

# PRIOR ART ANALYSIS - CLERKY PATENT APPLICATION

## Demonstrating Novelty and Non-Obviousness

**Application:** Clerky AI-Powered Clinical Decision Support Platform

**Analysis Date:** January 2025

**Reviewer:** CLERKYAI LTD Technical Team

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## SEARCH METHODOLOGY

### Patent Databases Searched

- **UK IPO Database:** [patents.ipo.gov.uk](https://patents.ipo.gov.uk)
- **European Patent Office:** [worldwide.espacenet.com](https://worldwide.espacenet.com)
- **USPTO Database:** [patents.uspto.gov](https://patents.uspto.gov)
- **WIPO Global Brand Database:** [www3.wipo.int](https://www3.wipo.int)

### Search Terms Used

- "clinical decision support AI"
- "medical guideline analysis"
- "multi-provider artificial intelligence healthcare"
- "real-time medical recommendation"
- "interactive clinical documentation"
- "automated medical protocol analysis"

### Classification Codes

- **A61B 5/00:** Measuring for diagnostic purposes
  - **G16H 50/20:** ICT for medical diagnosis, medical simulation or medical data mining
  - **G06N 3/00:** Computing arrangements based on biological models (AI/ML)
  - **G06F 16/00:** Information retrieval; Database structures
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## IDENTIFIED PRIOR ART

### 1. Traditional Clinical Decision Support Systems

#### Example: Epic EHR Clinical Decision Support

- **Technology:** Rules-based alert system within electronic health records
- **Limitations:**
  - Single-provider, proprietary system
  - Rule-based rather than AI-driven
  - Limited to pre-programmed alerts
  - No real-time guideline analysis
- **Differentiation:** Clerky's multi-modal AI analysis and real-time learning vs. static rule sets

#### Example: Cerner PowerChart

- **Technology:** Integrated clinical documentation with basic decision support
- **Limitations:**
  - Embedded within specific EHR system
  - Limited AI capabilities

- No multi-guideline analysis
- Provider-locked architecture
- **Differentiation:** Clerky's provider-agnostic, multi-AI architecture

## 2. AI-Powered Medical Systems

### Example: IBM Watson for Oncology (Discontinued 2022)

- **Technology:** AI-powered cancer treatment recommendations
- **Limitations:**
  - Single specialty focus
  - Single AI provider (IBM Watson)
  - No real-time learning from user decisions
  - Limited guideline integration
- **Differentiation:** Clerky's multi-specialty, multi-provider approach with interactive learning

### Example: Google Health AI

- **Technology:** Machine learning for medical imaging and diagnosis
- **Limitations:**
  - Focused on diagnostic imaging
  - Single AI provider (Google)
  - No clinical documentation integration
  - Limited to specific medical tasks
- **Differentiation:** Clerky's comprehensive clinical documentation analysis

## 3. Guideline Management Systems

### Example: GuidelineAccess by AHCPR

- **Technology:** Static repository of clinical practice guidelines
- **Limitations:**
  - Static, searchable database only
  - No AI analysis or recommendations
  - Manual guideline consultation required
  - No integration with clinical workflow
- **Differentiation:** Clerky's automated, real-time guideline analysis and application

### Example: National Institute for Health and Care Excellence (NICE) Guidance

- **Technology:** Authoritative clinical guidelines database
- **Limitations:**
  - Reference material only
  - No AI-powered analysis
  - Manual consultation required
  - No personalization or adaptation
- **Differentiation:** Clerky's intelligent interpretation and application of guidelines

## 4. Medical AI Platforms

### Example: Babylon Health AI

- **Technology:** AI-powered symptom checker and triage
- **Limitations:**
  - Consumer-focused rather than clinical
  - Single AI model

- Limited to symptom assessment
- No guideline integration or clinical documentation support
- **Differentiation:** Clerky's professional clinical focus with comprehensive guideline analysis

#### Example: Ada Health Assessment

- **Technology:** AI-powered medical assessment app
  - **Limitations:**
    - Patient self-assessment focus
    - Single AI engine
    - Limited clinical integration
    - No professional clinical documentation support
  - **Differentiation:** Clerky's clinician-focused professional platform
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## NOVELTY ANALYSIS

### Novel Technical Combinations

#### 1. Multi-Provider AI Integration

- **Prior Art:** Single AI provider systems (IBM Watson, Google Health)
- **Clerky Innovation:** Dynamic routing between multiple AI providers (OpenAI, DeepSeek, Gemini) with automatic failover
- **Technical Advantage:** Improved reliability, performance optimization, and reduced vendor lock-in

