OFFICE OF THE UNDER SECRETARY OF WAR
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

The Honorable Mitch McConnell
Chairman
Subcommittee on Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

APR 24 2026

Dear Mr. Chairman:

The Department's response to the Joint Explanatory Statement, pages 110–111, accompanying H.R. 2882, the Further Consolidated Appropriations Act, 2024 (Public Law 118–47), "Peer-Reviewed Cancer Research Program," is enclosed.

This report covers Fiscal Year (FY) 2024 appropriations for the Peer-Reviewed Cancer Research Program (PRCRP) ($130 million); discusses key PRCRP research efforts, outcomes, and products; and summarizes the projects selected for FY 2024 funding, including their relevance to military health. The FY 2024 PRCRP Programmatic Panel selected 62 applications for funding, representing 65 separate awards (14.7 percent funding rate), based on scientific peer-review ratings, programmatic intent, and relevance to military health. Through evaluations including military health needs, gaps in research topic areas, and patient outcomes, the FY 2024 PRCRP funded innovative and impactful research to support Service members and their families.

Thank you for your continued strong support for the health and well-being of our Service members and families. I am sending similar letters to the other congressional defense committees.

Sincerely,

[redacted]

Sean O'Keefe
Deputy Under Secretary of War for Personnel
and Readiness

Enclosure:
As stated

cc:
The Honorable Christopher Coons
Ranking Member

[redacted]

OFFICE OF THE UNDER SECRETARY OF WAR
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND READINESS

The Honorable Ken Calvert
Chairman
Subcommittee on Defense
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

APR 24 2026

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Sincerely,

[redacted]

Sean O'Keefe
Deputy Under Secretary of War for Personnel and Readiness

Enclosure:
As stated

cc:
The Honorable Betty McCollum
Ranking Member

[redacted]

OFFICE OF THE UNDER SECRETARY OF WAR
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

The Honorable Roger F. Wicker
Chairman
Committee on Armed Services
United States Senate
Washington, DC 20510

APR 24 2026

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[redacted]

Sean O'Keefe
Deputy Under Secretary of War for Personnel
and Readiness

Enclosure:
As stated

cc:
The Honorable Jack Reed
Ranking Member

[redacted]

OFFICE OF THE UNDER SECRETARY OF WAR
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

The Honorable Mike D. Rogers
Chairman
Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515

APR 24 2026

Dear Mr. Chairman:

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Sincerely,

[redacted]

Sean O'Keefe
Deputy Under Secretary of War for Personnel
and Readiness

Enclosure:
As stated

cc:
The Honorable Adam Smith
Ranking Member

[redacted]

Report to the Congressional Defense Committees

Peer-Reviewed Cancer Research Program

April 2026

The estimated cost of this report for the Department of War (DoW) is approximately $9,800.00 for Fiscal Years 2025–2026. This includes $0.00 in expenses and $9,800.00 in DoW labor.
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BACKGROUND AND PURPOSE

This report is in response to the Joint Explanatory Statement, pages 110–111, accompanying H.R. 2882, the Further Consolidated Appropriations Act, 2024 (Public Law 118–47), which requests that the Assistant Secretary of War for Health Affairs provide a report to the congressional defense committees on the status of the Peer-Reviewed Cancer Research Program (PRCRP). For each research area, the report includes the funding amount awarded, progress of the research, and relevance of the research to Service members and their families.

The Defense Health Agency (DHA) manages the Defense Health Program (DHP) Research, Development, Test, and Evaluation (RDT&E) appropriations. The DHA Research and Development (R&D)-Medical Research and Development Command (MRDC) Congressionally Directed Medical Research Programs (CDMRP) provides execution management for the DHP RDT&E PRCRP Congressional Special Interest funds.

FISCAL YEAR 2024 PRCRP INTRODUCTION

Congress initiated the PRCRP in 2009 to research cancers relevant to military health and not already addressed in the cancer programs currently executed and managed by CDMRP. For Fiscal Year (FY) 2024, the Further Consolidated Appropriations Act, 2024 (Public Law 118–47) provided $130 million for the PRCRP and specified 18 topic areas (Table 1).

Table 1. FY 2024 PRCRP Topic Areas

• Bladder Cancer	• Germ Cell Cancers	• Neuroblastoma
• Blood Cancers	• Liver Cancer	• Pediatric, Adolescent, and Young Adult Cancers*
• Brain Cancer (excluding glioblastoma)	• Lymphoma	• Pediatric Brain Tumors*
• Colorectal Cancer	• Mesothelioma	• Sarcoma
• Endometrial Cancer	• Metastatic Cancers	• Stomach Cancer
• Esophageal Cancer	• Myeloma	• Thyroid Cancer

*Research focused on children (ages 0–14 years), adolescents (ages 15–24 years), and/or young adults (ages 25–39 years).

Research into cancer reduces the burden of the disease on military families, lowers costs for the Military Health System (MHS), and improves force readiness. Occupational exposures cause an estimated 2–8 percent of cancer deaths.[1] Due to the nature of their duties and deployments, military personnel face increased exposure to cancer risk factors compared to the general public. Such carcinogenic exposures[2] include: handling chemicals, ionizing radiation, electromagnetic fields, jet fuel, biological agents, herbicides, pesticides, air pollutants, burn pits,

groundwater contamination, chemical and biological warfare weapons, combat trauma, and harsh and demanding environments.

FY 2024 PRCRP TOPIC AREAS: RELEVANCE TO MILITARY HEALTH

Mission Readiness and Force Strength

A cancer diagnosis in a Service member severely impacts mission readiness by removing them from active duty, often preventing their return to full duty. Investing in research that prevents cancer and improves treatment outcomes is critical to enhance mission readiness and force strength by minimizing treatment need, duration, and toxicity.

Furthermore, Service members are affected when cancer impacts their family or support network. The time required to support the care, recovery, and well-being of family members can significantly erode unit force readiness and create vulnerabilities. The Military Services already recognize the impact of family well-being on Service members' mission readiness, warfighting capability, lethality, and retention.[3,4] Consequently, effective prevention and treatment of life-threatening illnesses among family members directly enhances Service members' presence on duty and reduces anxiety, thereby improving performance in key national security roles. Reducing cancer incidence, mortality, and morbidity, therefore, directly strengthens Warfighter presence, focus, combat effectiveness, and lethality.

