Nurse Understaffing Linked to Increased Risk of Patient Mortality

PATIENTS’ MORTALITY RISK RISES as the number of understaffed nursing shifts they are exposed to increases, according to a study by researchers from the UCLA School of Public Health, Mayo Clinic and Vanderbilt University. The study, published in the New England Journal of Medicine, additionally found that when nurses’ workloads increase during shifts because of high patient turnover, mortality risk also rises.

The study was headed by Dr. Jack Needleman, professor of health services at the UCLA School of Public Health, who with his colleagues analyzed the records of nearly 198,000 admitted patients and 177,000 eight-hour nursing shifts across 43 patient-care units at a large tertiary U.S. academic medical center. As part of their comprehensive analysis, the researchers calculated the difference between the target nurse-staffing level and the actual nurse-staffing level for each shift they examined.

They found that for each shift patients were exposed to that was substantially understaffed – falling eight or more hours below the target level – patients’ overall mortality risk increased by 2 percent. Because the average patient in the study was exposed to three nursing shifts that fell below target levels, the mortality risk for these patients was about 6 percent higher than for patients on units that were always fully staffed.

The study also found a higher mortality risk when nurses’ workloads increased because of high patient turnover in individual units. For each shift a patient experienced in which turnover – due to admissions, discharges and transfers – was substantially higher than usual, the risk of mortality was 4 percent higher. The average patient in the study was exposed to one high-turnover shift.

Nearly a decade ago, research published by Needleman and his colleagues in the New England Journal of Medicine provided important early evidence that nurse staffing in hospitals was associated with patients’ clinical outcomes. “This study addresses the challenges to prior studies and finds that, indeed, nurse staffing is hugely important,” Needleman says. “Since the hospital we studied delivers high-quality care, has low mortality rates, has high nurse-staffing targets and meets its targets over 85 percent of the time, it’s unlikely the increased mortality we observe is due to general quality problems.”

Growing Influence of Food Marketing a Key Contributor to Rise in Obesity

THE DRAMATIC INCREASE in U.S. obesity rates since 1980 is, to a great extent, the result of an unprecedented expansion in the scope, power and ubiquity of food marketing, according to an analysis by Dr. Frederick Zimmerman, professor and chair of the school’s Department of Health Services.

Writing in the Annual Review of Public Health, Zimmerman noted that many have sought to explain the rise in obesity using “rational choice” arguments –
citing, for example, a decline in food prices as a key factor in greater food consumption. But Zimmerman’s analysis concluded that such contentions don’t square with the facts of the current epidemic.

“Neither prices, nor rates of physical activity, nor food subsidies have changed dramatically since 1980, when the obesity epidemic began to get into full swing,” Zimmerman says. “Instead, what has changed is the rapid expansion in the power and scope of food marketing.”

Zimmerman found that, while television food advertising has remained relatively constant over the last three decades, all other forms of marketing have exploded. For example, product placement and food-company sponsorships of sporting events, once virtually nonexistent, have become multibillion-dollar forms of food marketing – “all the more insidious for their subtlety,” Zimmerman says. Food advertising on the Internet and in-store displays have also emerged as key strategies.

“Of course, it is almost always the least healthy foods that are so vigorously promoted – sugary beverages, salty snacks, candy, and other products that fatten wallets as they fatten us,” Zimmerman says.

Food promotion is just one form of marketing, he noted in the analysis. Others include increased portion sizes and convenient placement of food at points of purchase. “There seems to be an unwritten rule that no checkout counter should be beyond arm’s reach of a candy bar,” Zimmerman observes.

“It doesn’t have to be this way,” he adds, pointing out that many countries restrict advertising of sugary foods and beverages to children, and that soda or marketing of unhealthy food itself could be taxed. Concludes Zimmerman: “Only by reigning in or countering marketing power can rationality be restored to the dietary choices of Americans.”

Review of Cysticercosis in United States Makes the Case for Public Health Measures

CYSTICERCOSIS – an infection by the pork tapeworm *Taenia solium* that can cause severe neurological illness and death in humans – is generally viewed as a disease of developing countries or immigrants from areas where it is endemic. However, a review of more than 50 years of literature by two UCLA School of Public Health faculty members, along with colleagues at the U.S. Centers for Disease Control and Prevention, confirms that cysticercosis is acquired in the United States – and in many geographic areas.

The study, whose authors include Drs. Frank Sorvillo and Shira Shafir of the school’s Department of Epidemiology, makes the case for implementing public health measures to control the disease, which has gained recent attention as an infection associated with poverty in the United States, and is a major cause of preventable epilepsy. Based on its epidemiology and global impact – 50 million people are infected worldwide – the International Task Force on Disease Eradication has included cysticercosis as one of six infectious diseases targeted for eradication.

Publishing in the journal *Emerging Infectious Diseases*, Sorvillo (who is also with the Los Angeles County Department of Public Health), Shafir and colleagues reviewed 78 cases of cysticercosis in the United States, reported from 12 states between 1954 and 2005. In 21 percent of the cases, household members or close personal contacts were the confirmed or presumed source of infection. Cysticercosis carriers are typically unaware of their infection; if hygiene is poor, transmission of the tapeworm eggs can easily occur among those in close contact.

“Our review underscores that cysticercosis acquired in the United States can occur in many geographic regions of the country, and points to several compelling rationales for implementing public health efforts to control this disease,” says Shafir. “Cysticercosis is a preventable severe infection. Moreover, it is a fecal-oral transmitted disease, and a probable source of infection among contacts can fre-
quently be found – principally among household members, who are major sources of eggs and therefore infection.”

