RAND’s mission—to help improve policy and decisionmaking through research and analysis—guides the topics we choose to tackle, our methodological approaches, and our outreach. At the start of every new year, we pause to reflect on the past 12 months of effort to make individuals, communities, and nations safer and more secure, healthier and more prosperous. To identify our accomplishments, we apply a three-tier test for impact, with each tier requiring more from us than the previous one:

**TIER 1**
The research and analysis address issues at or near the top of the policy agenda or help shape that agenda.

**TIER 2**
The results reach key decisionmakers and the broader public, improving the quality of policy discussions and debate.

**TIER 3**
The findings and recommendations lead directly to improvements in policy and decisionmaking.

This Year in Review profiles inspiring examples of RAND research achieving Tier 3 impact—our research and analysis being used to make a difference. We could not do this without the entire RAND community, including the commitment and expertise of RAND staff and investments from our clients, grantors, and donors.

Michael D. Rich
President and CEO
TOUCHING LIVES

In 2019, RAND research made direct and meaningful contributions to improving health, education, and prosperity for individuals and communities throughout the world, including through the examples highlighted here.

Improving K–12 Curricula

In 2019, RAND’s research on K–12 curricula and social and emotional learning (SEL) spurred impact across the United States at the district, state, and federal levels.

With states adopting more-rigorous and far-reaching standards for K–12 mathematics, English language arts, and literacy, it can be difficult for teachers to select high-quality instructional materials aligned with those standards. For the past few years, RAND researchers have been assisting states and school systems with efforts to define high-quality curricula and encourage their adoption by schools and teachers. This effort originated in Louisiana, where a RAND team found that state policies to boost the adoption of curricula designated as high quality were successful.

The impact of RAND’s research and analysis on this topic continued to spread in 2019, as researchers shared their expertise gained from studying Louisiana’s reforms with eight other states striving to improve their curricula.

Drawing on new data from the RAND American Educator Panels, researchers are helping those states track their use of high-quality curricula. And by determining which factors support that use, RAND is helping inform future state policies. In May, Chicago Public Schools (CPS)—the third-largest school district in the United States—launched the Curriculum Equity Initiative, which aims to ensure that teachers at all schools have guaranteed access to high-quality curricula. While announcing the initiative, CPS cited RAND’s recommendation that school systems should provide more guidance and support in the selection and development of high-quality materials.

RAND research on SEL—which helps boost important social and emotional competencies, such as emotional regulation, resilience, communication, and leadership—was cited by Congress in 2019 as a justification for a new initiative to support SEL and “whole child” approaches to education, including $65 million in funding for SEL grants. With this new source of funding, states and school districts may be better able to promote these important skills for students, strengthening their interpersonal and intrapersonal competencies.
Recruiting and Retaining Women in the U.S. Coast Guard

Despite having a higher overall retention rate than other military services, the U.S. Coast Guard retains women at a lower rate than it retains men. The Coast Guard asked the Homeland Security Operational Analysis Center (HSOAC)—operated by RAND for the U.S. Department of Homeland Security—to identify why women leave the Coast Guard and then to develop recommendations to help mitigate identified barriers to retention.

The Coast Guard has announced several new policies aimed at implementing HSOAC’s recommendations. To address and diminish the stigma women often face for being away from their units during parental leave, the service introduced a pilot program to allow units to backfill gaps caused by members on parental leave without incurring costs. The Coast Guard has also eliminated gender-specific pronouns from promotion packages and professional evaluations, with the aim of addressing HSOAC’s finding that women see limited opportunities for advancement in the service. In response to another recommendation, the service created a pilot program to assess fitness based on abdominal circumference rather than height and weight.

HSOAC’s study has received congressional attention as well: The Coast Guard reauthorization bill includes language requiring the service to submit a report to Congress detailing actions it has taken or plans to take to implement RAND’s recommendations. HSOAC is now working on a follow-on study for the Coast Guard focused on recruiting and retaining under-represented minorities.

Building Back Better in Puerto Rico

Losses resulting from natural hazards cost billions of dollars each year and can require extensive rebuilding of local infrastructure. RAND’s ongoing research to assist Puerto Rico’s recovery from Hurricanes Irma and Maria is playing a key role in helping ensure that rebuilding proceeds not only within budget but also in a way that better serves the island’s post-disaster needs.

