



PRACTICE REVENUE OPTIMIZATION  
BILLING AND MANAGEMENT SERVICES

# Industry Insights

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## Did You Know?

Young women who received the HPV vaccine through a school-based program had fewer cervical cell abnormalities when screened for cervical cancer.

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## Anti-Cancer Strategy Mobilizes Both Innate and Adaptive Immune Response

Scientists have developed a new vaccine type that involves injecting cells that have been modified so that they can stimulate both an innate immune response and the more specific adaptive response, which allows the body to keep memories and attack new tumor cells as they form.

According to Shin-ichiro Fujii, leader of the Laboratory for Immunotherapy, who led the study, "Cancer cells have different sensitivities to the innate or adaptive response, so it is important to target both in order to eradicate it. We have developed a special type of modified cell, called aAVC, which we found can do this." To find whether it worked in actual bodies, they conducted experiments in mice with a virulent form of melanoma that also expresses a model antigen called OVA. Tests in mice showed, moreover, that aggressive tumors could be shrunk by vaccinating the animals with aAVC cells that were programmed to display OVA antigen. Following the treatment, the tumors in the treated animals were smaller and necrotic in the interior—a sign that the tumor was being attacked by the killer CD8+T-cells. Fujii continues, "We were interesting in finding a mechanism, and were able to understand that the aAVC treatment led to the development of blood vessels in the tumors that expressed a pair of important adhesion molecules, ICAM-1 and VCAM-1, that are not normally expressed in tumors. This allowed the killer CD8+T cells to penetrate into the tumor. Our therapy with aAVC is promising because typical immunotherapies have to be tailor-made with the patient's own cells. In our case we use foreign cells, so they can be made with a stable quality. Because we found that our treatment can lead to the maturation of dendritic cells, immunotherapy can move to local treatment to more systemic treatment based on immune memory."

## Women With BRCA1 Gene Mutation: Higher Uterine Cancer Risk

Women with a mutation in the BRCA1 gene, which is already linked to breast and ovarian cancers, also face a higher risk of a deadly type of uterine cancer. Lead study author Noah Kauff, director of Clinical Cancer Genetics at Duke Cancer Institute, said the study was the first "conclusive link" between the gene defect and an increased likelihood of serous endometrial carcinoma, a type of cancer that affects the lining of the uterus and carries a mortality rate of 50%. The study was published online in the journal *JAMA Oncology*, and involved almost 1,100 women in the US and Britain who were studied for five years. All of them carried BRCA1 or BRCA2 mutations and previously had undergone surgery for the removal of their ovaries and fallopian tubes. The researchers found that eight women developed uterine cancer — a slightly higher rate than in the general population but not statistically different. Although serous endometrial cancer accounts for only 10 percent of all uterine cancers, he said, it is responsible for 40 percent of the deaths.