation	4
PH.380.604	Life Course Perspectives on Health	4
PH.380.711	Issues in Survey Research Design	3
PH.380.651	Methods and Measures in Population Studies	4
PH.340.666	Foundations of Social Epidemiology	3
PH.221.620	Applying Summary Measures of Population Health to Improve Health Systems	3
PH.309.712	Assessing Health Status and Patient Outcomes	3
PH.340.706	Methods and Applications of Cohort Studies	2
PH.380.603	Demographic Methods for Public Health	4
PH.221.722	Quality Assurance Management Methods for Developing Countries	4
PH.330.621	Mixed Methods for Research in Public Health	2
PH.330.657	Statistics for Psychosocial Research: Measurement	4
PH.140.664	Causal Inference in Medicine and Public Health I	4
PH.340.613	Design and Conduct of Clinical Trials	2
PH.340.706	Methods and Applications of Cohort Studies	2
PH.223.632	Methods for Planning and Implementing Evaluations of Large-Scale Health Programs in Low and Middle income Countries	4
PH.309.712	Assessing Health Status and Patient Outcomes	3
PH.410.671	Introduction to Qualitative Research Methods	3
PH.410.673	Introduction to Qualitative Data Analysis for Public Health	2
PH.410.615	Research Design in the Social and Behavioral Sciences	3
PH.309.616	Introduction to Methods for Health Services Research and Evaluation I	2
PH.340.667	Health Equity Research Methods to Address Social Determinants of Health	4
<b>Electives</b>		
PH.221.656	Conceptual Foundations of Health Equity and Social Justice	3
PH.221.654	Systems Thinking in Public Health: Applications of Key Methods and Approaches	3
PH.330.600	Racism and Public Mental Health	1
PH.700.622	Bioethics, Human Rights, and Global Health	3
PH.318.623	Social Policy for Marginalized and Disenfranchised Populations in the U.S.	3
PH.308.610	The Political Economy of Social inequalities and Its Consequences for Health and Quality of Life	3
PH.180.625	Community-Driven Epidemiology and Environmental Justice	3
PH.410.864	Critical Issues in Health Disparities	1
PH.410.660	Latino Health: Measures and Predictors	3
PH.550.844	Current Issues in Public Health: COVID-19 Pandemic Response	2
PH.410.683	Global Perspectives on LGBT Health	3
PH.308.610	The Political Economy of Social inequalities and Its Consequences for Health and Quality of Life	3
PH.410.660	Latino Health: Measures and Predictors	3

## Health Policy & Management Concentration

This concentration trains students to: (1) analyze policies that impact population health, (2) evaluate health services, healthcare delivery, and information systems, and (3) identify strategies for enhancing the quality, effectiveness, and efficiency of systems of care. Training addresses today's most pressing health, medical, and mental and behavioral health problems. In addition to the courses listed below, students in the concentration are required to take 2 credits of **DrPH Health Policy & Management Concentration Seminar**.

### A. Healthcare Management & Leadership Track

This track is focused on measuring, monitoring, and improving the clinical and financial performance of health services organizations, as well as training leaders for organizational change.

