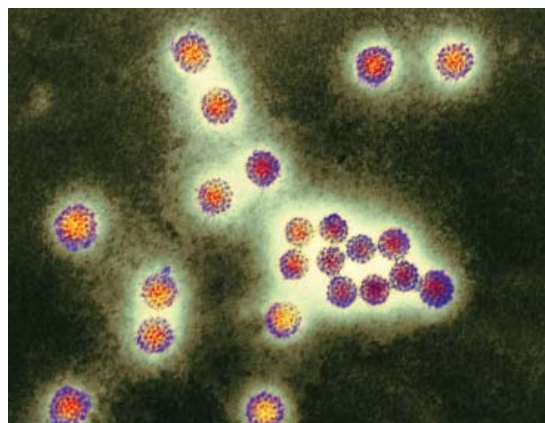


New studies of HPV vaccination

WITH CONTROVERSY continuing to simmer in some quarters over the human papillomavirus (HPV) vaccine, three new studies exploring who benefits most from its use and the factors impacting its adoption may help to foster increased vaccination rates.

The Advisory Committee on Immunization Practices (ACIP) recommended routine vaccination of females aged 11 to 12 years and noted that the quadrivalent HPV vaccine is licensed for use in females between 9 and 26 years old (*MMWR*, March 23, 2007;56[RRO2]:1-24). The first study reinforces the value of adhering to these recommendations, finding that administration of HPV vaccine may reduce the risk of a range of genital diseases among adolescents and young women.

The study (from the Feb 5, 2010 *Journal of the National Cancer Institute*. [Epub ahead of print]) looked at 17,622 women aged 15 to 26 years who were enrolled in one of two randomized placebo-controlled efficacy trials for the HPV6/11/16/18 vaccine. Outcomes included cervical intraepithelial neoplasia (CIN, a precursor of cervical cancer), external anogenital and vaginal lesions, Pap test abnormalities, and procedures such as colposcopy



Papillomavirus vireons seen in a colored transmission electron micrograph

and definitive therapy or excision of lesions. A limitation of the study was that only 14 of the 40 HPV types that infect the genital tract were assessed.

Among women who were uninfected, the study revealed that vaccination was up to 100% effective in reducing the risk of HPV16/18-related high-grade cervical, vulvar, and vaginal lesions and the risk of HPV6/11-related genital warts. For the group representing the general population, researchers reported that vaccination reduced the risk of any lesion, genital warts, Pap test abnormalities, and definitive therapy, irrespective of HPV type.

The second study, in the Feb 15, 2010 *Journal of the National Cancer Institute* (Epub ahead of print), reinforced the notion that older women may not benefit

from HPV vaccinations or frequent HPV screenings.

The researchers examined whether women's age and the duration of carcinogenic HPV infections influenced subsequent persistence of infection and the risk of CIN grade 2 (CIN 2) or worse disease. Ana Rodriguez, MD, and colleagues screened more than 9,000 women in Costa Rica aged 18 to 97 years. Participants with CIN 2 or worse disease at enrollment were treated and not followed any further for the duration of the study. Those at low-risk of CIN 2 or worse were rescreened at 5 to 7 years, and higher-risk participants and subsets of low-risk women and initially sexually inactive women were rescreened either annually or semi-annually for up to 7 years.

The rate of new infections preventable by vaccination declined with age, the researchers found. The team also reported that the rate of newly detected carcinogenic HPV infections decreased with increasing age and ranged from 35% in women 18 to 25 years of age to 13.5% in women \geq 42 years old.

Finally, other than the recommendations of medical experts, what factors can impact a parent's decision on whether to have their child vaccinated for HPV?

According to a study published in *Cancer Epidemiology, Biomarkers & Prevention* (2010;19[2]:319-326), it could involve something as unusual as whether or not that parent is a smoker. Researcher Carolyn Fang, PhD,

Those parents who were more likely to have their daughters vaccinated also believed that cancer can be cured if caught early.

an associate professor in the Cancer Prevention and Control Program at Fox Chase Cancer Center, used information from a 2007 survey from more than 1,300 parents or guardians of female children or adolescents ≤18 years old to examine the multiple behavioral correlates of HPV vaccine acceptability.

