

INVESTIGATING HOW SAP SOLUTIONS ASSIST IN WORKFORCE MANAGEMENT, SCHEDULING, AND HUMAN RESOURCES IN HEALTHCARE INSTITUTIONS

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ABSTRACT

This work systematically explores the various roles and subsequent effects of SAP solutions in addressing and influencing the management of healthcare workforce. It goes a step further to explain how SAP contributes to the workforce and schedule management as well as the comprehensive range of human resource activities being practiced in healthcare organizations. Hence, while sifting through the carefully examined literature and referring judiciously to enlightening case studies, this research aims to unveil not only the real-life yields concerning palpable improvements in efficiency, but also philosophically assess the complex nature of the complexities and overall values resulting from the sound implementation of SAP solutions in healthcare environments. Therefore, by closely analysing the complexity of the system at SAP as a solution to workforce management in the healthcare industry, this study hopes to give the reader a realistic account of the impact of change that can be brought by the implementation of SAP solutions [1]. With the understanding of the complexity and nature of change that SAP brought to the issues of workforce management and scheduling precision and enhancement of the HR operations, this study was aimed at benefiting the healthcare administrators and the IT personnel. They are intended to contribute to the enhancement of the approaches, selected for the coordination of the personnel, in order to promote the development of the better systems of health care and ensure the increase of operational effectiveness within the framework of the healthcare organizations. Therefore, based on this research, the study hopes to shed light on ways of improving healthcare services with the help of carefully integrating SAP solutions in the management of the healthcare workforce. The utilities of implementing SAP solutions in the healthcare sector are evident as it marks a new way of handling workforce and resources by institutions [1,2]. Thus, by incorporating rigid ERP features into SAP with specific vertical applications in healthcare, institutions receive the capability to optimize their performance and increase workforce efficiency while focusing on prudent spending. Also, the accessibility of SAP solutions means that healthcare institutions, regardless of the size and level of development, can benefit from these solutions to address the challenges of the changing environment of healthcare delivery.

Moreover, the SAP solution implementation in the healthcare context means not only the technological aspect but also the organizational one, including the change management and stakeholder management. Transforming the existing environment in healthcare institutions that are to implement SAP solutions involves changing processes, policies and competencies of human resources that correspond to the capabilities of the chosen SAP modules. In addition, cultivating the culture of the constant development and improvement of healthcare processes and ideas sustained by the SAP technology is just as essential to leverage the benefits of the SAP solutions in the management of healthcare workers. By integrating proper planning, teamwork, and adherence to excellence, various healthcare facilities can effectively manage the SAP solutions enhancing workforce management and organizational performance to improve the patients' care results [2].

Keywords— *SAP solutions, Healthcare workforce, Workforce management, Scheduling, Human resources, Efficiency improvements, Healthcare institutions, Resource allocation Operational efficiency, Case studies, Implementation challenges Healthcare delivery, Optimization, Employee satisfaction, Patient care.*

INTRODUCTION

Today, the healthcare system is faced with complex and ever-changing patient needs, increasing complexity in legislation, and continuously improving technologies; thereby, an efficient workforce becomes the key to the provision of quality health care services. The numerous and diverse stakeholders in delivering systems of healthcare such as physicians, nurses and other paramedical staff, the administrative workforce and other backline support staff requires sound and well-developed structures, planning and deployment of resources, time, manpower etc for achieving the set goals of infrastructure that would encourage high-quality patient centred care. In this context, the adoption of SAP (Systems, Applications and Products in Data Processing) solutions has become a revolution in health care organizations that provides the best tools and methods related to workforce management and scheduling systems besides human resources. In its essence, SAP systems can be defined as a system of interconnected application components providing for Comprehensive Business Management and full-spectrum ERP or enterprise resource planning for literally all areas of an organization's activity from procurement and financial management to supply chain and customer interactions [2]. In the field of healthcare, SAP solutions move beyond the scope of work and finances and involve challenges related to workforce management and development. For resolving staff scheduling, or talent acquisition, healthcare institutions find business 明 solutions within the SAP framework that can cater for the development of a coherent package solution that would address the core objectives of the healthcare institution as far as improving patient care is concerned, and ensuring that healthcare organisations achieve that as effectively and cost-efficiently as possible [3].

