***Solution Facts*** **Model name:** Duke Health Policy Chat **Locale:** Duke University Health System

**Approval Date:** 11/04/2024 **Last Update:** 3/11/2024 **Version:** 0.1.1

**Solution Developer:** Duke Institute for Health Innovation

## Summary

An AI-powered assistant that helps healthcare staff at Duke access and understand policies and procedures. This AI tool uses natural language processing to answer questions about policies, find relevant policy documents, and present information in an easy-to-understand way.

## Mechanism

- **Framework**……**DIHI Retrieval Augmented Generation (RAG). Copyright 2024**
- **Input data type** ……PDF Documents (n=3719)
- **Input data source** ……Policy Tech by NAVEX. https://dukeuniversity.policytech.com/
- **Input data refresh frequency** ……Weekly

## Evaluation

| Metrics | Definition | Additional guidance | Score |
|---|---|---|---|
| **Contextual Recall** | # Correct Document Retrieved Faithfulness / # Total Queries | 9 input text questions | 100% |
| **Faithfulness** | Whether or not the answer that is provided by the system is related to the context that was provided. | If the response can be attributed to the context<br>- exactly → 3<br>- with minor differences → 2<br>- with significant differences→ 1<br>- cannot be attributed at all → 0 | 87.5% (21/24)<br><br>Query 1 – 4 : 3/3 each<br>Query 5: Undetermined<br>Query 6 – 8 : 3/3 each |

## Uses and directions

- **General use:** Policy Chat was designed to provide clear, concise answers to specific policy-related questions, making it easy for users to get the information they need without wading through complex documents.
- **Benefits:** By aligning with its intended use, Policy Chat helps streamline policy education and related workflows. It may improve policy adherence and reduce conflict about which information is or is not within policies.
- **Target population and use case(s):** This was designed first for use by Duke University Health System Perioperative Services. This model is for New and existing healthcare providers and administrators across the Duke Health Enterprise (DHE). Use cases: Do we need to count instruments for hernia repair? Where do I place the Bovie pad on the patient?
- **Appropriate decision support:** Policy Chat was designed to provide clear, concise answers to specific policy-related questions. It performs best when responding to focused, actionable questions—those that aim to clarify a single, well-defined point of policy.
- **Before using this model:** Test the model retrospectively and prospectively on a diagnostic cohort that reflects the target population that the model will be used upon to confirm validity of the model within a local setting.

## Warnings

- **General warnings:** This model it is not intended to process broad, exploratory requests that require summarizing or presenting entire policies.
- **Inappropriate Settings:** This model was not evaluated on policies outside of Duke Health or questions from healthcare professionals outside of Duke Health. Do not use this model out of the Duke Health setting without further evaluation.
- **Clinical Rationale:** This model is no more a diagnostic tool or treatment protocol than the policies it references.
- **Inappropriate decision support:** This model may not be accurate outside of the target population and use cases (Beyond Duke, broad exploratory requests requiring return of entire policies or counts of policies). This model is not a diagnostic and is not designed to guide clinical diagnosis or treatment.
- **Examples of inappropriate decisions to support:** Should I exanguinate this patient? Should I replace this policy?
- **Generalizability:** This model was primarily evaluated within the local setting of Duke University Health System Perioperative Services. Do not use this model in an external setting without further evaluation.
- **Discontinue use if:** Clinical staff raise concerns about how the model performance deteriorates due to policy shifts.

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