FEMA’s Public Assistance Grant Program is a key source of federal recovery funding for Puerto Rico. Traditionally, these funds must be used to bring a facility back to predisaster conditions. Instead, Puerto Rico requested to use a more flexible approach for rebuilding—the first recovery effort to do so on this scale. This way, Puerto Rico will be able to better serve the community. For example, it could rebuild hospitals that are more resilient to future hurricanes or schools in different locations to better reflect current student populations.

FEMA develops a cost estimate to account for the price of all eligible rebuilding. In Puerto Rico, cost estimates over $5 million are reviewed by an independent panel. FEMA asked RAND to provide experts for this panel, which will review an estimated total of more than $36 billion in reconstruction work. As part of this role, RAND developed an approach to cost analysis that can be used for future disasters.

In addition to helping ensure sufficient funding for Puerto Rico’s recovery, RAND is helping FEMA lay the groundwork for other jurisdictions to improve cost estimating and to take advantage of increased flexibility in rebuilding after a disaster.

Boosting Community Well-Being

RAND analyses have long played a vital role in boosting the well-being of communities around the world. In 2019, policymakers in Santa Monica and Pittsburgh took key steps toward implementing RAND’s findings.

Since 2013, RAND researchers have helped the Santa Monica city government incorporate well-being into its policies and programs. The team created the Wellbeing Index to frame discussions of how government, community partners, and residents can work together to help the community thrive. Santa Monica is now using this framework to guide city planning, performance metrics, and budgeting.

Separately in Santa Monica, RAND found that a program aimed at a small group of chronically
homeless individuals successfully placed most of them into affordable housing while reducing spending on police services and emergency medical care. Spurred by the report’s findings, the city boosted funding for the program, which includes specialists who locate and engage homeless individuals in the city on housing, substance use disorders, and other challenges. This approach builds on a stream of RAND efforts to address homelessness, including research demonstrating the cost-effectiveness of supportive housing—which is catalyzing city governments nationwide to invest in combining affordable rental housing with intensive case management services that link individuals with the kind of health and social services needed to sustain independent living.

In Pittsburgh, RAND is helping address inequity and inequality on a range of issues—from education to infrastructure. After developing a framework to measure equality in terms of both outcomes and access to opportunities, RAND tracked changes in the city’s performance as policymakers used these data to implement efforts to reduce inequality and improve resident well-being. In May, influenced by this analysis, Pittsburgh created the Office of Equity to embed equity-oriented thinking into the city’s decisionmaking processes, and the office is expected to use RAND’s research to further identify and address inequity in Pittsburgh moving forward.

Addressing Barriers to Female Officer Retention

Women are underrepresented among the U.S. Air Force’s senior leadership, compared with their representation within the lower officer ranks, and one factor contributing to this underrepresentation is that female officers tend to separate from the active duty Air Force at higher rates than men. Beginning in 2017, the Air Force asked RAND to examine potential retention barriers for female Air Force officers. RAND researchers conducted focus groups with 295 female Air Force officers across 12 Air Force installations to better understand the factors they consider when deciding to remain or separate from the active duty Air Force.

These engagements highlighted several considerations that affect retention decisions, including family, career, work environment, and military cultural factors. Consistent with RAND’s recommendations, the Air Force has implemented policies focused on providing officers more autonomy in assignment decisions, improving access to childcare, ensuring a private space for nursing mothers, and expanding the career intermission program. As a result of RAND’s efforts, more female officers will see an extended career in the Air Force as a viable option—a benefit to them and the United States.
Supporting Military Caregivers

There are more than 19 million veterans living in the United States today, many of whom have service-connected conditions or disabilities that require ongoing support and care. For years, RAND’s research has shed light on the critical role that caregivers play in meeting the needs of the nation’s current and former service members and has analyzed programs and policies that support caregivers—as well as gaps in that support landscape. In 2019, this research led to the creation of new resources for caregivers, their families, and their employers.

