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The Nemours Office of Health Equity and Inclusion (OHEI), Research & Education Section (RES) is pleased with ensuring that evidence used in advancing care of racial/ethnic minorities, underserved populations, socio-economically challenged, as well as populations affected by health disparities and, meets the requirements of rigorous scientific methodology. OHEI supports an undergraduate internship (Health Equity Summer Scholarship Program) which provides an opportunity for undergraduates to acquire research and skills in areas pertaining to pediatric health disparities science.

Social Determinants of Health Screening

In an ongoing effort to identify and address disparities within our patient population, Nemours created a pediatric appropriate SDoH screening tool compiled from several evidence-based social needs questionnaires for adult population. Between December 2020 and June 2021, Nemours screened over 5,000 primary care patients and over one third of these patients had a social needs assessment. As Nemours advances its SDoH strategy, we will use this and other data to drive the identification of priority areas in order to develop appropriate interventions to address the medical needs of our pediatric patient population and their families.

Background

Nemour strongly encourages NICU center its efforts to reduce disparities through an approach that begins with children and their families. As you know, e

Beyond merely lacking large quantities of pediatric EHR data in aggregated or federated research datasets, use of multigenerational datasets will require careful stratification by age, sex, race, and ethnicity. Modifications to our common data models to ensure use of measurement units (e.g., time, anthropometric units) that do not implicitly bias results by lacking the necessary granularity for pediatric patients.

Nemours already has established expertise in AI/ML techniques, managing research identified EHR data, and linking geocoded data to support research on health disparities. Nemours is also leveraging nearly two decades of EHR data on over three million pediatric patients to discover patterns of care that lead to outcomes. AI/ML can evaluate population level data to find factors that contribute to disease, biomarkers or sociomarkers, as well as predictive factors. They can also develop predictive tools, risk stratification and geographic targeting approaches which are critical as the nation continues to improve value based and population level healthcare. Nemours believes it is critically important for the NIH initiative to build on and scale efforts across the United States to truly impact population health.

Another area of great promise for AI/ML is its application in precision medicine. Our vision has focused largely on the incorporation of EHR and SD data to analyses that will ultimately allow us to create ever more precise patient phenotypes. This greater precision in characterizing patient types should open the door to AI/ML studies able to untangle the complex relationships between R P L and health. The massive quantity of data needed to explore this genotype-phenotype complexity demands computer resources with extremely large memory capacity and massively parallel computational capabilities. Biomedical Research Informatics Center (BRIC) that provides AI/ML and related computational resources for a variety of efforts including basic and clinical research, predictive analytics, quality improvement. Our experiences in developing and maintaining the storage and computational power for BRIC underlines the significant material as well as resources needed for AI/ML application in healthcare. Nemours strongly encourage NIH to allocate instrumentation grant support for AI/ML focused special purpose computer and storage hardware and training programs.

Finally, Nemours believes that providing support for academic programs focused on equity, social determinants, disparities and related areas, combined with scholarship and internship opportunities within healthcare organizations is a way to promote both greater interest and diversity in the workforce that will use and develop even more advanced AI/ML tools in the future.

Conclusion

Nemours is committed to developing tools like AI/ML that show promise to improve patient care and long term health outcomes.

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