

TZU CHI NURSING CARE

*With the Compassion of Bodhisattvas,
Where Ever Sufferings Are, We Are.*



Humanized Intelligent Nursing Care



Medical Research



DNA



By Wang Shu-Chen, Vice Director of the Department of Nursing, Hualien Tzu Chi Hospital

Recent discussions of information or technology always include the metaverse. Since the original meaning of meta is “beyond”, the term connotes a new era of technology characterized by linkage of realities through cloud-based and virtual technologies or an aspiration to replace or transcend reality. What are the potential benefits of the Internet, the virtual world, information technology, artificial intelligence, smart health care, and big data for patient-centered clinical nursing care with a human touch. As nursing practitioners, should we wholeheartedly embrace these technologies and champion the rapid development of smart nursing or should we rather hold on to traditional methods as deemed appropriate? What is the proper course of action?

In this era of ubiquitous smartphone and Internet use and reliance on smartphones for a sense of security, this issue of the Tzu Chi Nursing Journal will explore how nursing personnel of Tzu Chi hospitals utilize digital technologies and digital transformation of tasks in their lives and at work. This discussion also covers perceived benefits, worries, and future expectations.

Basic Statistics

Gender	Number of People	%
Female	1,033	94.5
Male	60	5.5
Total	1,093	100.0
Age	Number of People	%
under 20	12	1.1
21~25	316	28.9
26~30	213	19.5
31~35	128	11.7
36~40	144	13.2
above 40	280	25.6
Total	1,093	100.0
Years worked in the hospital	Number of People	%
under 1	122	11.2
1.1~2	130	11.9
2.1~3	96	8.8
3.1~5	164	15.0
above 5	581	53.1
Total	1,093	100.0

AI Products and Tools Have Become Indispensable in Our Lives

A total of 1,093 valid questionnaires have been collected for this issue. First, nursing practitioners were asked what AI-related technologies, apps, or websites they use in their daily lives. All 11 options except transcription software were selected by more than 20% of respondents. Google is ranked first with 97.4%, indicating almost universal use, followed by map search apps (75%), and translation software (68.3%). e-payment (52.1%), social media (51.7%), and search engines (49.9%) are ranked fourth, fifth, and sixth, followed by fingerprint recognition (43.2%), Uber (32.6%), Siri (32.2%), and smart home (23.8%). It can be safely assumed that the demand for e-payment and food delivery services has increased significantly during the pandemic since these options decrease the need for direct contact with other humans or objects.

Job Title	Number of People	%
Registered nurse	836	76.5
Deputy head nurse	48	4.4
Head nurse	51	4.7
Supervisor and above	20	1.8
Case manager / functional unit	47	4.3
Nurse Practitioner / senior RN	91	8.3
Total	1,093	100.0
Department	Number of People	%
Internal Medicine	187	17.1
Surgery	152	13.9
Pediatrics	35	3.2
Obstetrics & Gynecology	48	4.4
Intensive Care & ER	207	18.9
Functional Unit	20	1.8
Kidney Dialysis	43	3.9
Operating Room	65	5.9
Outpatient Clinic	190	17.4
Palliative Care	26	2.4
Administration	26	2.4
Psychiatry	28	2.6
Others	66	6.1
Total	1,093	100.0



Globalization Is a Breeze with the Latest Technology and Software

These AI and digital tools which represent a common feature of daily life are increasingly applied to nursing tasks. Notable examples include Google scholar, a search engine for scholarly literature, and translation software which is a useful tool for the creation of English presentations or speech manuscripts. An actual experience of translation software use is shared below.

Generally speaking, communication in English or other foreign languages represents a vexing issue for nursing personnel. Highly mature and optimized translation software is therefore a great boon for our personnel as a perfect way to overcome language barriers. This tool greatly facilitates the task of presenting the spirit and techniques of Tzu Chi nursing care to international audiences. Ms. Cheng Ya-Chun, Nursing Supervisor, and Ms. Lee Yi-Rong, Head Nurse at Hualien Tzu Chi Hospital, have attended training programs for foreign nursing personnel organized by international medical centers in Burkina Faso and Eswatini in recent years. The biggest challenge they encountered was the language barrier since the official languages in Burkina Faso and Eswatini are French and Swazi & English, respectively. Ms. Lee points out that “ Google Translate has a pronunciation function for single words and whole passages, which is great for pronunciation practice. After practicing several times, people gain the courage to recite the same passage in public. Despite the fact that the translations are by no means error-free, Google Translate provides a real-time solution for language problems.” Due to the COVID-19 pandemic, students from Eswatini have not been able to pursue academic studies in Taiwan over the past two years. Their in-person classes have been moved online, which has further accentuated the importance of translation software as a convenient and useful communication tool.

The same software was utilized for communication and provision of health education to a Russian patient in the COVID-19 isolated ward. This patient was a captain of a deep-sea fishing vessel, who was admitted to Hualien Tzu Chi Hospital for treatment of acute pneumonia while his vessel was berthed in Hualien Harbor. Ms. Chou Ying-Fang, Nursing Supervisor at Hualien Tzu Chi Hospital, recalls that “the captain was in a state of great agitation when he arrived at the hospital. Through the use of a translation device to communicate with him and provide him with health education and the thoughtful preparation of Russian food, the nursing personnel was finally able to mitigate his anxiety and homesickness. The captain calmed down and accepted our medical treatment.” On the evening before his discharge, Head Nurse Chou Yun-Juan presented him with a Get-Well Card created with the latest technology and recorded instruction in Russian for the oximeter. This was the staff's first experience of caring for

Q1

What AI-related technologies, apps, or websites do you use in your daily life?

(N = 1,093, multiple selections)

