

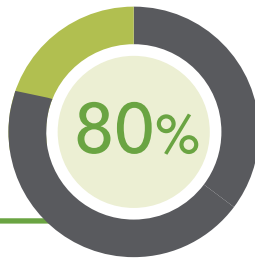
DxPro for Research

Clinical Insight at Unprecedented Scale

Powered by the emtelliPro™ Natural Language Processing (NLP) engine, DxPro creates structured data from the unstructured text of medical documents to uncover deep insights into patient health and disease, freeing researchers from manual chart review and unlocking research productivity.

A REVOLUTIONARY RESEARCH ENGINE

80% of medical data is unstructured text, and requires time-consuming manual review when used in research



DxPro creates structured data from the unstructured text of medical reports to simplify cohort identification and accelerate data collection and correlation for research across clinical systems, specialties, and patient populations.

ACCELERATE MULTIDISCIPLINARY RESEARCH

Advanced data mining and clinical summary tools enable real-time analysis of new and historic orders and reports to build multidisciplinary datasets of patients, procedures, and diagnoses:

- Collect and analyze new and historic data across patient charts and clinical systems in real-time (e.g. EMR/EHR, RIS, PACS, LIS, CVIS, etc.)
- Intelligently compare cross-specialty findings, measurements, and clinical indicators associated with complex clinical conditions to uncover key clinical insights
- Accurately quantify and measure clinical and financial ROI associated with research-driven improvements

USE CASE - RADIOLOGY RESEARCH



The Hospital for Sick Children (SickKids), an academic pediatric hospital in Toronto, Ontario, turned 20 years of radiology reporting into a single structured data repository of over 2.5 million reports.

These are used for research, clinical, and operational analytics providing researchers access to cohort identification and enabling the extraction of discrete variables for AI and ML development.

IMPROVE RELIABILITY AND ELIMINATE BIAS

Able to process and anonymize millions of reports daily, DxPro automates the identification, collection, and correlation of research cohorts at enterprise or population levels to build broad, reliable, and representative datasets:

- Improve the accuracy and reliability of your research findings by eliminating conscious and unconscious bias inherent in human-based data analysis
- Uncover timely and actionable insights across patient populations at enterprise, community, state, or national levels
- Reduce the cost, effort, and delays associated with manual cohort identification and extraction

NEXT-GENERATION TECHNOLOGY FOR LEADING RESEARCH ORGANIZATIONS

Using emtelliPro's deep learning-based NLP technology, DxPro identifies, extracts, and correlates data from orders and reports to unlock clinical and operational insights hidden within discrete and narrative data elements.

UNDER THE HOOD



- Process all types of medical text with high precision and recall, aided by our deep learning models that parse the often-confusing text of medical imaging reports



- Extract and codify medical terms using standard or custom ontologies (e.g. SNOMED, RadLex, MEDCIN, etc.)



- Summarize and sort diagnoses from clinical reports by dictionary, diagnosis, diagnostic category, report date, and report type or segment



- Intelligently search for diagnoses within a single patient's chart or from an entire patient population of EMR records

EASY TO USE WITH APPS

- An at-a-glance visual timeline of radiology exams and diagnoses provide a complete, unified, and contextually relevant view of the patient record
- The Visual Client allows users to visualize NLP output, seeing the relationships between words and identified annotations and assertions
- The Database is a highly normalized, RDBMS-based database that allows visualizations and simplifies app creation or BI software usage using well-known SQL

STRAIGHTFORWARD INTEGRATION WITH I.T. SYSTEMS

- Vendor-agnostic; compatible with multiple data sources including reports stored in databases, or on disk as text files or PDFs
- Ready for secure cloud-based or on-premise deployments
- Multiple SDKs, including Python, Java, C#, and PHP for integration with apps and existing systems
- Client software that automates post-processing ETL and allows report processing and database population with a single command
- Supports nearly all popular relational databases for storage of NLP output
- Highly secure; HIPAA BAA option for cloud-based processing



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