

ABP Core Curriculum Requirements

1. Core Curriculum

All fellows must participate in a core curriculum in scholarly activities. This curriculum should provide skills that lead to an in-depth understanding of biostatistics, clinical and laboratory research methodology, study design, preparation of applications for funding and/or approval of clinical or research protocols, critical literature review, principles of evidence-based medicine, ethical principles involving clinical research, and the achievement of proficiency in teaching. The curriculum should lead to an understanding of the principles of adult learning and provide skills to participate effectively in curriculum development, delivery of information, provision of feedback to learners, and assessment of educational outcomes. Graduates should be effective in teaching both individuals and groups of learners in clinical settings, classrooms, lectures, and seminars, and also by electronic and print modalities. Additional content specifications have been developed for subspecialty examinations based on the competencies related to the core curriculum in scholarly activities. [Click here](#) to view these additional specifications.

Core Knowledge in Scholarly Activities

A. Principles of Biostatistics in Research

1. Types of variables (eg, continuous, ordinal, nominal)
2. Distribution of data (eg, mean, standard deviation, skewness)
3. Hypothesis testing (eg, Type I and Type II errors, p-values, statistical power)
4. Common statistical tests (eg, ANOVA, Chi-square, nonparametric tests)
5. Measurement of association and effect (eg, correlation, relative risk, odds ratio)
6. Regression (eg, linear, logistic, survival analysis)
 7. Diagnostic tests (eg, sensitivity and specificity, predictive values, disease prevalence, receiver operating characteristic (ROC) curves)
8. Systematic review and meta-analysis

B. Principles of Epidemiology and Clinical Research Design

1. Study design, performance, and analysis (internal validity)

2. Generalizability (external validity)
 3. Bias and confounding
 4. Causation
 5. Incidence and prevalence
 6. Screening
 7. Cost benefit, cost effectiveness, and outcomes
 8. Measurement (eg, validity, reliability)
- C. Ethics in Research
1. Professionalism and misconduct in research (eg, conflicts of interest, falsification)
 2. Principles of research involving human subjects
 3. Principles of consent and assent
- D. Quality Improvement
1. Project design (eg, models, aims, key drivers, tools, Plan-Do-Study-Act (PDSA) cycle)
 2. Data and measurement (eg, outcomes, balancing measures, run charts, control charts, common cause and special cause variation)

Core Curriculum Addressed in Pediatric Fellowship Scholarly Training Handbook 2018-2019

1. Core Curriculum

All fellows must participate in a core curriculum in scholarly activities. The Department of Pediatrics provides options for core curriculum designed to provide skills that lead to an in-depth understanding of biostatistics, clinical and laboratory research methodology, study design, preparation of applications for funding and/or approval of clinical or research protocols, critical literature review, principles of evidence based medicine, ethical principles involving clinical research, and the achievement of proficiency in teaching.

Fellows are expected to keep a log of their own learning activities and to provide this information to their Scholarship Oversight Committee and Fellowship Program Director.

A. Required Learning Activities

- 1) **Research Ethics and Compliance Training Modules** by the Collaborative Institutional Training Initiative (CITI) Program (Appendix C, Page 31).
- 2) **Departmental Fellows Forum**: The forum will be held on the 1st and 3rd Tuesday every month and serves as part of the Departmental core curriculum. Attendance will be monitored and minimum of 75% attendance required for eligibility for travel funds.

B. Other Training Opportunities

Following training opportunities are optional and must be approved by fellowship director and the Vice-Chair for Academic Affairs prior to initiation.

- 1) Quality Improvement Research – see Institute for Quality and Patient Safety.
<https://uvahealth.com/about/quality-safety>

2) Education Training Track (Tomorrow's Professor Today program):
<http://cte.virginia.edu/programs/tomorrows-professor-today/>

3) Bench/Basic Research:

For those interested in Bench Research, additional course work and training should be discussed and planned with your mentor. Participation in the Certificate in Public Health Sciences program is encouraged for all clinician investigators.

4) Educational Programs:

There are many educational opportunities and programs through the Health System and the University that may offer significant assistance meeting a fellow's goals and training needs. Many of the ongoing lecture series within the medical center are at no cost. The following courses, however, require tuition payment. A grant may cover some if not all of the expenses for various course. Fellows should be meeting with their program directors to determine whether pursuit of any of the following options is desirable.

a) Master of Public Health Program

The Master of Public Health (MPH) Program at the University of Virginia offers an individualized and interdisciplinary experience that focuses on the competencies professionals need to improve the health of communities and individuals. The curriculum provides graduate professional training in quantitative and qualitative research methodologies; health policy, law and ethics; translational and community-based research; and community engagement strategies. Core courses in the MPH Program include the following:

- PHS 7000 Introduction to Biostatistics
- PHS 7010 Introduction to Epidemiology
- PHS 7050 Public Health Law and Ethics
- PHS 7100 U.S. Health Care Policy
- PHS 7170 Data Management in Population Health with SAS
- PHS 7180 The Practice of Public Health
- PHS 7840 Human Subjects Research Ethics

b) Master of Science in Clinical Research

The Master of Science in Clinical Research (MS-CR) Program provides training to health and medical professionals who desire and need quantitative and analytic skills in patient-oriented and translational research, as well as more traditional clinical investigation. Using an interdisciplinary blend of biostatistics, epidemiology, clinical trial design, medical informatics, and health services research, the MS-CR program equips clinical researchers with the statistical and data management tools needed to conduct translational clinical and comparative effectiveness studies in medical care. Core courses in the MS-CR Program includes the following:

- PHS 7000 Introduction to Biostatistics

- PHS 7010 Fundamentals of Epidemiology
- PHS 7170 SAS & Data Management in Population Health
- PHS 8950 Supervised Clinical Research
- PHS 7001 Introduction to Biostatistics II
- PHS 7011 Theory & Quant Epidemiology
- PHS 7120 Comparative Effectiveness & Outcomes
- PHS 7840 Human Subject Research