Google **97.4%**



Search engine **49.9%**



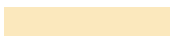
Maps **75.0%**



Siri **32.2%**



Uber **32.6%**



E-payment **52.1%**



Fingerprint recognition **43.2%**



Social media **51.7%**



Transcription software **7.4%**



Smart home **23.8%**



Translation software **68.3%**





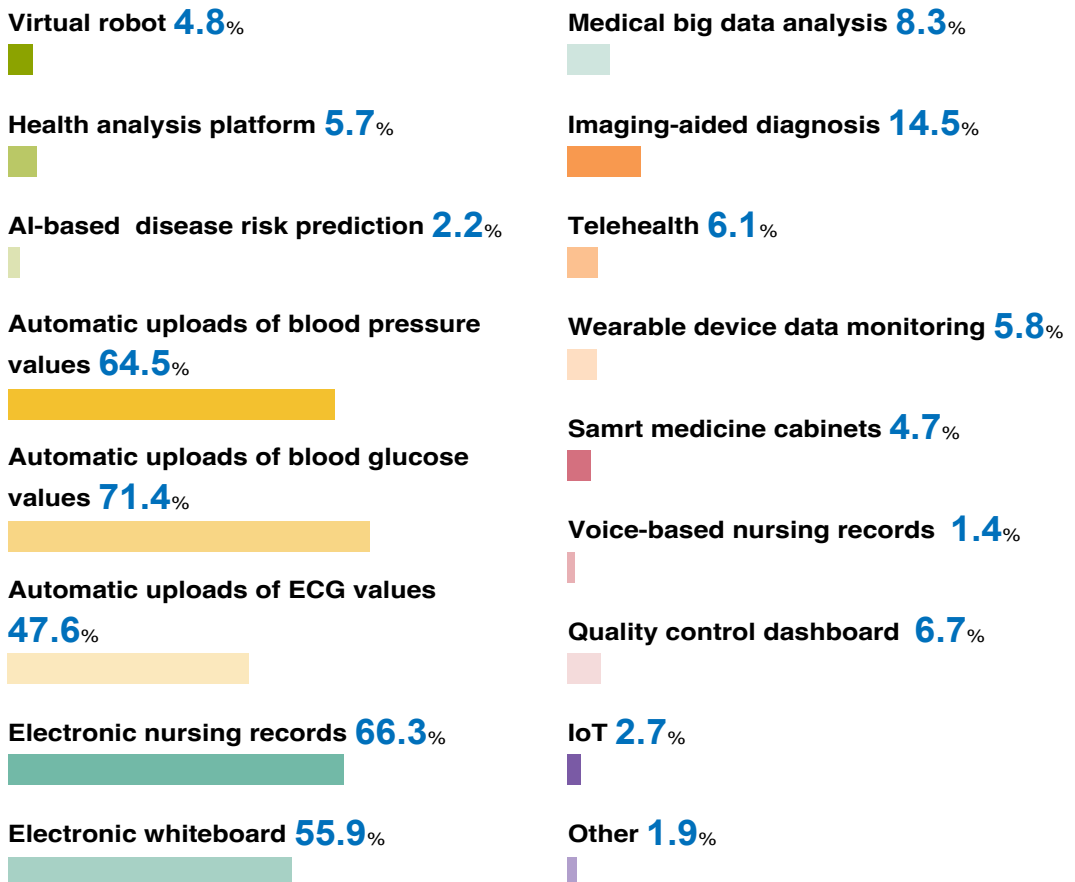
a Russian patient. They were able to rely on the latest technology to communicate with him without learning Russian from scratch.

Digital Aids Greatly Reduce the Likelihood of Human Error

Which products of digital transformation do nursing practitioners currently use in their clinical and administrative work?

The top-ranked item is automatic uploads of blood glucose values (71.4%). The second- and third-ranked items are electronic nursing records (66.3%) and automatic

Q2 | Which products of digital transformation do you currently use in your clinical and administrative work? (N = 1,093, multiple selections)

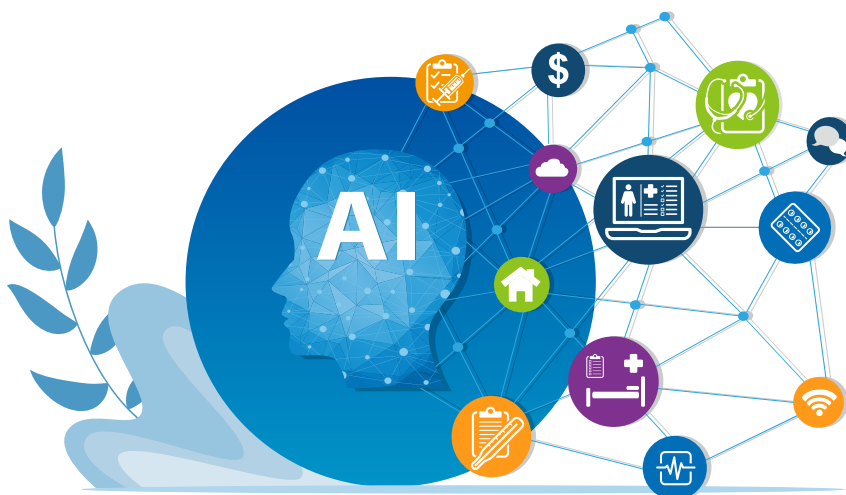


uploads of blood pressure values (64.5%), closely followed by electronic whiteboards (55.9%) and automatic uploads of ECG values (47.6%). There is a significant gap between the aforementioned options and imaging-aided diagnosis (14.5%). The remaining options are used by less than 10% of the surveyed nursing practitioners. It is however evident from the data that different units make at least some effort to utilize digital tools to ease the workload of their nursing personnel.

In our age of digitization, patients and nurses no longer have to create hand-written records. Some data derived from physiological examinations can be uploaded automatically and imported directly into electronic record forms, which helps prevent data entry errors and ensures data immediacy. This gives other members of the medical team immediate access to the latest examination results. Nursing practitioners are no longer required to copy vital sign values recorded on a piece of paper one by one into patient records after completing their regular work tasks. It is also no longer necessary to prepare differently colored pens to distinguish between body temperature, pulse, and breathing in hand-drawn graphs. All these manual procedures have been converted into data records and the generated graphs are both accurate and visually appealing. In conclusion, these technologies help reduce administrative processing times and the likelihood of human error.

Utilization of Electronic Whiteboards to Prevent Falls

As for the use of electronic whiteboards, every nursing station at Hualien Tzu Chi Hospital features a large 60-inch screen which shows the movements of every patient in the ward. It is displayed on the board who is the head nurse on duty, which patients





are on the way to the operating room or examination rooms, and which patients are prone to falls. Even information pertaining to the fire-fighting team of the unit is shown on the board.

The hospice ward has utilized information pertaining to high-risk fall patients on the electronic whiteboard paired with Team Resource Management (TRM) concepts to enable volunteers to participate in fall prevention. In 2021, the ward established a PCOC (Palliative Care Outcome Collaboration) electronic record system. Patient care status is indicated through lights in different colors. A red light signals that there is an urgent need to update or revise the patient care plan, while a green light indicates that the patient is in stable condition and discharge preparations should be initiated or ongoing observation is sufficient. Ms. Chiang Ching-Chun, Head Nurse of the hospice ward, points out that these lights on the electronic whiteboard enable team members to constantly monitor the patient's situation and status and deal with patient problems in a timely manner.

Long Distances Can Be Bridged with Online Meeting Technologies

The most successful example of imaging-aided diagnosis application is wound care administered by RN Hsu Mei-Yu. The team has taken on the Risk Fund Program in the Hualien and Taitung area which is hosted by the Ministry of Health and Welfare. It utilizes a wound image recording device developed by the Industrial Technology Research Institute and collaborates with home health nurses in the Hualien/Taitung region in the imaging-aided diagnosis of wounds and case-based wound management for patients in home care settings with the ultimate goal of providing timely care for patients in remote regions. The hospice ward of Hualien Tzu Chi Hospital adopted a cloud-based care system as early as 2013. This system allows family members to communicate with the medical team of the hospice ward by video conference and receive real-time information pertaining to medical care and wound care status in their homes without visiting the hospital. The drop in rehospitalization rates can be mainly attributed to this cloud-based system.

In addition to the 16 items listed on the questionnaire, a significant number of surveyed nursing practitioners entered other items such as the Chinese Medicine-based Physical Condition Detection System, which allows automatic detection of physical conditions after entry of data pertaining to the patient's physical status. Another example mentioned by the respondents is long-term care and case management systems. For instance, hospitalized patients can be referred to long-term care case managers of public health bureaus through a long-term care APP. Another approach

is the management of the allocation and locations of hired caregivers through the long-term care management system of the hospital, which can even be linked to salary calculation.

