Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Nursing and Maslow’s Hierarchy: A Health Care Pyramid Approach to Safety and Security During a Global Pandemic

Surani Hayre-Kwan, DNP, MBA, FNP-BC, FACHE, FAANP, Barbara Quinn, MSN, RN, ACNS-BC, FCNS, Tracy Chu, MS, RN, CCRN, Pauline Orr, DNP, MedSurg-BC, NE-BC, and Julie Snoke

The COVID-19 pandemic of 2020 tested health care organizations in ways many had never experienced. In response to new problems, nurses and other staff needed creative solutions that would allow them to quickly and safely provide care. Nurses concurrently experienced stressors to their personal needs. The authors collected examples of creative problem-solving through staff interviews and reflected on Maslow’s hierarchy of needs to consider how nurse’s needs were being met throughout the pandemic. Recognizing that basic needs must be addressed before an individual can ascend the levels to eventual self-realization, the authors share how one health care organization quickly and successfully met the patient care requirements while supporting nurses basic needs like safety and trust.

“One can choose to go back toward safety or forward toward growth. Growth must be chosen again and again; fear must be overcome again and again.”
—Attributed to Abraham Maslow

The nursing profession has a long and valued history of being a steady force for patients during their most vulnerable moments. Nurses demonstrate stability and endurance, rising to challenges while providing care and adapting to shifting requirements of the health care climate. Nurses consistently seek to meet the needs of their patients, and during the COVID-19 pandemic, nursing was challenged to respond quickly and creatively.

The basic needs of nurses and the impact of the pandemic can be understood using the lens of Maslow’s Hierarchy of Needs (Figure 1). This motivational theory is made up of 5 hierarchical levels describing the basic human needs; the bottom of the hierarchy (food, water, etc.) must be satisfied first before an individual can attend to the needs that are higher up in the hierarchy (friendships, self-actualization, etc.). At the onset of COVID-19, nurses were “set back” to the first level, and organizational responses had to begin with the basics.

Located in Northern California, with more than 15 thousand nurses, Sutter Health operates a network of 26 hospitals and ambulatory services that offer primary- to tertiary-level care in rural to inner-city locations. Most nurses work in acute settings, supporting medical-surgical and specialty services. The COVID-19 crisis removed comfortable familiarity within hospital units—the habits of “home” units were disrupted. COVID-19 erased the concepts of “routine” and “scheduled” and replaced them with the unfamiliar and impromptu.

**KEY POINTS**

- Nurses should be considered a key resource for any organization seeking creative solutions to emergent needs or sudden crises.
- Caring for nurses following the global pandemic will require health care organizations to reassess how they can better serve basic needs, wellness, trust, and professional role development.
- Health care organizations should engage their nursing teams to evaluate COVID-19 improvements to patient care and recommend which should be sustained post-pandemic.
The basic physiological needs include the things that are vital to our survival. Prior to COVID-19’s arrival, nurses’ basic needs were met. They were less concerned with issues such as access to nourishing food, secure shelter, reliable childcare and adequate sleep. They found assurance in following established safety protocols to keep them healthy and felt secure in their employment.

COVID-19 challenged the assumption that basic needs could be easily met. Some nurses were unexpectedly furloughed from work (due to decline in admissions and procedures), childcare centers closed, and people were urged to stay inside their homes. Grocery store shelves were emptied of essential items. Conflicting reports created fear and distrust of information. While feeling apprehensive for the safety of themselves and their families, some nurses were working longer shifts on the “frontline” with mounting anxiety and stress.

Sutter Health quickly addressed Maslow’s foundational level, physiological and safety needs, through a focus on physical safety and infection control. Nonessential workers were asked to work from home to reduce the potential of exposure. Screening for signs and symptoms of COVID-19 was implemented at all entry points for employees and patients. COVID-19 testing locations were organized to meet the patient needs in the health care system footprint. Patients with potential COVID-19 were directed to specific “respiratory” clinics, where staff roles were refined, evolving to a process so efficient that asymptomatic patients were seen by a provider within 5 minutes of arrival, and symptomatic patients were seen with 10 minutes.

