

Pharmacoepidemiology & Treatment Science – Strategic Plan

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Vision Statement

PETS aims to serve as a world-class interdisciplinary program of research and training focused on the uses and effects of therapeutics and diagnostics in real-world populations.

Key points: strong in current traditional/state-of-the art approaches, with goals to embrace/develop novel and emerging methods, conduct research that goes “beyond health care databases”; multidisciplinary nature (structure/faculty/students) critical

Research Priorities

PETS strives to conduct world-class externally-funded pharmacoepidemiologic science. Research priorities are driven by the scientific interests of core faculty and external partners as well as by trends/demand in the field and Rutgers-specific opportunities. International contacts and collaborations as well as cross national projects are an area of opportunity.

- Clinical (active): Pediatrics, geriatrics, mental health, cardiovascular diseases , diabetes
- Clinical (developing/future targets): Cancer, rare diseases, devices, diagnostics
- Methodological (active): Heterogeneity (climate, comorbidity), microbiome, linkage (linkage methods as well as applications such as linked EHR/claims data), validation, causal inference, drug repurposing
- Methodological areas (developing/future targets): machine learning, unstructured data/natural language processing, wearables, methods to study therapeutics for rare diseases, social science methods, use of survey methods to augment health care databases, pharmacogenomics, pharmacomicrobiomics, pragmatic trials

Survey of Existing Partners

- EMSOP/HOPE: shared interest in understanding pharmaceutical outcomes, HOPE has complementary interests/ expertise (healthcare costs, cost effectiveness, return on investment for therapeutics)
- SPH: Joint training programs/initiatives with the department of Epi/Biostats constitute the core of PETS’s training program. Great potential for research collaborations and PETS faculty hires with primary appointments at SPH
- Pharmaceutical Industry/service providers: Geographic proximity is an asset; training opportunities ranging from continuing education (e.g., certificate) to PhD training. Pharmacoepidemiology fellows in EMSOP’s industry fellowship program. Strongest interest in “exclusive” data resources such as Rutgers Health EHRs with linked claims data, etc.

Opportunities for Future Collaborations

- Rutgers Health: Data access and integration into research projects is critical (electronic health records, biospecimen data)
- Pharmaceutical industry/service providers: Expand collaborations in training and research: Areas of particular interest include cancer, rare diseases, treatment effect heterogeneity (e.g., by disease severity algorithms)
- Rutgers Computer Science: E.g., advanced machine learning methods and computing capabilities
- Horizon BCBS/other large health insurers: Linkage of claims to Rutgers Health EHRs with linked claims data ; research collaborations
- Veterans Affairs: Research collaborations to include VA data/populations

Next Steps

- Recruitment of strong new PETS core faculty, particularly in (but not limited to) areas of interest shown above
- Recruit trainees to the newly established programs and develop reputation as a world-class training program
- Establish new and deepen existing industry collaborations (research collaborations, EMSOP fellows, post-docs)
- Develop joint grant applications with HOPE and SPH

Metrics for Success

- Relevant metrics include number and total funding of PETS grants
- Attainment of financial independence
- Number of training programs and trainees
- National and international presentations
- Peer-reviewed publications in high impact journals.