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I Am an ECMO Nurse

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Some people are born to be caregivers, I believe I am one of them. When I turned 17 years old, I started working as a Nursing Assistant at a local military hospital in Uzbekistan. After the Afghanistan war had ended 1990, the hospital was full of young, injured soldiers suffering from amputated limbs and post-traumatic stress disorder (PTSD). I began working there because I wanted to help, and I was inspired to go to nursing school because I wanted to continue to help in new ways.

Yelena Ignatyeva, BS, RN, CCRN, ECMO Lead, has been working at UCSDH for the last 16 years. She has more than 30 years of intensive care experience in multiple areas. She is a Clinical Nurse IV, CCRN, ECMO Lead. Yelena loves to travel and take care of her family.

I graduated from nursing school with honors and continued supporting my community in the military hospital until my family made the monumental decision to immigrate to the United States. I count myself among the fortunate few who were granted the opportunity to live a better life.

In 1995, I got my first job at Albany Medical Center as a telemetry technician. It was a miracle because I could barely speak English. However, my infectious smile and eagerness to learn helped me to rise above language barriers. Interpreting electrocardiograms (EKGs) and recognizing rhythms was easy, but every time the phone rang, I was terrified I would misunderstand what people were telling me. Also, I feared I would call the unit with urgent information which would be misinterpreted. It was overwhelmingly stressful and daunting to realize that learning the language would take months or even years.

A year later, I transitioned to a pediatric Intensive Care Unit as a Certified Nursing Assistant (CNA), a role both intimidating and exciting to me. Eager to learn, I shadowed nurses, taking notes and asking questions to dig deeper into the nursing role. At the same time, I was finally getting closer to my final steps in becoming a nurse as I scheduled my licensing exam. I remember completely immersing myself in the material: reading textbooks, listening to instructional audio tapes while driving, watching educational videos while eating, and studying the English language all while taking care of my three-year-old daughter. It was another miracle mixed with relentless effort when I passed the exam. Soon, I got my first nursing job in a cardio-pulmonary intensive care unit (ICU): the most advanced unit in our hospital. I was fortunate to have two exceptional mentors guide me through the nuances of becoming a cardiothoracic (CT) surgical nurse. Not every new nurse survives in this fast-paced environment, and my preceptors' support was essential.

In 1999, a new chapter in my life

unfolded when my husband secured employment in California, prompting our relocation to San Diego. Uncertain of my hospital preference, I decided to get a job as a registry nurse. For the next 9 years, I worked across various ICUs in San Diego. This exposure shaped me as a nurse, extending my proficiency across diverse specialties and patient populations in the ER, burn center, CT surgery, trauma, and neonatal care. Working as a registry nurse was challenging and stressful and I provided care to critically ill patients while navigating an unfamiliar setting in a time efficient manner. This experience trained me to be resilient, adaptable and provided me with invaluable insights into choosing the right hospital where I wanted to settle down. UCSDH was my preferred choice due to its benefits package, provision of educational hours, the nursing union, opportunities for professional development, and the reputation of being one of the most advanced and well-equipped ICUs in our region.

In 2008, I secured a position in the surgical intensive care trauma unit at UCSDH Hillcrest. Working alongside numerous incredible nurses, I acquired extensive knowledge and expertise in taking care of post-surgical and trauma patients. After a year of experience, I was able to successfully execute a practice improvement project and earn a promotion to CNIII level. This was my first introduction to research and my passion for positive changes to nursing practice. Due to my experience working in different institutions, I wanted to bring something to UCSDH that would potentially improve our practice and workflow. I noticed that other hospitals utilized a variety of devices to crush medications for administration via gastric tubes. I conducted a comprehensive analysis and surveyed nurses about their experiences and preferences. It was so interesting to learn of the complications they encountered with different devices: injuries, clogged feeding tubes, feeding tubes requiring replacement, additional radiologic exams, and delays in tube feedings. Feeling empowered by the project, I realized the impact I could make. I completed my project advocating for the adoption of a new pill crusher, "Silent Knight," finding that it would be mutually beneficial for patients and nurses at UCSDH. Staff very much appreciated that device and the "Silent Knight" was implemented hospital-wide. Additionally, I helped to create a sustainable supply chain for the device accessories and conducted training sessions for nurses on its utilization. The feedback from the staff was overwhelmingly positive. To this day, everyone at UCSDH continues to utilize it, to reconfirm the positive impact it has had on our operations.