Prior to COVID-19, nurses felt safe treating infectious patients during code blues with established staffing protocols and personal protective equipment (PPE). At 1 Sutter Health affiliate, once COVID-19 emerged, code blue staffing was streamlined to 5 essential participants. A multidisciplinary team quickly developed a COVID-19 supply cart that was brought to every code blue. The cart was stocked with supplies needed to care for patients with suspected or confirmed COVID-19 and contained items such as a specific video scope for intubation, viral filters for ventilation and powered air purifying respirators. Education, along with in-person drills, was provided to over 400 staff during a 2-week period.

With looming global shortages of PPE, Sutter Health affiliates proactively created plans to conserve use and preserve the existing supply. Creating and communicating standards of PPE usage was accomplished at several Sutter Health affiliates by creating a “stoplight” system, modeled after the red, yellow, green traffic light (Figure 2). Red denoted a critical limit on supplies, yellow indicated available supplies but limited volume, and green represented no limits on volume or availability.

Led by nurses, multidisciplinary teams composed of respiratory therapists, physicians, infection prevention
and leadership reviewed recommendations from the Centers for Disease Control and Prevention, the Sutter Health incident command team, and bedside staff. Communicated at daily morning huddle, “stop-light” levels were based on:

- PPE inventory/allocation
- Current available N95 model masks for in-patient areas
- Hospital and isolation census
- Patient acuity
- Schedule in procedural areas and the impact of their PPE usage on in-patient PPE supplies

In addition to mitigating physiological stressors, many nurses’ foundational safety needs were threatened. Feelings of safety were disrupted by personal stressors such as forced societal isolation, disruption in daily routine, unpredictable circumstances, financial uncertainty, and increased needs of adult and child dependents. To bolster staff resilience, Sutter Health extended employee assistance program (EAP) benefits to include additional housing support, childcare, elder care, pet care, and legal and financial resources. Counseling session limits were increased by 50% and expanded to include employee dependents, family, and couples counseling. EAP webinars specific to self-care and well-being during COVID-19 were created, and the EAP website was updated to include a 24/7 counseling support line. With basic needs met, nurses were able to feel more secure in navigating this “new normal” during COVID-19.

“The ability to be in the present moment is a major component of mental wellness.”
—Abraham Maslow

Once basic needs are met, Maslow suggests that humans are receptive to friendship, intimacy, family, and a sense of connection. Sutter Health fostered this through a multilayered strategy.

Expanding existing internal communications was essential to address the rapidly changing environment and resulting anxiety and fear experienced by health care workers. This broader sense of connection was created through frequent, effective dissemination of information to teams on the frontline. Conflicting and changing information on infection prevention guidelines, availability of PPE, and a daily deluge of findings required frequent, brief, and visible communication formats.

The daily, sometimes hourly, guidance from health care and government experts was important to monitor, but not something every frontline provider needed to hear in its entirety. Worried the staff would quickly be overwhelmed, one affiliate appointed an infection control nurse and director of nursing to monitor and filter the stream of information; they participated in a weekly call-in meeting with the organization’s emergency management system to obtain the most up-to-date facts and reported back to affiliate staff.

To bolster confidence and foster trust in leadership, it was important for leaders to have a visible presence on the frontline. An example of this was implementation of daily rounding on units by infectious disease preventionists, specialists, and other leaders. This gave leaders an opportunity to observe care delivery in ac-
tion, demonstrate appropriate use of PPE, offer fact-based reassurance, clarify rumors, and allow frontline staff to ask questions.

Posting information in staff bathrooms and in workstations is a communication method that can make one smile but can be quite effective when staff cannot stop long enough for an in-service or training. By making bright and eye-catching posters and placing them at the level they could be seen easily throughout the unit, staff could readily learn new information (Figure 3). This provided another adjunct to huddles, daily rounds, and contributed to open communication.