Code	Title	Credits
<b>Required Courses</b>		
PH.311.861	DrPH Concentration Seminar in Health Policy and Management	0.25
PH.312.603	Fundamentals of Budgeting and Financial Management	3
PH.312.701	Strategic Leadership and Decision Making	3
PH.312.620	Performance Measurement in Health Care	2
PH.313.641	Introduction to Health Economics	3
PH.313.790	Introduction to Economic Evaluation	3
<b>Health Informatics Selective (Take 1)</b>		
PH.312.633	Health Management Information Systems	3
PH.309.631	Population Health Informatics	3
<b>Quality and Patient Safety Selective (Take 1)</b>		
PH.309.712	Assessing Health Status and Patient Outcomes	3
PH.311.615	Quality of Medical Care	3
PH.309.730	Patient Safety and Medical Errors	3
<b>Electives</b>		
PH.312.703	Learning Organizations & Knowledge Management	3
PH.312.702	Leading Change: Building and Empowering Teams	3
PH.140.607	Multilevel Models	2
PH.309.616 & PH.309.617	Introduction to Methods for Health Services Research and Evaluation I and Introduction to Methods for Health Services Research and Evaluation II (Multi-Term Course)	4
PH.309.617	Introduction to Methods for Health Services Research and Evaluation II	2
PH.312.630	Healthcare Financial Management	3
PH.312.604	Quantitative Tools for Managers	3
PH.312.617	Fundamentals of Financial Accounting	3
PH.380.611	Fundamentals of Program Evaluation	4
PH.340.727	Introduction to Health Survey Research Methods	2
PH.410.635	Applications of innovative Methods in Local and Global Health Equity Research	4
PH.410.671	Introduction to Qualitative Research Methods	3
PH.410.673	Introduction to Qualitative Data Analysis for Public Health	2
PH.312.693	Introduction to Comparative Effectiveness and Outcomes Research	3

PH.340.667	Health Equity Research Methods to Address Social Determinants of Health	4
PH.340.716	Implementation Science Concepts, Methods & Study Designs	2
PH.550.601	Implementation Research and Practice	3
PH.330.650	Methods in Implementation Science	3

responsive to the needs of public health practitioners and policymakers. Through coursework, students develop skills needed to understand and evaluate complex problem and to propose and critically assess solutions to those problems. The track is relevant to those currently working in public health policy and practice settings at the intersection of evidence, decision-making, and implementation.

### B. Public Health Informatics Track

This track offers training in methods and concepts of informatics for application to public health and population health management. It is designed for public health professionals or population health managers who wish to develop an area of expertise or specialization in the emerging field of public health informatics.

Code	Title	Credits
<b>Required Courses</b>		
PH.311.861	DrPH Concentration Seminar in Health Policy and Management	0.25
PH.309.635	Population Health: Analytic Methods and Visualization Techniques	3
PH.309.631	Population Health Informatics	3
ME.250.953	Introduction to Biomedical Informatics	3
ME.250.750	Design Discovery for Healthcare	3
ME.250.901	HSI: Knowledge Engineering and Decision Support	2
ME.250.955	Applied Clinical Informatics	3
ME.250.952	Leading Change Through Health IT	3
<b>Electives</b>		
PH.380.603	Demographic Methods for Public Health	4
PH.340.696	Spatial Analysis I: ArcGIS	4
PH.340.697	Spatial Analysis II: Spatial Data Technologies	3
ME.250.957	Database Querying in Health	3
ME.250.771	Introduction to Precision Medicine Data Analysis	3
ME.250.770	Clinical Data Analysis with Python	3
ME.250.777	Clinical Decision Analysis	2
ME.250.755	Natural Language Processing in the Health Sciences	1.5
ME.250.778	Implementing Fast Healthcare Interoperability Resources	2
ME.250.782	Observational Health Research Methods on Medical Records	3
PH.312.633	Health Management Information Systems	3
ME.250.954	HIT Standards and Systems Interoperability	3
ME.250.959	Digital Health Laws and Regulations	3
ME.250.960	The Role of Digital Health and the Health Care Delivery System	3
ME.250.961	Large Scale Observational Research Preparation	3
ME.250.783	Imaging Informatics and Deep Learning	3
ME.250.962	Prototyping for Healthcare Design	3
ME.250.784	Clinical Decision Support (CDS) Application Interoperability	3

