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Research Article

Evaluating the Efficacy of Using Computerized Shifting Information Systems (NCSIS) in organizations – Towards Effective and Computer Technology-Based Administration

BAROS D.K.
Pontificia Universidad Católica del Perú, Lima 32, San Miguel, Lima, Peru
E-mail: Baros@gmail.com
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ABSTRACT
Shifts involve a change in duty performance from one member to another, and they reflect a routine and essential process. Traditionally, the preparation of shifts has relied on paper records. However, these records exhibit some drawbacks. For example, they are inefficient and also consume a lot of time. In the wake of technological evolution, developments in the healthcare industry have seen shifting information systems gain growing application. This study seeks to evaluate the efficacy and effectiveness of employing nursing shift information systems, targeting the surgical wards in the workplace. Specific groups that the study targets include associate unit managers, unit managers, practitioners, doctors such as student doctors, interns, resident doctors, and senior consultants, and preoperative, surgical, and operating room. Also, the study targets allied health professionals that include dietitians, occupational therapists, pharmacists, physiotherapists, podiatrists, and speech pathologists. Besides, groups that might benefit from the study include porters, volunteers, ward clerks, clinicians, and patient service assistants.
Keywords: Information systems, allied health professionals that include dietitians, occupational therapists, pharmacists, physiotherapists, podiatrists.

INTRODUCTION
The study's specific objective is to sensitize staff members on surgical wards regarding the procedure through which shifting might be simplified, as well as the performance of computerized shifting information system (NCSIS). It is also notable that this study takes place in the workplace boardroom and it is deemed important in various ways. For instance, the study might allow the organization to increase its administrative efficiency based on the findings that might be presented about the central subject, especially on surgical wards. For example, administrative efficiency might be predicted by CNSIS-related beneficial effects such as reductions in cases of incomplete output and intake event occurrence and reductions in the time needed for shifting.

As mentioned earlier, work shifts characterize the management processes that touch on surgical ward operations (Bowles, Dykes and Demiris, 2015; Salameh, Eddy and Batran et al., 2019). The implication is that there is a transfer of information from one person to another. This shifting seeks to ensure that patients receive continuous care. From the literature, the process also seeks to allow incoming persons to make priorities based on the information gained from the staff members from whom they would be taking over (Chen, 2015; Sharmil, Girija and Geetha, 2019). In situations where these transfers of information are incomplete or incorrect, dangers include misunderstanding or missing information and possibilities of sentinel events. With paper-based records mostly associated with these dangers, the need to embrace CNSIS could not be overstated.

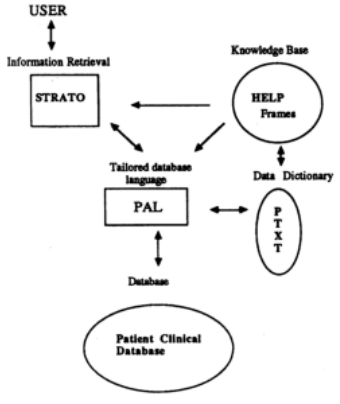

Figure 1: An illustration of nursing and computerized information system functionality

Beneficial effects of CNSIS have been documented. For example, CNSIS improves documentation because it paves the way for uniform, easy, and systematic data recording, as well as the ability to maintain patient histories that are easily accessible (Cheng, Chan, Chen & Guo, 2019; Staggers, Elias, Makar and Alexander, 2018). Also, CNSIS reduces the need for paperwork that remains redundant. Also, CNSIS enhances staff management regarding scheduling shifts, maintaining the team, and managing their workload (Cho, Kim, Choi & Staggers, 2016). It also allows for real-time assessment of the staff members' requirements as deemed appropriate.

Similarly, CNSIS fosters decision-making because its active systems suggest relevant patient diagnosis for incoming while passive systems ensure that these formats and organize the resultant data appropriately and in real-time. Furthermore, NCSIS enhances the synchronization of shifts, whereby activities on surgical wards are integrated with the rest of the clinical systems. The tertiary effect is that there is likely to be a smooth flow of information from one shift to another (Donelle, Sidani and Regan, 2019).

METHODOLOGY

From the insights above, CNSIS is associated with correct, integrated, timely, and complete information that minimizes operational errors. Also, the reduction in errors reduces patients' length of stay in hospital, as sentinel events such as hospital acquired infections are avoided. It is also notable that previous studies affirm that when Kardex written shifts are used, they are disadvantageous because data that is relevant is about 84.6 percent, suggesting that the rest tends to be redundant. Also, the written shifts are time-consuming and chances of transferring patient data incorrectly stand at about 30 percent. This secondary study relied on sources such as e-books, journals, and government reports to examine and report issues regarding the selected subject under investigation.

