

ISSUE 6 WINTER 2018-2019

MVP Insider A Newsletter for Million Veteran Program Participants

MVP Enrolls 700,000th Veteran

On Sept. 19, 2018, the Department of Veterans Affairs' Million Veteran Program (MVP) program enrolled its 700,000th Veteran partner—a significant milestone on the way to the program's goal of 1 million enrollees.

"We've been able to enroll, on average, 100,000 new partners every year," explains Stacey B. Whitbourne, Ph.D., Director of Recruitment and Enrollment for MVP. "It demonstrates our sustainability and ability to keep going to get to a million enrollees—and beyond!"

Whitbourne credits Veterans for the success of the program. "The main reason we've been so successful is because of our Veteran partners. There is no other group of volunteers who would participate in research like this. They are completely altruistic."



"Veterans don't receive monetary incentives by enrolling," she continues. "They do it out of the goodness of their heart on the premise that MVP can help their brothers and sisters in arms, their family members, and ultimately, everyone! That's good enough for them." VA researchers use MVP data to examine a host of different illnesses and conditions. They focus on diseases and illnesses that are prevalent in the Veteran community, such as posttraumatic stress disorder, suicide and Gulf War Veterans' Illnesses. They also emphasize issues that affect not only Veterans but all people, including cancer, cardiovascular diseases, diabetes, Parkinson's disease and arthritis.

Currently, Veterans can enroll in MVP at 139 sites; 58 main sites (VA Hospitals and Medical Centers) and 81 satellite sites (such as VA community-based outpatient clinics.) In Fiscal Year 2018, 13 new main and satellite sites were brought on board, including the New Orleans and Las Vegas VA Medical Centers.

Continued on page 3



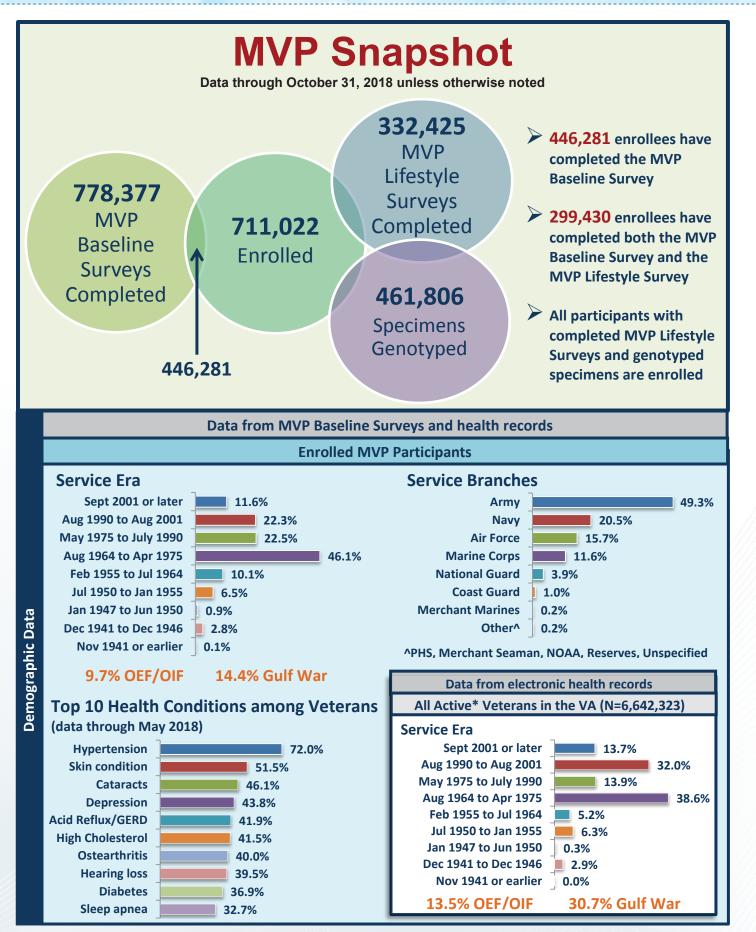
U.S. Department of Veterans Affairs Veterans Health Administration Office of Research & Development



MVP Insider

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*Veterans that have used the VA in the past 5 years and are not deceased

MVP on the Road

For the third consecutive year, MVP went "on the road" in summer 2018, visiting Veterans Service Organization (VSO) national conventions to recruit new Veteran partners and provide updates on the program's progress.