In 2011, I transferred to Sulpizio Cardiovascular Center (SCVC) in La Jolla. A few years later I conducted a collaborative research study with physicians entitled "Transport of Critically Ill Cardiovascular Patients". This project was to achieve the professional development goal of becoming a Clinical Nurse IV (CNIV). The study was proposed by our nurse educator as a collaborative effort between nurses and physicians in the ICU. With 22 years of experience as an ICU nurse, I felt a connection to this topic and believed my extensive experience in patient transport would offer significant insights.

The project created a lot of interest within our unit since it was UCSDH's first ever CNIV project. It quickly gained approval from my manager, unit director, and a dedicated research mentor, nurse scientist Judy Davidson. Judy's mentorship proved to be invaluable, aiding me through moments of self-doubt and knowledge gaps, ensuring that the project was executed correctly. I quickly realized I had to assume a leading role due to the primary investigator's overwhelming commitments. There were multiple times I felt like giving up on the project, as though I did not have the knowledge to complete and publish a research paper, but Judy would meet with me regularly and help overcome ongoing challenges. She would say, "Yelena, how would you eat an elephant? One bite at a time", and that's exactly what I did. Slowly, I learned multiple skills, including data processing and statistical analysis, eventually leading to the publication of my manuscript. Our study disproved our initial hypothesis that safe transport must include a physician, revealing that the presence of two ICU nurses during critical transport matched the care level provided by a physician. This ultimately highlighted the importance of adhering to standards set for safe and successful critical care transport. I presented the study at the UCSDH annual research conference and published my manuscript in Critical Care Nursing Quarterly journal. When I first saw my article in the magazine, I felt relieved! It was validating that the persistence and endless support from others had paid off. This project pushed me out of my comfort zone, and ultimately left me with a profound sense of accomplishment, knowing I've contributed to the nursing and medical field.

Working in CVC/ICU gave me an opportunity to learn the most advanced devices and care for the most critically ill patients. This included those requiring ECMO (extracorporeal membrane oxygenation) support. ECMO acts as an external lung and heart, removing carbon dioxide from the blood while infusing it with oxygen.

the CVC Nurse Educator, Cassia Yi, started the project: to establish UCSDH's first nurse-led ECMO program. Traditionally, the ECMO is run by a perfusionist, but Cassia's idea was to train and support registered nurses in this role, as other medical centers do. I was one of the first ECMO Specialists. The program was an immediate success. From managing 12 ECMO patients in 2016, UCSDH expanded our care to 104 patients by 2023.

During the pandemic, the primary mission of the UCSDH ECMO program was to rapidly increase our ECMO capacity to provide care to the surge of patients affected by severe COVID-19 induced acute respiratory distress syndrome (ARDS). The regions around San Diego were severely impacted by COVID-19. Local healthcare centers did not have the resources to admit or manage patients on ECMO. However, UCSDH could provide that much-needed care. In response to this community crisis, UCSDH pioneered a mobile ECMO unit. This specialized team was equipped to initiate patients on ECMO at their hospital and then safely transfer them to UCSDH for continued care. As the demand for ECMO continued to

increase, it necessitated the creation of an ECMO lead position.

In 2021, I was promoted to an ECMO lead position. It was a brand-new position full of uncertainties and lacking established rules and policies. However, having previously worked with Cassia Yi, I had confidence in her leadership. My responsibilities expanded to managing ECMO nurses, conducting educational sessions, and acquiring surgical techniques. All these new duties, combined with providing care to a growing number of acute ECMO patients, presented new challenges daily. In my daily work, I round with both the primary care and ECMO teams, participate in care decisions, and share my perspectives about patient treatment. As an ECMO lead, I facilitate the ECMO referral process, manage staff and equipment, replenish supplies, and assist with bedside procedures. When an "Code ECMO" is activated, I facilitate an immediate consultation between physicians to determine whether the patient should be approved for ECMO. If the decision is made to proceed with ECMO, I set up the necessary equipment and assist with the cannulation process. As the ECMO lead, I am responsible for the data collection for all our institution's ECMO cases. I enter data into UCSDH's secure REDcap database and input data into the national ECMO organization, ELSO, that collects ECMO related data from all USA ECMO centers. My duties also include providing continuous ECMO education to our Extracorporeal Nurses and conducting annual evaluations to ensure the highest standards of care are met. I participate in Mobile ECMO, aiding in the cannulation and subsequent transport of patients who are in critical condition to our hospital. I find the role of an ECMO lead to be one of the most intriguing and fulfilling throughout my career. Witnessing the development and expansion of the ECMO program has been a rewarding journey.

Every step in my journey, from working as a telemetry technician to serving as a CNA, has shaped my path to becoming a nurse. In the world of healthcare, a nurse, indeed, knows no borders.

Untitled, by Ten Mendoza, DNP, PMH-RNBC