Code	Title	Credits
<b>Required Courses</b>		
PH.311.861	DrPH Concentration Seminar in Health Policy and Management	.25
PH.300.650	Crisis and Response in Public Health Policy and Practice	3
PH.300.712	Formulating Policy: Strategies and Systems of Policymaking in the 21st Century	3
PH.301.645	Health Advocacy	3
PH.305.684	Health Impact Assessment	3
PH.308.721	Catalyzing Change Part 1: Practical Approaches to Health Policy	3
PH.308.722	Catalyzing Change Part 2: Health Policy Leadership	3
<b>Electives</b>		
PH.317.605	Methods in Quantitative Risk Assessment	4
PH.317.610	Risk Policy, Management and Communication	3
PH.180.634	Public Health Emergencies: Risk Communication and Decision Science	3
PH.317.615	Topics in Risk Assessment	2
PH.313.643	Health Economics	3
PH.313.790	Introduction to Economic Evaluation	3
PH.313.601	Economic Evaluation I	3
PH.313.602	Economic Evaluation II	3
PH.313.793	Extended Exercises in Cost Effectiveness	2
PH.380.611	Fundamentals of Program Evaluation	4
PH.306.650	Public Health and the Law	3
PH.180.628	Introduction To Environmental and Occupational Health Law	4
PH.180.620	Introduction to Food Systems and Public Health	4
PH.180.619	Drinking Water and Water Policy: Avoiding Another Flint	1
PH.380.740	Nutrition Programs, Policy and Politics in the United States: the Impact on Maternal, Child and Family Health	3
PH.410.604	Harm Reduction: A Framework for Evidence-Based Policy and Practice	3
PH.305.630	Transportation Policy, Equity and Health	2
PH.180.606	Case Studies in Food Production and Public Health	4
PH.380.768	Selected Topics in Women's Health and Women's Health Policy	4
PH.380.761	Sexually Transmitted Infections in Public Health Practice	4
PH.380.663	Gender-Based Violence Research, Practice and Policy: Issues and Current Controversies	3
PH.340.663	Epidemiology Workshop: Interpreting and Using Epidemiologic Evidence	2

### C. Health Policy Track

This track provides training to develop, identify, and translate the best available evidence to inform critical public health policy challenges at the local, national, and global levels. The curriculum incorporates systems-thinking and rigorous scientific methods from multiple disciplines to be

PH.410.614	A New View: Improving Public Health Through innovative Social and Behavioral Tools and Approaches	4	PH.312.670	Negotiation in Health Care Settings	3
PH.221.654	Systems Thinking in Public Health: Applications of Key Methods and Approaches	3	PH.340.717	Health Survey Research Methods	4
PH.301.644	Public Health Advocacy: Grassroots Organizing for Policy Change	3	PH.340.727	Introduction to Health Survey Research Methods	2
PH.308.680	Health Care and Congress: Perspective From K Street	2	PH.380.611	Fundamentals of Program Evaluation	4
PH.340.636	Epidemiology in Evidence-Based Policy	2	PH.410.635	Applications of innovative Methods in Local and Global Health Equity Research	4
PH.410.635	Applications of innovative Methods in Local and Global Health Equity Research	4	PH.410.671	Introduction to Qualitative Research Methods	3
PH.410.630	Implementation and Sustainability of Community-Based Health Programs	3	PH.410.673	Introduction to Qualitative Data Analysis for Public Health	2
PH.308.630	U.S. Pharmaceutical Policy	3	PH.330.650	Methods in Implementation Science	3
PH.223.680	Global Disease Control Programs and Policies	4	PH.340.716	Implementation Science Concepts, Methods & Study Designs	2
			PH.550.601	Implementation Research and Practice	3
			PH.309.731	Patient Safety in Developing Countries	2

## D. Quality and Patient Safety Track

This track addresses issues related to quality of healthcare, patient safety, patient-centered outcomes, and performance measurement and improvement. The curriculum is designed for public health, clinical, and management professionals—especially those who wish to develop the expertise to implement evidence-based interventions and improve care delivery.

