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Development and Validation of Industrial Pharmacy

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DESCRIPTION

The Fourth Industrial Revolution is only getting started in the industrial world (4IR). The way humans utilise technology in this century will be fundamentally altered, having significant ramifications for how individuals live and work. Will 4IR alter pharmaceutical practise, wonders this commentary? The pharmaceutical sector was established during the first three revolutions, giving pharmacists a virtual monopoly over the distribution of medications. Instead, 4IR may develop non-pharmaceutical treatment options for patients and scale back its role in the distribution of pharmaceuticals. The fourth revolution might become less of a chance and more of a threat for the pharmaceutical industry if it remains mired in conventional, linear thinking that thinks the future is an extension of the past.

When reacting to 4IR, the sector is faced with the "innovator's dilemma." Should the pharmaceutical profession alter its existing practises to: (i) perform things more effectively, (ii) try something new, and (iii) discourage competitors? Pharmacy must learn how to interact with AI, robots, IoT, autonomous cars, wearables, nanotechnology, biotechnology, materials engineering, power storage, and quantum computing in order to keep its position in the medical industry. Pharmacists may take over as the game's playmasters in the future if they can grasp the new rules. If not, creative new approaches to supplying patients' pharmaceutical requirements may eventually supplant the practise of pharmacy.

The manufacture of vaccines using biological and pharmaceutical methods is discussed after a brief introduction of the vaccine business as well as the regulatory standards for biologics. Details of vaccine manufacture are explained. They demonstrate that, despite recent initiatives and advancements, it is still difficult to continuously adjust vaccine supply to request "at any time and from any location due to the inherent difficulties of physiological production, which is characterised by tight flow, structural fragility that produce the most value for the money spent on care as the emphasis on care efficiency increases. In the highly technology world of the upcoming decades, care integration and eHealth are viewed to be the most promising answers. The development of pharmacy services has significantly altered the look of community pharmacies. As a result, pharmacy practise researchers are paying more attention to service design and execution, and the introduction of eHealth ideas to pharmacy in creating a demand for new approaches to service design. Additionally, there are still well-known obstacles and difficulties in achieving pharmacy service integration with healthcare systems.

Health systems are searching for creative solutions that maximise the value of care as a result of the increased emphasis on care efficiency. The most promising remedies in the highly technology world of the upcoming decades are thought to be eHealth and care integration. Its face of retail pharmacy has drastically changed as a result of the development of pharmacy services. As a result, service formulation and construction are receiving more attention from academics studying pharmacy practise, and the introduction of eHealth ideas is creating a need for new approaches to service design. Additionally, the integration of pharmacists with health systems continues to face well-known obstacles and difficulties.

A user-centered alternative approach for the design, development, and implementation of health services, particularly eHealth services, is provided in this study as Design Science Research Methodology (DSRM). This substitute, which has its roots in the field of information sciences, has been accepted as a services design technique in a variety of contexts, including the medical profession. Case examples are provided in this article to demonstrate how a DSRM procedure should be carried out in a healthcare context and what approaches to pick for each phase of the process. Finally, the benefits of DSRM over other user-centered service design approaches are discussed in an effort to spark conversation about using DSRM to examine the deployment and sustainability of pharmaceutical services. The major focus is on the creation of a method for producing stable colloidal solutions to extremely small metallic or metallodic particles using electricity. These colloids served as therapeutic agents in a variety of fields, foreshadowing what is now known as nanomedicine even before the name was coined.