RESULTS AND DISCUSSION

Findings demonstrated that in situations where the shifts are taped, time is saved, but they do not allow for face-to-face communication. As such, they do not provide room for feedback provision among team members, implying that they could attract errors among staff members. Also, such shifts consume a lot of time. The eventuality is that computerized systems emerge as solutions because they are better placed to reduce errors, especially because they integrate high-risk events with the past history of patients (Hsiao and Chen, 2016).

As documented above, wireless and computerized technologies emerge as promising solutions to conventional approaches to shifting. This observation is informed by the affirmation that these technologies improve the safety of patients and health care outcomes significantly, besides respecting patients' subjective feelings. Particularly, the merits are attributed to the technologies enhanced information clarity while staff members take over duties from their colleagues. Furthermore, the technologies, CNSIS in this case, outperform classic approaches in such a way that they reveal possible missing personnel duties that are deemed relevant, yet they might have been omitted, had paper-based records been embraced (Ifinedo, 2018).

Several reasons inform the need for the adoption and implementation of CNSIS on surgical wards. For instance, the information system would save payments that the hospital management makes for overtime duties, as the system can identify missing duties expected to be performed by members of the team, outperforming paper-based records that are prone to this drawback. From case analysis, statistical outcomes suggest that NCSIS implementation saves about 610,571 dollars in the U.S. annually (Lee, Sun, Kou & Yeh 2017; Loh, McHugh and Mohile et al., 2018). The information system also saves about 30 percent of staff's time, pointing to its efficacy and need for implementation on surgical wards. Apart from cost and time-related benefits, CNSIS, a state of shift information digitization, would allow the hospital organization to engage in routine research and quality monitoring because it provides a platform for database study in the form of chart records, eventually informing areas that require improvement in the affected surgical areas.

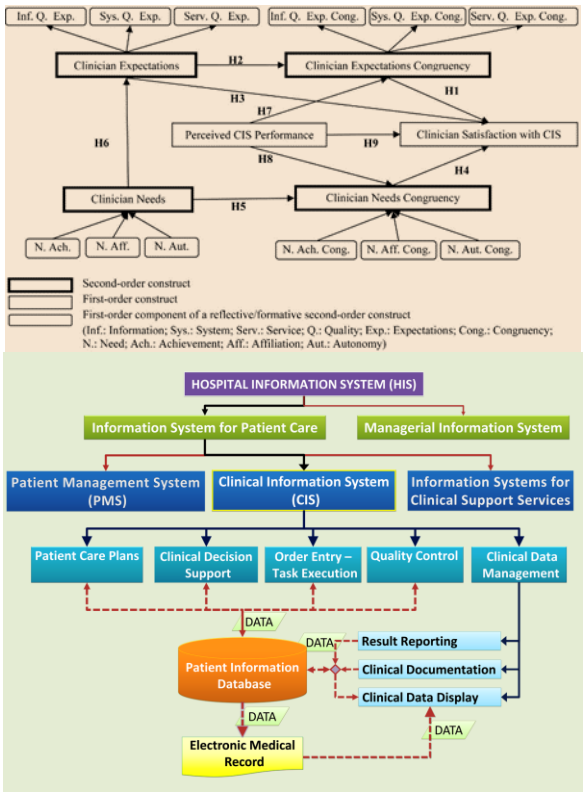

Figure 2 (a) and (b): An illustration of NCSIS functionality in organizations

Despite the promising nature of the information system, however, a few issues are worth considering. For instance, the newness of the system on surgical wards implies that it might be prone to resistance to change. Also, there might be possible computer break-downs that could compromise shifting procedures on surgical wards, besides demanding backed manual hand drawings for patients' wounds – to enable incoming personnel to understand about when and how to do any needed dressing changes. To counter these issues, the healthcare institution needs to put power and data back-up systems in place. Also, there is a need for camera system integration to record patients' wounds.

CONCLUSION

In conclusion, there is a need for surgical words to implement CNSIS systems, having confirmed the technology's efficacy. Particularly, this information system lends several benefits to healthcare stakeholders. From the perspective of patients, the information system reduces their length of hospital stay, translating into a further beneficial effect of reduced health care expenditure at the individual and family levels. Also, with sentinel events minimized, the information system enhances the patients' overall satisfaction. The information system is also beneficial to staff members, pointing to the importance of its implementation. For this group of stakeholders, benefits include time-saving, reduction in confusion, reduced incidents of procedural errors, and the ability to identify previously missing duties, an attribute that fosters service quality and completeness. Lastly, for administrators, CNSIS implementation is poised to yield benefits in terms of annual cost-saving (by saving the overtime pay) and improved firm reputation due to reductions in service errors on surgical wards, as well as enhanced patient satisfaction.

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