

New Study Validates RevelSI Population Health AI Against CDC Benchmarks

Revel Business Group (RevelSI) has validated a MEAT-criteria artificial intelligence system for medical coding and population health surveillance, demonstrating high epidemiological accuracy against national benchmarks.



New York City, New York Apr 14, 2026 ([Issuewire.com](https://www.Issuewire.com)) - Revel Business Group (RevelSI) announces the publication of a new study validating the epidemiological accuracy of a deterministic

artificial intelligence system. The software utilizes Monitor, Evaluate, Assess, Treat (MEAT) criteria to identify active chronic conditions within large, unlabelled patient populations. The research, titled "[Epidemiological Validation of a MEAT-Criteria AI System Against National Benchmarks](#)", compared the prevalence rates generated by AI technology against age-adjusted national benchmarks provided by the United States Centers for Disease Control and Prevention (CDC).

The cross-sectional digital census study analyzed 105,084 de-identified Electronic Health Records (EHR) from a patient demographic with a mean age of 70.6 years. The artificial intelligence system scrutinized unstructured clinical notes, such as discharge summaries and progress notes, alongside structured data including medication lists and laboratory results. The algorithm assigned International Classification of Diseases, Tenth Revision (ICD-10) codes only when strict textual evidence of active management was extracted. The analysis demonstrated a strong positive correlation, with a Pearson coefficient of 0.92, between the prevalence rates derived by the system and the CDC's Behavioral Risk Factor Surveillance System (BRFSS) benchmarks. Furthermore, an internal evidence audit revealed that 99.2% of the generated diagnoses were supported by explicit physician statements, and 93.1% were corroborated by textual evidence of active pharmacological or procedural treatment.

The application of the MEAT-criteria model effectively mitigated the false-positive rates frequently associated with standard Natural Language Processing (NLP) tools, which often misinterpret historical mentions of diseases as active conditions. By acting as a digital auditor, the system revealed significant variances intrinsic to healthcare data documentation. The findings highlighted an acuity bias, where electronic record estimates for metabolic conditions exceeded survey data because the system correctly identified silent, treated populations through medication records. For example, the system recorded hyperlipidemia prevalence at 72.3 percent versus the national benchmark of 53.7 percent. Conversely, the artificial intelligence identified a documentation gap concerning behavioral health, accurately reflecting clinical environments where providers may prioritize acute somatic complaints over secondary conditions. This was evident in anxiety disorders, which were recorded at 2.6 percent in clinical texts compared to the 15.5 percent survey benchmark.

"Our validation study demonstrates that requiring explicit clinical evidence of active management allows automated systems to process medical data at a scale previously impossible," said Bogdan Tulai, CEO at RevelSI. "We provide healthcare organizations with a secure and transparent solution that resolves the historical limitations of manual chart review and probabilistic models."

The epidemiological validation of this deterministic system provides the healthcare industry with an auditable alternative for population health management. Traditional manual chart abstraction is highly resource-intensive, processing limited volumes of records daily, while administrative claims data often incurs significant reporting delays. The deployment of automated, criteria-based artificial intelligence allows health systems and public health entities to conduct continuous, large-scale medical surveillance. This technology ensures that chronic disease prevalence estimates are derived from objective clinical interventions rather than self-reported surveys or delayed financial claims, establishing a reliable foundation for resource allocation and medical tracking.

About Revel Business Group (RevelSI):

RevelSI is an AI and cybersecurity technology company that develops deterministic artificial intelligence and data analytics solutions tailored for the healthcare sector in a secure environment. The company focuses on clinical documentation accuracy and population health metrics to support evidence-based medical administration.

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