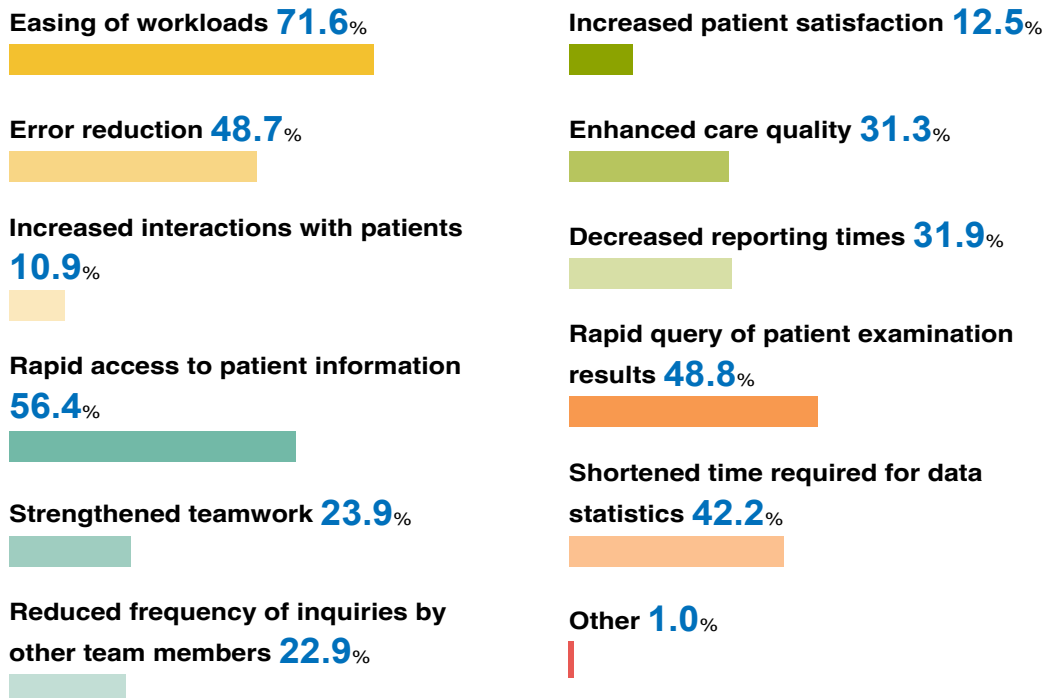
Easing of Workloads and Rapid Access to Key Information

We asked the surveyed nursing practitioners how AI products facilitate their clinical work. The most frequently selected option is easing of workloads accounting for 71.6% followed by rapid access to patient information (56.4%). The third- and fourth-ranked items are rapid query of patient examination results (48.8%) and error reduction (48.7%), followed by shortened time required for data statistics (42.2%). These results reflect the benefits of digital tools in clinical applications. Some respondents believe that these products are capable of reducing reporting times (31.9%), enhancing care quality (31.3%), strengthening teamwork (23.9%), and reducing the frequency of inquiries by other team members (22.9%).

Q3

How do AI products facilitate your clinical work?

(N = 1,093, multiple selections)

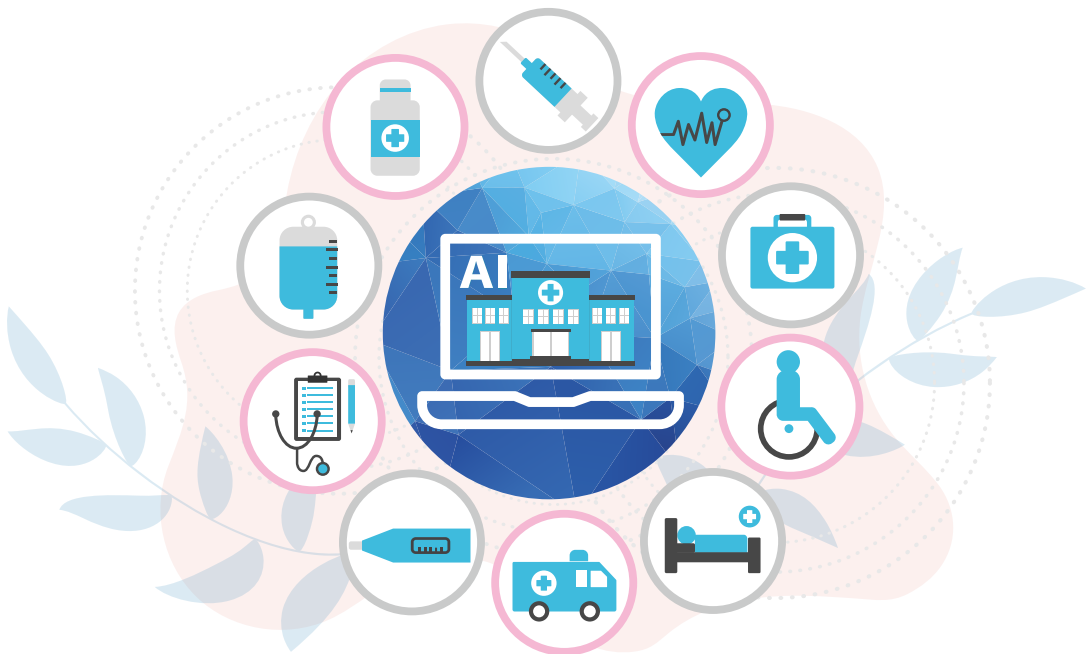
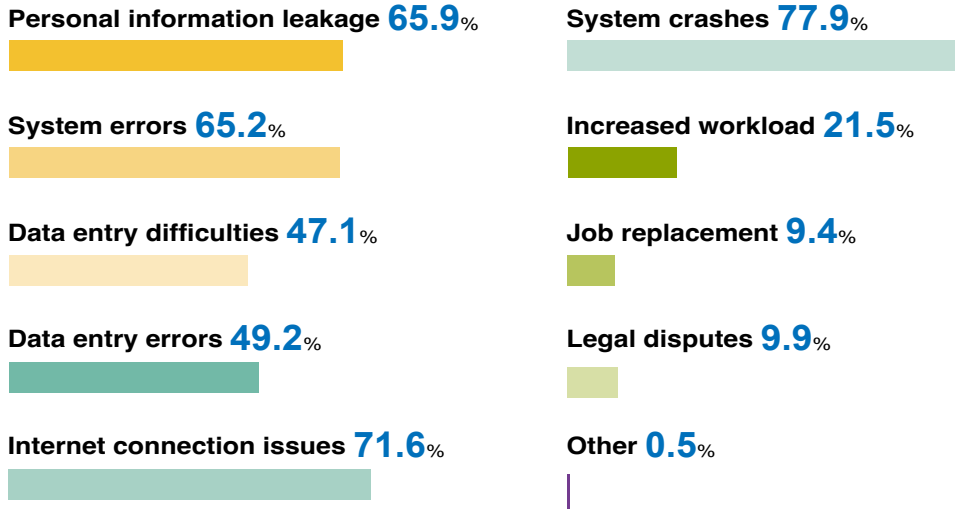




Q4

What hidden concerns do you have regarding the products of digital transformation?