SELF-ESTEEM

Self-esteem is reflected in an internal reflection of one’s self. An individual recognizes what abilities and knowledge they possess, having confidence in their skills, and being a role model for others. Seeking to align with the 2020 international recognition of Year of the Nurse and Midwife 2020, Sutter Health developed a strategy to identify and celebrate those nurses who exemplified role models within the system. Nursing leadership convened a special planning team for in-person Year of the Nurse celebrations. Included in the list of events was an annual nursing symposium planned for May 2020; a highly anticipated, in-person, 2-day event with all nurses invited to register and space-limited participation of several hundred attendees.

As COVID-19 caused cancellation of multiple system-wide symposia and in-person events to reduce potential spread of disease, it was clear that the nursing symposium could not take place as previously

Figure 3. Posted Communication

Surgical Masks and N95 Respirators: Use and Purpose

Surgical/procedure masks
- Contains droplets from coughs and sneezes.
- Encouraged for patients and visitors with respiratory symptoms.
- Used by patients and visitors to minimize exposure to patients with respiratory illness.
- Used by staff during invasive procedures to prevent passage of germs to patients.
- Used by staff to protect their lower face (mouth, nose and cheeks) from sprays and splashes.
- Used by staff to protect their mouth and nose from contaminated fingers.
- Does not protect the user from small airborne contaminants.

N95 Respirators
- Used by staff to reduce exposure to airborne contaminants.
- Should not be given to patients or visitors.
- Should only be used by staff who have been fit tested.
- Staff should only use the make/model they were fit to.
organized. The planning team quickly pivoted to a virtual event and rescheduled for late fall 2020. Presentations were adapted to reflect topical content, including COVID-19 epidemiology, well-being, and self-care. Additional new content included messages of gratitude, foundational values of nursing, and tools to foster well-being.

Resilience was a common thread throughout the event. The keynote presentation focused on EAP resources to address burnout, and breakout sessions provided tools for use in daily life, as well as mental health topics specific to the stressors of 2020. Nurses were also made aware of resource lists and links posted to a designated wellness page on the Sutter Health Nursing intranet site.

Following the symposium, nurses completed evaluations and overwhelmingly found value in attending the symposium. When asked what was most valuable, some of the responses included:

“The sense of community: even though we were not sitting in the same location, there was a sense of inclusion and participation.”

“It was great to be there with a virtual group of people, and loved the chat sessions and hearing all their answers. It made me feel like a part of a bigger group with the organization. The topics are what I needed to hear with all that is going on right now.”

“It got me recharged! I felt part of the organization, not just like an individual working for the organization. I felt a renewed pride in being a nurse...I feel valued. Thank you for offering this.”

**SELF-ACTUALIZATION**

### Preparing for a Surge

Maslow recognizes self-actualization is the pinnacle of a person’s ultimate potential and cannot be reached unless all levels below are satisfied. A nurse approaching the self-actualization level can practice to the fullest potential, exhibiting traits that help them be responsive and resourceful, acting as leaders and mentors for staff.

The COVID-19 pandemic offered nurses the ability to truly embrace the heart of nursing, bringing innovative solutions to patient care. An example of this was the need for patient surge readiness across the globe. The media coverage of Europe and New York's surge provided a frightening glimpse at the reality of the pandemic, the impact on large populations, and the workforce caring for them. Local and state agencies asked that each health care organization prepare for a patient surge. Sutter Health convened subject matter expert groups that included infection control, critical care, and emergency response for a coordinated approach to this preparation.

In addition to patients on land, there were many COVID-19–positive cruise ship passengers in need of care. Locally, the pandemic spotlight focused on the needs of the American and international passengers on the Princess Cruise ship stationed off the coast of San Francisco. Sutter Health was one of the first organizations to respond and accept patients into hospitals, with nurses leading the decisions for placement of these patients within our affiliates.