Sorvillo and Shafir are currently working with the L.A. County Department of Public Health to improve surveillance for cysticercosis in the county.

Decline in Rate of Vaginal Birth After Cesarean Tied to Restrictive Policies

DESPITE STUDIES CONSISTENTLY SHOWING HIGH RATES of success and low complication rates, vaginal births for women who have previously had a cesarean section have declined from a peak rate of 28 percent in 1996 to 8.5 percent in 2006, according to an analysis led by Dr. Kimberly Gregory, professor in UCLA’s schools of public health and medicine. Driving the downward trend, Gregory found, are concerns about patient safety and physician liability that have led to more restrictive hospital policies.

Gregory reviewed the literature and analyzed the National Inpatient Sample Database to describe trends in vaginal birth after cesarean (VBAC) access in the United States, along with factors associated with changing use. Her study was published in Seminars in Perinatology.

For decades, VBAC has had a success rate of approximately 70 percent and a serious-complication rate of uterine rupture that is less than 1 percent. In 1981, the NIH Consensus Conference on Cesarean Childbirth called for increased VBAC to bring down the rate of cesareans performed. The American College of Obstetricians and Gynecologists (ACOG) subsequently published a series of guidelines resulting in more liberal use of VBAC, which led to a dramatic increase over the next 15 years.

That trend began to be reversed, Gregory concluded, after a widely reported 1997 publication by McMahon et al. highlighted long-known risks. In conjunction with well-publicized litigation settlements after uterine rupture, it led to revisions of the ACOG position, including guidelines that made VBAC more burdensome for physicians and hospitals, Gregory found.

Her analysis indicates that VBAC access has declined across all hospital types, with women delivering in suburban, rural, private, and/or nonteaching hospitals having the least access. VBAC utilization is higher where there is a model of care that includes nurse midwives.

“Women need to have access to nonbiased, evidence-based information to engage in a collaborative partnership of equals with midwives and obstetricians,” Gregory says, “and clinicians need a better set of tools to bring about more rapid dissemination and change in provider practices.”

Chemotherapy for Breast Cancer: Quality of Life Returns but Physical Symptoms Need More Attention

WOMEN WHO UNDERGO CHEMOTHERAPY as part of their treatment for breast cancer show significant improvement in both their physical and psychosocial functioning within 12 months – with quality of life returning to its pre-treatment level, according to a study headed by Dr. Patricia Ganz, professor in the UCLA schools of public health and medicine and director of the Division of Cancer Prevention and Control Research at UCLA’s Jonsson Comprehensive Cancer Center.

But Ganz, reporting in the Journal of Clinical Oncology, also found that women who received chemotherapy experience more severe and persistent physical symptoms during the first year of recovery – symptoms that warrant more attention than they typically receive.

Recurrence rates for breast cancer have been declining, in part because of improvements in adjuvant drug treatments. National guidelines call for women with
invasive breast cancer larger than 1 centimeter to be offered chemotherapy. But such treatment can produce long-term cognitive, psychosocial and physical side effects that can be debilitating, and previous studies of long-term breast cancer survivors have found that women who received chemotherapy had poorer quality of life than those who didn’t.

Ganz and colleagues previously conducted a randomized trial of a psychosocial intervention in 558 women who were enrolled in the study within a month after completing therapy. In the current report, they compared self-reported quality of life scores at study entry and then at two months, six months and 12 months later, according to whether or not women had received chemotherapy as part of their initial treatment.

At study entry – four weeks after the end of initial treatment – the chemotherapy group reported significantly more severe physical symptoms, including musculoskeletal pain, vaginal problems, weight problems and nausea. In other quality of life measurements the two groups were similar, and both groups’ quality of life had improved significantly by the one-year mark, with no difference between the two groups.

“This study finds that while quality of life returns to pre-treatment levels after adjuvant chemotherapy, breast cancer survivors have persistent symptoms from the treatment,” Ganz says. “These must be addressed as part of post-treatment survivorship care.”

Climate Change Exacerbates World Hunger Concerns

CLIMATE CHANGE, the use of food crops as a fuel source and rising food prices loom as three major challenges to the global problem of malnutrition and food insecurity – a problem that, despite international efforts, has worsened since 2005, according to an analysis co-authored by Dr. Cristina Tirado, an associate professor of community health sciences at the school, and published in Food Research International.

The report, for which Tirado collaborated with colleagues at the International Food Policy Research Institute, the Food and Agriculture Organization of the United Nations, and Oxfam America, noted that 1 billion people were suffering from hunger and malnutrition in 2009. Reductions in child malnutrition are proceeding too slowly to meet the Millennium Development Goal target of halving hunger by 2015, according to the analysis.

According to the analysis, more frequent and intense extreme weather events such as tropical cyclones, intense rainfall and droughts will reduce food production and increase water scarcity, especially in regions already vulnerable to food insecurity. A decline in output from the agricultural, forestry, livestock and fisheries sectors would adversely affect the poor, those dependent on subsistence agriculture and fisheries, and traditional societies. Probable migrations of people from rural to urban areas would further strain health and food resources, the authors stated.

Producing food crops for use as bioenergy to replace fossil fuels remains controversial; the report noted that conversion of land from food to fuel production has contributed to increasing food prices and will reduce availability of food crops. In addition, rising prices can compromise the quantity and nutritional value of food consumed by poor people, leading to malnutrition and subsequent health problems.

“Climate change undermines current efforts to reduce under-nutrition, which remains a serious challenge to the social, economic and health dimensions of people’s livelihoods,” says Tirado. “Placing people, human rights and achievement of the Millennium Development Goals at the center of strategies to adapt to and mitigate the effects of climate change can enhance the development of sustainable climate-resilient policies.”