(N = 1,093, multiple selections)



In the past, nursing personnel were responsible for query and review of all patient information. Direct inquiry with RNs by other members of the medical team therefore represented the most convenient and effective way to acquire accurate information. However, this frequently resulted in work interruptions since RNs had to respond to inquiries of physicians and nurse practitioners. The aforementioned new technologies ensure rapid access to the latest information by all team members. The system will even directly notify the attending physician of emergencies, which removes the necessity of reporting by nursing personnel.

Digitization and Visualization of Nursing Management

All nursing departments of Tzu Chi Hospitals in Taiwan constantly refine and optimize their information management practices. Taipei Tzu Chi Hospital organized a workshop for the sharing of experiences in the application of visualization dashboards in the field of nursing quality indicators. Dalin Tzu Chi Hospital followed up with a workshop on medical big data and Power BI. The Nursing Department of Hualien Tzu Chi Hospital launched its Power BI management system in 2022.

In the past, statistical analysis had to be conducted of complex patient abnormalities or abnormal nursing records. Further analysis of causes of occurrences indicated in the charts generated after analysis requires renewed queries of relevant details (personnel, matters, times) in the source data. After adoption of the Power BI management system, an AI Dashboard that clearly displays relevant events is available. This dashboard enables administrators to identify quality management issues and conditions in an effortless manner.

The answers of the respondents clearly reflect a positive evaluation of the process of digital transformation in hospitals. Quite surprisingly, only 10.9% of the surveyed RNs believe that such technologies can increase interactions with patients and only 12.5% are of the opinion that they will enhance patient satisfaction. These results therefore serve as a clear reminder to nursing supervisors that nursing tasks rely on the concerted efforts of frontline nursing staff. This includes building of work environments or process improvements.

Teething Troubles in the Field of Internet Connection and System Stability

The fourth questionnaire item explores hidden concerns associated with the products of digital transformation. The top-ranked options are system crashes (77.9%) and Internet connection issues (71.6%), followed by personal information leakage



(65.9%), system errors (65.2%), data entry errors (49.2%), and data entry difficulties (47.1%). Ms. Chia-Hui Tai, nursing supervisor at Hualien Tzu Chi Hospital, points out that the acceptance of new equipment such as Internet-connected blood sugar monitors or ECG is very high among clinical personnel, but the functioning of these devices tends to be negatively affected by frequent Internet connection issues.

Potential issues can be illustrated with the following example: A Registered Nurse had to reconnect a blood sugar monitor to the charger after a time-wasting process of repeated connection failures and constant display of connection error messages due to signal instability. She remarks that data records for two patients could have been completed within the same time if she had switched to manual operations and data recording. It is therefore not surprising that 21.5% of the respondents believe that the products of digital transformation will result in increased workloads. Despite the fact that the percentage of respondents who express concern about their jobs being replaced (9.4%) and potential legal disputes (9.9%) is quite low, these worries bear clear testimony to a lack of trust in these new tools on the part of certain practitioners. Insufficient product stability seems to be the main concern.

The Future of Healthcare Digitization and Smart Wards with a Human Touch

Finally, we asked the respondents about their expectations with respect to hospital digitization. 7 of the 8 listed options were selected by more than 30%. Only 2.5% chose the option “AI robots”. The top-ranked item is smart medical device management systems (55.9%), followed by voice-based nursing records (47.8%), smart wards (43.2%), smart medicine cabinets (41.2%), and imaging-aided diagnosis (41.0%). Nursing practitioners may have different mental images of these options. Smart wards encompass all the other options. Hualien Tzu Chi Hospital is therefore firmly committed to creating high-quality smart wards and completing its All-in-one Smart Mobile Ward Round System as early as possible.

In the final section, we solicited suggestions from the respondents. Some nursing practitioners recommended a vending machine for medical supplies similar to beverage vending machines to save the hassle of routine counts and accounting. Others suggested the development of AI-based disease risk prediction and medical big data analysis for quality management and monitoring. Outpatient nursing personnel expressed the wish for an automatic queue management system and automatic display of the number of patients who have already checked in.

It is often said that the only constant in this era of Industry 4.0, the fourth industrial

Q5

What are your expectations with respect to the optimization of the following smart functions in the context of hospital digitization? (N = 1,093, multiple selections)

Smart wards 43.2%



Smart linen management 30.8%



Smart medicine cabinets 41.2%



AI robots 2.5%



Voice-based nursing records 78.8%



Imaging-aided diagnosis 41.0%



Smart medical device management 55.9%



Smart medical device management 37.3%



revolution, is change. The analysis of big data pertaining to clinical care, disease diagnosis, and treatment provides healthcare professionals with a clearer understanding of the results and side effects of past therapies. Big data can also be utilized to forecast diseases. In the age of Industry 4.0, the main focus of all designs has shifted back to individual demands. Patient/family member/medical personnel demands are centered around immediate care. The digital transformation of the healthcare industry is associated with a painful transition period. With a view to guaranteeing the stability and accuracy of new products, we must put significant time and effort into the testing of the new and the old. Consequently, nursing personnel and nursing supervisors in particular must accept new ways of thinking and modes of operation more open-mindedly. Needless to say, the development of new programs and equipment must always be human-centered. The ultimate goal from the perspective of clinical nursing personnel and patients is to turn cold technology into helpful tools with a human touch.



Development of an ACLS First-Aid Process Recording System - Saving Lives Is Priceless

By Chang Hui-Ying, Emergency Dept. Nurse Practitioner, Hualien Tzu Chi Hospital

Hualien, a county characterized by its elongated shape, has around 400 OHCA (Out-of hospital cardiac arrest) cases each year. Roughly 50% of these emergency patients are directly transported to Hualien Tzu Chi Hospital by an ambulance. If first aid is performed prior to arrival at the hospital, the survival rate upon hospitalization is around 50%. The Hospital plays an indispensable role in safeguarding the health of east coast residents.

As a key critical care center in eastern Taiwan, Hualien Tzu Chi Hospital accepts critically ill patients from all hospitals in Hualien and Taitung County. Our team has developed an ACLS First-Aid Process Recording System, an AI-based system which is unrivaled in Taiwan. This recording system is a program which has been developed on the foundation of ACLS (Advanced Cardiac Life Support) principles. It has a very simple, intuitive, and user-friendly interface. Upon launch of the system, the program provides guidance in the execution of standardized first-aid procedures and an



In the past, the hospital used a paper-based first-aid record form. The successful development of the ACLS First-Aid Process Recording System has raised the precision and effectiveness of our life-saving efforts.

automatic timer function is activated simultaneously (pulse confirmation every 2 minutes/injection of epinephrine every three minutes). The system alerts users of what actions have to be taken in each period beforehand. It is capable of real-time storage of ACLS processes and utilization of sound for active reminders to identify reversible causes of death. It also provides dosage recommendations for required electric cardioversion. The graphic interface clearly displays contents to be recorded. Upon completion of first-aid procedures, the recorded data is uploaded and saved on a cloud drive. The stored data can be accessed in a convenient and rapid manner, which is highly conducive to the creation of medical records and automatic copying of first-aid time sequence records into nursing records. This helps alleviate the stress of RNs who had to recall all details of the first-aid process in the past and generates significant time savings by automating manual recording processes. Physicians gain the ability to directly import first-aid medication records into the prescription system for issuance of medication orders. This brand-new system helps reduce administrative processing times and frees up precious time for patient care.