Service-Connected Environmental Exposures and Occupational Risks for Cancer

The U.S. Department of Veterans Affairs (VA) has acknowledged that certain exposures increase cancer risk among Service members and their families.[5] Significantly, the VA recognizes 21 conditions associated with Agent Orange exposure,[6] including 6 directly relevant to the FY 2024 PRCRP cancer topic areas: bladder cancer, blood cancers (chronic B-cell leukemia, chronic lymphocytic leukemia), lymphoma, multiple myeloma, mesothelioma, and soft tissue sarcomas. Although the Vietnam War ended in 1975, C-123 airplanes used to spray Agent Orange remained in commission until 1982, potentially exposing a wider range of personnel.[7] The National Academies of Sciences, Engineering, and Medicine (NASEM) has determined that Service members not involved in the Vietnam War may have been exposed to Agent Orange residue during transportation or through contact with these planes.[8]

The VA recognizes 10 FY 2024 PRCRP cancer topic areas as presumptively connected to service due to ionizing radiation exposure:[9] bladder, brain, colorectal, esophageal, liver (in absence of cirrhosis or hepatitis B (HBV)), stomach, and thyroid cancers; blood cancers including leukemia (except chronic lymphocytic leukemia); lymphomas (except Hodgkin lymphoma); and multiple myeloma. Moreover, the VA has established a presumptive service connection for five FY 2024 PRCRP cancer topic areas related to environmental contamination at Camp LeJeune: adult leukemia (blood cancers), bladder cancer, liver cancer, multiple myeloma, and non-Hodgkin lymphoma. This connection stems from the potential exposure of individuals living or working at the U.S. Marine Corps base camp from 1953 to 1987 to contaminated drinking water containing industrial solvents, such as trichloroethylene and benzene, that leaked from underground fuel storage tanks.[10,11]

A systematic review and meta-analysis of 10 scientific studies published between 1990 and 2020 revealed that seamen working aboard naval or commercial vessels had more than double the risk for mesothelioma compared to the general population, highlighting the dangers of asbestos exposure on ships.[12] Similarly, a case-control study among Service members suggests an association between exposure to certain polychlorinated biphenyls (PCBs)—manufactured organic chemicals banned under the 1976 Toxic Substances Control Act—and an increased risk of papillary thyroid cancers, posing a risk to veterans who worked on the repair and maintenance of transformers, capacitors, and conduits before 1977 due to their prior exposure to PCBs.[13]

To better understand cancer risks among aviation personnel, phase 1 of a study mandated under section 750 of the William M. (Mac) Thornberry National Defense Authorization Act for FY 2021 (Public Law 116–283) examining the incidence of cancer diagnosis and mortality among aviators and aviation support personnel (ground crew), found that aircrew members had higher rates of three cancers (including thyroid cancer, an FY 2024 PRCRP topic area) and a 24 percent higher overall cancer rate compared to demographically matched civilian populations. The study also found that support personnel had higher rates of several cancers (including brain cancer, excluding glioblastoma, and thyroid cancer—both FY 2024 PRCRP topic areas), and a three percent higher overall cancer rate. This two-phase study is ongoing.[14]

Recognizing potential risks for aviation personnel, the Aviator Cancer Examination Study (ACES) Act of 2025 (Public Law 119–32) mandates that the VA partner with NASEM to study the incidence and mortality of cancer among individuals who served as aircrew in the Navy, Air Force, or Marine Corps. The ACES Act identifies six FY 2024 PRCRP Topic Areas—bladder, brain, colon, germ cell (testis), and thyroid cancer, and non-Hodgkin lymphoma—as cancers of interest.[15]

Furthermore, infectious agents, such as *Helicobacter (H.) pylori* (stomach cancer) and hepatitis (liver cancer), represent another area of cancer risk,[16–18] particularly since Service members may experience increased exposure to certain pathogens during deployment or in combat conditions.[20] Additionally, high-pressure occupational situations and harsh environments encountered by Service members may increase cancer risk by amplifying the inflammatory response.[21] A cohort study using VA and Department of War (DoW) administrative data for more than 1.9 million veterans who served in the Iraq or Afghanistan Wars between 2004 and 2019 showed an association between moderate or severe penetrating traumatic brain injury and subsequent development of brain cancer, suggesting a potential risk for veterans.[22]

Increasing Incidence of Young Adult and Early-Onset Cancers

As of 2023, more than 92 percent of active duty Service members and over 80 percent of Reservists are under 41 years of age,[23] highlighting the significance of increasing rates of young adult and early-onset cancer as a concern for military health and readiness. In 2025, an estimated 85,480 adolescents and young adults (AYAs) between the ages of 15 and 39 years will be diagnosed with cancer in the United States. From 2013 to 2022, rates of new cancer cases of any site among AYAs have been rising, on average, by 0.3 percent each year.[24] Table 2 lists the most common AYA cancers.

Table 2. Common AYA Cancers by Age Group

Age (Years)	Cancer Type
15–19	Thyroid cancer, Hodgkin lymphoma, and brain and central nervous system tumors (brain cancer and neuroblastoma)
20–29	Thyroid cancer, testicular (germ cell) cancer, melanoma, and Hodgkin lymphoma
30–39	Breast cancer,* thyroid cancer, melanoma,* and colon and rectum cancer

*Breast cancer and melanoma are ineligible for PRCRP funding but are included in the table for completeness. Research for these cancers is funded through the CDMRP Breast Cancer Research Program and Melanoma Research Program, respectively.

Further analysis of medical data from 2010 to 2022 revealed an increasing incidence of some early-onset cancers, defined as cancers primarily occurring in individuals aged over 50 years but diagnosed in people aged 18 to 49 years. Early-onset disease incidence increased in the PRCRP topic areas of stomach cancer, myeloma, and cancers of the bones and joints (sarcomas). Mortality rates increased for early-onset diseases in the FY 2024 PRCRP topic areas of colorectal, uterine (endometrial), and testicular (germ cell) cancers.[25]

Cancer Burden in the MHS

Cancer treatment costs for Service members, veterans, their families, and other military beneficiaries place a burden on the MHS and VA. Data provided by the Armed Forces Health Surveillance Division (AFHSD), based on electronic records within the Defense Medical Surveillance System (DMSS), demonstrate the impact of cancer care on the MHS. Table 3 presents the MHS medical encounters during 2015–2024 for select cancer types within the PRCRP topic areas.

