

# AI @ CureMD

Accelerating Artificial  
Intelligence In Healthcare

CureMD

# Disease Prediction Models: Advanced AI for Proactive Healthcare

The Disease Prediction Models exemplify CureMD's innovative approach to healthcare, utilizing clinically validated AI models by a panel of experienced physicians, to forecast health risks with unparalleled precision. Our AI model can predict with reliable accuracy the risk of developing 6 major chronic diseases within the next year. The model uses an explainable AI model to provide explanations for its predictions by highlighting important features, risk factors and the decision rules autonomously learned by mining patterns from the real-world evidence in the electronic health records.

## **Predictive Analytics**

rationale of predictions in the form of risk factors and rules to a doctor The current diseases include:

- DM
- HTN
- COPD
- Asthma
- CKD
- CHD

### **Comprehensive Data Analysis**

Our model harnesses AI to analyze a wide array of patient data, including medical and social history, vitals, family history, and demographics, ensuring a holistic view of a patient's health profile.

### **Comprehensive Risk Factor Profile**

Lists the risk factors for each model with their contributing weightage, so that the healthcare provider is able to make informed decisions and mitigate the risk by paying attention to the controllable risk factors.

### **Machine Learning Algorithms**

Using sophisticated machine learning algorithms to identify patterns in real-world evidence from electronic health data, our model is able to predict disease risks with explainable reasons.

### **Real-Time Insights**

Our AI models are dynamically updated in real time when new electronic healthcare data is ingested into our state-of-the-art Lakehouse AI, automatically running feature and model engineering pipelines.

### **Robust Validation**

Our AI model has been rigorously tested and validated against the latest guidelines and available literature, affirming its inferences are grounded in sound and credible medical knowledge and research.

### **User-friendly Interface**

Designed with healthcare professionals in mind, featuring an intuitive interface that provides a seamless user experience and explanations, requiring no specialized training for users.

### **Non-invasive Predictions**

The models do not require laboratory tests or results from other invasive procedures, enabling earlier interventions and preventive care.

# AI Cohort Builder Model: Precision and Efficiency at Your Fingertips

The AI Cohort Builder Model is a revolutionary tool designed to redefine how healthcare professionals' access and utilize patients' big electronic healthcare data. With its advanced AI capabilities, this model is an invaluable asset for conducting clinical research, patient care management, and designing healthcare policies by analyzing population dynamics and trends based on the public health registries data.

Our AI Cohort Builder Model empowers healthcare professionals to effortlessly identify a group of patients meeting specific inclusion and exclusion criteria described in a natural language, and then create the desired patient cohorts.

## **Natural Language Processing (NLP)**

Entering complex queries as easy as typing a sentence by using the natural language interface. For example, "show me all male patients between the age of 18 and 45, who have diabetes, but do not use insulin and are not hypertensive."

### **Enterprise Medical Knowledge Graph**

Searches through CureMD's extensive database of 17 million patients, ensuring a comprehensive semantic search in a state-of-the-art enterprise medical knowledge graph curated from the CureMD EHR data including structured, semi-structured and unstructured healthcare data

### **Real Time Cohort Building**

Creates a cohort of patients in less than 30 seconds, showcasing the model's efficiency in handling big data efficiently and effectively.

### **Versatile Application**

Perfect for recruiting patients for clinical trials, creating specific patient cohorts, and deriving public health insights. Whether you're a researcher, clinician, or public health professional, this tool provides you with actionable data in real-time at your fingertips to enable real time decision making.

### **Streamlined Workflow**

By simplifying the process of identifying patient cohorts with precise criteria, healthcare professionals can focus more on their research and the depth of analysis needed to find hidden patterns.

# Patient Disease Trajectory Model: Navigate Patient Health Futures

Step into the future of personalized healthcare with CureMD's groundbreaking and proprietary AI Patient Disease Trajectory Model. This pioneering tool is designed to transform the way healthcare professionals predict and understand the potential paths of patient conditions and diseases over a period of time. Our tool is designed to enable physicians to take an evidence-based, system medicine approach, treating the emerging disease persona of a patient, not just a disease in a silo.