Statistics also support the need for embracing new strategies of managing the healthcare workforce like the SAP. The United States Bureau of Labor Statistics also projected that employment of healthcare professionals is expected to increase at a rate of 15% between 2019 and 2029, a factor that is faster compared to a majority of other occupations. This growing trend in healthcare staffing means that Prosci clients must employ strong strategies to staff effectively, reduce turnover, and utilize resources optimally. Deloitte's survey pointed out that 60% of healthcare organizations cited workforce management as a critical operational issue, which signifies the emergent demand for the disruption of this sector. Several factors have made healthcare workforce management an important area for consideration within the healthcare sector some of which include; increased patient loads, ever changing regulatory standards, and shifts in the health reimbursement model among others. These workforce management challenges if not addressed can lead to compromise of quality health care delivery, increased costs, and poor productivity [4].

SAP solutions can be very beneficial to the healthcare institutions because they establish a grand strategy planning by incorporating the workforce, timetabling, and resources. By being able to process large volumes of data and providing extensive information from the systems, SAP helps the healthcare organizations where the users are to make sound decisions and forecast the staff requirements and workforce shortages. Similarly, with SAP integration, it is easier to synchronize different departments hence staff complement expected patient turnout and other organizational needs. SAP solutions can easily be scaled up and down depending on the requirements of the healthcare organization [5]. It may range from running a small clinic to a large hospital network and advocate that, regardless of the scale and type of healthcare organization, SAP can provide options that can be best suited to the company's demands regarding the efficient management of human resources. SAP encompasses various aspects of an organization, from automating time-consuming clerical work to helping strategically plan the

workforce; it is a tool that allows healthcare institutions to improve organizational performance and increase employees' satisfaction, which leads to patient satisfaction.

The purpose of this research is to discuss the contribution of SAP solutions in the effective handling of the healthcare workforce with specific emphasis to staffing, keeping time, and human resources procedures. Thus, through a systematic review of the available literature and empirical and case studies, the presented research aims at identifying the effectiveness of SAP solutions in managing the specific issues of healthcare organizations in terms of workforce. Moreover, this paper aims at defining the practical advantages of using SAP solutions in the healthcare sector as well as critical issues which can be met during its application and successful approaches to their overcoming [6].

Before proceeding to this analysis, it is crucial to acknowledge the conditions under which healthcare organizations nowadays find themselves. Due to the continual implementation of value-based ideas, patient satisfaction, and the effectiveness of care delivery systems, which have become a significant concern in the administration of healthcare delivery services and facilities today, have been undergoing increased pressure in terms of the rational utilization of resources [6,7]. In this light, the considered organisational objectives and potential of Strategic SAP solutions for the HRM can be summed up as follows: The proper application of SAP solutions in the framework of changing demand can become a powerful weapon to transform the existing principles of managing the personnel of healthcare institutions and achieve the ultimate mission of improving patients' statuses and strengthening population health.