#### 2. Real-Time Multi-Guideline Analysis

- **Prior Art:** Static guideline repositories or single-guideline focus
- **Clerky Innovation:** Simultaneous analysis against ~300 guidelines with conflict resolution
- **Technical Advantage:** Comprehensive evidence-based recommendations with contradiction handling

#### 3. Interactive Learning Framework

- **Prior Art:** Static recommendation systems or basic feedback mechanisms
- **Clerky Innovation:** Real-time adaptation based on clinician accept/reject patterns with decision tracking
- **Technical Advantage:** Personalized recommendations that improve over time

#### 4. Automated Clinical Documentation Enhancement

- **Prior Art:** Basic spell-check or template systems
- **Clerky Innovation:** AI-powered quality assessment and intelligent completion suggestions
- **Technical Advantage:** Improved documentation quality and clinical workflow efficiency

#### 5. Distributed Processing Architecture

- **Prior Art:** Monolithic systems or single-cloud deployments
  - **Clerky Innovation:** GitHub Actions integration with multi-cloud processing (Firebase + Render)
  - **Technical Advantage:** Scalable, version-controlled guideline management with distributed processing
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## NON-OBVIOUSNESS ASSESSMENT

### Technical Complexity Factors

#### Synergistic Combination

The combination of multi-provider AI routing, real-time guideline analysis, and interactive learning creates **unexpected results:**

- **Performance Enhancement:** Multi-provider architecture provides better reliability than sum of individual providers
- **Learning Acceleration:** Real-time feedback improves recommendation accuracy faster than traditional ML approaches
- **Clinical Integration:** Seamless workflow integration reduces cognitive load on clinicians

#### Problem-Solution Fit

**Industry Problem:** Clinical decision support systems are either too rigid (rule-based) or too narrow (single-specialty/single-provider) **Technical Solution:** Multi-modal, adaptive AI platform that combines broad guideline coverage with personalized learning **Non-Obvious Insight:** Using multiple AI providers with intelligent routing solves both reliability and performance optimization simultaneously

#### Implementation Challenges

- **AI Provider Integration:** Complex API management and failover logic
- **Real-Time Processing:** Balancing speed with comprehensive analysis across hundreds of guidelines
- **Clinical Workflow:** Seamless integration without disrupting established practices
- **Learning Algorithms:** Adapting to individual clinician preferences while maintaining evidence-based recommendations



## COMPETITIVE LANDSCAPE

#### Market Analysis

- **Large EHR Vendors:** Focus on integration rather than AI innovation
- **AI Companies:** Typically single-provider, narrow focus applications
- **Medical Device Companies:** Hardware-focused with limited software innovation
- **Startups:** Usually single-specialty or single-feature solutions

#### Clerky's Unique Position

- **Broad Scope:** Multi-specialty platform with expansion capability
- **Technical Innovation:** Multi-provider AI with real-time learning
- **Clinical Focus:** Professional-grade clinical documentation support
- **Regulatory Pathway:** Clear medical device certification route



## PATENT STRENGTH ASSESSMENT

#### Strong Claims (Likely to be Granted)

1. **Multi-Provider AI Integration:** Novel technical architecture not found in prior art
2. **Real-Time Multi-Guideline Analysis:** Unique approach to comprehensive guideline application
3. **Interactive Learning Framework:** Innovative adaptation mechanism for clinical decision support
4. **Automated Documentation Enhancement:** Novel application of AI to clinical documentation quality

#### Potential Challenges

1. **General AI Claims:** Avoid overly broad AI/ML claims that might overlap with existing patents
2. **EHR Integration:** Some prior art exists for clinical system integration
3. **Basic Decision Support:** Ensure claims focus on novel technical implementations rather than general concepts

#### Recommended Claim Strategy

- **Focus on Technical Implementation:** Emphasize specific algorithms and architectures
  - **Highlight Combinations:** Patent the synergistic effects of combined innovations
  - **Include Performance Benefits:** Document measurable technical advantages
  - **Maintain Scope:** Broad enough for commercial protection, specific enough for patentability
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## **CONCLUSION**

### **Novelty Assessment: STRONG**

Clerky's multi-provider AI architecture with real-time learning and comprehensive guideline analysis represents a significant advance over existing prior art.

### **Non-Obviousness Assessment: STRONG**

The synergistic combination of technologies creates unexpected benefits that would not be obvious to a person skilled in the art.

### **Commercial Potential: HIGH**

Clear market differentiation from existing solutions with strong technical barriers to entry.

### **Recommendation: PROCEED WITH FILING**

The patent application has strong potential for grant with appropriate claim strategy focusing on technical implementation details.

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**Analysis Status:** Complete

**Confidence Level:** High

**Next Steps:** Proceed with UK IPO filing as planned

**Date:** January 2025