Code	Title	Credits
<b>Required Courses</b>		
PH.311.861	DrPH Concentration Seminar in Health Policy and Management	.25
PH.309.712	Assessing Health Status and Patient Outcomes	3
PH.309.730	Patient Safety and Medical Errors	3
PH.311.615	Quality of Medical Care	3
PH.312.620	Performance Measurement in Health Care	2
PH.312.693	Introduction to Comparative Effectiveness and Outcomes Research	3
PH.312.701	Strategic Leadership and Decision Making	3
<b>Health Informatics Selective (Take 1)</b>		
PH.312.633	Health Management Information Systems	3
PH.309.631	Population Health Informatics	3
<b>Evaluation and Research Methods Selective (Take One Sequence)</b>		
Program Evaluation Sequence		
PH.309.600	Evaluating Quality Improvement and Patient Safety Programs	3
Health Services Research Sequence		
PH.309.616 & PH.309.617	Introduction to Methods for Health Services Research and Evaluation I and Introduction to Methods for Health Services Research and Evaluation II (Multi-Term Course)	4
<b>Elective(s)</b>		
PH.140.607	Multilevel Models	2
PH.221.722	Quality Assurance Management Methods for Developing Countries	4
PH.309.620	Managed Care and Health Insurance	3
PH.312.604	Quantitative Tools for Managers	3
PH.312.603	Fundamentals of Budgeting and Financial Management	3

## Implementation Science Concentration

This concentration is focused on developing and sharing evidence to support the formulation, implementation, and scale-up of new health policies and programs through the application of interdisciplinary tools and approaches to study processes in complex health systems. The curriculum provides students with the skills to work collaboratively and integrate diverse perspectives into cogent intervention designs and implementation strategies. Students learn how to support iterative cycles of implementation and adaptation of public health programs based on evaluation and learning and how to synthesize and present complex information to policymakers and practitioners. This concentration is relevant to those working domestically and internationally and is well-suited to people seeking to develop careers as program managers, physician managers, and those working in the knowledge translation field or in policy advisory positions. In addition to the courses listed below, students are required to take 2 credits of **DrPH Implementation Science Concentration Seminar**.

Code	Title	Credits
<b>Required Courses</b>		
PH.410.880	DrPH Concentration Seminar in Implementation Science	.25
PH.550.601	Implementation Research and Practice	3
PH.330.650	Methods in Implementation Science	3
PH.410.630	Implementation and Sustainability of Community-Based Health Programs	3
PH.340.726	Implementation Research Methods to Address Real World Epidemiological Questions	3
<b>Methodology and Analysis Selectives (Take 7 credits minimum)</b>		
PH.221.722	Quality Assurance Management Methods for Developing Countries	4
PH.224.692	Methods in Formative Research and Human Centered Design for Intervention Development	4
PH.312.693	Introduction to Comparative Effectiveness and Outcomes Research	3
PH.221.654	Systems Thinking in Public Health: Applications of Key Methods and Approaches	3
PH.309.616	Introduction to Methods for Health Services Research and Evaluation I	2
PH.309.617	Introduction to Methods for Health Services Research and Evaluation II	2



PH.340.686	Introduction to Systematic Reviews and Meta-Analysis	2
PH.330.608	School-Based Preventive Interventions and Research	1
PH.410.664	Knowledge Management for Effective Global Health Programs	3
<b>Electives</b>		
PH.390.678	Introduction to Quality Improvement & Knowledge Translation Research	3
PH.309.600	Evaluating Quality Improvement and Patient Safety Programs	3
PH.221.646	Health Systems in Low and Middle income Countries	3
PH.340.861	Clinical Trials: Procedures, Design, and Interpretation of Results	3
PH.140.664	Causal Inference in Medicine and Public Health I	4
PH.221.645	Large-scale Effectiveness Evaluations of Health Programs	4
PH.410.755	Designing Health Communication Programs for Social and Behavior Change	4
PH.221.625	Evaluation of District-Level Primary Health Care Implementation in Low-and Middle-income Settings	3
PH.221.711	Managing District Health Systems in Low and Middle Income Countries	3
PH.340.636	Epidemiology in Evidence-Based Policy	2
PH.340.663	Epidemiology Workshop: Interpreting and Using Epidemiologic Evidence	2
PH.301.692	The Role of Community-Based Organizations (CBOs) and Non-Governmental Organizations (NGOs) in Improving Global Public Health	3
PH.410.620	Program Planning for Health Behavior Change	3

