Groundbreaking Algorithm, XDOH (eXtracting Determinates of Health) to Extract Social Determinants of Health Information from Medical Records

This cutting-edge AI model makes healthcare more equitable and accessible, ensuring every patient can understand their medical information to support their care and improve outcomes.

Sacramento—(BUSINESS WIRE)—March 11, 2024 – UCDH introduces a groundbreaking algorithm to identify social determinants of health information data from patient records to address whole person care. Recognizing the critical role that social and digital determinants of health play in improving health outcomes and reducing health inequities, UCDH unveils a cutting-edge technology to uncover SDOH factors such as socioeconomic status, housing, and transportation directly from unstructured medical notes. A network of health systems around the world including co-validated the AI algorithm and its ability to identify and trigger actionable insights, like coordinating transportation for patients in need, marks a significant step towards addressing health inequities, reflecting the organization's commitment to serving its diverse patient population.

The new algorithm addresses the challenges of extracting SDOH information from electronic medical records (EMRs), overcoming issues related to unstructured data, documentation variability, and privacy concerns. "By integrating the SDOH extraction algorithm into our healthcare delivery system, we are taking a significant leap towards understanding and addressing the holistic needs of our patients," said Dr. Hendry Ton, Associate Vice Chancellor for Health Equity, Diversity, and Inclusion at UC Davis Health.

The development process encompasses defining SDOH categories, data collection and preparation, annotation, preprocessing, and feature engineering. With a focus on machine learning and natural language processing, the algorithm is trained and validated to accurately identify SDOH factors, integrating seamlessly into EMRs for real-time insights. "This innovative tool empowers our clinicians with actionable insights into the social and environmental factors affecting our patients' health," Dr. Keisuke Nakagawa, Executive Director of the UC Davis Health Cloud Innovation Center.

Providing equitable care for our patients requires a whole person care approach to access and delivery of services. Without insights into the social and determinants of health, health systems are limited in their ability to deliver the appropriate care at the right time, right place. This algorithm will allow health systems to see and act on a more complete view of the patient.

"The global network of Cloud Innovation Centers and our healthcare network allow us to bring together diverse expertise to meet the complex needs of every community. This ensures that our digital transformation journey leaves no patient behind, regardless of where you live," said Dr. Keisuke Nakagawa, Executive Director of the UC Davis Health Cloud Innovation Center.

To find out more about XDOH visit https://xdoh-releases.health/ for model information, information on participating healthcare organizations, implementation details, team support training, and tutorials.