The AI Patient Disease Trajectory Model is not just about looking ahead; it's about learning from the past to improve the future. This innovative model offers a dual view of patient health, predicting future disease trajectories and uncovering past health patterns with great precision, as they are derived from the hidden patterns based on real-world evidence.

## **Advanced AI Predictions**

Harnessing the power of AI learning, this model predicts the future trajectory of various diseases and conditions that a patient develop over time. It's like having a crystal ball which allows physicians to transcend space and time to see the future disease trajectory of a patient in the disease universe.

### **Retrospective Insights**

In addition to its predictive capabilities, this model provides valuable retrospective insights, revealing potential conditions or diseases that could have preceded a patient's current diagnosis. This historical analysis enhances understanding of disease etiology and progression in identifying the root cause diseases (like disease blackholes) in the disease universe.

### **Sankey Charts Visualization**

Information is scientifically presented in easy to understand, and beautiful Sankey charts which illustrate the flow and transition between different states of health, conditions, or outcomes of a cohort of patients. These visual representations provide actionable health intelligence from large and complex datasets.

### **Data-Driven Insights**

Trained on a vast dataset of patient histories, this model draws on the outcomes of similar past cases to forecast future conditions, diagnoses, and health outcomes. This approach ensures predictions are grounded in real-world evidence.

### **Simplicity and Accessibility**

Designed with user-friendliness in mind, it delivers complex predictive insights in an easy-to-understand visualizations, eliminating the need for specialized training to interpret the data.

# Introducing CureDoc: Revolutionizing Healthcare Communication

CureDoc stands at the forefront of healthcare innovation, a bespoke Large Language Model (LLM) crafted responsibly and securely to seamlessly cater to both patients and providers. This cutting-edge model embodies the pinnacle of medical communication, combining ease of use with the depth and precision of medical expertise.

## **Dual-Purpose Design**

Uniquely positioned to serve the informational and operational needs of both patients and healthcare providers, facilitating positive outcomes for all stakeholders aspiring for value-based care.

## **State-of-the-Art Training**

The CureDoc LLM core is meticulously trained on the latest US medical guidelines, ensuring every patient encounter is managed by a physician following current, up-to-date, and medically accurate knowledge, guidelines and information.

## **Security and Responsibility**

CureDoc is designed on the principles of data security and patient wellness. All interactions with the CureDoc are stored in a secure enclave and are kept in the valet of a patient or a provider. The system is trained to make its best efforts to not engage in conversations that could lead to harming its users.

## **Medical Notes**

Physicians can securely upload their medical notes to create summaries and can also query them to quickly recollect the medical history of the patient.

## **Continuous Updates**

CureDoc evolves in real-time, integrating new data and guidelines as they become available. This commitment to continuous learning ensures that users always have access to the most relevant, up-to-date and accurate medical advice.

## **User-Friendly Interface**

Featuring a chatbot interface renowned for its simplicity, CureDoc allows for intuitive navigation and interaction, making complex medical information accessible to everyone.

### **Understanding Complex Commands**

Engineered to comprehend and execute complex queries effortlessly, CureDoc stands out for its ability to process and respond to intricate commands with ease and precision.

### **Speed and Efficiency**

Recognized for its prompt responses, CureDoc delivers accurate medical information swiftly and securely, respecting the user's need for timely assistance.

### **Rigorous Validation**

CureDoc has been meticulously tested and validated by a team of medical professionals. Its outputs have been rigorously checked against existing medical guidelines to ensure the highest level of accuracy and reliability.

# CureBot:

## The Intelligent AI Assistant Transforming EHR Use

Introducing CureBot, the pinnacle of AI innovation within the Electronic Health Record (EHR) system, meticulously designed to alleviate the burden on healthcare providers. CureBot is not just smart; it's a forward-thinking assistant that anticipates your needs, streamlines your workflow, and delivers information right where it's needed, when it's needed, and how it's needed.

### **Proactive Information Delivery**

CureBot intelligently presents the most relevant information at the right time, ensuring you have all necessary data at your fingertips without the need to ever search for it.

### **Bespoke Workflow Integration**

It learns from your interactions and preferences, adapting to offer personalized suggestions that fit your specific practice style and specialty, effectively reducing time spent on routine tasks.