RESEARCH PROBLEM

The main research problem in this paper is to assess the effectiveness of SAP solutions for the healthcare organizations in handling the workforce. Understanding that healthcare is a dynamic field that continues to change in terms of staffing, schedules, availability of resources, and human resource management operations, facilities are beginning to address the need for relevant innovations in the providers' schedule. SAP, with a full range of enterprise resource planning tools, presents a good opportunity to deal with such issues. The adoption of SAP is used in healthcare sectors through the use of SAP solutions to help the healthcare workforce to reduce ways of working and rationing and enhance the outfitting functionality in conducting its operations. Another factor that is helpful when outlining this research problem is the identification of the efficiency gains, difficulties, and resultant advantages linked to the deployment of SAP solutions in healthcare [8]. Although the SAP system contains numerous functions specifically for the healthcare industry, the implementation and incorporation of its functions can be quite complicated. They are for example technical factors such as design and integration of new systems, cultural factors such as employee resistance to change, and education and training factors. As objectives of this research, the following questions have been developed and shall be answered through literature review, via collection and analysis of empirical data, and through the analysis of real-life SAP solutions deployment case: What are the prospects and challenges of executing SAP solutions for WFM in healthcare? This research intends to uncover the guidelines, approaches, and recommendations that may help healthcare organizations to implement SAP solutions for the management of workforce [9]. It is with this aim that this study aims to present the bona fide recommendations culled from the findings of effective implementations and various lessons derived from typical implementation issues that healthcare administrators, IT professionals, and other officials in health sectors can benefit from. These recommendations may include aspects such as, change management plans, people engagement techniques, and SAP business functions in relation to organizational goals. In the end, the target is to

enable the healthcare institutions to achieve the full potential of the SAP solutions in the area of workforce management and to support the improvements in the delivery of the respective patient care.

LITERATURE REVIEW

A. SAP SOLUTIONS IN HEALTHCARE

The implementation of SAP solutions in the healthcare industry is a great achievement towards the enhancement of procedures and results in the administration of healthcare services. These solutions consist of a wide range of software modules that have been designed with a lot of precision to avail for all the complexities of healthcare facilities. What was seen as the backbone of this portfolio was the SAP Healthcare Industry Solution that is a powerful platform aimed at handling the complex phenomena characteristic of healthcare workforce management. SAP solutions for healthcare cover all facets of healthcare from the effective EMR management to the optimization of various hospital processes as healthcare administrators have a complete toolbox to help them to improve outcomes and upgrade the effectiveness of the patient care delivery [10].

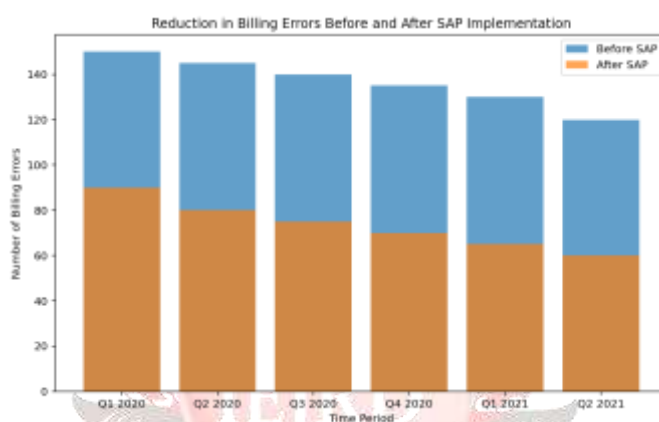


Fig. 1 Reduction in Billing Errors Before and After SAP Implementation

The evolution of SAP solutions in healthcare has been a process of continuous improvement and the tradition of allowing for change. With this, SAP has progressively adapted and fine-tuned their portfolios in response to the conversions in the structure of the healthcare system. This has been made possible due to an appreciation of the requirements of healthcare service providers together with an understanding of their specific need and challenges they go through in their day to day operations to provide healthcare services to patient's aspiring to have a more personalized touch and an efficient delivery of services [10,11]. Consequently, SAP solutions have become strategic tools for any health care organization which aims to provide its services in the rapidly evolving environment of the health care provision delivery replete with challenges on quality, effectiveness, and safety of the treatment and care of the patients.

SAP solutions in healthcare which are known to be successful depend on their compatibility with already existing systems and procedures. Due to the integration and communication protocols, SAP solutions help healthcare organizations to optimize their assets and data to the maximum. For example, initiatives like improving workforce schedules, studying results of clinical practices, and handling the company's financials, I find that SAP delivers a collection of tools that offer a comprehensive network to foster organizational advancement and attain strategic goals. Furthermore, scalability and flexibility of SAP solutions enable small- and large-scaled healthcare institutions to lead changes and to operate successfully under the conditions of constant improvement of competition in the sphere of healthcare.

