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SHORT COMMUNICATION

# Improving Patient Safety by Utilizing Intelligence Informatics of Nursing Healthcare System

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## Introduction

Based on Changhua Christian Hospital dataset, it shows the completeness of the chart recordings of the nursing end reached 79%; it might greatly affect clinical patient care. In accordance with global shortage of nursing manpower and contemporary technology, it is essential to formulate a health care system that can cater to both nursing peroneal as well as improving first line quality of care.

## Purpose

Improvement of medication safety and target zero Improvement of satisfactory rate, with THIS up to 87%.

## Methods

Since year of 2011, the nursing committee collecting on site datasets. Stage 1 started from 2011 and ended at 2014, setting up mobilized nursing task force. Stage 2 started at 2015 and ended at 2019, completing smart way and auto omic transmission system.

- We will have AP hotspot in every room, mobile nursing work-station, and automatic biophysiological transmission system; it will depend on nursing decision making system the obligation of the nursing care. Nursing committee will hold regular conferences on the monthly basis, in an attempt to improve systemic problems. Until 2020, our hospital has extended this system to seven of our branch hospital, as well as been commercialized to four outreached hospitals in Taiwan.
- All of the sub-systems could be connected on another, apart from the nursing system. With the help of evidence- base- medicine and auxiliary decision-making systems in the year of 2014, we were able to input patient basic data real time, giving in charge personnel timely alert signals and autonomic reporting
- We will validate the program by choosing on ward to test if it is feasible or not; if the result is satisfactory, the policy will be announced and put into effect throughout the hospital.
- The nursing department will randomly review the nursing records and medical records every month, ensuring the quality of medical records.

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## Results

The quality of our nursing chart recording has persistently made progress the target has reached 90% from year 2018 to 2020.

Improving nursing personnel retention rate to 99.36% in the year of 2020 With the honor of SNQ certification in the year of 2019 HIMSS 6 accreditation in the year of 2020.

- This has saved money up to 4,638,448 NTD in terms of paper based documentation, in comparison to paper based 1,162,315 NTD and space expenditure 4,800,000 NT of 24 ping; nursing staff can saved up to 40 to 50 minutes of their shift during the workload.
- The project shows completeness of nursing data recordings increased from 79.0% of 2014 to 94.0% of 2019. Including reduction of bed compression during the hospitalization from 0.6%to 0.2%, the extravasation of the chemotherapy from 0.49% to 0.02, patient confined implementation during admission from 1.2 to 0.6 /per 100 persons, the nursing intelligent healthcare system: 5.25 out of 7 on average of every nursing staff in the year of 2020.

## Discussion

Nursing case managers, with the help of BI automatic analytic system, are able to display occurrences of compression/rate in CLOUD, transforming relevant data into quality care system to form diagrams.

Our program incorporate evidence base medicine as well as nursing hot words to make clinical jobs more “intelligent” easy to understand and used, thus more acceptable to users. With the help of AI, this program can help to reduce workload of the first line nursing staff. This study is limited to analyzing the effectiveness of nursing records and information-based work related to drug administration for nursing staff. Unexplored and cascading of information flows across teams for effectiveness analysis, it is hoped that in the future, the sharing of cross-professional information will be improved, the workload of nursing staff will be reduced, and the continuity of patient care will be improved.

## Conclusion

Delivering electronic sheets, or screen-based information to the patients and family members. This plan

will also serve an important mechanism for nursing staff during the hand-over shifts, as well as providing evidence of the satisfactory rate values in real time. Full time engineers and senior nursing staff to effectively implementing the program/policy is also of paramount of importance; the smoothness of internet connection will alter the willingness and satisfaction of users. Medicine is an ever -changing art and science and it requires contemporary and state of art intelligent system to assist first line medical staff, improving work efficacy and patient safety issues. The quality of nursing records is currently checked by hand, data audit consistency requires regular consensus meetings for auditors to ensure the correctness of the data; Responding to the Impact of Nursing Emerging Infectious Disease Control Issues, many information flows and equipment require additional workflows, it will affect the objectivity of future data collection and comparison. Therefore, the hardware equipment and professionals need great support from top supervisors of Changhua Christian Hospital. Until 2020, our hospital has extended this system to seven of our branch hospitals, as well as been commercialized to four outreached hospitals in Taiwan [1-7].

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