Teams of MVP staff members visited the Disabled American Veterans' and Blinded Veterans' Association's annual conventions in Reno, Nevada; the Veterans of Foreign Wars' meeting in Kansas City, Missouri; the AMVETS National Convention in Orlando, FL; and the American Legion's 100th National Convention in Minneapolis, MN.

"We enrolled more than 550 Veterans, and talked to thousands of Veterans, family members, and others involved with the organizations, which is great," explains Nancy Steward, MVP's National Program Coordinator. "It's getting better and better every year." The team sees many Veterans at the conference who have already enrolled. "They're spreading the word around the country," she says, gratefully.

MVP representatives set up in an area provided by conference organizers. There's a "check-in" center, to determine whether Veterans are eligible to take part in MVP. Those who are eligible and interested in participating receive a briefing on the program's consent process and HIPAA regulations, and are then taken to another area to have their blood drawn.

There's also a map for both new and old participants to place a sticker indicating where they live. "It's neat to see that people have enrolled from all parts of the country, including Alaska,



Photo by Derrick Morin: Chad Gallien, MVP Coordinator at the Indianaplois VA, talks to a Veteran at the 2018 American Legion convention where about 150 Veterans joined the program.

Hawaii, and even Puerto Rico" Steward tells us. MVP's Baseline and Lifestyle Surveys are mailed to new enrollees, so they can complete their surveys at home.

"We hear all manner of stories from Veterans who stop by," says Derrick Morin, MVP Product Manager.

Local MVP sites are also getting into the act. The VA Boston Healthcare System, for example, visited the "Big E" fair in West Springfield, Massachusetts to promote MVP and recruit new participants. All MVP sites are encouraged to attend similar events or meetings where Veterans may gather. "We went to the Big E on Military Appreciation Day, when Veterans got in for free, and there was a huge military presence."

"We want every Veteran to enroll with VA for their health care, so that they can enroll in MVP," concludes Steward. "MVP will improve care for everyone."

700,000 Enrollments

Continued from page 1

(Visit MVP's website to learn more: https://www.research.va.gov/mvp/allclinics.cfm.)

Next year, says Whitbourne, MVP hopes to bring on an additional five VA Medical Centers. "We want as many stars on our map as possible — and we want them to be spread out geographically to allow every Veteran to participate." In addition, she tells us, "we are working to develop an online portal where people can enroll and complete our MVP Baseline and MVP Lifestyle Surveys electronically." The surveys ask Veterans questions about what they eat, how much they exercise, how they feel physically and emotionally, and other topics. They provide critical knowledge that cannot be determined from Veterans' health records or the DNA information obtained from blood samples.

MVP hopes to "go live" with online capabilities in 2019. Please stay tuned!

"From the bottom of our hearts, we are grateful to each and every Veteran who has provided us with information," she concludes. "It's a 15-20 minute MVP visit, and doesn't take very much time, but the information is lasting and far reaching."

Gulf War Era Survey Begins

Nearly 700,000 men and women served in the Persian Gulf during Operations Desert Shield and Desert Storm in the early 1990s. A prominent condition affecting these Gulf War Veterans is a cluster of medically unexplained chronic symptoms that can include fatigue, headaches, joint pain, indigestion, insomnia, dizziness, respiratory disorders, skin problems and memory impairment. VA refers to these illnesses, collectively, as Gulf War Illness.

In August 2018, MVP began mailing out the Gulf War Era Survey to MVP partners who served during the Gulf War era, whether or not they were deployed to the Gulf region. The questionnaire is designed to collect more information from these enrollees, in hopes of identifying genes that contribute to, or protect against, developing Gulf War Illness. Eventually, researchers hope to identify and test new treatments for the condition. This is the first time the program has attempted to recontact MVP participants on a major level.

According to Stacey B. Whitbourne, Ph. D., about 50,000 invitations to complete the Gulf War Era Survey have already been sent out to MVP partners who served during the Gulf War

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era. Within the next six months, an additional 60,000 will be sent out. "If you don't receive one, and you would like to participate, contact the MVP Information Center toll-free at 866-441-6075, and we'll do our best to get a Gulf War Era Survey to you!" she says.

