



Amazon Comprehend Medical

A HIPAA-eligible natural language processing (NLP) service that uses machine learning to extract structured medical information from unstructured clinical text.

<https://aws.amazon.com/comprehend/medical/>

Overview

Amazon Comprehend Medical is a fully managed, HIPAA-eligible AWS service that leverages pre-trained machine learning models to analyze and extract clinical insights from a variety of unstructured medical texts, such as physician's notes, discharge summaries, clinical trial reports, and patient health records. The service eliminates the need for developers to build, train, or deploy their own complex natural language processing models.

Key Features and Capabilities

Medical Entity Recognition: Automatically identifies and categorizes medical entities like medical conditions, medications, anatomy, tests, treatments, and procedures with high accuracy.

Protected Health Information (PHI) Detection: Detects and tags protected health information (PHI) fields, enabling users to implement data privacy solutions and de-identify data to comply with HIPAA Safe Harbor guidelines.

Ontology Linking: Links extracted medical entities to standardized medical vocabularies and codes, including ICD-10-CM (diagnoses), RxNorm (medications), and SNOMED CT (broader medical concepts).

Relationship Extraction: Identifies relationships between entities, such as the dosage, strength, or frequency related to a specific medication.

Scalable Processing: Supports both near real-time (synchronous) analysis for single documents and large-scale batch (asynchronous) processing for thousands of documents stored in Amazon S3.

Target Users and Use Cases

Amazon Comprehend Medical is primarily used by healthcare providers, insurers, clinical researchers, and biotech/pharmaceutical companies. Common use cases include:

Clinical Research: Accelerating patient cohort identification for clinical trials and improving pharmacovigilance by rapidly identifying adverse effects.

Revenue Cycle Management: Automating medical coding by extracting diagnoses and procedures from clinical notes to improve billing accuracy and speed up claims processing.

Patient Case Management: Structuring clinical information from narrative notes to enhance clinical decision support and improve documentation.

Key Features

- Medical Named Entity Recognition (NERe)
- Protected Health Information (PHI) Detection
- Ontology Linking (ICD-10-CM, RxNorm, SNOMED CT)
- Relationship Extraction
- Batch and Real-time Analysis
- Confidence Scoring
- HIPAA-eligible

Pricing

Model: usage_based

Usage-based pricing, charged per unit of 100 characters processed. Pricing is tiered based on volume and varies by API operation (e.g., NERe, PHI Detection, Ontology Linking). No upfront fees or minimum commitments. A free tier of 8.5 million characters is available for the first month for new users.

Starting at: USD \$0.01

Target Company Size: small, medium, enterprise

Integrations

Amazon S3, Amazon OpenSearch Service (Kibana), AWS Lambda, Amazon DynamoDB, Amazon Textract

Compliance & Certifications

HIPAA-eligible, SOC 2, ISO 27001

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