Brigham and Women's Hospital
Founding Member, Mass General Brigham

Division of Pharmacoepidemiology and Pharmacoeconomics
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The Division of Pharmacoepidemiology and Pharmacoeconomics at Brigham and Women's Hospital Department of Medicine and Harvard Medical School is accepting applications for post-doctoral fellows in pharmacoepidemiology - applied and methodologically focused.

The Division includes 25 faculty and 75 staff who work closely together to research how we use medications effectively and improve health. We are a world-leading interdisciplinary research center that brings together the various specialties of medicine, epidemiology, biostatistics, health services research, legal, regulatory and the social sciences to evaluate the effectiveness of prescription drugs in relation to their risks and costs; to study how medications are prescribed and used; to develop methods to optimize prescription drug use; to understand how medicines are approved and regulated after their marketing. The Division is a first-rank training site for graduate students and fellows in a variety of subject areas and methodological research.

We are seeking self-motivated, diligent, and independent fellows to work with Division faculty in the following areas (full description and application: drugepi.org/dope/employment):

- **Answering high-impact questions to inform clinical decision-making on the comparative effectiveness and safety of medications in geriatric pharmacoepidemiology by applying and advancing cutting-edge methods**: Collaborate closely with Division faculty who are leaders in the field of geriatric pharmacoepidemiology. A fellow working in this area will answer critical clinical questions on the prescribing and deprescribing of highly potent (e.g. anticoagulants) and/or potentially inappropriate medications (e.g. antipsychotics or benzodiazepines) and their comparative effectiveness and safety in older adults leveraging real world data, including administrative claims linked with electronic health records (including structured EHR and free-text notes and reports), and a variety of clinical assessment files (e.g., Minimum Data Set [MDS], Outcomes and Assessment Information Set [OASIS], Inpatient Rehabilitation Facility Patient Assessment Instrument [IRF-PAI]), with the opportunity to lead several NIH-funded large research projects. The ideal candidate would be a team player and have a doctoral degree in epidemiology, aging research, or clinical geriatrics.

- **Answering high-impact questions to inform clinical decision making on the comparative effectiveness and safety of medications in cardio-metabolic and renal conditions by applying and advancing cutting edge methods:** A fellow working in this area will collaborate closely with Division faculty who are leaders in the pharmacoepidemiology of cardio-metabolic and renal diseases to answer critical clinical questions on the use of medications and their comparative effectiveness and safety leveraging real-world data, including administrative claims, electronic health records, and clinical registries (PROMISE). Fellows will have the opportunity to lead several important research studies. The ideal candidate would be a team player and have a doctoral degree in pharmacoepidemiology and ideally a clinical background, or a degree in medicine combined with pharmacoepidemiology/ epidemiology training.

- **Developing and implementing cutting-edge methods to bridge the gap between randomized clinical trials (RCTs) and real-world evidence (RWE):** RCTs and RWE are critical and complementary sources of evidence generation about the benefits and safety of medical products. A fellow working in this area will be involved in several interrelated projects that will leverage individual-level RCT data to explore this complementarity and will be expected to explore and test novel analytical approaches for analysis of RCT and real-world data. A fellow in this area will have the opportunity to leverage the infrastructure from RCT-DUPLICATE's large sample of trial emulations to develop and test methods designed to understand and calibrate results from RCTs and database studies, for example meta-regression techniques to examine the influence of alternative methods on concordance. Training and experience in statistical modeling and programing is required. Experience with developing prediction models, model validation and calibration approaches, imputation methods, Monte Carlo simulations, and machine learning algorithms is highly desirable.

- **Conducting impactful pediatric real-world evidence research to advance pediatric care and inform the regulation of medications in children**: Up to 50% of medications in the outpatient setting and 80% in the inpatient setting are used off-label in pediatric patients. There is increasing interest in evaluating the suitability of real-world evidence studies to form the basis for supplemental regulatory approval of medications to be used in pediatric patients that were previously approved in adult patients. The fellow will conduct pediatric pharmacoepidemiology studies of medication safety and effectiveness using large claims and electronic health record data sources and studies how it impacts the regulation of medications in children. The ideal candidate will have a doctoral degree and training and experience in pharmacoepidemiology. The fellow will work under the supervision of division faculty with expertise in pharmacoepidemiology and pediatrics, and in collaboration with the Harvard-MIT Center for Regulatory Science.

- **Evaluating the safety of medication use during pregnancy**, primarily using pregnancy cohorts nested in large healthcare utilization databases. A fellow working in this area will collaborate closely with faculty and other members of the Harvard Program on Perinatal and Pediatric Pharmacoepidemiology (H4P). Fellows will have the opportunity to lead NIH-funded research studies addressing critical questions related to drug safety in pregnancy across multiple clinical areas (e.g., psychiatry, neurology, infectious disease). In addition, fellows will be able to contribute to methods-oriented projects that explore the use of cutting-edge epidemiological and statistical approaches to improve causal inference in this area. Aside from a keen interest in perinatal (pharmaco)epidemiology, the ideal candidate would have a doctoral degree in pharmacoepidemiology/epidemiology and preferably a clinical background, or a degree in medicine combined with pharmacoepidemiology/epidemiology training.

Interested individuals should send their CV and a personal statement to Lewis Seton or visit the Division website.