The efforts of the emergency care team of Hualien Tzu Chi Hospital in the development and implementation of the ACLS First-Aid Process Recording System are dedicated to saving lives.

When the triage nurse in the emergency room broadcasts via the intercom “OHCA patient in five minutes”, the RNs and physicians on duty feel a rush of adrenaline and gear up with great zeal. All staff members quickly finish their tasks at hand and rush to the first-aid section to assist in the performance of ACLS for the patient who is about to arrive. RNs who are already in the first-aid section divide tasks among themselves. The primary nurse takes responsibility for preparation of the endotracheal tube and the epinephrine, and the assisting nurses take on tasks in sequence. Nurse A volunteers to prepare the manual resuscitator, the sputum suction device, and defibrillator, Nurse B prepares the drip infusion, and Nurse C launches the computer-based ACLS First-Aid Process Recording System. When all preparations are completed, the physician quickly designates tasks to the RNs. The team in full gear

clench their fists in preparation for the tug-of-war with death to save the patient's life. This scenario plays itself out at least once a day in each shift. The team chemistry of the emergency staff members can be grasped with one glance or gesture.

"Two minutes are up, stop chest compression, analyze heart rate", "heart rhythm is changing, confirm pulse", "I have a pulse!" This message is extremely uplifting for the whole team. The sounds of the patient's heartbeat and the defibrillator resemble a heartwarming infusion.

I still have a fresh memory of a tourist from Kaohsiung who experienced chest tightness and discomfort after an amusement ride in a theme park in Hualien. After being rushed to the hospital in an ambulance for emergency treatment, he suddenly lost consciousness during inquiry in the first-aid section. The RN looked at the defibrillator and yelled "ventricular fibrillation". The physician on duty immediately grabbed the defibrillator, adjusted the electrodes to 150 J, and performed chest compression for two minutes. When the patient came to, he exclaimed "Ouch". This miraculous resuscitation lightened up the faces of all medical staff members in the first-aid section.

After regaining full consciousness, the patient asked us what had just happened and why his chest hurt so much. The physician explained that his chest pain stemmed from ventricular fibrillation and resulting cardiac arrest. "We performed defibrillation and chest compression to pull you back from the gates of death. Now we're going to take you to the Cardiac Catheterization Room to perform cardiac cath."

On the way from the Emergency Room to the Cardiac Catheterization Room, the patient grasped my hand tightly and whispered: "Thank you for all your efforts to save my life! If it hadn't been for you, I might have died far away from home." I was deeply moved when he said that and it suddenly occurred to me that we had saved a person's life.

The latest statistics reveal that the ACLS First-Aid Process Recording System resulted in a significantly improved survival rate of 51.2% and discharge rate with restored neurological functions of 9.7% in 2020 (the respective percentages were 42.6% and 7.6% in 2018 when ACLS procedures were still paper-based). These statistics signal an increase of the aforementioned rates by 8.6% and 2.1% due to the adoption of the ACLS First-Aid Process Recording System. This time-saving and life-saving system is the direct result of the tremendous time and effort put into this project by a large number of staff members. The outstanding results listed above have made these efforts worthwhile.



Cloud-based Wound Healing Network in Hualien and Taitung

By Hsu Mei-Yu, Wound, Ostomy, and Continence Nurse, Hualien Tzu Chi Hospital

In 2006, the ninth year of my career as Wound, Ostomy, and Continence Nurse, I was dispatched to Korea to acquire an international certificate. Upon my return to Taiwan, a home care nurse requested my assistance for a home visit. This visit left an indelible impression on me.

The emaciated patient lying in bed had over 20 pressure sores and countless bruises all over his body. 16 of these sores were deep to the bone and oozed pus intermittently. The air was filled with a foul, musty, repugnant odor. The home care nurse seemed to be oblivious to the bad smell. She kneeled down and bent over the patient to clean the reeking wound in the dim light. I still have a fresh memory of this scene, which marks the starting point of my transition from in-hospital to home care.

10 years have gone by since that experience in 2006. Our wound care team has provided medical care to countless suffering families deep in our communities. However, the wounds of patients like the case described above are still festering 10 years later. This can be explained by several factors: the high number of chronic patients in the Hualien/Taitung area coupled with the rising incidence of complicated wounds, shrinking family size coupled with the rising number of small and single-person households, rising extent of family dispersal, senior relatives, non-family members, or foreign migrant workers serving as caregivers, and the elongated

shape of the county coupled with inconvenient traffic conditions. The combined impact of these factors turns every visit to a home care patient into a daunting challenge.

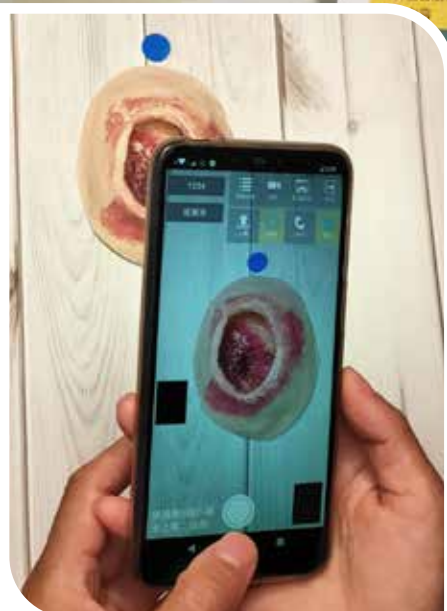
There are only seven plastic surgeons and six wound, ostomy, and continence nurses in the Hualien/Taitung area who possess the expertise and skills to provide professional wound care. The provision of such professional care therefore represents a heavy burden. What can we do to meet the huge demand for in-home wound care?

Successful Application for Subsidies Through Perseverance

In 2019, the Ministry of Health and Welfare launched the Smart Health Care and Joint Regional Defense Pilot Program in 2019. Tele-wound care represents one link of this program. This program sparked a glimmer of hope in my heart, and I decided to grasp this opportunity. I planned to utilize the subsidies provided in the context of this program to build a smart tele-wound care service model for the transition to home care after discharge from the hospital.



Wound, Ostomy, and Continence Nurse Hsu Mei-Yu provides guidance in wound care to home care personnel and family members in the patient's home.



Members of the wound and ostomy task force of Hualien Tzu Chi Hospital meticulously create an operating manual for the wound APP to assist families with relevant needs in the Hualien/Taitung regions and enhance the overall quality of wound care. In the image on the left, instructions are provided on how to upload wound photographs to the smartphone APP in a home setting.

Under guidance by Ms. Hui-Chun Chung and Ms. Shu-Chen Wang, Director and Vice-Director of the Department of Nursing, we developed a program to apply for subsidies. Despite our deep disappointment after failure of this initiative, we were not willing to give up easily and decided to persevere in our efforts. We therefore submitted another application and were finally granted a subsidy in the context of the Total Hospital Risk Adjustment Transfer Funding Scheme for hospitals in eastern Taiwan. I thought to myself: “You will succeed if you never forget your original ideals and aspirations.”

