

# Reaction paper analysis



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**A LOOK AT NEW NURSING TECHNOLOGIES AND TRENDS** Nursing technology has transformed the way nurses work and continues to evolve, along with the roles that nurses play in today's health care arena. According to various studies and surveys, technology in the nursing world has increased patient satisfaction and overall outcomes, reduced clinical errors and decreased the amount of paperwork that nurses were once required to perform. The outlook for new technology in nursing remains robust, as new devices, computers and robots aim to transform the future of health care.

The following technologies are just a few that have made headlines recently as they ease and streamline each nurse's workload to help them focus on what matters most-their patients. **POINT OF CARE TECHNOLOGY** Accessing patient records, X-rays, medication information and even obtaining second opinion from another health care professional, can all be done directly from the bedside thanks to new advances in point-of-care technology. Utilizing a wireless network and computer, nurses in many hospitals can now access and receive a wide array of information right from the patient's room.

Computer and software companies are working to further advance point-of-care technology to include wireless and mobile applications that will enable nurses to have the information they need directly at their fingertips.

**ELECTRONIC HEALTH RECORDS** Electronic Health Records (EHR) have been a hot topic lately as policymakers work towards establishing a Nationwide Healthcare Information Network (NHIN) that would standardize EHRs. Although paperless health records have been utilized for years, a new Harvard research study showed that fewer than 1 in 5 nurses are using EHRs.

Although computerized documentation was linked to nursing excellence and better patient outcomes. As more hospitals began to implement EHRs, experts predict that there will likely be fewer medical errors, an increase in quality care and satisfaction, and overall increase in accuracy. ELECTRONIC LIFT SYSTEMS, SMART BEDS AND COMPUTERIZED STAFF SCHEDULES Many of the health care technologies we see today have been put in place to make a nurse's everyday routines safer and more efficient. Electronic lift systems operated by remote control and other wireless technologies have greatly reduced injury and stress for both patients and nurses. Smart beds and computerized staff scheduling systems have also improved general nursing efficiency. Smart beds, such as those developed by Hill-Rom, work in conjunction with other point-of-care technology to obtain and analyze patient information such as weight, temperature and head and neck elevation. New staff scheduling systems improves efficiency by enabling nurses to set up coverage and even schedule their shifts remotely. PATIENT AND STAFF IDENTIFICATION SYSTEMS

Patient and staff identifiers in the hospital setting have become increasingly important in light of patient mix-ups and unauthorized people entering a facility or accessing patient records. Bar codes, wristbands and radio frequency identification (RFID), all work to track and identify patients in an effort to reduce errors while also keeping the hospital population safe. New palm vein technology, eye scans and microchips have also been introduced as a way to identify both patients and healthcare professionals, and to cut down on unauthorized access to patient files.

As new technologies continue to emerge, nurses' roles will continue to evolve, with each advance, bringing a safer and healthier future for both nurses and the patients in their care. OTHER TRENDS IN NURSING THE PATIENT SAFETY IMPERATIVE A vigorous demand for increased patient safety is being heard from all sectors. Patient safety will be paramount in 2004. Although a greater focus on patient safety has been a trend since the Institute of Medicine's landmark report in 1999 estimating that 44, 000-98, 000 people die yearly as a result of medical errors, several recent studies have turned the spotlight on nursing as a safety net.

Reflect upon these sentiments expressed by the authors of a major new report about nurses and patient safety: " how well we are cared for by nurses affects our health, and sometimes can be a matter of life or death... in caring for us all, nurses are indispensable to our safety. When nurses' workloads are too heavy, safety can too easily become compromised. Can we expect nurses caring for too many patients or working too many hours to continue to intercept 86% of the medication errors made by physicians and pharmacists that they usually intercept before such errors reach the patient?

Can we expect the same outcomes of care that are achieved with more reasonable workloads? To no one's surprise, heavier patient loads are associated with higher rates of infection, gastrointestinal bleeding, pneumonia, cardiac arrest, and death from these and other causes. The typical work environment of nurses harbors many latent conditions that are sources of threats to patient safety. Sicker patients, inadequate orientation for new nurses, communication failures, interruptions, and distractions were among the environmental factors found to contribute to errors.