New Video Features MVP Partners

The Million Veteran Program (MVP) has created a new video! It describes MVP and features the experiences of three Veteran partners, including Julia Morin, a U.S. Navy Veteran who discusses the blood donation aspect of enrollment. "As much as I hate needles," she explains, "it was quick and painless."

Ray Lay, a former Marine currently living with diabetes, is grateful for the work of VA researchers. "(They) have helped me to live with my condition much better. I do believe that for that little-bitty vial of blood and follow-up with the questionnaire, we are leaving a legacy."

And Shanda Taylor-Boyd, an Army Veteran, reinforces the legacy theme and also says, "MVP is nothing short of an opportunity for us to continue to stand beside each other, to support one another."

The video explains that MVP research studies on the effect of genes on health may lead to better treatments and preventative measures related to diseases including heart disease, diabetes and cancer. It tells prospective partners that the security and confidentiality of the data they provide are VA's top priority, and that very few VA staff members have the key to their encoded information.

"Veterans helping Veterans through the Million Veterans Program is your chance to continue to serve and make a difference," the video concludes. "Your small sacrifice today offers the potential promise to help past, present and future generations of Veterans, (and) improve their lives through innovation, discovery and the advancement of our health care tomorrow."

Watch the video at https://www. research.va.gov/mvp/.

MVP Information Center Helps Callers Everywhere

The MVP Information Center, located at the Canandaigua, New York, VA Medical Center, handles calls from Veterans throughout the nation about MVP. Information Center staff members answer questions about consent forms and the MVP process, schedule appointments for Veterans to enroll in the program at participating VA facilities, and discuss research being done using data from the program.



Front Row: Suzanne Zwecker, Anne Van Patten, Annie Correa, Karolina Kotas Back Row: Douglas Adams, Jonathan Martinez, Julian Byfield, Jonathan Bridgman, Derek Janke Missing: Melissa Juhl, Jamin Felice and Bruce Crawford

"We help Veterans get a clear picture about what MVP is and how MVP will benefit future Veterans," explains Annie Correa, the Information Center's supervisor.

Veterans who receive letters inviting them to participate in the program often ask what the program involves. They are told MVP's goals are to learn how genes affect health, and to improve the health care Veterans receive. They learn the program is collecting genetic, clinical, lifestyle and military exposure information researchers can use in approved studies.

Veterans who call will also learn that if they participate, they will be asked for a blood sample and to fill out a survey on their military experience, their health and their lifestyle, and may be asked to participate in follow-up surveys.

Other Veterans ask about how their privacy is protected, and how

MVP researchers are able to associate the data they provide when their names are not on the surveys they've filled out. They are told about the extensive policies and procedures that are in place to protect their personal information, and how unique ID numbers associate surveys and blood samples with patient records.

Veterans who have already agreed to participate in the program and have donated blood samples and taken surveys often call and want an update on how the program is progressing. They also call just to ask, "what else can I do to help?"

Besides Correa, Information Center staff includes Jonathan Martinez, a Lead Health Technician; 8 full time employees, and 2 back up staff trained to handle calls about the program. Five employees, including Correa, are Veterans themselves. "I'm very proud to say that," she tells us.

The Information Center's hours are 8 a.m. to 6 p.m. Eastern time Mondays through Fridays. It is closed on weekends and holidays. Veterans can call the Information Center at 1-866-441-6075.

THE MVP INFORMATION CENTER USE AT A GLANCE

INBOUND CALLS ANSWERED

38,727

OUTBOUND CALLS MADE

68,494

APPOINTMENTS SCHEDULED

26,530

FY 18 10/1/17-09/30/18

MVP Insider

What is Genotyping?



Humans are made up of cells, the smallest possible unit of life. Cells are made up of a large number of complex molecules, and perform a large number of chemical reactions to make the molecules it needs to stay alive and perform human functions. Many of these reactions are accomplished by proteins, and the information on how to make those proteins is encoded in a special molecule called DNA, that's copied every time a cell reproduces. Because of this, every time a cell reproduces its offspring get the same set of instructions.

The DNA of a single cell codes for a large number of proteins, and the part of the DNA that codes for a given protein is called a gene. Different people can have different versions of the same gene, which are called alleles. Each person has two copies of every gene from the two parents—therefore, they carry two alleles for every gene, which can be the same or different. The pair of alleles an individual carries for a particular gene is an individual's genotype for that gene.