A labor pool was quickly organized to train and redeploy staff across the organization. A tool was created to allow for quick filtering of training requirements based on skills and clinical unit needs. Clinical teams were retrained to support areas needing extra staffing and support. This process simplified the coordination and deployment of surgical services staff to the high-demand critical care areas. Additionally, the centralized nursing workforce education hub reprioritized their nursing residency programs to critical care training to focus on ventilator management and patient proning. This redeployment of the workforce was an effort across the system, care centers, and hospitals to respond to the state request for increased patient capacity above normal limits.

With the anticipation of the surge, nursing was part of the team at Sutter Lakeside Hospital that developed a visual patient capacity plan to meet the potential community need. This plan guided hospital leaders in their role supporting local public health preparedness with bed management as key. **Figure 4** displays the capacity improvement made by Sutter Lakeside Hospital, resulting in 140% increase in available patient beds. The visual surge plan allowed for a quick look tool to disseminate needed

| METRIC | BEFORE IMPROVEMENT | AFTER IMPROVEMENT | % IMPROVEMENT |
|--------|---------------------|-------------------|--------------|
| Community Care | 25-Bed Critical Care Hospital | Maximum Plan of 60 Beds | 140% Increase in Capacity |

**Figure 4.** Sutter Health Lakeside Hospital Capacity Improvement
information to all levels of the organization allowing for open and transparent dialogue with the team around staffing, infection control, supply and equipment needs as well.

COVID-19 Triage Line

As a result of several procedural department closures across Sutter Health, registered nurses (RNs) were displaced from normal work schedules and became available for COVID-19 preparations. One solution identified early in the COVID-19 experience was to develop and launch an RN-led nurse advice line.

A new toll-free telephone number was created to route COVID-19 calls to the newly formed COVID-19 RN Advice Line team. This number was broadly published across all channels used to communicate to health care members and then more broadly through social media and local radio and television stations. The first Sutter team member connecting with the patient was the patient service representatives, who answered patient calls and routed messages to a designated location in the electronic health record. COVID-19 advice line nurses checked the pool for new messages and contacted patients in order of receipt (Figure 5).

REFLECTION

Sutter Health sought to meet the needs of all Maslow pyramid sections and instill trust that the organization was able to support the health care team. Any crisis can trigger change, and nurses often become inspired reflections of this transformation. The COVID-19 pandemic challenged health care organizations across the globe to find ways to care for large volumes of highly contagious patients, locate new sources for PPE, and care for their stressed workforce. Stories emerged about nurses creating unique solutions to all these problems, and Sutter Health was no different.

Nursing is uniquely positioned to manage challenges, primarily because they are prepared for the unexpected. Departments where this happens frequently are filled with nurses who relish the medical emergencies as challenges. Nursing at Sutter Health seemed to have a cultural shift of many teams joining as a single team, creating a supportive environment where nurses developed a greater awareness of how they could help care for our patients, despite working in a different environment.

“The fact is that people are good, give people affection and security, and they will give affection and be secure in their feelings and their behavior.”

—Abraham Maslow

REFERENCES

1. Maslow AH. A theory of human motivation. Psychological Review. 1943;50(4):370-396.

2. World Health Organization. Year of the Nurse and the Midwife 2020. Available at: https://www.who.int/campaigns/annual-theme/year-of-the-nurse-and-the-midwife-2020. Accessed November 14, 2020.

Surani Hayre-Kwan, DNP, MBA, FNP-BC, FACHE, FAANP, is director, Professional Practice & Nursing Excellence, at Sutter Health in Sacramento, California. She can be reached at kwans@sutterhealth.org. Barbara Quinn, MSN, RN, ACNS-BC, FCNS, is director, Professional Practice & Nursing Excellence, at Sutter Health. Tracy Chu, MS, RN, CCRN, is clinical nurse educator at Sutter Medical Center Sacramento. Pauline Orr, DNP, MedSurg-BC, NE-BC, is chief nurse executive at Sutter Lakeside Hospital in Lakeport, California. Julie Snoke is program manager, Advanced Practice Clinicians, at Sutter Health.

Note: The authors would like to thank every nurse at Sutter Health for their dedication to nursing and to caring for our patients in Northern California as we navigated the COVID-19 pandemic.