

CONSTRUCTING PATIENT FLOW of COPD PATIENTS in OUTPATIENT DEPARTMENT for DISCRETE EVENT SIMULATION

Chronic Obstructive Pulmonary Disease (COPD) is the world's third deadliest disease that can also frequently lead to emergency admissions. In the UK, there are about 1 million people with COPD which is a progressive lung disease.

COPD is mainly modelled by researchers with the help of Markov modelling and Monte-Carlo simulation for assessing the effectiveness of new drugs, therapies, and treatments. However, there is no work in the literature about COPD patient flow modelling at operational level. First of all, conceptualising COPD patient pathway is needed to better understand COPD services, by bridging healthcare decision makers and model developers in a common language, and more importantly to capture reality within modelling environment.

In this paper, therefore, a COPD patient flow diagram of Outpatient department is developed using healthcare guidelines and COPD service professionals from a well-known hospital in the UK. The pathway, including *outpatient clinics and services*, is modelled using discrete-event simulation technique. Also, a set of possible scenarios is tested. Lastly, initial model set of results are presented and analysed. In conclusion, the study will be very helpful for conceptualisation studies of different diseases as well as for COPD services in the UK to provide better planning and management.