From Clinical Services to Cloud-Based Consultation

My firm commitment to the development of a tele-wound consultation model probably stems from my deep awareness of the difficulties and needs of patients and family members in the area of wound and ostomy care in remote townships that I have gained in the course of my over 20-year career in the field of wound healing as a professional and family member of a chronic patient.

We adopted the consultation program for the transition from long-term care to tele-wound consultation in the Hualien/Taitung region in 2020. We have further established a joint management channel spanning wound care in hospitals, communities, and home settings in cooperation with the Service Section of National Health Insurance Administration – Eastern Division and the Industrial Technology Research Institute by enlisting discharge planning nurses, home health nurses, wound, ostomy, and continence experts, and information engineers of 12 medical care institutions in the Hualien/Taitung region. Available chronic care models have been integrated into this wound case management system which is aided by e-Health technology equipment. The system relies on local home health care nurses who take instant photographs of wounds with the aid of the App, assess the physical status and wound history of patients, and upload relevant information to the cloud-based tele-wound management platform. Experts provide overall wound assessments and treatment advice to remote home health nurses. The system also relies on regular visits, measurements, tracking, and monitoring. Wound recovery times and rehospitalization rates have been successfully reduced through this program in the first year of its implementation.

I view my almost 30-year career in the field of wound healing not only as a profession but rather as a lifelong calling. Whenever a patient with a wound calls for help, a wound healing team responds to the call. We jointly forge ahead on the path toward “no harm, no injury” with the aid of digital technologies. I am deeply grateful for the joint contributions of all involved teams and to all the patients we have encountered on this journey.



Tutoring Nursing via VR

**By Chiang Ju-Ping & Chou Ying-Fang, Teaching Head Nurse & Teaching Supervisor
of the Department of Nursing, Hualien Tzu Chi Hospital**

On the foundation of patient-centered concepts and patient safety, simulation-based instruction has always been a key strategy in the field of clinical teaching. The rapid evolution of technology has resulted in the invention of numerous auxiliary tools in the field of education. As a direct response to the COVID-19 pandemic, virtual reality has been widely applied to the field of medical education in recent years.

With a view to enhancing skills in the field of hi-tech care, the Teaching Department of Hualien Tzu Chi Hospital has invested in the purchase of VR instruments and lesson plans. This investment encompasses 13 lesson plans for nursing training in the fields of surgery and internal medicine, emergency and critical care, obstetric and pediatric nursing, and community-based care.

Provided education ranges from the training of grassroots instructors to practical application. Initially, grassroots instructors attend relevant training programs. Numerous training courses are organized to enable trainees to achieve major breakthroughs in field of actual operations and practices. These courses mark a significant departure from traditional approaches, enabling trainees to gain a full insight and understanding through hands-on experiences.

Upon a detailed discussion of achievable instructional objectives by the nursing education team, a PICC (Peripherally Inserted Central Catheter) course module has been integrated into the curriculum this year (2022). The goal is to facilitate provision of long-term intravenous fluid therapy, reduce the incidence of complications associated with peripheral intravenous catheters (PIVC), and decrease the frequency of puncturing caused by repeated intravenous needle insertions in patients with PIVC complications or patients requiring frequent insertion of central venous catheters due to certain diseases. The VR lesson plan of the PICC course module facilitates the review of curriculum contents and planning of teaching modes. The adoption of challenge activities at different stations completely overturns the teaching methods of traditional



training courses. A total of 111 individuals attended this course. 60 trainees participated the VR lesson plan for PICC care.

Ms. Cha Fang-Yu, Deputy Head Nurse at Hualien Tzu Chi Hospital, provided the following feedback after attending this lesson plan-based training course: “I think this training model is really impressive. Past catheter-related training courses mostly consisted of classroom education paired with model training. The VR experience really gives you the feel of being present on site, which is absolutely amazing. It makes the whole learning process fun and exciting, which is in stark contrast to the dull, boring, and monotonous teaching methods of the past. I gained a lot from this course and feel much more confident to provide care for a PICC patient in the future. I also look forward to more first-hand experiences of VR lesson plans in the future. I might even get involved in the design of creative nursing lesson plans.”

The adoption of VR, a new weapon in the field of nursing education, has not only made courses more interesting but also facilitates the acquisition of accurate care concepts and reinforces the learning process. After the course, the system awards scores and reminds trainees of deficiencies. There is no doubt that the VR experience fosters learning motivation and increases familiarity with care processes through repeated practice, which is very helpful for clinical practices. We sincerely hope that the full potential of this educational approach and the associated lesson plans will be unleashed.



The Taste of Bliss from Volunteers in the COVID-19 Pandemic

By Lee Huei-Mei, RN, Hemodialysis Room, Taichung Tzu Chi Hospital

In the middle of the COVID-19 pandemic, I was nervous about the news on TV. Broadcast about confirmed cases made us even more alert as we were battling COVID infection in the hospital.

As I recall the time when I started this job, I was greeted everyday with amiable smiles from volunteers at the hospital. This brought me great comfort for a beginner like me. Each morning patients came in for dialysis treatment, and volunteers would later file in accordingly.

Volunteers in our dialysis room help make beds and replenish the four essentials: tubes, dialysis solution, towels and lotions. They also assist patients with disability. After they finish tasks on hand, they come and ask, "Is there anything else we can help?"

Sometimes we are tied up with tasks and missed our meals, volunteers would remind us to make time to have meals. They prepare snacks or fruits to replenish our bodies for more energy. Medical volunteers are vital components of the dialysis team.

In compliance with the epidemic prevention policy and to protect our volunteers, volunteers were not allowed inside the hospital anymore. Therefore, volunteers program was suspended temporarily. When there were no volunteers in the dialysis room, we had a sense of loss.

"Nurses! Don't forget to eat lunch." "Nurses! Take good care. The weather is cold." These thoughtful exchanges were not there anymore. Without volunteers even the patients are hard to adjust. It is a tremendous blessing to have volunteers around to look after patients.

Fortunately, resident volunteers (those who volunteers daily throughout the year) can still participate without interruption. They help relieve our workload when we are busy. They change sheets for all patients and greet them with "Bless you", "Thank you", and a warm and compassionate smile. None of them ever display the appearance of weariness.



There was a patient who had bowel problem and needed immediate attention. Volunteers would not leave even though it was time for a break. They stayed and helped us change sheets as well as patient's clothes. I was deeply touched and felt indebted to them.

**During this epidemic period,
extra dishes delivered by volunteers was a blessing.**

"Today we have red bean and tapioca soups, barley soup and tofu pudding. Please enjoy!" They change menu often with different ingredients for a variety of different dishes. Some volunteers made pancake, vermicelli, and pickle vegetables with sauce; a variety of snacks, sweet and salty. Their loving care are especially heartfelt during this epidemic. Even though volunteers cannot enter the hospital, they brought dishes to the front door; and certainly look after us with no reservation. When leaving, they urged us again and again to take care of ourselves while tending patients.

These heartwarming acts from volunteers have raised our energy and spirits. We can concentrate on our patients.

The contribution from the volunteers always comes in time when we need them. And they never ask anything for return. This is the pleasure from helping others. There are some words of wisdom from Jing Si Aphorism, "If you have love in your heart, then there is no feeling of lacking. You are indeed a rich person if you are happy to contribute." Hopefully, the pandemic will be over soon. In addition, I wish the well-being for all our volunteers. Let's safeguard our home with happiness together.

