



STATEMENT FOR THE RECORD

House Committee on Veterans' Affairs

Subcommittee on Health

Hearing: "Beyond the Million Veterans Program: Barriers to Precision Medicine"

June 26, 2019

We applaud the Chairman for holding this oversight hearing on a critical topic to our Veterans. Serving those who served our nation is an important mission for Sanford Health. We want to ensure that our nation's heroes have access to the most cutting-edge personalized medicine. In March, we announced a bold impactful partnership with the U.S. Department of Veterans Affairs that will help the VA meet new and emerging needs for Veterans, their families and caregivers.

About Sanford Health

[Sanford Health](#), one of the largest health systems in the United States, is dedicated to the integrated delivery of health care, genomic medicine, senior care and services, global clinics, research and affordable insurance. Headquartered in Sioux Falls, South Dakota, the organization includes 44 hospitals, 1,400 physicians and more than 200 Good Samaritan Society senior care locations in 26 states and nine countries. Nearly \$1 billion in gifts from philanthropist Denny Sanford have transformed how Sanford Health improves the human condition.

The Sanford Health Department of Veterans and Military Services helps Veterans and military personnel obtain health care services, navigate care and insurance coverage, identify wellness services and search for employment opportunities. The Department also offers family support services and veteran community outreach.

The PHarmacogenomics Action for cancer SuRvivorship (PHASeR) Initiative

On March 12, 2019, the U.S. Department of Veterans Affairs and Sanford Health announced a new initiative aimed at improving patient care and lowering costs related to adverse reactions to medications, which research shows costs up to \$30 billion per year. Veterans across the United States will receive free pharmacogenetic testing through a partnership between the VA and Sanford Health called PHarmacogenomics Action for cancer SuRvivorship (PHASeR).

Pharmacogenetic testing can be a critically important tool for physicians in prescribing the proper medications at an optimized dosage. People respond to medications in different ways and frequently, their bodies will not respond to the prescribed medication properly. This difference in the ability of our bodies' to break down medications is partly determined by our genes. Leveraging this test means VA physicians are better-equipped to determine optimal therapy and dosing thereby avoiding intolerance to certain medications.

The tests are free to veterans and require no taxpayer resources. The program is made possible by a \$25 million gift from Denny Sanford and a matching fundraising effort from Sanford Health.

The VA-Sanford Health partnership allows veterans to gain access to the testing at their local VA facility while Sanford Health will process the tests and supply confidential results to VA physicians. The program has started with patients who have survived cancer. A pilot is being conducted at the Durham VA Medical Center, Durham, North Carolina. To date, 25 Veterans have participated in the program. By 2020, the program will reach 250,000 U.S. veterans at 125 sites.

The two organizations are working together to embed the results into the patients' electronic health record, so that physicians get notified of potentially conflicting medications in the future. The program also supports genetic counseling for both patients and physicians.

Real-World Implications: Patrick McGuire, Navy Veteran

Patrick McGuire, 45, a Navy Veteran and stage 4 lung cancer survivor, is one of the first participants at the Durham VA Health Care System launch site. He was diagnosed with cancer in 2015. He underwent multiple surgeries for tumors in his brain and lungs in addition to a host of other ailments. He was initially treated outside of the VA and was prescribed medications that did not interact well with him. After seeing VA doctors, his condition improved, and he had fewer adverse reactions to treatment.

Following his final chemotherapy treatment, McGuire used a wheelchair for several months due to the loss of muscle and strength. He was unable to swallow from the radiation damage to his esophagus. He worked hard in physical therapy and progressed to a walker and cane. Against all odds, he recovered. Today, he rarely uses his cane at all.

Benefits of Pharmacogenetics

Pharmacogenetics saves lives, improves quality and efficiency and saves money.

- It is estimated that nearly 50 percent of antidepressants are ineffective for a particular patient and approximately 25 percent of people cannot appropriately use clopidogrel for antiplatelet treatment after cardiovascular intervention.
- Some chemotherapy and immunosuppressant drugs used to treat cancer and autoimmune disorders can build up in the bodies of people who have reduced functions of the TPMT and DPYD enzymes. A genetic test to identify the level of enzyme function in patients can help oncologists adjust dosages to prevent sometimes life-threatening toxicity levels due to accumulation of the medicines in the body.
- As cancer treatment becomes more effective, patients are more likely to survive and go on to have other health conditions requiring various medications with strong pharmacogenetic implications:
 - Plavix (clopidogrel) is an anti-platelet medication prescribed after cardiovascular intervention to inhibit the formation of clots which lead to costly and potential deadly

adverse events such as heart attack or stroke. Plavix requires activation by an enzyme called CYP2C19 to provide benefit, but if a patient does not have the right pharmacogenetic profile to metabolize CYP2C19 correctly, a different drug may be needed to prevent these adverse events.

- Certain anti-depressants are prescribed for depression, anxiety, insomnia, and neuropathic pain that require CYP2C19 and CYP2D6 enzymes to properly regulate the medication. A genetic variant could lead to the lack of efficacy for these drugs or an increase in dangerous side effects.
- Some patients have genetic variants that lead them metabolizing certain opioids too quickly or too slowly. Pharmacogenetic testing can help identify the right dose of the right pain medication.

Long-Term Benefits for the Government and Medical Research

Data generated from this program is available to researchers within the VA to further expand upon the understanding of how a person's genetic makeup impacts their ability to metabolize medications – yielding better care for our veterans. It can also be expanded to other medical areas outside of cancer survivorship. VA is at the cutting edge of providing this care to patients.

Additionally, the initiative may be able to save money by avoiding medications that are ineffective or cause expensive and debilitating side effects – a win-win for both patients and taxpayers.

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