Rx Researchers
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Interim Report

Our Problem

Chronic Obstructive Pulmonary Disease, or COPD, is an umbrella term for various diseases that cause breathing difficulties by blocking airflow to the lungs. Risk factors such as pollution, cigarette usage, and multifarious diseases can contribute to the development of COPD and other respiratory issues. Our question is as follows: “How can various factors present in a population with COPD or other respiratory ailments affect how long an affected individual maintains adherence to COPD medications such as oral steroids and bronchodilator inhalers?”

Our Plan

Our plan for solving this problem computationally is, firstly, researching how different diseases or environmental factors influence the development of COPD and adherence to the medication for it and how COPD medicines can cause adverse reactions. In order to solve this query computationally, we intend to determine the recommended dosage of COPD medication, the standard medical adherence of those taking said medication, and certain factors that could change the effects of COPD and its treatments. From there, we will create a program that can simulate a group afflicted with COPD taking medication based on recommendation, then give the simulated group one or more afflictions and have the program run lower doses of medication until the group takes the medication for the prescribed time period.

Our Progress

Up to this point, our efforts have included compiling a thorough arrangement of information and existing studies concerning risk factors of COPD and adherence to prescribed

medication to curate a robust data set. Simultaneously, we have begun our exploration of potential models upon which we can base our computational model.

Our Expected Results

Our anticipated outcome of our computational model is established in our hypothesis that individuals who encounter various additional factors like smoking, underlying diseases, and contamination influencing chronic obstructive pulmonary disease (COPD) will exhibit diminished medical adherence to prescribed drugs aimed at alleviating the symptoms of COPD.

Cited Sources

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