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Further Research Opportunities in Medical Decision Support Systems (MDSS) Research

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Abstract: ***A review of the developments and the current state of Medical decision Support System can help practitioners and medical representatives to better understand MDSS and its application. This study can also offer insightful prospective topics for further study and areas that need improvement. The roadmap holds significance to the medical and healthcare industry. It will contribute to previous research in the field of Decision Support Systems, Medical decision Support System, Medical informatics and Diagnosis decision support systems.***

Keywords: Medical decision Support System, Medical informatics and Diagnosis decision support systems.

1. Introduction

Attempting to understand MDSS and venturing into the field related to technology and healthcare is particularly important for the society as it can improve the standard of available medical care and facilities. Improvements and innovation in MDSS can help detect ailments, predict conditions, and help both doctors and patients to foresee medical conditions among other things. It can provide accurate guideline compliance and enhance physician performance (Hunt, Haynes, Hanna, & Smith, 1998). Computerized decision support system can be extremely valuable for treatment or diagnosis support and compliance accuracy when used at the point of care (Lobach & Hammond, 1997). This study will be a basis for additional research in the MDSS field and play vital role in medical education and exploration. Advancement in healthcare will help save lives of many and contribute to the betterment of the society. Thus, this research can bring about a positive social change, which will help build a heather world.

2. Suggestions and Recommendation for Further Study

The medical and healthcare industry is continuously searching for strategies for developments and improvements in all aspects. The current study offers an insight into the evolution and current situation of MDSS. It provides scholars and professionals with the necessary knowledge related to decision support systems in healthcare sector. Recommendations for further research to improve the MDSS research to include:

1) Conduct a study with specific hospitals that have used MDSS since inception and trace the evolution through data acquired from that institute.
2) Conduct the study in a specific country or regional zone to get better understanding of development of MDSS in different zones.
3) Conduct a study to understand the role of MDSS in different medical conditions and how over the years developments have catered to specific diseases and conditions.
4) A quantitative study needs to be conducted to collect quantifiable data in order to measure the different components of healthcare decision support systems.
5) A quantitative study to understand the role of MDSS in diagnosis and patient care for various diseases.
6) A quantitative study to understand how developments in MDSS have influenced the mortality rate in the present time.
7) A study to examine the effectiveness of MDSS as opposed to the decision taken by a medical practitioners in the remote areas of third world nations without access to technology.
8) A study discussing how 'shared decision making processes' can influence the outcome of a medical condition.
9) A study investigating the role of Clinical records in the diagnostic decision process performed by a physician.
10) A quantitative study to examine the impact of MDSS on the quality of care provided at a given health care organization.
11) A study to investigate and document cases where medical representative overrides the system's recommendation and advice. The monitoring and documentation of these exceptions will provide a means to identify the system's limitations and subsequently refine the knowledge base and inference engine. This exception tracking will contribute considerably to the incremental improvement of the system.

3. Concluding Remarks

The study provides a comprehensive overview of tracing the evolution of MDSS from system with machine learning to the present day intelligent system. Understanding the developments in the field provides scholars, educators and medical professionals with information necessary to understand the modern MDSS and also creates scope for further developments and research. The current study contributed to previous research in the areas of information technology, decision support systems, medical informatics, and medical decision support systems.

The discussion in the study not only provides insight into the development of MDSS but also attempts to fill the gap that exists in the body of knowledge and literature. The study will enable medical practitioners to understand the concept of MDSS and its significance in the healthcare system especially relating to patient care and management. Improvements in MDSS can also help detect illnesses, foresee conditions, and help both doctors and patients to anticipate medical conditions among other things. The discussion in this study can be used to further investigate MDSS and its role in healthcare sector and its drug discovery process.

4. Social Change Implications

The study can bring about positive social change and help create a healthier world by discovering new drugs. When the majority of the population is healthy, it affects the overall condition of the nation especially its economy. People are more productive which indirectly contributed to sociological and economical condition of the nation and the world at large. Thus, this study is indirectly instrumental in creating a healthy world (Tadaravrthi & Korrapati, 2017a, 2017b; Kapu & Korrapati, 2017a, 2017b).

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