All humans have about 20,000 genes. All our genes together are known as our genome, and the sequence and location within DNA of all the genes in our genome has been determined by researchers.

"Genotyping is a 'quick and dirty' way to look and see how individuals differ at hundreds of thousands of very specific locations across the human genome," explains Jennifer Moser, Ph.D., MVP Program Manager. "Instead of sequencing the entire genome, which takes a while, involves a lot of data, and is expensive, genotyping gives information about the sequencing of DNA at specific locations across the genome. It's like a screen." Dr. Phil Tsao, Ph.D., adds, "It's like seeing just the important pixels on your computer screen so that you can distinguish your Uncle Harry from your Aunt Jane."

Isolated DNA is placed on a small chip, "about the size of a Tic Tac container," says Moser. "On the chip there are about 700,000 features, and each of those features represents a specific location on the genome." MVP researchers use this information to conduct Genome-Wide Association Studies (GWAS), which use statistical techniques to compare the genomes of people with a disease or trait to those without the disease or trait.

GWAS tells researchers which areas of the genome are responsible for some of the variations in a particular disease. "They get you closer to an answer, but they don't provide the answer," says Moser. "We're still at the level of trying to determine if there are genetic factors involved with different conditions."

"Researchers have been doing GWAS for years to help determine the genetic components of disease," she continues. "The awesome thing about MVP is that it is so large that researchers have the statistical power to detect very small genetic changes that influence diseases that have previously been unknown. You can find very rare variants you won't see in a smaller population."

How MVP Protects Your Privacy and Confidentiality

Protecting the privacy and confidentiality of MVP partners is of paramount importance to VA, as it is in every VA research study. Participating Veterans' data are protected in multiple ways:

First, all Veterans' blood samples and data are stored in a secure, state-ofthe-art biorepository, access to which is significantly restricted.

Second, VA has created a secure data and computing infrastructure called GenISIS (Genetic Information System for Integrative Science). GenISIS is located behind VA's firewall, in VA Office of Information and Technology-maintained data centers with well-defined security rules and procedures.

Currently the only way for researchers to analyze MVP data is within the secure

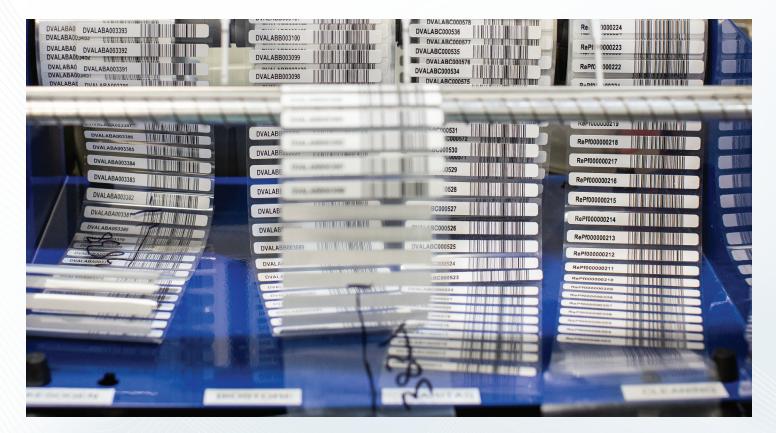
VA approved environments such as GenISIS. MVP data are "on a little island of their own within VA," explains Saiju Pyarajan, Ph.D., Director of MVP's Data and Computational Sciences Center, "separated from the rest of VA's medical data."

Lastly, researchers are only allowed access to MVP data on an as-needed basis to perform approved analyses. VA uses complex algorithms to integrate the various pieces of data and ensures individual researchers are given only coded data without any personal identifiers, such as names, addresses, dates of birth and Social Security numbers.

"We keep each data domain (health records, survey data, genomic data and

blood samples) with separate identifiers for an added layer of security," continues Pyarajan. "Each data domain by itself cannot be stitched together with other data domains to identify the same person. For example, tubes in which blood samples are collected only have a label with a random assigned code, with no information about the person such as names or Social Security numbers. Genetic information generated from the samples is again coded with a different identifier."

"At every step, there's a new identification code," says MVP Program Manager Jennifer Moser, Ph.D. "Only a limited number of people can put everything together."



