Abstract

Unbalanced medical resources in healthcare system is the critical problem in this modern world; especially in emergency situations, such as recent pandemics like COVID-19, HIV/AIDS pandemic peaked in 2005, FLU pandemic - 1968 etc.The purpose of this study is to address one of these emergency situations, COVID-19. Major concern in COVID-19 pandemic is social distancing. Secondly, the balanced medical resource allocation and patient referring between clinics and hospitals, while the resources are limited. For the sake of maximum utilization of resources and quick response to address the COVID-19 pandemic, We formally design a model that gives comprehensive inspection of unbalanced medical resources of healthcare system. Firstly, we design the system's architecture for the COVID-19 pandemic using a high level class of Petri nets known as colored Petri nets. Secondly, we evaluate the designed system with the help of simulation & state space reports. This study definitively answers to the questions discussed above. The models are designed to gain a clear understanding of the system and to check the presence or absence of different behavioral and structured properties of the system. The model also meets the desirable or undesirable properties of a colored Petri net. Further study concludes the system behavior and its properties.