A Diploma for Overcoming Sputum Suctioning

By Wang Chia-Ling, RN, Ward 11B, Taichung Tzu Chi Hospital

Working for over 25 years, I always remember my severe nasal congestion caused by a bad cold 20 years ago. To get my airway open as soon as possible, the clinic physician used a small cotton swab moistened with medicine and inserted directly into the nasal cavity. With physical endurance and struggle, the thought that flashed through my mind was, “This is how it feels to draw sputum out or put a nasogastric tube in!” Although it only took a few seconds to poke the nose, my heart was screaming. When the treatment was over, with a sigh of relief, I quietly reminded myself to remember this feeling deeply.

Deal with Feelings First, Then the Matter

Last year, at the Empathy Workshop organized by the Taiwan Academy of Hospice Palliative Medicine, I learned that the use of empathy goes beyond the past affinity. They taught us when dealing with situations, we have to “Deal with Feelings First, Then the Matter”. It’s really a treasure. At the same time, it reminded me of a case I took care of recently which provides a good example.

74 year-old Uncle Smart stayed in this unit due to a stroke and needed rehabilitation treatment. Uncle Smart is just admitted to the hospital and unhappy. He cries whenever he gets a call from a friend or misses home. Especially when it comes to drawing sputum, both tearful and resisting. The wife who care for him seems broken and distressed. Other times, he looks depressed, and stay motionless, with no expression, let alone rehabilitative. This couple; wife is impatient, husband is slow with strong feelings. I feel



that one thing they have in common is that they love to cry.

Uncle Smart has a smoking addiction for decades. He always needs a nasogastric tube when hospitalized. Even though he is already trained to eat, but obviously there's cough with sputum and unable to clear itself. So after a team discussion, we decided to communicate with his wife first. During the hospitalization, it is forbidden to feed him to avoid choking. Then there is the sputum treatment by the Health Education and also the disposal of sputum by the nurse. Past experience of sputum suctioning was terrifying to the patient who could only accept it helplessly. Although the wife accepted it, she was very reluctant and worried her husband would be resentful to the point where he wouldn't talk and always crying.



Tears Become Smaller, Brave to Suctioning

As always, I used my way to talk to Uncle Smart for the suctioning. After I got ready, I leaned next to his ear and told him, “Uncle, I’m going to draw sputum now. Don’t be scared. I will do it gently”. Then I saw him shedding tears immediately. After a few seconds of crying, I stroked his cheek and said, “Ok, ok. Sorry!” The wife hadn’t recomposed herself so I beckoned her to give me a tissue to wipe away tears for Uncle Smart. At the same time I said, “Uncle, sorry and appreciated.”

The next few days, Uncle Smart already improved from being silent to slowly responding, then saying thank you to me. He even started to have a

smile on his face by the second week of treatment. He still sheds tears when he gets suctioning, but the wife is relieved to see him smile.

The First Nurse to be Thanked for Suctioning

Just when Uncle Smart was getting better, he chose to be transferred to another hospital due to COVID-19 Pandemic Policy, but he came back within two weeks at his own expense. As soon as we met, the wife hugged me and first thing she said was, "It's so nice to see you again. I feel so peaceful." It turned out Smart Uncle was shedding tears every day at the other hospital. He was complaining and shouting, wanting to be discharged. So they decided to come back here instead. The next few days, Uncle Smart soon smiled again. The amount of sputum gradually improved, and frequency gradually reduced. Also, his tears also shrunk to the point where only a single drop condensed in the corner of his right eye during suctioning. Surprisingly, Uncle Smart took the initiative to tell me with a smile, "Thank you." Next, after each suctioning, the wife always emphasize, "Nurse, you are the first person to do suctioning and he took the initiative to say thank you."

I Want to Stay in Hospital, It's Warmer than Home

Finally, with team effort, Uncle Smart's mood is more cheerful, rehabilitation has improved significantly, nasogastric tube has been removed, and now he walks without aids. He used to be an introvert and quiet, but now he's humorous and talkative. The wife was very surprised and delighted by his recovery and personality change. Two weeks before the planned discharge, Smart Uncle said astonishingly, "Can I not be discharged? Every day there are people who are warm-hearted, a good environment, everyone I meet is kind and it's warmer than home." I answered him with a smile, "What! Are you not afraid of suctioning anymore?" He waved his hand shyly to stop mentioning it.

On the day of discharge, we made him a Sputum Suction Diploma and held a graduation ceremony for Uncle Smart with the blessings of many patients and colleagues. Uncle Smart, I will always remember your gratitude and Thank You. I will continue good deeds diligently and treat every future, suffering patient with kindness.

The Smile Is a Natural Antidote

By Luo Yin-Zhu, Deputy Head Nurse, Ward E29, Hualien Tzu Chi Hospital

One day on a whim, I decided to flip through my kindergarten yearbook. Underneath the box “My dream job”, I had written two words in large font - “A nurse”, I wanted to be a nurse. Now that I think about it, I remember when my kindergarten teacher asked us about our dream jobs, I had absolutely no clue and had just responded with the same thing as the person before me. I had long forgotten about my random answer, but funnily enough, I did become a nurse.

As a nurse, I find myself entwined in all sorts of stories just like those dramas on TV, experiencing emotions on every end of the spectrum: “Joy, Anger, Sadness, and Happiness.” During the good times, I feel absolutely blessed to work in a hospital. In bad times, the hospital becomes a strong magnet of negative energy. I have a love-hate relationship on this job, but I am lucky to be able to pursue this career, as it taught me many things that do not exist in textbooks.

If I don’t smile, people think I am seething with anger, so I constantly remind



myself to use my “Four Treasures”. “The smiling face”: bringing more comfort to everyone around, “the sweet mouth”: speaking positively to build meaningful relationships, “the flexible waist”: putting others ahead of oneself, “the fast limbs”: utilizing each second to the maximum. I learned these from volunteers and patients, and they have become useful tips for me when on shift and also for me when trying to bond with others.

When I was working in the neurosurgery ward, changing the medicine for patients with centipede-like incisions on their scalp was everyday business. Aunt Chen was admitted into the ward after a cerebral hemorrhage from a car accident. Fortunately, she was admitted early and could function like a normal human being after surgery. However, Aunt Chen cared quite a lot about her appearance, so she was always in a prickly mood after seeing her hair gone, a centipede-like cut on her head, and feeling the pain of the incision. After preparing my “four treasures”, I stepped in and introduced myself. With every change of medicine, I would explain patiently, “Every staple must be cleaned properly to avoid infections and help the incision heal





properly. The hair will also regrow better. The pain of the incision is inevitable, but if I cause you too much pain, you can tell me and I can be more gentle. In order for you to become beautiful again, more time spent healing will only help you.” Slowly, Aunt Chen let down her guard and began to trust us with a smile.

Aunt Chen could even start joking after a while, “You always seem like you’re performing some sort of archaeological discovery on my brain, bringing out the small swabs, then the large swabs, then the gauze. It’s

like my head is worth a large fortune or something.” This created a roar of laughter in the room.

As the proverb says, “Laughing is, and will always be, the best form of therapy.” It sounds like a magic tonic that does not exist, but laughter is definitely a natural antidote for illnesses and negativity. It can mitigate pain, solve anxiety, and improve healing without any side effects.