### Women’s and Reproductive Health Concentration

This concentration focuses on the general and reproductive health status of women, the determinants of their health status, the disparities therein, the application of relevant gender equity frameworks, and preventive strategies and programs to address women’s health and the health of their newborns and young children. There are many challenges to improving women’s and reproductive health, including the low status of women in many cultures and countries, political constraints to addressing reproductive health needs, limited access to reproductive health services, and insufficient evidence on the effectiveness of strategies to improve women’s health and reproductive health. This concentration is well-suited to those seeking leadership positions in domestic and international agencies concerned with addressing the complex and challenging problems in women’s and reproductive health. In addition to the courses listed below, students are required to take 2 credits of **DrPH Women’s & Reproductive Health Concentration Seminar**.

Code	Title	Credits
<b>Required Courses</b>		
PH.380.825	DrPH Concentration Seminar in Women’s and Reproductive Health	.25
PH.380.604	Life Course Perspectives on Health	4
PH.380.603	Demographic Methods for Public Health	4

#### Evaluating Research Approaches to Understand Women’s or Reproductive Health (Take 1)

PH.380.611	Fundamentals of Program Evaluation (Evaluating Research Approaches to Understand Women’s or Reproductive Health)	4
PH.380.601	Critically Evaluating the Science for Policy and Practice	2
PH.380.662	Critiquing the Research Literature in Maternal, Child, and Reproductive Health	4
<b>Health Concerns for Women, Mothers, and Newborns Selective (Take 2)</b>		
PH.380.765	Preventing Infant Mortality and Promoting the Health of Women, Infants and Children	3
PH.380.663	Gender-Based Violence Research, Practice and Policy: Issues and Current Controversies	3
PH.380.613	Gender-Based Violence Research, Practice and Policy	2
PH.380.761	Sexually Transmitted Infections in Public Health Practice	4
PH.380.762	HIV Infection in Women, Children, and Adolescents	4
PH.380.664	Reproductive and Perinatal Epidemiology	4
PH.380.609	Women’s Health: Disparities and Equity Implications	2
PH.380.666	Women’s Health	3
<b>Promoting Population-Level Women’s, Reproductive, Maternal, and Child Health Selective (Take 1)</b>		
PH.380.624	Maternal and Child Health Legislation and Programs	4
PH.380.768	Selected Topics in Women’s Health and Women’s Health Policy	4
PH.380.665	Family Planning Policies and Programs	4
PH.380.667	Women’s Health Policy	3
PH.380.706	Using Data to Inform Family Planning Policies	2
<b>Women’s &amp; Reproductive Health Frameworks Selective (Take 1)</b>		
PH.380.744	Nutrition and Growth in Maternal and Child Health	3
PH.380.768	Selected Topics in Women’s Health and Women’s Health Policy	4
PH.380.655	Social and Economic Aspects of Human Fertility	3
PH.380.668	International Perspectives on Women, Gender, and Health	3
PH.380.669	International Perspectives on Women, Gender, and Health	2
<b>Electives</b>		
PH.380.710	Public Health Perspectives on Abortion Policy	1
PH.380.755	Population Dynamics and Public Health	2
PH.120.620	Fundamentals of Reproductive Biology	3
PH.380.600	Principles of Population Change	4
PH.380.711	Issues in Survey Research Design	3
PH.380.620	A Coalition-based SMART Approach to Public Health Advocacy	3
PH.340.727	Introduction to Health Survey Research Methods	2
PH.380.623	Adolescent Health and Development	3
PH.380.628	Public Health Perspectives On Abortion	3
PH.380.749	Adolescent Sexual and Reproductive Health	3

## PhD Program Policies

For a full list of program policies, please visit the DrPH Program (<https://publichealth.jhu.edu/academics/drph/curriculum/>) page where students can find our handbook.