### **Seamless Communication**

With its chatbot-like interface, CureBot understands and executes complex commands, allowing for natural, conversational interactions that simplify your EHR navigation.

### **Advanced Task Automation**

From summarizing patient encounters to collating lab results and generating patient education materials, CureBot effortlessly handles a variety of tasks, significantly reducing administrative load.

### **Predictive Assistance**

Leveraging the latest in AI technology, CureBot anticipates your next action in a patient management workflow, offering suggestions and completing tasks before you even ask. It's like having a personal assistant that knows exactly what you need, optimizing your workflow for efficiency allowing you to focus on value-based patient care.

### **Customization and Control**

Tailor CureBot to display the information and prompts most relevant to your day-to-day operations. Its flexibility ensures that your EHR experience is personalized to your preferences and clinical needs.

# The AI Ambient Listening Tool: Revolutionizing Patient Encounters

In the era of digital healthcare, the AI Ambient Listening Tool stands out as a groundbreaking innovation, designed to transform the way healthcare providers document patient encounters. This cutting-edge tool listens in on consultations, creating accurate transcripts that are then seamlessly converted into SOAP notes for integration into the patient's medical record.

## **Effortless Documentation**

Operates in the background during patient-provider encounters, capturing every word with precision. It eliminates the need for manual note-taking, allowing providers to focus entirely on the patient.

## **Intelligent SOAP Generation**

Converts conversation transcripts into structured SOAP notes using medically accurate language. This ensures that notes are not only comprehensive but also adhere to the highest standards of clinical documentation.

### **Time-Saving Efficiency**

Drastically reduces the time required to create medical notes, streamlining the documentation process and freeing up valuable time for healthcare providers to spend on patient care.

### **Privacy and Security**

Designed with confidentiality in mind, it employs advanced security measures to ensure that all patient information is captured, processed, and stored securely, adhering to healthcare privacy regulations.

### **Seamless EHR Integration**

SOAP notes generated by the tool are easily integrated into existing Electronic Health Record (EHR) systems, facilitating a smooth workflow and ensuring that patient records are always up-to-date and accessible.

# Smart Fax Management System: Revolutionizing Document Handling in Healthcare

In an age where efficiency in healthcare is paramount, the Smart Fax Management System emerges as a transformative solution for managing incoming documents and faxes. Designed with precision and the healthcare professional's needs in mind, this system leverages cutting-edge OCR (Optical Character Recognition) technology to streamline document management, making it faster, more accurate, and, importantly, intelligent.

## **Automated Document Analysis**

Utilizes advanced OCR tools developed in-house to meticulously extract useful information from a wide array of documents and faxes, ensuring that every piece of data is captured accurately.

## **Intelligent Categorization**

Automatically places documents into relevant categories and folders. Whether it's patient records, lab reports, or referral letters, the system sorts and organizes everything seamlessly, saving hours of manual labor.

### **Focus on Patient Care**

By significantly reducing the time and effort spent on document management, healthcare providers can redirect their attention to what truly matters—delivering exceptional patient care.

### **Enhanced Accuracy and Accessibility**

Minimizes human error and improves the accessibility of information. With documents digitized and organized, retrieving patient information becomes instantaneous and error-free.

### **Eco-Friendly Solution**

Promotes a paperless environment, aligning with sustainability goals and reducing the physical storage space needed for documents.

# Chemotherapy Effectiveness Model: Harnessing AI to Revolutionize Chemotherapy

CureMD's Chemotherapy Effectiveness Model is a beacon of innovation in oncology care, employing sophisticated AI algorithms to transform how chemotherapy treatments are selected and managed. The system calculates regimens that have a low chance of failing or discontinuation by analyzing the medical profile of a patient and conducting inferences from real-world evidence in the medical data. This advanced model:

## **Leverages Deep Learning**

Utilizes cutting-edge AI and machine learning techniques to analyze vast datasets, learning from outcomes to predict Time to Treatment Failure (TTF) with an unparalleled accuracy of more than 80% for the most prevalent cancer types.

## **Smart Predictions for Better Outcomes**

Empowers oncologists with smart, data-driven insights, predicting chemotherapy effectiveness and guiding treatment decisions tailored to individual patient profiles.

