# **Clinical Supply Process Optimization Tool**



## **Company Background**

Pfizer's Global Clinical Supply manages 400+ active trials at any given moment, sources and supplies trials with investigational product, and delivers drugs to patients.

One of Pfizer's core principles is "time is life", which motivates them to optimize their processes in order to deliver life changing drugs to patients faster.



# **Project Goal**

Develop a tool that identifies optimizations in Pfizer processes while also minimizing risk.

### **Design Process**

Research: Before recieving any data, we read case studies about Pfizer's COVID vaccination development. This familiarized us with the pharmaceutical processes our solution is optimizing for, as well as Pfizer's values of speed and efficiency.

Interview: Each liaison represents a functional line within GCS. By talking to them, we gained a broad perspective on various pain points and desires to address in our solution.

Understand: Our liaisons gave us a package consisting of data commonly used in each trial. By taking time to understand the purpose and format of each document, we could better design our solution to effectively handle the information.

Codesign: As we created our designs, we hosted codesign sessions with our liaison team to gain immediate feedback on how well our design aligned with their wants and needs. This helped us quickly and iteratively refine our solution.

Develop: After solidifying a design, we started building our solution within Pfizer's ecosystem. However, we guickly recognized that our level of access to their internal tools made this route infeasible. Using mocked and publiclyavailable data, we pivoted to creating a proof-of-concept that could later be integrated by Pfizer's tech team.

**Deliver**: In addition to the codebase our team has developed, we also provided technical documentation and suggestions for future steps for Pfizer's tech team.

We designed an AI tool that references documents from Pfizer's clinical trials and data about known risks, alternative decisions, and expected timeline impacts from previous trials.

Our solution quickly identifies potential risks and alternative decisions for a Pfizer expert to evaluate, which accelerates the overall decision-making process.

We used the following tools to create our solution:



By identifying recommended risks through the analysis of past documents and data, we can support Pfizer's Global Supply Chain with making efficient, data-driven decisions. This approach allows us to optimize the supply chain, delivering drugs more quickly and ultimately saving lives.

# **Problem**

Supply chain planning is complex, rigid, and time intensive. Identifying risks and making decisions requires:

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Reliance on
intuition and prior
experience

Presence of experts from all functional lines

Olin Scope Team:

**Faculty Advisor: Jessica Townsend** 

Thorough understanding of numerous documents (often 70+ pages)

Coordination of long meetings around everyone's schedules

### **Pfizer Liaisons:**

Michele Frey, Valery Ochollah, Kristin Sullivan, Wendy Spader, Shawn Musselman, Ruey-Ching Hwang, Maria Ficchi, **Ashish Honawar** 

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## Solution

To handle PDF data, we employed preprocessing techniques to break down long documents into small usable chunks.

We used a Large Language Model (LLM) to work with the text-based data. To ensure our model also referenced the risk and timeline tables, we implemented Retrieval-Augmented Generation (RAG).



# Impact



Deliver **HOPE to** patients