## DrPH Program Objectives

1. Identify, synthesize, and apply evidence-based public health research and theory from a broad range of disciplines and health-related data sources for problem-solving and to advance programs, policies, and systems promoting population health. (*Data analysis*)
2. Identify and analyze ethical issues including balancing the claims of personal liberty with the responsibility to protect and improve the health of the population and act on the ethical concepts of social justice and human rights in public health research and practice. (*Ethics*)
3. Influence decision-making regarding policies and practices that advance public health using scientific knowledge, analysis, communication, and consensus building. (*Policy*)
4. Assess and use communication strategies across diverse audiences to inform and influence individual, organization, community, and policy actions to promote the health of the public. (*Communication*)
5. Enable organizations and communities to create, communicate and apply shared visions, missions and values; inspire trust and motivate others; build capacity; improve performance, and enhance the quality of the working environment; and use evidence-based strategies to enhance public health. (*Leadership*)
6. Provide fiscally responsible, strategic, and operational guidance within both public and private health organizations for achieving individual and community health and wellness. (*Management*)
7. Design and evaluate system-level and programmatic initiatives in multidisciplinary teams so as to promote public health outcomes and health equity (*Program design and evaluation*)
8. Assess adult learning needs and design and deliver training or educational experiences that respond to these needs using the best pedagogical practices available. (*Education*)

## CEPH Learning Objectives & Foundational Competencies

According to the Council on Education for Public Health (CEPH) requirements, all BSPH degree students must be grounded in foundational public health knowledge. Please view the list of specific CEPH requirements by degree type (<https://e-catalogue.jhu.edu/public-health/ceph-requirements/>).

## Concentration & Track Competencies

### Custom Track

1. Compare and contrast intrapersonal, interpersonal, community, and social behavior change theories and frameworks and assess their usefulness for designing public health interventions overall and in a chosen specialty area.
2. Assess the strengths and weaknesses of applying the systems approach to public health problems overall and in a chosen specialty area.
3. Design a comprehensive evaluation plan for a health program.

*Note.* There are three competencies that all students are expected to achieve. In consultation with their advisors, students identify at least two additional competencies that are tailored to their planned course of study.

## Environmental Health Concentration

### Environmental Health Track

1. Analyze and address the science and current issues related to environmental and occupational health.
2. Explain how environmental and occupational health sciences can be integrated to improve public health practice.
3. Evaluate environmental and occupational health risks by applying toxicology and risk analysis (i.e., risk assessment, risk communication, and risk management) to improve environmental and occupational health outcomes.
4. Design, advocate, and provide leadership for effective environmental and occupational health.
5. Assess environmental and occupational health-related illnesses and risks based on human physiology and human-environment interactions.

### Health Security Track

1. Apply risk assessment principles to program planning, implementation, and goals, particularly in the context of emergency response and health security problems.
2. Evaluate major health security threats, and characterize the human, social, economic, and political risks they pose to societies.
3. Analyze major US and international initiatives to prevent, detect, and respond to health security threats, and assess those areas of health security where preparedness is strongest and where additional progress is needed.
4. Evaluate the effectiveness of strategies to enhance health security and prevent or mitigate health security threats.
5. Synthesize and communicate important health security information in a way that increases the likelihood that political leaders and policymakers take appropriate action.

## Global Health: Policy & Evaluation Concentration

1. Assess global public health burdens and threats and formulate strategies to solve complex health issues.
2. Examine health systems frameworks, strategies, actors, and tools to analyze and evaluate health systems performance and their reforms in global settings with a primary focus on LMICs.
3. Apply key policy frameworks and models in policy development and analyze the role and contribution of actors, context, and evidence in shaping effective policies and programs in LMICs.
4. Create effective and comprehensive evaluation plans for small and large programs in health with ethical and resource considerations, with a primary focus in LMICs.
5. Examine theories on globalization's impact on health and apply analytical tools to evaluate globalization's impact on health, with a primary focus on LMICs.

*Note.* LMIC is an acronym for low- and middle-income countries.