Table 3. MHS Medical Encounters for Select PRCRP Topic Areas (2015–2024)*

Cancer Type	Patient Category	Average Patients per Year	Total Outpatient Encounters	Total Hospital Bed Days
Bladder Cancer	Active Service Members	65	2,370	136
	Other DoW Beneficiaries	18,464	908,638	80,000
Leukemia	Active Service Members	232	49,178	15,031
	Other DoW Beneficiaries	15,525	1,193,839	195,984
Osteosarcoma	Active Service Members	101	10,905	2,860
	Other DoW Beneficiaries	1,943	93,202	27,994
Stomach Cancer	Active Service Members	34	4,060	1,247
	Other DoW Beneficiaries	2,467	182,131	49,170
	Totals	**38,831**	**2,444,323**	**372,422**

*Data provided by the AFHSD based on DMSS electronic records. Does not include care received outside the MHS. Includes all MHS inpatient and outpatient encounters where a provider made the first (primary) diagnosis. Active Component Service members (ACSMs) category does not include Activated Reserve and Activated National Guard. This does not include care received while deployed, or any care received outside the MHS not processed through TRICARE (i.e., care covered by other insurance sources or care paid for entirely out of pocket). Other DoW beneficiaries include: National Guard/Reserve Members; Family members of ACSMs and National Guard/Reserve Members; former Service members; and family members of former Service members.

HBV and Hepatitis C (HCV) are the major causes of chronic liver disease and liver cancer worldwide.[26] HCV disproportionately affects VA health care users, making the VA the world's largest provider of HCV care.[27] The VA will potentially bear significant costs for liver cancer care. A study of liver cancer care among veterans found that the mean three-year total cost of care per patient was $154,688.[28] A study comparing 1,104 colorectal cancer patients treated either directly by the DoW or through Service-sponsored private sector care showed that the median per-patient costs to the DoW were $111,202 and $350,283, respectively.[29]

FISCAL YEAR 2024 PRCRP STATUS

Focus on Military Health Strategy

The FY 2024 Further Consolidated Appropriations Act directs that PRCRP-funded research be relevant to Service members and their families. To address this directive, the FY 2024 PRCRP devised Military Health Focus Areas that prioritize research on risk factors from environmental exposures and research to enhance mission readiness. The PRCRP required all applications to address at least one of the FY 2024 PRCRP Military Health Focus Areas, which are presented in Table 4.

Table 4. FY 2024 PRCRP Military Health Focus Areas

Environmental Exposures	• Environmental/exposure risk factors associated with cancer.
Mission Readiness	• Gaps in cancer prevention, early detection/diagnosis, prognosis, and/or treatment that may impact mission readiness and the health and well-being of military members, veterans, their beneficiaries, and the general public. • Gaps in quality of life and/or survivorship that may impact mission readiness and the health and well-being of military members, veterans, their beneficiaries, and the general public.

Program Cycle and Investments

The PRCRP initiated the FY 2024 funding cycle with a Vision Setting meeting to review the research landscape of the specified topic areas and develop an investment strategy that addresses knowledge and product gaps in cancer research and care, and that reduces the impact of cancer on military health. During the FY 2024 Vision Setting meeting, PRCRP Programmatic Panel members recommended seven award mechanisms to achieve the goals of the PRCRP. These award mechanisms span the research continuum, from discovery and basic research to advanced translational and clinical research. In addition, the panel members recommended prioritizing research that increases research capacity in the FY 2024 topic areas by soliciting research projects led by new investigators with oversight of established cancer researchers and through award mechanisms that encourage collaborative research. Table 5 outlines the FY 2024 PRCRP award mechanisms.

Table 5. FY 2024 PRCRP Funding Opportunities

FY 2024 Award Mechanism	Intent	Maximum Direct Costs per Award	Priority
Career Development Award − Scholar Option	Advance cancer research capacity by developing early-career investigators	$800,000	Increase Research Capacity and Collaborative Research
Idea Award	Support innovative, high-risk/high-reward concepts, theories, paradigms, and/or basic cancer research	$400,000	Discovery and Basic Research
Impact Award	Support high-impact mature research that can accelerate promising findings toward clinical applicability	$1,000,000	Translational Research

FY 2024 Award Mechanism	Intent	Maximum Direct Costs per Award	Priority
Patient Well-Being and Survivorship Award	Fill gaps in the understanding of survivorship and well-being of those affected by cancer	$1,000,000	Clinical Research
Virtual Cancer Center (VCC) Director's Award	Support a unique, interactive VCC that convenes two established investigators and up to 12 newly-awarded additional early-career investigators and their mentors to examine cancer commonalities	$1,750,000	Increase Research Capacity and Collaborative Research
Advancing Cancer Care Through Clinical Trials Award	Support rapid implementation of clinical trials with potential for significant impact on cancer treatment or management	$3,000,000	Clinical Research
Convergent Science Cancer Consortium Award	Support a transdisciplinary collaboration of scientists, clinicians, and consumer advocates to inform and address urgent and complex issues in cancer research	$20,000,000	Collaborative Research

The CDMRP uses a two-tier application review process consisting of scientific peer review and programmatic review. Both tiers of review incorporate the expertise of scientists, clinicians, Service members, and consumer advocates (cancer survivors or caregivers). The CDMRP convened 44 FY 2024 PRCRP scientific peer review panels from September 2024 through December 2024, and the FY 2024 PRCRP Programmatic Panel from December 2024 through March 2025. The MRDC Commanding General reviewed and approved the funding recommendations from the FY 2024 Programmatic Review.