Now, I bring the “four treasures” to the Eastern Medicine ward. Most of the patients there are in the middle of recovering and are there to speed up recovery. Aunt Li, in particular, was recovering from a cerebral stroke. I remember her clearly because she was a “dark horse”. Why so? When Aunt Li was first admitted, she was on a nasogastric feeding tube and tracheostomy tube. Aunt Li’s husband said that in the Western ward, the doctors said that Aunt Li would not recover and could only live off of other people’s support. However, he believed that she still had a chance, so he traversed many hills to bring her to Eastern treatment.

Rehabilitation was essential for recovery from a cerebral stroke, but Aunt Li always felt a bit uneasy during the sessions. As it turned out, like many patients, she was beginning to feel hopeless about her condition. A caretaker and I began to accompany Aunt Li with every step, just like teaching a child how to eat, walk, and go to the bathroom. Next, it was teaching how to breathe without the tube, encouraging every step of the way. Although it may seem like an easy task, it was an arduous mountain to climb for Aunt Li. Every time she felt exhausted, I and the caretaker would give her a massage.

When practicing walking, Aunt Li could not muster the courage to walk without a robot at first. I smiled and said, “Rest assured, the caretaker and I will not let you fall. You can treat us like the robots and bravely take that historic first step!” Aunt Li was then able to relax and take her first steps. Slowly, Aunt Li was off all tubes and could walk down the hall with the caretaker in one hand and a cane in the other.

One day, I ran into Aunt Li video calling her daughter and parents. The bright smile on Aunt Li’s face and the joy on the family members’ faces brought an indescribable happiness. In the words of Master Cheng Yen, “Love as medicine begets more self-love and less suffering.” Isn’t eliminating the pain of the ill what everyone aspires to achieve?



Do not Fear the Bully - Be Confident and Expressive

By He Sin-Yun, RN, Ward 10A, Taichung Tzu Chi Hospital

When I was promoted to a nurse from an intern, my communication sometimes stunned the patients, made them uncomfortable and even angry. I often used the phrase: "I don't know how to say." This is unprofessional in front of the patient's family. And they even replied: "I don't want a student intern! Please find me someone more senior!" After self-reflection, I realized that my poor choice of words made patients and their families unpleasant. But because I lacked confidence in communicating with patients, I always used this phrase to hide, and the problem persisted.

However, after I consulted with senior colleagues and learned from their experience, the situation gradually improved, though slowly. They also guided me step by step.

But when I encountered bossy patients or family, my first choice of words "I don't know how to say" would come out of my mouth unconsciously.

There are many examples, for instance, patients are not allowed to have visitors due to the COVID-19 pandemic. But there are still family members sneaked through. I explained to them nicely their visits broke the rules. Some family members would say unpleasant words or even shout loudly: "I am just visiting my loved ones, it will be fine. I did not run around, I've been home all the time."

"This is the current government regulation, only the chronic wards and intensive care units are open for visits. Our regular ward is not open for visits. We have to ask visitors to leave as soon as possible, so that they will not be reported. We need to protect all family members and patients in other wards."



No matter how I explained, some family members still argued with their utmost efforts. “You all have these regulations, how do I explain to my families at home, they are worried too! Just have a look, it won’t hurt! Why do you have to be this strict?”

When I was overwhelmed, I simply said, “I don’t know how to say.” Family members became irritated, and the argument went louder and louder. I said, “Auntie and Uncle! Please calm down first, and I will ask my senior colleagues to explain to you.” I had no choice but asked my senior colleagues to come to my rescue.

After work, I reflected on the conversations with patient’s family. I also discussed it with my mother. My mother criticized my carelessness. Often times I am too candid and offend people. She reminded me to speak more tactfully and hold back from focusing on the negatives. My mother always taught me: “If you really don’t know something, you still have to show your self-confidence. You want patients to believe you. Talking is an art. Practice it day after day will improve over time.”

It has been half-a-year since I entered the clinical workplace, I am still learning and practicing communication. I think about the old self compared with the present me. With the encouragement from my senior colleagues and my family, I have made great progress in communication. Now, when I interact with the patients and family, I can confidently show a smile. I often chat with patients during the treatment, we share the joy. I no longer worry about not knowing how to express myself.

Nurses, You Are the Best!

By Dr. Yeh Kuang-Ting, Orthopedic Department, Hualien Tzu Chi Hospital



Before my ward round, I always stop by the nurse station (Orthopedic Rehabilitation ward) on the ninth floor. “Is there anyone available to accompany me for the ward round?” I asked. One of the nurses near the patients’ garment closet stood up and responded, “Dr. Yeh, please wait a few minutes, we are bathing the Buddha (cleaning the patient). After this, I’m free to go.” “Okay,” I replied. Then I walked toward her to see if she needed any assistance.

Three nurses were cleaning a smiling patient efficiently. I spoke to the patient and told him how lucky he was. Although he was sick and hospitalized, there were so many white angels to look after him. He sure should feel grateful. After my words, the patient smiled even brighter. The nurse told me there was nobody at home to take care of him during the pandemic, nor were there any volunteers available. Therefore, once or twice a week, some colleagues would get together to do the wash.

After the rehabilitation ward, I went to the orthopedic ward on the tenth floor. The head nurse approached me warmly and asked if she could come with. All the nurses were treating patients so she went with me for the round.

I always admire the head nurse’s expertise, and



her candidness and caring attitude toward her colleagues. An orthopedics nurse, on the phone paused to tell me, “Dr. Yeh, wait for me. I will go with you. I have something related treatment prescriptions to discuss.” After the round, my pocket phone rang. A nurse from the operating room told me a patient had arrived at the nurse station but had some questions to ask before the operation. Another phone call was from an outpatient unit about a patient not feeling well after discharge. He wanted to re-admit with my busy outpatient schedule. After the call, I met a discharge-planning nurse and a long-term care nurse on the way to the nurse station at the operation unit. I discussed with them respectively about the patients’ conditions, and how to arrange a smooth and efficient discharge. I also mentioned the wounds: if not completely healed, ask for assistance from the wound care nurse.



The above encounters represent my daily challenge as an orthopedic surgeon. Nurses are an inevitable support pillar in holistic care, the soul in soothing a successful treatment course. They take care of patients' bodily pain and mental suffering, as well as aid their family members' exhausting bodies and minds with their expertise, friendliness, sincerity, compassion, and love. During the pandemic period, they stood firm and worked successfully on the first line of care even under the circumstances without any help from patients' households and volunteers. Their sense of mission and accountability is so awesome. People regularly use "White Angels" to describe nurses. However, when these angels have conferred the title of nurse, they had been given crucial and complex tasks physically and mentally. They can't make any mistake in each step of the task, and are facing unexpected situations. Their work and responsibilities are hard to imagine for anyone who is not in their shoes.

However, when we call them "White Angels"; I cannot forget that they are also human beings. They have their own emotion, and household tasks to deal with and take on. They also feel tired and sad. We should be more considerate and respectful. Although they are friendly, kind, and responsible, we cannot take it for granted.

My dear nurse colleagues, you are the best! I am so grateful for your willingness to take up this great mission. When you take care of the patients, we should look after you.