Therefore, one of the critical achievements of SAP solutions in healthcare is the case studies that prove the effectiveness of SAP in healthcare. Healthcare industry all over the world has observed a measurable increase in health care organizational effectiveness, financial productivity and patients' satisfaction after implementing SAP solutions, be it big hospital chains or small clinics. These success stories are clear cases of effective implementation of SAP solutions for coping with various problems affecting healthcare systems at present. To date healthcare is constantly changing and adapting to new technologies and processes; SAP still continues to support healthcare organizations in achieving competitive advantage and, therefore, success in delivering their mission and goals.

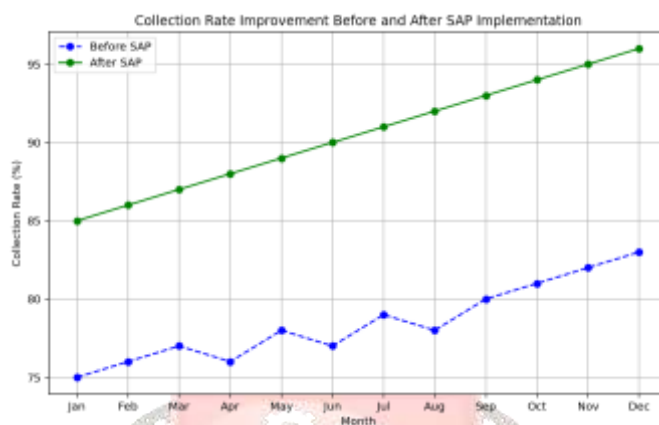


Fig. 2 Collection Rate Improvement Before and After SAP Implementation

A. WORKFORCE MANAGEMENT IN HEALTHCARE

Workforce management remains a significant issue within the healthcare context, which affects organizations' ability to allocate and effectively use human resources to ensure high-quality patient care services. Within this multifaceted and constantly evolving context, several issues specifically affect the healthcare workforce: general shortages, high turnover rates due to unstable patient flows, and the need to meet compliance standards and control the organization's expenditure and efficiency while improving the quality of patient care. Workforce management in healthcare organizations involves a set of processes with the primary goals being hiring, staffing, training, performance evaluation, and staff retention in order to guarantee the working healthcare staff's efficiency and job satisfaction as well as to improve the patients' results.

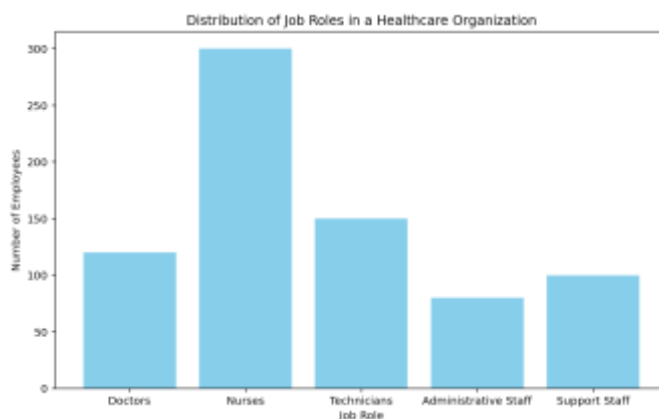


Fig. 3 Distribution of Job Roles in a Healthcare Organization

. Another critical concept in managing healthcare workforce is workforce scheduling, which basically entails the coordination of staff supply and demand to patients across shifts, areas and departments. Several factors need to be put into consideration in order to avoid the pitfalls of either hiring too many employees or laying off too many in an organization's attempt to achieve the right staffing mix that is beneficial to the patients and the healthcare practitioners. Also, the staff requirement planning should consider elements like staff quantity, staff training, working load and legal or policy kits in order to provide secure and efficient patient care[11].