In FY 2024, the PRCRP funded 62 applications (representing 65 separate awards) of the 440 full applications received, resulting in a 14.7 percent funding rate totaling $114,695,771. The remaining $15,304,229 of the FY 2024 PRCRP appropriation is directed toward administrative and management costs supporting of these and prior PRCRP projects and DoW withholds, including DHA R&D-MRDC withholds ($2,827,000), Small Business Innovation Research (SBIR)/Small Business Technology Transfer Programs (STTR) allocations ($4,336,000), and CDRMP management costs ($8,141,229) (Table 6).

Table 6. FY 2024 PRCRP Budget

Budget Allocations	Amount
FY 2024 PRCRP Congressional Appropriation	$130,000,000
Less: SBIR/STTR Withholds	($4,336,000)
Less: DHA R&D-MRDC Withholds	($2,827,000)
Less: CDMRP Management Costs	($8,141,229)
Amount Available for FY 2024 Research	$114,695,771

Table 7 presents total research investments per FY 2024 PRCRP topic area. The PRCRP awarded all FY 2024 research funds by September 30, 2025.

Table 7. FY 2024 Total Research Dollars Invested per PRCRP Topic Area^

Topic Area	Number of Awards	Award Amount
Bladder Cancer§	7	$8,918,111
Blood Cancers§	8	$36,306,337
Brain Cancer (excluding glioblastoma)	2	$3,034,016
Colorectal Cancer§	9	$13,586,499
Endometrial Cancer	2	$2,124,867
Esophageal Cancer	4	$4,458,339
Germ Cell Cancersμ	2	$2,892,255
Liver Cancer	2	$3,231,617
Lymphoma§	4	$4,159,044
Mesothelioma§	1	$990,623
Metastatic Cancers+	0	$0
Myeloma∞	0	$0
Neuroblastoma	4	$9,630,297
Pediatric Brain Tumors	3	$2,600,416
Pediatric, Adolescent, and Young Adult Cancers±	7	$11,315,705
Sarcoma	2	$3,859,920
Stomach Cancer	2	$1,157,875
Thyroid Cancer	4	$3,640,987

^Two VCC Director's Awards, funded for a total of $2,788,865, are topic-agnostic and do not appear in the table. The table values and VCC Director Award combined total is $114,695,773; this $2.00 difference from Table 6 is due to rounding.

§Six FY 2023 Clinical Trials received partial funding from FY 2024 funds to mitigate risk (totaling $5,475,879); those funds are represented in the appropriate Topic Area Award Amount but not the Number of Awards counts. The Blood Cancers Topic Area includes partial funding for two clinical trials.

μThe Germ Cell Total Award Amount includes $27,000 applied to a FY 2022 award in that Topic Area via a Funding Authorization Document.

[+]No applications submitted to the Metastatic Cancers topic area were recommended for funding. However, three funded awards classified under other topic areas will conduct research on metastatic disease: colorectal cancer; thyroid cancer; and Pediatric, Adolescent, and Young Adult Cancers.

[∝]One application in the Myeloma Topic Area was identified as meritorious and received a recommendation to fund but was withdrawn by the applicant during award negotiations.

±Research focused on children (ages 0–14 years), adolescents (ages 15–24 years), and/or young adults (ages 25–39 years).

PRCRP Funding Trends

The increase in appropriations in recent years enabled the program to fund more clinical and translational studies that are significantly closer to clinical application and can more immediately address cancer's impact on military health. Figure 1 compares the investment in translational and clinical studies in the last ten years of the program.

Figure 1. Distribution of PRCRP Funding Across the Research Continuum

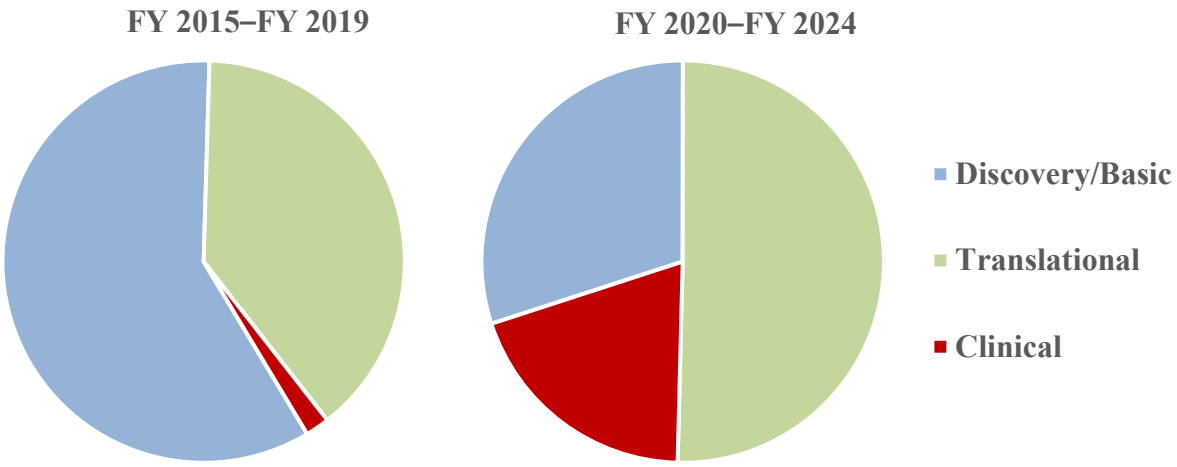

Table 8 provides a select list of clinical and translational studies involving human subjects or human tissue samples funded in FY 2024. The complete list of FY 2024 PRCRP awarded studies is available in Appendix A.