A new report from the Institute of Medicine finds that “ the work environment of nurses needs to be substantially transformed to better protect patients from healthcare errors. The report calls for changes in how nurse staffing levels are established and mandatory limits on nurses’ work hours as part of a comprehensive plan to reduce problems that threaten patient safety by strengthening the work environment in 4 areas: management, workforce deployment, work design, and organizational culture. SKYROCKETING

### HEALTHCARE COSTS

Healthcare is rapidly becoming unaffordable. The United States spends more on healthcare than any other industrialized country. In 2001, total national healthcare spending reached \$1. 4 trillion (an increase of 8. 7% in a single year! ) or 14. 1% of the nation’s gross domestic product. Increasing at a rate that is 5 times the inflation rate, healthcare spending in 2003 continued to rise at the fastest rate in our history Unless spending slows significantly, health insurance premiums will continue to rise rapidly and the number of uninsured Americans will increase.

Healthcare spending is projected to reach \$2. 6 trillion in 2010. A big contributor to escalating healthcare costs in the United States is the medical litigation system. The runaway litigation system raises the costs of healthcare for everyone, costs that are paid for through higher premiums for health insurance, higher out-of-pocket payments to obtain care, and higher taxes Born Earlier and Living Longer Neonatal nurses have witnessed a flood of premature babies in the past several years, a trend that is likely to continue in 2004. The increase in prematurity is partly a consequence of the popularity of assisted reproductive technology (ART). In 2000, 53% of infants

born through ART were twins, triplets, or higher-order multiples compared with 3% of the general population. Twins and other multiples are more often premature and/or of low birth weight, and often require neonatal intensive care. As a group, the number of premature infants may be getting larger, but individually, it seems that premature infants are getting smaller all the time — the phenomenon of “the incredible shrinking preemie. Though it is extremely difficult and heart-wrenching at times, neonatal nurses and physicians cannot shrink from the question of how small is too small. It is a question that has been asked for decades now, and still has no easy answer. Decades of research and experience in perinatology and neonatology have convinced us that the best approach is to prevent preterm labor if at all possible. The focus in 2004 will be on the prevention of prematurity in a broad sense, instead of focusing on more high-tech ways to save the lives of increasingly immature newborns.

Look for a high-profile media campaign from the March of Dimes aimed at both professionals and the general public so that everyone gets the message — babies are better off born at term. On the other end of the life spectrum, people are expected to live longer (77.2 years, in 2001). [17] The “over 85s” are the fastest growing segment of the older population. In fact, the whole population is getting older. The percentage of people over the age of 65 years in the United States is now 12%, compared with 8% just 50 years ago. We can expect this to rise further as the first of the baby boomers enter their sixties just 2 years from now.

Healthcare Consumerism and “E-Health” “Americans want the best healthcare someone else will pay for. Consumerism is an intriguing trend

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that bears close watching in 2004. “ Consumerism” is a buzzword that means different things to different people with different interests. In its truest sense, consumerism is “ a movement seeking to protect the rights of consumers by requiring such practices as honest packaging, labeling, and advertising, fair pricing, and improved safety standards. No argument there! In healthcare, a consumer has come to mean a more informed participant, perhaps one who uses the

Internet to obtain information about health, disease, and quality ratings of providers and hospitals. Defined as such, consumerism is a positive development in healthcare. However, in industry, consumerism also refers to a type of health insurance plan called a consumer-directed health plan that gives the consumer (the employee) more choices about how his or her insurance dollars will be spent. And, in practice, this means, plainly stated, that the consumer is paying for more of the healthcare costs. The big push behind the consumerism movement is the hope that it will ultimately drive down healthcare costs.

However, employers have been shifting more of the costs of health insurance premiums to employees for years now, yet the cost of health insurance keeps soaring. Are the majority of Americans suddenly going to adopt healthier lifestyles to save money on out-of-pocket medical expenses? We are taking the risk that many Americans are simply going to forego spending money on healthcare whenever possible. And since we are already in the midst of epidemics of obesity and diabetes in this country, we could end up paying with our health.

Further, it is believed that information technology will help consumers make better choices about healthcare, getting more “ value for money. ” Indeed, use of healthcare Web sites by consumers tripled in 2002 as individuals spent more time exploring their options before making healthcare decisions. The problem is, even with a boatload of information about disease, diagnostic tests, and treatment options, someone with a healthcare background can have difficulty making decisions about what is necessary and what is fluff, particularly when faced with the crisis of a serious illness.

How is the average lay consumer to accomplish this? Hospital and physician “ report cards” and other forms of quality ratings will become more prevalent, purportedly to help consumers make choices about where to spend their healthcare dollars. It remains to be seen if people will shop for healthcare services the way they do for a car or a television set, or if they will continue to rely on word of mouth, convenience, and what they are comfortable with, just as they have done in the past. Complementary and Alternative Medicine

Hand-in-hand with the healthcare consumerism movement is a trend known as complementary and alternative medicine, or CAM. CAM is a group of diverse medical and healthcare systems, practices, and products that are not presently considered to be part of conventional medicine. In 1999, the National Center for Complementary and Alternative Medicine became 1 of 27 institutes and centers of the US National Institutes of Health. In attempts to improve their health and/or combat illness, approximately 4 in 10 Americans will use CAM therapy this year, and many parents will also provide CAM for their children.



