Cancer 'moonshot' aims to speed fight against No. 2 killer

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In this Jan. 12, 2016 file-pool photo, Vice President Joe Biden points at President Barack Obama during the president's State of the Union address to a joint session of Congress on Capitol Hill in Washington. Harking back to America's triumphant race into space, the Obama administration is launching what it calls a "moonshot" effort to cure cancer. Don't expect miracles in the president's last months, but there has been striking progress in recent years. (AP Photo/Evan Vucci, Pool, File)

Harking back to America's triumphant race into space, the Obama

administration is launching what it calls a "moonshot" effort to cure cancer.

Don't expect miracles in the administration's last months in office.

"It probably won't be cured in my lifetime, but I think it'll be cured in yours," President Barack Obama told a 4th-grader in Baton Rouge on Thursday.

There's been striking progress in recent years even though cancer remains the nation's No. 2 killer. Obama assigned Vice President Joe Biden to figure out how to speed that progress. Details are still to come but topping Biden's wish list is increased research funding and getting scientists to better share data to spur breakthroughs.

Here's a look at the state of cancer:

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CURRENT IMPACT

The American Cancer Society predicts there will be nearly 1.7 million new cancer cases this year, and more than 595,000 deaths.

Yet the death rate is dropping—by 23 percent since its peak in 1991. That's mostly driven by improvements in detection and treatment of the four most common cancers—lung, breast, prostate and colorectal—and also, for lung cancer, drops in smoking.

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SURVIVAL VARIES

Five-year survival rates for most cancers are increasing. Today, it's 89 percent for breast cancer and more than 90 percent for prostate and thyroid cancers. More than two-thirds of patients survive at least five years with colorectal, cervical, uterine and kidney cancers and lymphoma.

Catching cancer before it spreads gives the patient the best survival chance, often even better than those numbers. Consider colorectal cancer: A colonoscopy can prevent it by allowing doctors to spot and remove pre-cancerous polyps. Yet only about 6 in 10 people recommended for screening, using colonoscopy or alternative tests, actually get it.

Far less progress has been made against pancreatic and ovarian cancers, harder to catch before they spread, or brain cancer, which killed Biden's son Beau.

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WHAT CAN BIDEN MANAGE IN JUST ONE YEAR?

"Cancer will not be cured this year," says Dr. Otis Brawley, the American Cancer Society's chief medical officer.

Nor will there be a single cure—cancer isn't one disease but hundreds. But scientists now understand much more about how cancer forms and spreads and are developing new ways to tackle it.

"We are at a remarkable moment," says Dr. Francis Collins, director of the National Institutes of Health, ticking off areas where science is poised to pay off. "That's part of the motivation."

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BEYOND CHEMO

Chemotherapy is still a mainstay of cancer treatment. But the hottest frontier is immunotherapy—tapping the body's immune system to attack tumors, like the drug credited with helping treat former President Jimmy Carter's advanced melanoma.

The first immunotherapies essentially strip away some of the ways that tumors hide, without as many side effects as chemo. They've worked well enough in melanoma and lung cancer that they're now being explored for a wide variety of tumors.

An even newer form of immunotherapy is being developed to increase the amount of patients' cancer-attacking cells.

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KNOW YOUR TUMOR GENES

Genetic differences inside tumors help explain why one person's cancer is more aggressive than another's, and why certain drugs work for one patient but not the next, especially newer "targeted therapies" that are designed to home in on certain characteristics.

Increasingly, patients at leading cancer centers are getting their tumor genes mapped to help guide treatment. If hospitals pool that genetic information, researchers can more rapidly learn which drugs best match which patients, says Dr. Victor Velculescu of Johns Hopkins University and the American Association of Cancer Research.

AACR just began Project GENIE as a first step, a database run by seven hospitals from the U.S., Canada, France and the Netherlands that so far have shared tumor data from about 17,000 patients. Velculescu says

Biden's efforts could spur larger collaborations.

Only a fraction of cancer patients get that kind of tumor testing today, in part because Medicare and other insurers don't routinely pay for it, Velculescu says. His group wants Medicare to change that.

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WHAT ABOUT RESEARCH FUNDING?

The federal government spends more than $5 billion a year on cancer research. Biden already is credited with having helped push through Congress a budget package last month that, among other things, increased the NIH's cancer funding by $260 million this year.

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MORE CLINICAL TRIALS NEEDED

Most children and teens with cancer are enrolled in clinical trials that carefully guide their treatment, and that's credited with markedly improving survival of pediatric cancer over the past 30 years.

In contrast, just 5 percent of adults with cancer enroll in clinical trials, a number that would have to increase to speed new approaches for cancer control.

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WHAT'S NEXT?

Look for newer ways to detect cancer early using so-called liquid biopsies, blood tests that capture fragments of DNA that tumors shed

into the bloodstream. Already doctors are studying these tests in cancer patients to see if treatments are working or need a change.

And why call it breast cancer if the part of the body is less important than the gene mutation it shares with a tumor found in the lung or the liver? As so-called precision medicine arrives, people increasingly will be treated for their tumor's molecular signature. "The treatments won't pay a whole lot of attention to what part of the body it arose in," says NIH's Collins.

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