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Science Conference

On Sept. 13-14, 2018, nearly 100 MVP Principal Investigators and key scientists gathered in Memphis, Tennessee to discuss issues of importance to the MVP Scientific Research program. "The scientists came together, shared their cutting edge findings, and spoke about new methods that will propel science going forward," says Christopher O'Donnell, M.D., MPH, Co-Principal Investigator for MVP.

One of the new methods discussed at the conference, explains O'Donnell, was Mendelian randomization, a new kind of epidemiologic study design that takes advantage of the genetic measures researchers obtain from MVP data to test whether or not a genetic association is or is not potentially meaningful.

Mendelian randomization uses a huge number of genetic variants to help researchers find out which associations are meaningful in terms of drug treatments—and which ones are not. "That's a very exciting opportunity that only a large biobank like MVP can really do at scale," explains O'Donnell.

Current studies in the areas of cancer, cardiovascular disease, diabetes, genetic variation, gulf war illness, posttraumatic stress disorder, data informatics, kidney disease, macular degeneration, mental health, suicide prevention and other diseases that affect Veterans were also examined. Daniel Roden, M.D., C.M., Director of Personalized Medicine at Vanderbilt University, spoke on the future of genomic research at a plenary session. Rachel Ramoni, D.M.D., Sc.D., VA's Chief Research and Development Officer, also spoke at the session.

Attendees also heard a presentation on the interesting new directions for research that can be done with MVP data using the Department of Energy (DOE)'s supercomputer capabilities in the new MVP-CHAMPION collaboration that DOE has established with VA, especially in the areas of suicide prevention, prostate cancer, and heart disease. (See our MVP-CHAMPION article on page 10 for additional information.)

"MVP is the largest research biobank in the US thanks to selfless participation of our Veterans. Each Veteran should know that his or her contributions to this study is resulting in a remarkable set of research findings and a resource that will pay dividends for decades to come." O'Donnell continues, "not only for discovering interesting genes, but also for propelling those findings towards the clinic more quickly.'

"Veteran contributions are already beginning to yield some important fruits, and will continue to do so as the database grows," he concludes.



(Photo by Jennifer Deen) Left to right: Larry Phillips, Mark Logue, Todd Edwards, Royce Clifford, Peter Wilson

New MVP Study Offers Hope for Treating Heart Disease



Cardiovascular, or heart, disease refers to conditions that affect the heart or blood vessels. It is the leading cause of death for both men and women in the United States. Diabetes is a chronic disease in which the body cannot produce or properly use insulin. More than 29 million Americans have diabetes, including some Veterans who developed the disease as a result of being exposed to herbicides while serving in Vietnam.

Researchers at VA Medical Centers throughout the nation and their academic affiliates used MVP data from almost 300,000 Veteran partners to complete a study that can help scientists develop new, more effective medicines for both diseases. The MVP data enabled them to uncover three genetic mutations that govern levels of cholesterol in adults. Mutations are permanent changes in the DNA sequence of an organism (DNA is a nucleic acid that contains the genetic information of every living thing). Unlike many mutations that can be harmful, the ones the scientists pinpointed are beneficial, because Veterans who have one or more such mutations have a better cholesterol profile and a decreased risk of heart disease, diabetes, and abdominal aortic aneurysms compared to those who do not (abdominal aortic aneurisms refer to an enlarged area in the lower part of the aorta, the major blood vessel that supplies blood to the body).

The three genes pinpointed in the study—PDE3B, PCSK9 and ANGPTL4—can all be used to find new treatments for heart disease and diabetes. A drug that's already on the market, cilostazol, mimics the beneficial mutation in the PDE3B gene. Cilostazol is currently used to treat pain in the legs that worsens when walking by improving blood flow. The study's results indicate that it may also be a good way to treat heart disease, although much further testing is needed.

The study was published online on Oct. 1, 2018 by Nature Genetics, a scientific journal.

Letter from the Principal Investigator

Dear MVP Enrollee,

You are part of a special group of Veterans who have selflessly joined MVP's world-leading effort to understand how genes affect health and disease. For this we are sincerely grateful. To date you are among over 710,000 MVP enrollees.

We have entered a new and exciting phase in MVP. More than 30 teams of researchers are exploring the data and finding information about diseases that affect Veterans such as PTSD, schizophrenia, bipolar disorder, heart disease, stroke, cancer, and eye disease. The results of these projects are being presented at national meetings and published in major journals – and the world is taking note!