Dr Fang found that approximately 18% of the participants would not let their daughters receive the HPV vaccine, about 25% were undecided, and approximately 58% reported that they would have their daughters vaccinated. Data collected showed that the parents who were more accepting of the vaccine were either current or former smokers, engaged in health-promoting activities within the past month, or had not used alternative, complementary, or unconventional therapies within the past year. What is more, the parents who were more likely to have their daughters vaccinated believed that cancer can be cured if caught early.

“Saying that parents would or would not vaccinate their daughters does not necessarily translate into action or lack of action for vaccination. There may be unanticipated barriers when parents attempt to get their daughters vaccinated, such as cost or access to health care, said Sally Vernon, PhD. Dr Vernon is director of the Division of Health Promotion and Behavioral Sciences at the University of Texas–Houston School of Public Health and editor of the journal in which the study was published.

Research finds mixed evidence on hospital flower risk

ALTHOUGH some hospitals have moved towards prohibiting flowers at the bedside because of a number of potential risk concerns, researchers say that evidence shows that these risks may not be great, according to findings published in *BMJ* (2009;339:b5257).

To explore the possible health and safety risks surrounding the presence of bedside bouquets in hospitals, Giskin Day and Naiome Carter of Imperial College London surveyed the literature and talked with patients and staff at two UK hospitals about their attitudes about flowers.

Older research had come down negatively on flowers. One study from 1973 found that although flower water contained high counts of bacteria, subsequent research gave no evidence that flower water has ever caused hospital-acquired infection. An even older study reported that in the late 1900s, it was believed that flowers compete for patients’ oxygen at night. Subsequent studies revealed a negligible impact of flowers on air composition.

Flowers have positive effects on emotions, mood, social behaviors, and memory.

On the plus side, other studies have reported that flowers have immediate and long-term positive effects on emotions, mood, social behaviors, and memory for patients. In fact, one study found that hospital patients in rooms with plants and flowers required significantly fewer postoperative analgesics; had lower blood pressure and a lower heart rate; had lower levels of pain, anxiety, and fatigue; and had more positive attitudes than patients in the control group.

Simone Cohn, a medical anthropologist at Cambridge University, suggests that the decision to ban flowers “seems to reflect a much broader shift towards a model of care that has little time or place for more messy and nebulous elements.”



ISTOCKPHOTO

Soliris	for paroxysmal nocturnal hemoglobinuria
Elaprase	for Hunter syndrome
Naglazyme	for Maroteaux-Lamy syndrome
Cinryze	for hereditary angioedema

The most expensive drugs

According to *Forbes.com*, the four most expensive drugs—and none of them are cancer drugs—cost more than \$350,000 per patient per year. All were developed to treat rare genetic disorders that afflict a small number of people.

Elderly cancer survivors advocate more for others

OLDER, timid patients who survive cancer urge other cancer patients to become bolder advocates for their own care, according to a study published in the *Journal of American Geriatric Society* (2009; 57[S2]:s269-s271).

Eva Kahana, PhD, and colleagues from the Elderly Care Research Center at Case Western Reserve conducted a longitudinal study to determine what older people do to weather chronic illnesses and frailties in their later years, as well as what they do to age successfully.

The study involved cancer survivors who underwent in-depth interviews about their cancer experience during the 17th year of the

study. Participants were on average 79 years old, and the majority of them were married women.

Researchers found that although participants had not been advocates for themselves, later in life they became advocates for others. Dr Kahana reported that survivors suggested their peers with cancer get second opinions, check their physician's background, maintain a positive mental attitude, join support groups, and learn more about treatment options before taking their doctor's advice. Very few of these individuals, however, had actually practiced these strategies during their own illness. Instead, they coped by relying on physicians and family members.



GETTY IMAGES

Supporting other patients with cancer

The researchers suggest that contrary to the common notion of a uninterested or disempowered elderly patient, “a transition may be occurring [in this group] from passive to a more active or even activist orientation due to the illness experience.”

Ultrasound “plus” for early-stage ovarian cancer

PHYSICIANS may be able to detect early-stage ovarian cancer using contrast-enhanced ultrasound combined with blood analyses, according to researchers from Mount Sinai School of Medicine and Vanderbilt University Medical Center.