Table 8. FY 2024 PRCRP-Funded Select Clinical Trials and Studies

Cancer Type	Topic Area(s)	Organization	Summary
Blood Cancers	Blood Cancer and Pediatric Adolescent and Young Adult Cancers (PAYAC)	Leland Stanford Junior University	A phase 1/2 clinical trial testing the safety and efficacy of a combinatorial treatment including chemotherapy, immunotherapy, and targeted small molecules in acute lymphoblastic leukemia, with the goal of improving cure rates and decreasing relapse.
	Blood Cancer and Lymphoma	Beckman Research Institute of City of Hope	A pilot clinical trial evaluating remote patient monitoring during and after completion of outpatient Chimeric Antigen Receptor (CAR) T-cell therapy to improve symptom control, reduce psychological distress and toxicities, and minimize emergency department/urgent care visits and hospital readmissions.
	Blood Cancer	University of Maryland, Baltimore	A first-in-human, phase 1a dose-escalation study assessing the efficacy, safety, and feasibility of tri-specific CAR T-cells for B-cell lymphoma patients, with the goal of improving currently available CAR T-cell therapies and providing more durable responses and better treatment outcomes.
Neurological Cancers	Pediatric Brain Tumors and Brain Cancer (excluding glioblastoma)	The University of Texas MD Anderson Cancer Center	A phase 1 clinical trial examining a second-generation, oncolytic virus in pediatric patients with diffuse midline glioma (DMG), a highly aggressive and incurable brain cancer, with the long-term goals of obtaining more effective and less toxic immunotherapies for DMG and other brain cancers.
	Brain Cancer (excluding glioblastoma)	Dartmouth Hitchcock Medical Center	A study adapting an intervention to improve cognitive function in brain cancer survivors.
Gastro-intestinal Cancers	Stomach Cancer	University of Michigan	A study using Million Veteran Program data to determine if the absent in melanoma 2 (AIM2) protein, is a key protective factor that can help prevent *H. pylori*-associated stomach cancer initiation and progression. Service members deploy to countries with high *H. pylori* prevalence.[19]

Cancer Type	Topic Area(s)	Organization	Summary
Other Solid Tumors	Bladder Cancer	The Institute for Cancer Research	A phase 2 clinical trial examining a combination induction therapy followed by chemotherapeutic maintenance with the goal of improving the intolerable toxicity of the current standard of treatment, which often leads to treatment discontinuation.
	Germ Cell Cancer	University of Illinois Urbana-Champaign	A study identifying drivers of testicular cancer, the most common cancer among male Service members,[30] ascertaining markers of chemotherapy sensitivity, and validating results in patient samples to inform future clinical trials. Around 20–30 percent of advanced disease will relapse,[31] making new therapy discovery a pressing clinical need.
		University of Minnesota Twin Cities	A study analyzing residual serum platinum levels and associated neurological toxicities such as hearing loss, tinnitus, and neuropathy, in a cohort of 900 pediatric and adolescent cancer survivors to understand adverse effects of platinum-based cancer therapy.
	Sarcoma	Dana-Farber Cancer Institute	A phase 2 clinical trial examining a mammalian target of rapamycin (mTOR) inhibitor in patients with vascular sarcoma and identifying response biomarkers to improve and inform treatment choices.

Convergent Science Cancer Consortium Award

In addition, the FY 2024 PRCRP invested $20M in direct costs to fund a single Convergent Science Cancer Consortium—a transdisciplinary, multi-institutional collaboration investigating a complex cancer research problem through studies in multiple FY 2024 PRCRP topic areas. The FY 2024 PRCRP awarded this consortium funding to three teams of scientists, clinicians, and consumer advocates with diverse expertise in basic, translational, and clinical research, located at three partnering institutions. The consortium members include experts from oncology; immunology; cell and molecular biology; cell therapy; metabolism; protein engineering; biostatistics; bioinformatics; technology and assay development; and an experienced military health advisor. The study aims to overcome barriers to CAR T-cell therapy, a potentially game-changing new approach to cancer treatment. CAR T-cell therapy, first approved in 2017 for treating some blood cancers in children and adults, boosts a patient's immune system to attack and kill cancer. However, CAR T-cell therapy is hampered by complications such as immune rejection, lack of targetable antigens, and the inability to infiltrate

solid tumors. The consortium's goal is to develop a highly effective, next-generation CAR T-cell therapy that transcends these challenges to treat solid tumors and additional hematological malignancies more effectively and with fewer risks to patients.

PRCRP RESEARCH PROGRESS

Table 9 shows examples of PRCRP-funded awards that have resulted in advancements in cancer research and cancer clinical care.

Table 9. Select PRCRP-Funded Research Advancements

Research Advancements
Advancing Precision Medicine
Conventional cancer treatments rely on a one-size-fits-all approach that disregards the complexity and heterogeneity of tumors composed of diverse cell types. To address this limitation, the PRCRP funded formative research in the development of CIBERSORTx (Cell-type Identification By Estimating Relative Subsets Of RNA [ribonucleic acid] Transcripts), an analytical tool for characterizing tumor cell subsets in individual tumor samples.[32] CIBERSORTx data have significant potential for personalized medicine and are widely used by cancer researchers exploring precision medicine to revolutionize cancer treatment.
Opening New Avenues for Drug Development
The myelocytomatosis (MYC) oncogene occurs in the vast majority of cancers[33] and generates MYC transcription factor, which significantly contributes to tumor cell proliferation due to its role in regulating cell growth. MYC transcription factor has long been considered "undruggable"[34] in part because it lacks a stable chemical structure commonly used for drug discovery. The PRCRP funded a proof-of-concept study to generate and test novel compounds, called rigid multicyclic peptides, that can bind to structureless proteins. This investigation identified NT-B2R, a bicyclic peptide that forms a strong and specific bond to MYC and suppresses transcription activities and cell proliferation.[35] This discovery advances the field of cancer research by opening a pathway to develop highly sought-after, MYC-targeted therapeutics that could potentially treat a wide variety of cancers.
Developing AI for Cancer Care
Artificial Intelligence (AI) tools are widely used in cancer detection and diagnosis but are less advanced in making prognostic and treatment response predictions. To address this limitation, the PRCRP funded research addressing critical problems in machine prediction of survival and treatment response by employing multimodal data. The study developed a vision-language foundation model by integrating features imperceptible to the human eye from high-resolution pathology slides and clinical text, such as exam notes.[36] The model effectively predicted patient prognosis and response to treatment, advancing the field of AI-assisted precision care, which could spare patients from unnecessary toxic treatments.
Discovery of a Novel Cancer Cell Population
PRCRP-funded discovery work led to the identification of a novel cell type and helped determine its potential as a biomarker of treatment response in colorectal cancer. These cells, dubbed circulating hybrid cells, are the product of immune cells fused with cancer cells.[37] Data

from the award established these cell fusion hybrids as a new and important component of tumor biology.