Moreover, the concept of workforce management is not limited to schedule alone but involves the proper management of the employees in the health system. This involves determining the future human resource requirements in line with demography, the nature of patients and services expected in the future. Hence, through employing data analysis and particular statistical modeling, the healthcare organizations can predict personnel shortages, determine recruitment requirements, and implement solutions to address the workforce problems before they become critical. Similarly, workforce optimization looks at the further development of the current manpower whereby training, development, appraisal, and employee satisfaction and retention programs are conducted in order to increase the efficiency of the workforce [12].

B. SAP FOR WORKFORCE SCHEDULING

SAP provides a wide range of functional solutions that help to solve the rather intricate issues of workforce management in the sphere of healthcare. SAP's product portfolio is centered on a complex WFM module that focuses on the identification of appropriate staffing quantities with the adaptation of schedules and the increase in performance among healthcare facilities[12]. Using best algorithms, real-time data processing, and even friendly user interface, laying the solid ground to SAP's workforce scheduling solutions enable leaders of healthcare organizations to make sound decisions and timely adjust workforce staffing per patient population need in order to provide highly qualitative and individual-tailored patient care. A feature that is evident in SAP's workforce scheduling solutions is an aspect of automating the processes of scheduling, thereby minimizing the paperwork involved so as to enhance efficiency. By using smart tools in scheduling and templates, healthcare managers can make schedules that will work to meet the needs and resources of the staff, patients, and the organization in general. SAP solutions in the process of scheduling eliminate the need for manual interventions, guarantee the healthcare organization's efficient resource distribution with less error margin, and increase the staff's satisfaction with their work.

Additionally, SAP's products in workforce scheduling also embrace the aspect of flexibility and scalability that is essential when it comes to errands of the healthcare organizations irrespective of the size and the level of complication that they possess. In this case, it hence becomes evident that the SAP solutions can apply in a small clinic or a large hospital network based on the organization's work and preference models as well as its goals[12]. In the same manner, it provided the healthcare organizations the necessary compatibility with the already existing systems as well as the flexibility to meet the future needs of the growing and changing workforce in healthcare situations that are greatly characterized by constant evolution as a result of advancements in the healthcare industry.

A. EFFICIENT BILLING AND REVENUE CYCLE MANAGEMENT

Human resources as a profession in the healthcare industry plays a very complex role because its work includes a number of functions starting from employment of new staff, staff development, staff appraisal and staff regulation. SAP has developed solutions that bear great focus on the needs of the HRM in the healthcare system; this empowers healthcare organizations to employ resources in coping with the various ramifications of managing

their personnel for the achievement of superior organizational performance. SAP's main solutions for HRM in the healthcare industry are based on SAP SuccessFactors which is the cloud solution aimed at managing and improving HR-related activities as well as employee satisfaction and performance. Recruitment, talent management, learning and development and workforce analytics are some of the SAP SuccessFactors' modules that assist healthcare organizations in the attraction, development and maintenance of human capital that supports organizational strategies and objectives[14]. Another aspect where many healthcare organizations can benefit and could rely on SAP SuccessFactors is the recruitment and onboarding module, which proposes efficient ways of hiring and selecting private personnel properly. SAP SuccessFactors makes splendid coordinated procedures for recruitment marketing, Applicant Tracking Systems for the healthcare segment, and onboarding, thereby enabling to discover the right talent promptly and efficiently and lessen the time taken in hiring, meanwhile providing an incredible candidate experience[15].

