

AI BEATS DOCTORS AT DETECTING EARLY STAGE OF CERVICAL CANCER

Relevant for: Science & Technology | Topic: Robotics & Artificial Intelligence

Scientists believe that simple technological innovations will help in early cancer screening. |

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Artificial intelligence may be poised to wipe out cervical cancer, after a study showed on Thursday that computer algorithms can detect pre-cancerous lesions far better than trained experts or conventional screening tests.

According to the World Health Organization, cervical cancer is the fourth most frequent cancer in women with an estimated 570,000 new cases globally in 2018.

Despite major advances in screening and vaccination, which can prevent the spread of human papillomavirus which causes most cases of cervical cancer, those gains have mainly benefited women in rich nations.

Some 266,000 women died of cervical cancer globally in 2012, 90% of them in low-and middle-income nations, according to the WHO.

“Cervical cancer is now a disease of poverty, of low resources,” said senior author Mark Schiffman, a U.S.-based doctor who has been searching for a cure to cervical cancer for 35 years.

“We are trying to find ways that are extremely cheap, extremely easy but very accurate, so that we can attack cervical cancer by vaccine and also a bit later through a simple technique that is cell-phone based or something like it,” Mr. Schiffman said.

Mr. Schiffman was part of a team that built an algorithm from an archive of more than 60,000 cervical images collected from Costa Rica.

The pictures were taken using just a speculum, small light and camera — no advanced imaging required.

The study began in the 1990s, involving more than 9,400 women who were followed for up to 18 years.

The AI technique, called automated visual evaluation, found precancerous cells with 91% accuracy, according to a report published in the Journal of the National Cancer Institute.

In comparison, a human expert review found 69 percent of pre-cancers, while conventional lab tests like Pap smears found 71 percent.

Among women aged 25-49, who face the highest risk of cervical cancer, the AI algorithm was even more accurate, finding 97.7 percent of pre-cancerous cells.

“It performed much better than humans looking at those same pictures. It certainly performed a lot better than me,” Schiffman said.

The goal is to roll out the technology in the next three to five years, enrolling more patients in clinical trials worldwide and eventually making it easily accessible everywhere.

Schiffman said a deal has just been struck with a major philanthropic group to assist in the process.

The technology has not been patented on purpose, Schiffman said. The aim is to keep costs very low so that women most in need can benefit.

“I think now we have a possible tool that can go anywhere and not sacrifice scientific quality but actually offer a medically valid screen,” he said.

Jennifer Wu, an obstetrician-gynecologist at Lenox Hill Hospital in New York who was not involved in the research, called the findings “very exciting.”

“This could really cut down on a lot of missed cases of cervical cancer, and allow more patients access to diagnosis and treatment,” she told *AFP*.

States study done by Centre for Occupational and Environmental Health in 2017

Kamaldeep Peter on her journey from being a person with breast cancer, to survivor, and member of a support group

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