Preclinical Advancements
Promising Results for a Deadly Childhood Cancer
A DMG diagnosis (previously known as diffuse intrinsic pontine glioma) in a child is devastating due to its inoperability; DMG has a one percent survival rate. The PRCRP funded research conducted at Weill Cornell Medicine, resulting in the development of a peptide nanofiber precursor (NFP), a highly stable structure shown to improve tissue penetration in DMG. NFPs were conjugated with DM1, a U.S. Food and Drug Administration (FDA)-approved chemotherapeutic with demonstrated effectiveness in treating other brain cancers. DM1-NFP exhibited selective toxicity toward glioma cells in mice implanted with human-derived DMG tumors. A single treatment with the intervention increased survival time.[38]
AI to Inform Treatment
The PRCRP funded the development of a computerized prediction tool that uses magnetic resonance imaging (MRI) to identify residual disease during post-chemoradiation therapy for colorectal cancer patients, with the goal of improving the detection of very small tumor volumes.[39] Building on this work, the PRCRP funded the research team to develop a computerized imaging-based companion diagnostic capable of identifying biomarkers to determine which rectal cancer patients will benefit from chemoradiation.[40] If validated, the model could determine colorectal patient response to chemoradiation and spare patients from unnecessary surgical procedures.
Linking PFAS Exposure to Germ Cell Cancer
Testicular cancer is the most common malignancy in men aged 20 to 40 years and the most diagnosed cancer in male Service members.[30] The PRCRP funded an analysis to clarify the causative link between 12 per- and polyfluoroalkyl substances (PFAS) and testicular germ cell tumors (TGCT) among Service members. This study identified service-related predictors of PFAS concentrations and increased TGCT relative risks with elevated PFAS concentrations among U.S. Air Force Service members.[41] The CDMRP Toxic Exposures Research Program provided additional funding[42] through a separate award to further investigate military service-related predictors of elevated PFAS serum concentrations and their associations with testicular germ cell tumor risk. Evidence from these studies could inform the development of PFAS contamination and exposure guidelines for both military and civilian populations.
Clinical Advancements
Sparing Patients from Unnecessary Toxicity
The PRCRP funded discovery work in hyperpolarized 13C magnetic resonance spectroscopic imaging (MRSI), a technique that can image increased metabolic processes that occur in aggressive and metastatic renal cell carcinoma, thus distinguishing these tumors from indolent disease.[43] 13C MRSI is currently in a phase 2 clinical trial being conducted with funding from another source.[44]

Early Detection for Esophageal Cancer

Most esophageal cancer patients receive their diagnosis at a late disease stage, when the prognosis is poor.[45] Early detection of esophageal adenocarcinoma and its precursor lesion, Barrett's esophagus, has potential to improve survival. To that end, the PRCRP funded a study conducted in a veteran population at the Louis Stokes Cleveland VA Medical Center to evaluate the diagnostic accuracy, tolerance, and acceptability of EsoCheck™, a non-endoscopic esophageal balloon sampling device, coupled with EsoGuard™, a deoxyribonucleic acid (DNA)-based screening assay. Preliminary results demonstrated high sensitivity and accuracy.[46] Service members may experience increased occupational exposures to ionizing radiation, a known risk factor for esophageal cancer.[47]

Promising Vaccine Therapy for Colorectal Cancer

The PRCRP funded a phase 1B clinical trial to investigate the safety, immunogenicity, and preliminary efficacy of a combination of a multi-peptide vaccine and TAS-102, an oral chemotherapy medication. The trial,[48] now completed, enrolled patients with metastatic colorectal cancer and found that the combination treatment was safe and tolerable and stimulated an immunogenic response.[49]

RNA-Nanoparticle Vaccines for Pediatric Gliomas

The PRCRP funded in vitro studies validating the safety and assessing the ability of RNA-nanoparticle vaccines to enhance and empower the immune system[50] to attack and kill diffuse midline glioma tumor cells. Research results supported the initiation of a phase 1 clinical trial[51] funded by other sources, evaluating the feasibility and safety of RNA-nanoparticle vaccines in children and adults with newly-diagnosed brain cancer.

Preventing Immune System Evasion

MICA and MICB are proteins expressed by many human cancers that help the immune system identify cancer cells for destruction. Tumors can evade immune system detection by shedding MICA and MICB from the cell surface. PRCRP funding supported the early development and validation of a monoclonal antibody, CLN-619, that reactivates tumor immunity by preventing loss of cell surface MICA and MICB.[52] CLN-619 is currently being tested in two clinical trials, funded from another source, that include nine types of advanced or refractory cancer.[53]

Improving Blood Cancer Treatment

The PRCRP funded the validation and optimization of monoclonal antibodies against B-cell activating factor receptor (BAFF-R), a protein expressed on human B-cell lymphomas. This work showed that BAFF-R is a promising treatment strategy and supported the development of BAFF-R CAR T-cells.[54] A phase 1 clinical trial of BAFF-R CAR T-cell therapy in relapsed and refractory B-cell acute lymphoblastic leukemia is being conducted with funding from another source.[55]

Detecting Early Relapse in Testicular Cancer

Testicular cancer, a type of germ cell tumor, is the most frequent tumor arising in young men, a population prominently represented in Service members. Depending on tumor type and risk factors, up to 50 percent of patients will experience recurrence[56] requiring frequent computed tomography (CT) surveillance. However, CT scanning includes radiation exposure which can increase cancer risk[57] and cannot detect very small tumor volumes. The PRCRP funded

research into microRNA (miRNA)-371 that demonstrated proof of principle that this biomarker could detect the disease at low or very low tumor volumes.[58]
Product In Clinical Practice
FDA Approval of XPOVIO© (selinexor)
The PRCRP contributed to a groundbreaking achievement for cancer research and military health. Seminal work conducted at the Ohio State University on the overexpression of a protein called exportin (XPO1) led to clinical trials testing selinexor as a new treatment for blood cancers. In 2020, the findings led to FDA approval of XPOVIO© (selinexor), in combination with ibrutinib, as an oral treatment for multiple myeloma and relapsed or refractory diffuse large B-cell lymphoma. As of August 2025, 62 active clinical trials are testing selinexor as an intervention.[59] Exploratory analyses in an ongoing clinical trial of patients with advanced or recurrent endometrial cancer showed that selinexor increased the length of progression-free survival for a subgroup of patients.[60]

SUMMARY

The PRCRP's mission is to decrease the burden of cancer on Service members, veterans, and their families, and advance the combat readiness and lethality of U.S. Service members. Through analyses of military health needs, gaps in research and patient outcomes, and Federal and non-Federal funding landscapes, the FY 2024 PRCRP funded 62 applications (representing 65 separate awards) of the 440 full applications received, resulting in a 14.7 percent funding rate totaling $114,695,771. The FY 2024 PRCRP investment in these awards represents its continued commitment to enhance the health and well-being of Service members, veterans, their families, and the American public.