**Value based Care**

The system predicts the treatment failure probability and the time to treatment failure using oncology specific curated models by explaining the reasons including the failure rules, important features and risk factors. The system also enables an oncologist to review possible treatment plans based on NCCN guidelines and select the one that enhance value-based care by choosing plans that provides the best efficacy and effectiveness in an affordable cost, saving billions of dollars for the national healthcare system and patients

**Patient Wellness**

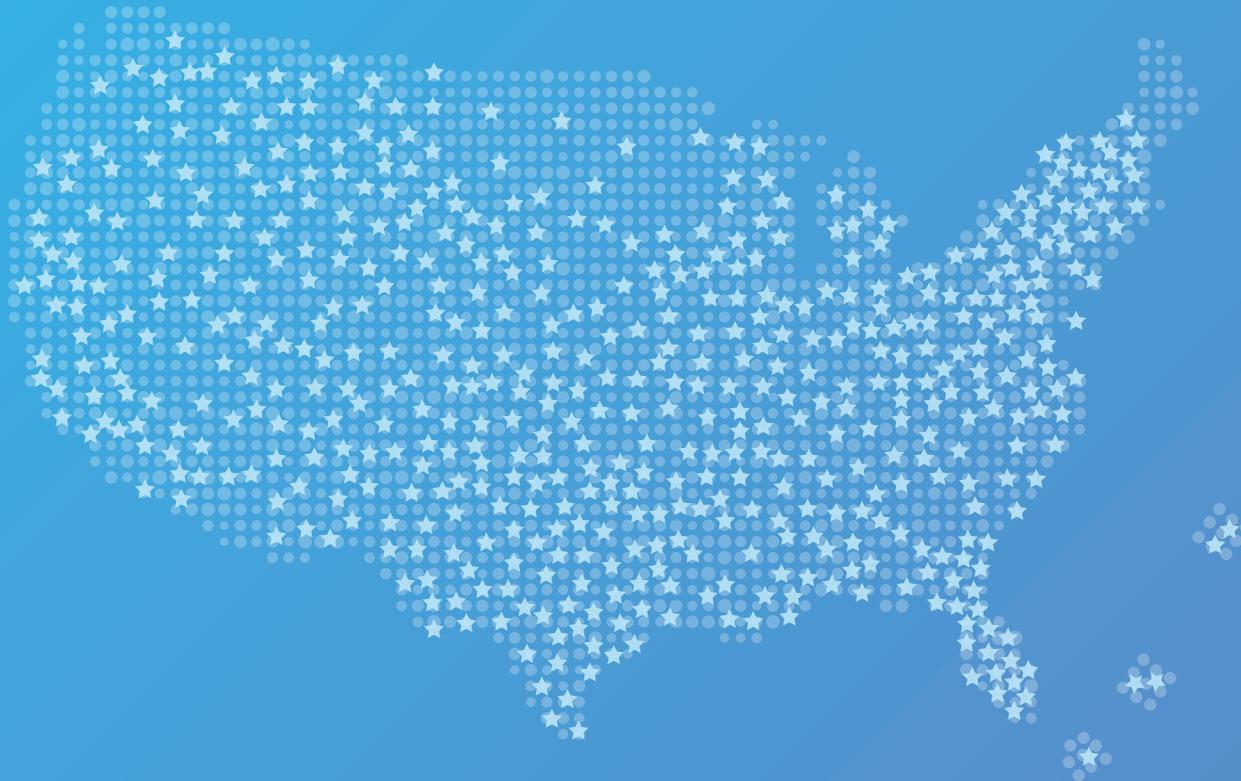
The system reduces three toxicities: chemical, financial and emotional. As a result, patients and family do not have to endure the chemo stress once it is discontinued and a new treatment therapy is started.

**Adapts and Evolves**

Continuously updated with the latest clinical data and outcomes, ensuring its recommendations remain accurate and relevant to current treatment protocols.

**Intuitive Visual Analytics**

Presents complex predictive data through intuitive graphs and visual aids, making it easier for clinicians to interpret and act on the findings of the system.



## Practice without boundaries™

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