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Application of computers in manufacturing operation

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The use of computers in the manufacturing sector has increased in recent years due to various reasons. One of the main reasons for this is the high demand for manufactured products and the requirement of on time delivery of quality product. Most of the manufacturers have turned to computer integrated (CIM) or computer aided manufacturing (CAM) to improve efficiency, quality and reduce cost, lead time and process time of the product. Computers are today applied in all the aspects of manufacturing operations including, planning, control, scheduling, designing, distribution, processing, marketing, production etc. This paper reviews the application of computers in major manufacturing businesses and discusses the features and importance using various journal papers on the subject.

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HTE-DLP: An artificial intelligence system that improves the quality of lipid-lowering therapy

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HTE-DLP is an artificial intelligence software (CDSS) that performs a sequence of clinical decisions including all lipids lowering therapy and shows specific recommendations for each patient using efficiency, safety and cost criteria. It is based on European Guidelines for the Management of Dyslipidemia 2011. It is the first lipid-lowering therapy CDSS developed in Spain and the first to be validated in Europe.

Methods: It was a cluster-randomized trial comparing standard prescriptions with HTE-DLP assistance, conducted by 10 expert physicians (7 specialists and 3 general practitioners) in cardiovascular risk management from five different hospitals and primary care centers in Catalonia (Spain). Each physician was asked to recruit 10 patients. The physicians enrolled consecutive eligible patients with high cardiovascular risk aged >18 years old with LDL-cholesterol (LDL-C) >100 mg/dl... Included patients were randomly distributed into the intervention or control group by a computer program. HTE-DLP was blocked automatically if a patient was assigned to the control group. Physicians used HTE-DLP in the "real-clinic-world". It was assessed the theoretical impact on the frequency of coronary artery disease with the CASSANDRA-REGICOR methodology. Researchers were asked to evaluate HTE-DLP with questionnaire QoE for applications in health.

Results: Use of HTE-DLP meant additional lowering of LDL-C of 20.5%. When experts in vascular risk using HTE-DLP number of high vascular risk patients reaching lipid targets of LDL-C <70 mg/dl increased by 4.4 times. In general practitioners would increase 5.8 times. Use of HTE-DLP reduced direct costs of lipid-lowering medication, 19% less per 1 mg of LDL-C descended. The widespread use in Spain of HTE-DLP would mean in 2020 a decrease in coronary heart disease health costs between 4.7% and 6.4% (between 24 and 32 million Euros savings to the healthcare system). Physicians expressed good agreement with the 1st HTE-DLP recommendation in 86.1% of cases and use was described as comfortable in 85% of cases. Assessing users HTE-DLP by Questionnaire QoE for applications in health was positive (3.89/5).

Conclusion: Using in clinical practice a specific CDSS it is possible to improve the management of dyslipidemia with a decrease in coronary heart disease and lowering healthcare costs.

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