## Health Equity & Social Justice Concentration

1. Critically evaluate issues relating to health equity and social justice in analysis of public health programs and policies.

2. Apply theoretical frameworks to identify social determinants of health that promote or compromise health equity and health disparities in disadvantaged groups.
3. Apply methods to measure social determinants of health and their relation to health outcomes for vulnerable and marginalized populations.
4. Apply social justice principles to inform strategies and policies to promote health equity in communities.
5. Evaluate the implementation and sustainability of health programs at the interpersonal, intrapersonal, organizational, social/environmental, and political levels.

## Health Policy & Management Concentration

### HEALTHCARE MANAGEMENT & LEADERSHIP TRACK

1. Evaluate the role of organizational leadership in the development and communication of a shared mission, vision, and core values.
2. Evaluate the role key financial performance indicators serve in managing and improving organizational performance.
3. Apply evidence-based tools and frameworks to enhance organizational performance in the human, clinical, financial, information and supply chain domains to drive value and improved outcomes.
4. Manage data, information, and knowledge systematically to improve assessment of patient outcomes, reduce medical errors, enhance quality of medical care and patient safety, and strengthen overall service delivery.
5. Assess Quality and Patient Safety programs as a means to develop and sustain a culture of patient/client focused excellence.

### HEALTH POLICY TRACK

1. Critically assess policy interventions to address complex public health problems.
2. Apply data to inform decision-making for policy formulation and weigh scientific, political, ethical, and social public health concerns.
3. Formulate and execute advocacy strategies that are responsive to public health policy goals.
4. Communicate the role of public health within the larger health and social policy system, with a focus on response to managing health crises.
5. Apply state-of-the-science, leadership, and communication strategies to effectively disseminate scientific evidence to policymakers.

### PUBLIC HEALTH INFORMATICS TRACK

1. Assess the state of the science and current research and policy issues related to the foundation of population health informatics.
2. Identify the most effective visualization techniques that can be used to convey impactful results to different end users (e.g., patients, clinicians, care managers/coordinators, health system admins, and policymakers).
3. Propose a high-level design for a decision support intervention and implementation.
4. Evaluate various informatics solutions for public or population health management interventions based on different criteria such as user-centered software design and system architecture, design thinking and interoperability, standards, human factors, security, privacy, and ethical issues.
5. Articulate the proper management approaches for an organization to evaluate organizational readiness and implement solutions utilizing change management strategies.

## Quality & Patient Safety Track

1. Apply quality improvement and evaluation frameworks to health services challenges.
2. Evaluate and manage measurement challenges.
3. Identify implementation barriers and leverage facilitators and evidence to enhance quality and patient safety in practice.
4. Assess utility of specific quality improvement and patient safety measurement interventions and methods.
5. Apply a framework for analyzing and improving the quality of medical care.

## Implementation Science Concentration

1. Apply key implementation science constructs and theories to public health problems.
2. Distinguish implementation outcomes from efficacy, service, and client outcomes.
3. Recognize which stakeholders should be engaged in the process of developing, implementing, evaluating, and sustaining a community-based program.
4. Propose implementation of research study aims, methods, data sources, and study designs to address a public health question.
5. Critically evaluate the relevance of study designs used for efficacy, effectiveness, and implementation research.

## Women's & Reproductive Health Concentration

1. Assess the principal health concerns for women or mothers and newborns, the associated population-based risk factors, and the relative impact of each risk factor.
2. Apply a life course framework to understanding the determinants of a woman's or reproductive health concern, implications for a woman's health later in life, and the population strategies to address it.
3. Evaluate strategies to promote population-level women's or reproductive, maternal, and child health, including healthcare services and systems delivery strategies used to address health concerns in the population.
4. Evaluate research approaches to understand woman's or reproductive health concerns and the implications of the research.
5. Apply frameworks related to women's and reproductive health for improving their health.
6. Identify and assess the causes and consequences of population change related to women's and reproductive health using demographic methods.