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APPENDIX A. COMPLETE LIST OF FY 2024 PRCRP-FUNDED PROJECTS

Advancing Cancer Care in Clinical Trials			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Bladder Cancer	Pembrolizumab Maintenance After Enfortumab Vedotin/Pembrolizumab Induction in Front-Line Metastatic Urothelial Carcinoma	The Institute of Cancer Research	$1,959,353
Blood Cancers	Digital Health Intervention for Self-Management and Telemonitoring in Chimeric Antigen Receptor T-Cell Therapy	Beckman Research Institute of City of Hope	$5,339,958
	First-in-Human Phase 1 Clinical Trial Using Trispecific (CD19/CD20/CD22) CAR T Cells for the Treatment of Relapsed/Refractory B-Cell Lymphoma	University of Maryland, Baltimore	$4,523,000
PAYAC	Advancing Cure Rates for Infantile Acute Lymphoblastic Leukemia	Leland Stanford Junior University	$4,232,760
Sarcoma	A Phase 2 Trial of Nab-Sirolimus in Patients with Progressing or Symptomatic Epithelioid Hemangioendothelioma	Dana-Farber Cancer Institute	$3,238,909
Career Development Award – Scholar Option			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Bladder Cancer	Strategies to Upregulate and Image NECTIN4 to Enhance NECTIN4 Targeted Therapies in Bladder Cancer	University of California, San Francisco	$1,312,000
Blood Cancers	Immunologic Drivers of Lineage Bias in TP53-Mutant Acute Leukemia	University of Chicago	$1,306,778
	Investigation of Menin/KMT2A Protein Degradation for the Treatment of Myeloid Neoplasms	Brigham and Women's Hospital	$1,428,720
	Organoid-Based Modeling and Therapeutic Targeting of TP53-Mutated Acute Myeloid Leukemia	University of Texas MD Anderson Cancer Center	$1,306,991
Colorectal Cancer	Advancing WRN as a Promising Therapeutic Target for MSI-H Cancers	Columbia University Irving Medical Center	$1,316,000

Career Development Award – Scholar Option (Continued)			
Topic Area	**Proposal Title**	**Organization**	**Funding**
PAYAC	Adaptation of an Inhaled Substance Use Intervention for Adolescent and Young Adult Cancer Survivors	University of Chicago	$1,312,000
	Targeting Noncanonical Wnt Signaling to Prevent Ewing Sarcoma Metastases in a Novel Zebrafish Model	Albert Einstein College of Medicine	$1,344,000
Convergent Science Cancer Consortium Award			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Blood Cancers	Convergent Science Cancer Consortium for Immune Cell Engineering	University of Texas MD Anderson Cancer Center	$19,100,256
Colorectal Cancer	Convergent Science Cancer Consortium for Immune Cell Engineering	University of Houston	$6,545,487
Neuroblastoma	Convergent Science Cancer Consortium for Immune Cell Engineering	Vanderbilt University Medical Center	$5,665,088
Idea Award			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Bladder Cancer	Engineering Receptors to Promote Effective Infiltration of CAR T Cells into Bladder Tumors	Johns Hopkins University	$606,060
	PLZ4-Targeting Ultra-Small DM1 Nanoconjugate for Bladder Cancer Therapy	University of California, Davis	$644,000
	Reprogramming Protumoral Neutrophils to Enhance ICI-Based Responses in Bladder Cancer	Houston Methodist Research Institute	$646,000
Blood Cancers	Dissecting Cooperativity Between Cell States in AML	Oregon Health and Science University	$623,656
	Exploiting METTL3 Inhibition-Induced Dysregulation of DNA Repair in the Treatment of Leukemia	Yale University	$670,917

Idea Award (Continued)			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Colorectal Cancer	Colorectal Cancer and Antineoplastic Therapy Interact to Impair Cognition	University of Texas MD Anderson Cancer Center	$650,231
	Enhancing Long-Term Persistence of CAR-NK Cells for Treatment of Solid Tumors	University of Minnesota Twin Cities	$614,150
	In Situ Engineering of Oncobacteria to Remodel the Colorectal Cancer Microenvironment	Eligo Bioscience	$436,398
	Investigating a Novel Molecular Link Between Obesity and Colorectal Cancer Progression	University of South Alabama	$616,000
	Targeting Glycoimmune Checkpoints Siglec-7 and -9 for the Treatment of Colorectal Cancer	Scripps Research	$718,032
	Targeting the DPEP1-Neutrophil Axis in Microsatellite Stable Colorectal Cancer	Vanderbilt University Medical Center	$700,000
Endometrial Cancer	Targeting EMT and Therapy Resistance in Uterine Carcinosarcoma: GPER1 in the Spotlight	University of Oklahoma Health Sciences Center	$572,000
Esophageal Cancer	Multispecific Bridge Nanoparticles to Engage T Cells and Off-the-Shelf CAR-T Cells Against Antigen (+) EC Tumors to Enhance Antitumor Immune Activity	University of Notre Dame	$622,340
	Myeloid Cell and Other Inflammatory Components in the Progression of Barrett Esophagus to Invasive Esophageal Adenocarcinoma	University of California, San Francisco	$656,000
Lymphoma	cGAS Is a Potential Therapeutic Target of Immunometabolism in AIDS Lymphomas	Mountain Home Research and Education Corporation	$460,000
	Defining the Cellular Origins and Molecular Vulnerabilities of NOTCH-Driven Lymphomas	National Cancer Institute	$487,800
	Development of a Novel Multiengager Antibody Complex to Augment Natural Killer Cell Function and Durability in Lymphoma	University of Minnesota Twin Cities	$616,000

