Nursing and its Importance in Future

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Introduction

Nursing can be characterized as an art and as well as science a heart and mind. At its heart lies a basic respect for human dignity and patient's needs. It is supported by mind, in a practice of precise and rigorous core learning. And because of the vast range of specialization and complex nature of skills in the nursing profession, each nurse has specific strengths, passions and expertise. However, in a field as varied as nursing, there is no standard answer.
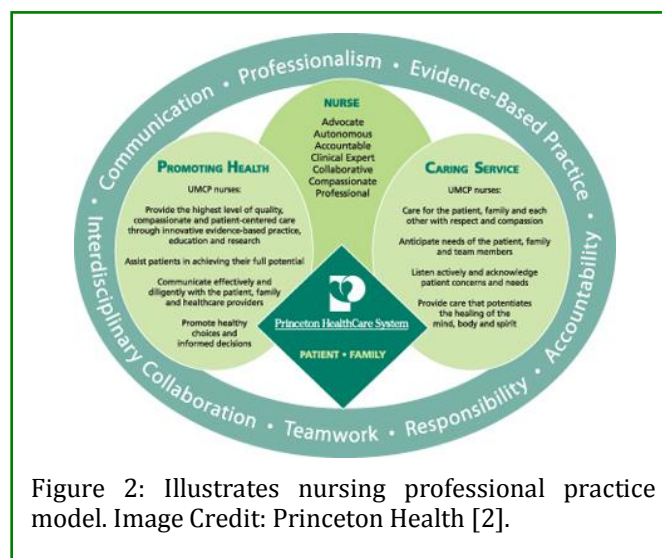

Figure 2: Illustrates nursing professional practice model. Image Credit: Princeton Health [2].

Responsibilities of a nurse can range from making critical handling decisions to providing inoculations. The key unifying characteristic in every role is the skill and drive that it takes to be a nurse maintaining highest standards of ethical and moral values. Through long term monitoring of patients behavior and knowledge based proficiency, nurses are best placed to take an all-inclusive view of a patient's comfort [1] (Figure 1&2).

Extra Dose of Flu Vaccination may Reduce Hospital Visits for Nursing Home Residents

A large and randomized clinical trial was tested whether a flu vaccine with four times the antigen of a standard vaccine might decrease the risk of hospitalization among persons especially vulnerable and risk seniors. The

Figure 1: Illustrates nursing a patient with care and comfort. Image Credit: Princeton Health [2].

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investigation report compared hospitalization rates among more than 38, 000 occupants of 823 nursing homes in 38 states during the year 2013-2014 flu season based on Medicare claims data. Almost half of the homes were administered extra dose vaccine whereas other 414 provided a standard dose. In conclusion, the hospitalization rate for respiratory illnesses between extra dose patients was 3.4 percent compared to 3.8 percent among normal dose patients over six months after vaccination. Statistical investigation report analysis revealed that the comparative risk of hospitalization for respiratory illness was 12.7 percent lower for the extra dose group Furthermore, Gravenstein and team members found that the rate of hospitalization for any reason, respiratory or otherwise was considerably lower in the extra dose group. For every 69 people acquired versus the normal dose vaccine, one more person stayed out of the hospital during flu season. "The investigation report and study should provide nursing leadership with useful information to consider as they plan for future flu seasons" was said by Gravenstein chief author of the study [3,4](Figure 3).
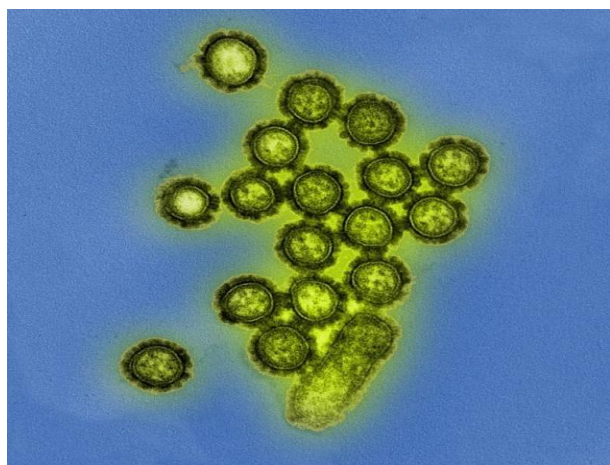

Figure 3: Illustrates Extra dose vaccines were able to help nursing home patients stay out of the hospital more often than normal dose vaccines, even in a year when the H1N1 flu, which was not believed to be a major problem for seniors. Image Credit: National Institute of Allergy and Infectious Diseases [4].

Nursing Reports may Help to Indicate ICU Patients Will Survive

Hospitals usually use severity of illness scores to anticipate the 30 day survival of Intensive Care Unit (ICU) patients. These reports include lab results, vital signs, physiological and demographic features collected within 24 hours of admissions. Doctors and experts used large publicly available Intensive Care Unit (ICU) database, Medical Information Mart for Intensive Care III that have patient information between 2001 and 2012. After some inclusion and exclusion measure were examined; the dataset used in the investigation analysis included information about more than 27,000 patients as well as nursing report. Then experts applied an open source sentiment analysis algorithm to extract adjectives to establish whether it is a positive, negative or neutral statement. A multiple logistic regression method was then fit to the data to represent a relationship between the measured sentiment and 30 day mortality while controlling for gender type of ICU and simplified acute physiology score. The investigation sentiment analysis furnished significant noticeable improvement for anticipate 30 day mortality in multiple logistic regression method for group of patients. There was also a clear variance between the patients with the most positive messages who experienced maximum survival rates and the patients with the most negative messages who experienced the minimum survival rates. "Mortality is not only result that nursing report could potentially anticipate; they can also be used to anticipate readmission or recovery from infection while in ICU" was said by Dubin [5].