In addition, the VA has joined forces with other federal agencies to enhance and use this wonderful resource. The Department of Energy is collaborating to help provide computing power to analyze this amazing data. We are also collaborating with the Department of Defense to pilot enrollment among Veterans who have left active duty. My son, an Army Ranger, is looking forward to the day when he might be able to enroll.

As we enter the holiday season, I want to thank you again for joining this effort to improve the health of all Veterans as well as all Americans. We have heard countless times that Veterans join MVP to continue serving fellow Veterans and the country. We appreciate your generosity. I want to assure you that the entire MVP team is working tirelessly to make the most of this world-leading resource.

Mike Gaziano MVP Principal Investigator

MVP-CHAMPION Program Provides a Supercomputing Boost

In May 2017, VA and the Department of Energy (DOE) began a partnership to advance health care for Veterans and other Americans focused on the secure analysis of large digital health and genomic data. The joint project is called MVP-CHAMPION, and it is now in full swing.

According to Edmon Begoli, Ph.D., MVP-CHAMPION Principal Investigator and Chief Data Architect for DOE's Oak Ridge National Laboratory (ORNL), "Genomic data requires very significant computing resources. Not many organizations have expertise in high-performance computing, but DOE hosts the fastest supercomputer in the world.'

"It was a very natural fit to provide VA's data to another federal agency that can maintain the same level of privacy and integrity controls and protections, and can expertly manage and store huge amounts of data. DOE can also invite researchers to access the data in a highly secure and managed manner."

The data are stored securely at ORNL, part of the agency's National Laboratory computing system. Originally designed to support nuclear technology development, the system now also supports other scientific missions. ORNL manages the fastest supercomputer in the world, but other DOE labs also make large systems available to researchers throughout the world who run experiments too large for other systems.

"We support projects that cannot be done anywhere else," Begoli tells us. In working with DOE, VA not only gains access to the agency's supercomputing capabilities but also to the expertise of highly-trained DOE employees able to support computing work at this level. Veterans' MVP data are housed in a highlysecure high-performance computing system, "like a fortress," Begoli explains. the best predictors of certain forms of heart disease. The system was "turned on" in November 2017, and final approvals for projects in each area are now being completed by VA Institutional Review Boards.

In the meantime, projects on adverse



Photo from the U.S. Department of Energy's Oak Ridge National Laboratory (ORNL) of the Summit supercomputer – currently the fastest supercomputer in the world.

VA and ORNL have established a highspeed data connection to move data securely between the two agencies. ORNL does not run VA data on an open system but has built a secure system for Veterans in a secure knowledge discovery infrastructure enclave.

The program originally had three priorities: to help VA improve computer algorithms it uses to identify Veterans at high risk of suicide; to seek new ways to determine which prostate cancers are deadly and require treatment, and which are slow-growing and not life threatening; and to learn which sets of risk factors are events on polypharmacy (the simultaneous use of multiple drugs to treat a single ailment or condition) are being developed, and "lots of brainstorming" is taking place throughout the nation on other ways to use VA's new capability.

"Veterans should know that this is probably the most comprehensive big data and high performance computing system in the world. It's kind of like a Swiss Army knife for science. And because the data are in the hands of federal institutions, they can rest at ease that their data will never be used for any commercial purposes," Begoli concludes.

www.research.va.gov/MVP

New studies funded in 2018!

For more information on all the ongoing research, visit the 'Studies based on MVP' section at www.research.va.gov/mvp.

Genetics of opioid sensitivity

This study aims to identify genetic predictors of opioid sensitivity. This will allow researchers to better predict the effectiveness of the opioid drug buprenorphine for maintenance treatment of opioid addiction, and better determine effective opioid dosing for pain treatment. They are running separate analyses for different classes of opioids. The results could help prescribers avoid over- or under-prescribing of opioids, as well as maximize the effectiveness of buprenorphine as a replacement for more dangerous opioids.

Parkinson's disease genetic risk factors

Researchers are using MVP data to identify genetic risk factors for Parkinson's disease. Gene-by-gene comparison will let researchers identify which gene variants are associated with the disease. They are also looking at whether genetic risks factors for Parkinson's identified in those with European ancestry also occur in Hispanic and African American patients. The researchers hope that this study will reveal new information on the biology of Parkinson's disease, possibly leading to targets for new treatments.