Most healthcare consumers will use the Internet to find information about alternative therapies. While some scientific evidence exists regarding some CAM therapies, for most there are key questions still unanswered. Nurses will not only be questioned about complementary and alternative therapies, but they will need to be proactive and open dialogues with patients about their use of CAM in order to address safety issues. In the very near future, nurses might have a greater role in providing CAM in some healthcare settings, including hospitals.

The flurry of interest in CAM has stimulated a movement to integrate CAM into the conventional healthcare system, and has led to funding for clinical trials to determine safety and efficacy of CAM therapies. Technological Wonders and Woes Imagine a wireless, disposable endoscopy camera in a capsule that provides real-color images of the gastrointestinal tract after being swallowed and moved along by peristalsis. Or picture an antibody-coated stent that prevents restenosis of coronary arteries. And envision in the works — an artificial pancreas and a robot that performs delicate surgery inside of an MRI chamber.

Consider the possibility of delivering a baby by Cesarean section — halfway — so that the baby can be incubated and resuscitated before clamping the umbilical cord, all because there is a large tumor growing on the baby's trachea. These miracles of modern medicine are the feel-good side of high-tech, the side we cannot get enough of. In sharp contrast to the way healthcare embraces new technology for diagnostic and treatment purposes, hospitals have lagged far behind other industries when it comes to the adoption of information technology.

We are still wallowing in paper, while the paperless, or electronic, medical record that has been talked about for years is still mostly just talked about. It looks as though this will soon be changing, though. The US Department of Health and Human Services is in the process of developing a standardized model of an electronic health record, expected to be ready sometime this year. More nurses can look forward to experiencing the challenges of working with new information technology systems in 2004.

Computerized provider (or physician) order entry and barcode-enabled point-of-care medication management systems are new applications designed to improve efficiency and reduce medication and other errors in the clinical setting. Computerized provider (or physician) order entry systems were highly anticipated to replace handwritten prescribing by the end of 2003. Barcode medication management systems are designed to prevent medication administration errors. Both are slowly making their way into more of the nation's hospitals. Web-Based Nursing Degrees Online advanced degree programs in nursing have multiplied rapidly in the past few years.

Today, it is possible to get an RN to BSN degree, an RN (bridge) to MSN degree, or an MSN in an array of clinical or nonclinical advanced practice majors. Do you already have your master's? There are even online post-master's certificate programs for nurses who want to become nurse practitioners. Some online programs are entirely Web-based, using online lectures, libraries, discussion groups, conferencing, and email for communication between instructor and student. Others conduct coursework online but require site visits one or more times per semester for laboratory or clinical practice.

Some are self-paced (asynchronous), while others follow a typical college schedule with all students participating simultaneously (synchronous). To date, there is little uniformity in online nursing degree programs — many different combinations of online coursework and campus attendance requirements exist. When nursing degree programs first went online in the late 1990s, some concerns were voiced over whether Internet education was appropriate for a practice-oriented discipline like nursing and whether the same high standards of traditional classroom learning could be maintained.

Since then, the growth of such programs has been impressive, and students and faculty alike express satisfaction with distance learning programs in nursing. Despite unresolved questions about quality of the curriculum, clinical standards, accreditation, and jurisdiction issues, it appears that online degree programs in nursing are here to stay. Living With Chronic Disease A total of 72% of all deaths in the United States are attributable to 4 major diseases: heart disease, cancer, chronic obstructive pulmonary disease, and diabetes.

These and innumerable other preventable and no preventable conditions such as asthma, arthritis, stroke, kidney disease — the list goes on and on — represent a way of life for millions of Americans living with a chronic disease. When chronic disease is complicated by comorbidities such as obesity and hypertension, management becomes that much more difficult. Although chronic diseases are among the most common and costly health problems, they are also among the most preventable.

As the elderly proportion of the population grows, chronic disease could very well overtake acute illness as our primary healthcare concern. Prevention of chronic disease, its complications, and optimal disease management require a different approach to healthcare than we have been used to, and we will have to adapt accordingly. In order to turn the tide on chronic disease for future generations, we need to redouble our efforts to help young and old clients avoid the known risk factors such as tobacco use, and encourage them to adopt healthy diets, exercise, and stress management.