Robot Nurse

Dr. De Momi with an international team trained a robot to imitate general and natural human actions. De Momi's work signifies that humans and robots can effectively coordinate their actions during high-stakes events such as surgeries. With time this would lead to significant advancements in safety during surgeries the reason because unlike humans, robots do not tire and can complete an endless series of precise activities. The intention is not to eliminate human expertise from operative room but to utilize robots particular skills and benefits. To conduct experiments of De Momi [6] and their team has done numerous reaching motions, in a way similar to handling instruments to a surgeon. These camera captures were input into the neural network of the robotic arm which was critical to controlling movements. Next a human operator leads the robotic arm in mimicking the reaching motions that the human subject had initially carried out. Although, there was not perfect overlay between the robotic and human actions, they were predominantly similar. Finally, various humans observed as the robotic arm made multiple motions. These spectators demonstrated, even if the activities of the robotic arms were "biologically inspired" which would signify that their neural networks had effectively learned to mimic human behavior.

"As a roboticist, this method will definitely change the work market, but they won't steal job opportunities. They will only allow decreasing workload and accomplishing better performances in multiple tasks from medicine to industrial applications" was explained by De Momi [6,7] (Figure 4).

Figure 4: Illustrates human like and non-human like trajectories were performed in a random order (10 human like and 10 non-human like) Image Credit: Courtesy of Dr. Elena De Momi, Politecnico di Milano [6,7].

Hospital to Introduce Remote Robots in Intensive Care Unit (ICU)

Physicians whose specialization is in the care of critically ill patients especially in the field of neurosurgery department at University of California Los Angeles (UCLA) are using RP-6 to provide additional monitoring from their homes and offices of Intensive Care Unit (ICU) can reduce mortality, morbidity, length of stay and cost of care. There is nation shortage of intensivists. There are fewer than 6,000 practicing intensivists in United States. As a result, only about 37 percent of ICU patients receive intensivist care, still having trained intensivist in the ICU results in better conclusion and decreased length of stay in the ICU and hospital. These experts are well known with complications that may occur and as a result better able to minimize errors. University of California Los Angeles (UCLA) is the first hospital to analyze the RP-6 robot in the ICU, although more than dozen other institutions are using robots to provide remote expertise in areas such as emergency rooms and patient wards. University of California Los Angeles (UCLA) ranks one of the best Medical Center hospitals according to U.S. News & World Report survey of 2,550 board certified physicians

from all over the country. "Patients like a lot. It was very surprising that how much patients enjoy remote video interactions via the robot" was confirmed by Dr. Louis Kavoussi [8] (Figure 5).

Figure 5: Illustrates Patient Timothy Copeland interacts with Dr. Neil Martin, professor and Chief of the Division of Neurosurgery at UCLA Medical Center, via RP-6 mobile robot, manufactured by In Touch Health Inc. Image Credit: Reed Hutchinson/UCLA Medical Center [8].

Personalized App may Improve Patient's Choice of Nursing

Most of patients and their families rely on the five star ranking system devised by CMS and promoted. The rankings are computed according to a fixed subset of quality measures in which each measure given a fixed significant importance weight. This five-star ranking, as per Mukamel is a "one size fits all patients" measure that does not indicate individual patient preferences and needs. In this specific study, patients used an iPad-based application, developed by Mukamel and the research team. The application is called Nursing Home Compare Plus, it enables patients to rank the importance of each performance measure according to their personal medical preferences and needs. "Patients medical preferences and needs may vary. Instead of looking for the best provider along all measures, patients should be considering for the best provider for them. As a result, allowing patients to personalize the composite measures to improve their choices" was told by Mukamel [9] (Figure 6&7).
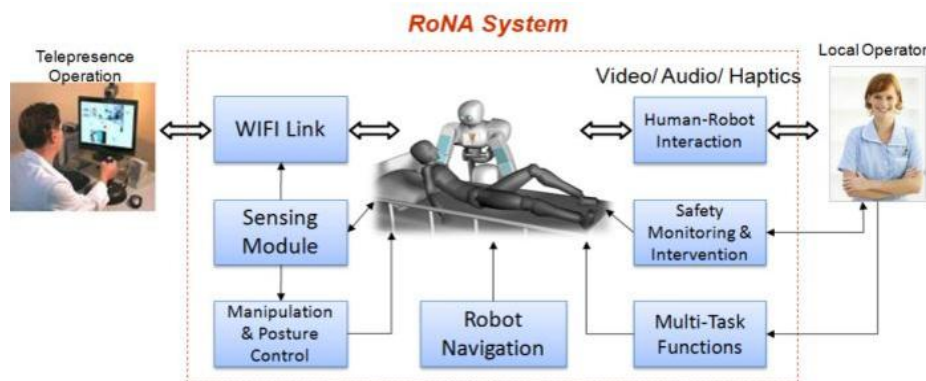
Figure 6: Illustrates Block diagram of a system framework for telepresence based control and direct control of RoNA [10].

Figure 7: Robots in nursing care: With the assistance of the robot caregiver Care-O-bot (Fraunhofer IPA) the user transfers the measurement results. Image Credit: Fraunhofer IPA [11].

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