“The fact that so many women are not diagnosed until their disease is advanced confirms the inadequacy of pelvic examinations and standard ultrasound in detecting early-stage ovarian cancer and the dire need for a validated screening method for the detection of early-stage disease,” said lead author David Fishman, MD. “The ability to detect ovarian cancer by a simple blood test has long been the holy

When used together, ultrasound and a blood test for cancer biomarkers may allow earlier diagnosis.

grail of screening tests. Although a single biomarker blood test would be ideal and simple, it is not possible at present,” said Dr Fishman.

In their study, Dr Fishman and colleagues found that contrast-enhanced ultrasound, a noninvasive medical imaging technique, may help confirm or refute the ability of newly-discovered biomarkers to accurately detect early-stage ovarian cancer. According to the authors, although proteomics and ultrasound are of limited value as early-detection tools when used separately, their use in combination shows promise in that it may allow diagnosis at an earlier stage.

“We also found that the contrast agents may significantly improve the diagnostic ability of ultrasound to identify early microvascular changes that are known to be associated with early-stage ovarian cancer,” said Arthur Fleischer, MD, a co-author of the article.

According to data presented with the study, ovarian cancer is the fifth leading cause of cancer-related death. If this disease is detected early, survival percentages are greater than 90%, compared with 30% for disease that is detected at an advanced stage. The study findings were published in the *American Journal of Roentgenology* (2010;194[2]: 349-54).

FDA Update

The FDA approved **Rituxan (rituximab)** to treat certain patients with chronic lymphocytic leukemia (CLL). Rituxan is intended for patients with CLL who are beginning chemotherapy for the first time and for those whose CLL has not responded to other cancer drugs for CLL.

The FDA approved a **risk evaluation and mitigation strategy (REMS)** to ensure the safe use of erythropoiesis-stimulating agents (ESAs). The medications included in the program are marketed by Amgen under the names Aranesp (darbepoetin alfa), Epogen (epoetin alfa), and Procrit (epoetin alfa). FDA required the manufacturer of these products to develop the REMS based on studies demonstrating that use of ESAs can increase the risk of tumor growth and shorten survival in patients with cancer.

The FDA approved **Tykerb (lapatinib) in combination with Femara (letrozole)** to treat hormone positive and HER2-positive advanced breast cancer in postmenopausal women for whom hormonal therapy is indicated.

The FDA approved a **new concentration of morphine sulfate oral solution** for the relief of moderate to severe, acute and chronic pain in opioid-tolerant patients.

Greens for chemoprevention

IN YET another example of the importance of eating healthfully, researchers from Lawrence Livermore National Laboratory (LLNL) have discovered that greens have a chemopreventive potential against the effects of aflatoxin poisoning. Aflatoxin is a naturally occurring carcinogenic mycotoxin associated with the growth of two types of mold, and it can be found in food and food crops including corn and corn products, cottonseed, peanuts and peanut products, tree nuts, and milk.

Moreover, because aflatoxins, particularly aflatoxin B1 (AFB1), are potent carcinogens in some animals, there is interest in the effects of long-term exposure to low levels of these mycotoxins on humans, according to the study, which was published in *Cancer Prevention Research* (2009;2[12]:1015-1022).

Researchers led by Graham Bench, PhD, and Ken Turteltaub, PhD, gave volunteers a small dose of carbon-14 labeled aflatoxin, an amount less than the amount that would be found in a peanut butter sandwich. In subsequent experiments, participants were given a small amount of chlorophyll or chlorophyllin concomitantly with the same dose of carbon-14-labeled aflatoxin.



ISTOCKPHOTO

The treatment significantly reduced aflatoxin absorption and bio-availability.

The team then measured the amount of aflatoxin in each volunteer after each dosing regimen and determined whether the chlorophyll or chlorophyllin reduced the amount of aflatoxin absorbed into the volunteers.

The results revealed that co-consumption of chlorophyll and chlorophyllin, which are found in green leafy vegetables, may limit the bioavailability of ingested aflatoxin in humans. “The chlorophyll and chlorophyllin treatment each significantly reduced aflatoxin absorption and bioavailability,” Dr Bench stated.

“What makes this study unique among prevention trials is that we were able to administer a micro-dose of radio-labeled aflatoxin to assess the actions of the carcinogen directly in people. There was no extrapolation from animal models, which often are wrong,” Dr Turteltaub pointed out.

ESTIMATED DEATHS IN 2009

159,390
from lung cancer

49,920
from colorectal cancer

40,610
from breast cancer

Source: American Cancer Society. Cancer Facts & Figures 2009.