Idea Award (Continued)			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Mesothelioma	Developing HUWE1 as a Therapeutic Target for Treating Mesothelioma	Harvard University	$676,000
Neuroblastoma	Development of a GPC2 CAR T Cell-Amplifying Extracellular Vesicle Vaccine	Children's Hospital of Philadelphia	$712,000
	Immune-Competent 3D Bioprinted Organoids to Study and Target Barriers to Cellular Therapy for Neuroblastoma	Emory University	$626,000
PAYAC	Comprehensive In Vivo Phenotyping of Fusion-Driven Pediatric Rhabdomyosarcomas	Abigail Wexner Research Institute at Nationwide Children's Hospital	$624,000
	New Approaches to Inhibition of Ewing Sarcoma Metastasis	University of Colorado Denver	$624,000
Pediatric Brain Tumors	Improved and Safer Chemotherapy of Medulloblastoma Using a Self-Assembled Nanomaterial	Oregon Health and Science University	$623,953
	Revolutionizing Pediatric Brain Tumor Treatment with Off-the-Shelf CAR-NKT Cells	University of North Carolina at Chapel Hill	$621,920
Sarcoma	Targeting Sensory Neurons via Anti-CGRP Therapies in Osteosarcoma	Johns Hopkins University	$621,011
Stomach Cancer	Development of Ultrasensitive Stool Tests for LINE-1 ORF1p for Gastric Cancer Detection	Brown University	$533,875
	The Role of Epithelial Aim2 in Helicobacter pylori-Associated Gastric Preneoplasia	University of Michigan	$624,000
Thyroid Cancer	A Novel Synthetic Lethal Vulnerability Uncovered by Inhibiting One-Carbon Metabolism in Anaplastic Thyroid Cancer	Albert Einstein College of Medicine	$672,000
	Novel Alpha-Emitting Radiopharmaceutical Therapy for Radioiodine Refractory Differentiated Thyroid Cancer	Mayo Clinic and Foundation	$621,435
	Targeting Androgen Receptors as a Novel Therapeutic Strategy for Advanced Thyroid Cancer	University of Colorado Denver	$624,000

Impact Award			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Bladder Cancer	Biomarker Development to Refine an Individualized Risk-Adapted Approach to Bladder-Sparing Treatment for Muscle-Invasive Bladder Cancer	Icahn School of Medicine at Mount Sinai	$1,227,478
	Impact of Tertiary Lymphoid Structures (TLSs) in Oncolytic Virus-Induced Tumor Elimination	H. Lee Moffitt Cancer Center and Research Institute	$1,685,000
Brain Cancer (Excluding Glioblastoma)	Radiopathomic Mapping of Tumor Burden for Personalized Management of IDH-Mutant Glioma	University of California, San Francisco	$1,594,419
Colorectal Cancer	Preclinical Validation of Novel Combination Therapeutic Strategies Targeting KRAS and BRAF Mutated Colorectal Cancer for Near-Term Clinical Examination	University of Texas MD Anderson Cancer Center	$1,622,612
Endometrial Cancer	Early Detection of Endometrial Carcinoma Through Cell Enrichment and Flow Cytometry	Johns Hopkins University	$1,552,867
Esophageal Cancer	Targeting Reflux-Activated Oncogenic mRNA Translation Program in Esophageal Adenocarcinoma	University of Miami Miller School of Medicine	$1,535,000
	The Role of Streptococcus in Esophageal Neoplasia	Columbia University Irving Medical Center	$1,644,999
Germ Cell Cancers	The Promise of Epigenetic Therapy for Refractory Testicular Germ Cell Tumors	University of Illinois Urbana-Champaign	$1,465,443
Liver Cancer	Noninvasive Machine Learning Analyses of cfDNA Fragmentomes for Early Detection of Liver Cancer	Johns Hopkins University	$1,552,513
	Pre-mRNA Splicing as a Therapeutic Vulnerability of Pediatric Liver Cancer	St. Jude Children's Research Hospital	$1,679,104
Neuroblastoma	Combination Therapy for High-Risk, MYCN-Amplified Neuroblastoma	Children's Hospital of Philadelphia	$1,746,810

Impact Award (Continued)			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Pediatric Brain Tumors	Phase 1 Trial of Engineered Oncolytic HSV-1 M032 in Newly Diagnosed Diffuse Midline Glioma	The University of Texas MD Anderson Cancer Center	$1,354,543
Thyroid Cancer	Targeting Specific lncRNAs in Novel Combined Therapies to Modulate the TSP1-Dependent Immune Microenvironment Vulnerabilities in Advanced Thyroid Cancer	Beth Israel Deaconess Medical Center	$1,723,552
Patient Well-Being and Survivorship Award			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Brain Cancer (Excluding Glioblastoma)	Targeting Knowledge and Cognition to Improve Quality of Life: An Innovative Telehealth Approach for Brain Tumor Survivors and Their Care Partners	Dartmouth Hitchcock Medical Center	$1,439,597
Germ Cell Cancers	Outcomes and Late Effects in Pediatric and Adolescent Germ Cell Tumor Survivors	University of Minnesota Twin Cities	$1,399,812
Lymphoma	Wearable Artificial Intelligence for Cardiac Function and Health Monitoring (WATCH) Study	Mayo Clinic and Foundation	$1,526,253
PAYAC	DYNAMIC: Development of a Behavioral Intervention for Young Adults with Advanced Cancer	H. Lee Moffitt Cancer Center and Research Institute	$1,619,065
	PEGASUS: Pregnancy Complications in AYA Cancer Survivors	University of Texas Health Science Center at Houston	$1,559,880
Virtual Cancer Center Director's Award			
Topic Area	**Proposal Title**	**Organization**	**Funding**
Agnostic	Convergent Science Virtual Cancer Center v2.0	University of Arizona	$1,696,170
	Convergent Science Virtual Cancer Center v2.0	University of Southern California	$1,092,695