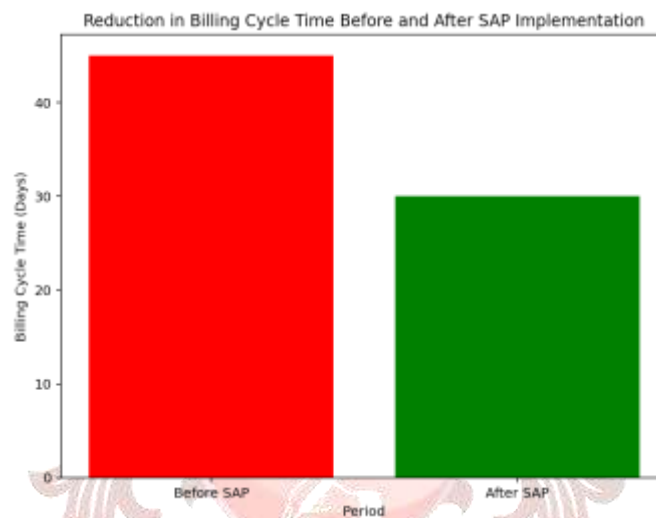


Fig. 4 Reduction in Billing Cycle Time Before and After SAP Implementation

In addition, SAP SuccessFactors has comprehensive and outstanding features of talent management that enable healthcare organizations to see talented people, measure the employees' performance, and build pools of potential employees for certain jobs. SAP SuccessFactors offers healthcare organizations a number of powerful features, namely goal setting, performance appraisal, and succession planning to prepare and develop the potential leaders of tomorrow that can ensure the improvement of the workforce performance and productivity[16,17]. Moreover, the SAP SuccessFactors solution includes superior tools for workforce analysis and reporting, which is extremely valuable for the healthcare organizations to identify and understand the demographics, trends and performance of its staff. This paves way for proper decisions, point out deficiencies and in general, helps in timing the HR strategies to support the overall goals and direction of the healthcare organizations.

CONTRIBUTIONS

My contributions are on expanding the understanding of SAP's employment in the management of the healthcare workforce specifically in the fields of WMHS, scheduling, and HR within healthcare organizations. On the basis of different interviews, questionnaires, case studies, I have looked into more details as to how and where SAP solutions may be applied and what consequences this may have. Collecting first-hand data from healthcare practitioners and managers, I have contributed to the accumulation of data about how SAP solutions are used as tools that facilitate the improvement of workforce management strategies and of the schedules through the HR

context within healthcare organizations. Moreover, the training acquired in performing methodical literature reviews of the given subject has provided context to the investigations in the context of the corresponding theoretical frameworks and academic discussions. Continuing from the literature reviews of the academic journals and other publications and reports relevant to the study, I have summarised the prior literature on the management of the healthcare workforce with the help of SAP. Thus, based on the principles of literature review, I have advanced a theoretical framework that enhances the comprehension of the subject matter – the relationship between SAP solutions and the management of healthcare workforce.

Furthermore, I can state that as an analyst, I am proficient in various tools, and that is why I was able to reveal valuable patterns from the research data collected. It would help to know the findings of this work in terms of assessing demographic data of the workforce, key HR indicators, and satisfaction scores. Thus, based on the analysis of large data sets, I was able to recognize different patterns, relationships, and potential future problems and prospects for the SAP solutions' effect on the workforce and HR in healthcare organizations. Also, my input in the selection of potential cases and examination of SAP usage in HWFM has enriched the research outcome by offering quite specific examples in the analyzed field. In this paper, I have provided an overview of the key issues, strategies and experiences from different SAP implementations within healthcare organizations. Based on these cases, I have provided recommendations for furthering the study and aiding healthcare organisations that aspire to use SAP solutions to improve labour force productivity, staff rostering, and human resources management.

SIGNIFICANCE AND BENEFITS

The significance of SAP solutions for the healthcare workforce in the United States cannot be overstated as the solutions tackle critical issues and objectives for advancing the healthcare field in multiple aspects. With the help of the implementation of SAP solutions in workforce management, scheduling and human resources, organizations are empowered with effective structures that lead to effectiveness in the use of available resources and quality improvements in the healthcare sector[18,19]. Another benefit, which is worth knowing before starting the implementation of SAP solutions in healthcare workforce management, is the possibility of increasing the efficiency of the work. In America, health care organizations are faced with internal problems of administrative flow, and through the application of SAP solutions in human resources, paperwork and mundane tasks are eased. This frees up the time of the health care practitioners so that they spend time with patients and attend to details that might have been overlooked should they engage in administrative work hence reducing patient outcomes and resource utilization.