Possible link between genetic risk for Alzheimer's and PTSD.

This project looks at the link between Alzheimer's disease genetic risks and PTSD symptoms. Researchers are looking at how gene variants already shown to increase Alzheimer's may also affect the risk of PTSD, and also how these risk factors interact with environmental factors such as traumatic brain injury and combat stress. They hypothesize that those at higher genetic risk for Alzheimer's may also have a higher risk of developing PTSD when exposed to trauma.

HPV-related cancer risk

Researchers are looking at variations in immune-related genes that may control how susceptible a person is to cancers caused by the human papilloma virus. The incidence of oropharynx cancer—a type of throat cancer—has sharply increased in recent years, primarily because of increased HPV exposure. The project is using MVP data to look for the specific genes that affect oropharynx cancer risk, as well as non-oropharynx cancers of the head and neck, which are usually related to tobacco and alcohol use.

Genetics of acute kidney injury

This project is looking at the genetic basis for susceptibility to intrinsic acute kidney injury. This condition results in tissue damage and persistent loss of kidney function. Intrinsic acute kidney injury can have a number of different causes, so the researchers must first classify the most common and severe forms of the condition. They can then identify the genetic variants associated with different forms of intrinsic acute kidney injury.

Testosterone and Alzheimer's disease

Researchers are studying the impact of low testosterone, androgen deprivation therapy, and testosterone replacement therapy on the risk of mild cognitive impairment and Alzheimer's disease. They are also looking at how pre-existing genetic risk for Alzheimer's changes the impact of testosterone treatments on cognitive function. They hypothesize that higher genetic androgen sensitivity is connected to higher risk of Alzheimer's disease.

Subtypes of suicidal behavior

Past studies have identified genetic biomarkers related to suicidal behavior. This study is using statistical and machine-learning methods to classify subtypes of suicidal behavior, ranging from low-lethality, low-intent impulsive acts to high-lethality, high-intent suicidal acts. The researchers will then do a genomic analysis of these subtypes in order to develop a diagnostic tool to assess the risk of suicidal behavior.

Gene variation in lung cancer

Researchers are studying the gene variations connected with different tumor structures in patients with non-small cell lung cancer. They are also comparing treatments and outcomes of patients diagnosed with either early or late stage tumors. By combining this information with knowledge of mutations found in patients' blood and tumors, they hope to find patterns enabling earlier and more personalized treatments.

Genomics of multiple myeloma

This project is looking at genomic markers linked to disease progression and prognosis on multiple myeloma. Multiple myeloma is a cancer of the plasma cells in the bone marrow. It is preceded by two non-malignant stages of disease: monoclonal gammapathy of undetermined significance and smoldering multiple myeloma. Multiple myeloma is particularly common among Veterans. Understanding the genomic basis of progression could help researchers build models to more effectively monitor Veterans at high risk of developing the cancer, and to treat Veterans who are already diagnosed.

Effect of genetic variation on medication dosing

Researchers are using MVP data to better understand how variations in patients' genes affect how they respond to a common anticoagulant, warfarin. Past studies suggest that knowing a patient's genetic variation can help find the right warfarin dose more quickly, leading to better control of blood clots. The large and diverse MVP patient population will allow researchers to conduct the largest study ever on the accuracy of dosing methods that use genetic information, and to better understand the strengths and weaknesses of those methods.

Diabetes and cancer

This study focuses on the relationship of diabetes with pancreas and liver cancer. Diabetes is one of the most prevalent chronic diseases in the United States. The majority of pancreatic cancer patients have diabetes, and diabetes is one of the largest potential risk factors for liver cancer. Researchers will use the VA's health records and MVP to try to figure out how diabetes and cancer are linked. The results of the research may be used to better understand the causes of cancer. (151B) MILLION VETERAN PROGRAM Connecticut Healthcare System

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A Partnership with Veterans

Have questions?

If you have any questions or would like to request MVP materials for distribution, please contact the MVP Information Center at 866-441-6075.

Like hearing from us?

Make sure we have your email address so we can send you newsletters and information electronically! The Information Center staff or your local MVP teams are happy to assist with updating this information.

You can also visit us at www.research.va.gov/MVP for updated information.

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