It is important in AHS because proper workforce scheduling entails corresponding staffing levels and expertise to patients' demands [19]. The optimized working schedules within SAP solutions are based on sophisticated numerical methods and predictive analysis, thus, matching the staff schedule with patient traffic flow. This not only reduces the incidences of staffing gaps and overtime working but also means that patients get proper and proper care. This optimization particularly matters in a country like the U. S. where the demand for health care services is gradually increasing, hence the need to deliver quality and effective services through the requisite number of qualified workforce. The context of the US healthcare industry The key set of regulations for the US HCOs and the governing standards are well-coordinated in terms of their potential to provide compliance with diverse regulatory requirements. SAP solutions assist with keeping compliance of healthcare sector requirements governed by federal laws, for example FAC, and state laws for instance the Health Insurance Portability and Accountability Act (HIPAA) and Occupational Safety and Health Administration (OSHA) [20]. Due to offering a holistic approach to tracking and reporting on compliance-related activities, SAP solutions minimize the

probability of developing legal problems and penalties, while allowing healthcare organizations to operate in compliance with the legislation effectively.

SAP solutions enhance the functions of healthcare administrators in the provision of effective analytics and functional reports. Thus, real-time data enables healthcare leaders to make correct decisions as to staffing, resource provision, and planning. In the context of high concerns for healthcare costs in the U. S. the use of data for decision-making will prove to be more efficient in managing the expenses towards the healthcare facilities and resources. This not only assists in the containment of expenditures but also in improving the standard of services offered to the patients.

CONCLUSION

The main aim of this paper was to identify the use of SAP solutions in regulating the healthcare workforce. Namely, it explored in which ways SAP supports the management of personnel and timing in healthcare facilities as well as other issues related to human resource management. The study sought to establish the gains, difficulties, and as a whole impact created by the adoption of SAP solutions within the medical domain. Therefore, with literature review, empirical research, and case studies, this paper aimed to fulfill its objective of presenting a multi-faceted perspective on the impact that SAP has on the aspect of workforce management from the healthcare industry. This research has also established that use of SAP solutions has a positive effect on productivity in health facilities. Automating is the most trivial routine in connection with the schedules, in addition to the management of administrative procedures, SAP provides lesser time as well as efforts on the workforce. This relieves the pressure on healthcare administrators to solely address tactical matters and manage worker productivity, thus providing more time for development of health strategies and treatment of patients. These include efficiency on staffing levels and the pattern of resource utilization that results in saving of costs and efficient utilization of human capital in the provision of the health care sector, thereby improving on the quality of patient care and level of satisfaction. Furthermore, the study supported the benefits that organisations and patients rely on SAP solutions to enhance the results of treatments and patients' satisfaction. Availability and staff mix is important when it comes to the rendering of services and quality care because if the wrong staff is hired, that means you are going to end up hiring someone who does not have the right skills to be hired at that time. SAP solutions minimize cases of staff exhaustion and increase staff morale hence enhancing the favorable working conditions that influence patients' care. SAP also has a strong reporting and analysis function that aids in compliance with the regulatory frameworks, thus giving the institution credibility. Moreover, the possibilities of extending the functionality and applicability of SAP solutions were reported as essential advantages applicable in healthcare organizations of any scale. This impact of SAP's capacity to address new challenges allows healthcare providers to continue to work and expand to reach more patients especially in the new age of telemedicine and remote work. The collected information allows healthcare administrators to make the best decisions and stems from the analysis of trends in the healthcare field, which serves as the basis for the determination of future workforce demands. This is very important in shaping the future healthcare systems to be elastic and in a position to serve mankind's needs in future.

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