A key finding from RAND’s caregiving research was that employers should consider launching initiatives and formulating policies to create workplace environments that are friendlier to caregivers. This year, AARP launched a guide for employers to better support military and veteran caregivers in the workplace, citing RAND research throughout the document.

Separately, Sesame Workshop announced its new Sesame Street for Military Families: Caregiving initiative, which offers programming and other resources created for military caregivers and their families, especially children. RAND research informed the initiative, and one of our lead authors served on its advisory group.
THE POWER OF FACTS

One enduring value of RAND research is in establishing and verifying facts—whether those facts proved welcome or unwelcome, provided new insights, or confirmed untested assumptions. Here are examples of projects that yielded results so clear and compelling that decisionmakers took note—and then took action.

Improving School Leadership

Although RAND has been studying the important role of school leaders for decades, 2019 research examining principal pipelines—a strategic approach to the hiring, preparation, evaluation, and support of school leaders—might have some of the most impressive findings to date. In response, dozens of U.S. school districts are exploring reforms to their principal pipelines to boost student achievement and improve school leader retention.

RAND’s evaluation of The Wallace Foundation’s $85 million, six-year initiative to implement principal pipelines examined the experiences of the six large school districts that participated, all of which serve majority-minority student populations. Researchers found that pipeline-district schools with newly placed principals outperformed comparison schools in both math and reading; in fact, the researchers did not find any other comprehensive districtwide initiatives with demonstrated positive effects of this magnitude on student achievement. They also concluded that the initiative boosted principal retention.

The Wallace Foundation is disseminating this research nationwide and has launched a new initiative to provide technical assistance to 86 school districts, many of which are among the largest in the country, as they work to implement principal pipelines.

Reducing Intoxicated Driving

Excessive alcohol consumption imposes a significant burden on the U.S. health care and criminal justice systems, and intoxicated drivers are a large part of this problem. Since 2011, RAND has conducted research on South Dakota’s 24/7 Sobriety Project, which requires individuals arrested for or convicted of alcohol-involved offenses to submit to Breathalyzer tests twice per day or wear a continuous alcohol-monitoring bracelet and enacts swift sanctions for those testing positive—typically, a night or
two in jail. Researchers found that the innovative alcohol-monitoring program helped reduce repeat DUI and domestic violence arrests and that program implementation was associated with a decrease in mortality.

RAND’s evaluation was a motivating force behind a new Nevada law enacting the 24/7 Sobriety and Drug Monitoring Program, which aims to respond to people who repeatedly drive under the influence. Ahead of the bill’s passage, RAND provided testimony about the South Dakota program, and the bill text indicates that RAND’s findings were a key factor in writing the law.

Increasing the Transparency of Health Care Costs

Large employers sponsor health care plans that enroll roughly half the U.S. population, and they are in a strong position to demand increased value from the health care system. However, they often lack information about prices for health care services, thus leaving room for unrealized cost savings that could be passed on to their employees.

RAND helped close this knowledge gap by developing a novel approach for measuring $13 billion in hospital spending across 25 states. This method allowed researchers to compare how much employers and private health plans pay for hospital services with how much Medicare would pay for the same services at the same facilities. RAND found that the average price paid to hospitals for privately insured patients was roughly 2.5 times what Medicare would have paid.

In Indiana—which had the highest relative rate among the 25 states analyzed, at over three times what Medicare would have paid—and in other states, stakeholders have used this new information to modify how they negotiate for health care services, with the ultimate goal of lowering prices for their employees. In November, the U.S. Department of Health and Human Services cited Indiana’s experience using RAND’s research as a justification for its new rule requiring hospitals to publicize a list of their standard charges for the items and services they provide. The rule is aimed at increasing transparency to increase market competition and ultimately drive down costs.

In 2020, RAND plans to release the results of a study examining rates in the states not included in the 2019 study, providing for greater transparency on health care costs across the nation.

Helping Teenagers Get More Sleep

In recent years, efforts to start schools later have spread across the United States, spurred by scientific research demonstrating that teenagers’ biological clocks run later than those of adults. The public health effects of waking adolescents too early have long been documented, but a 2017 RAND Europe report added a new angle to the debate: the economic implications of inadequate sleep for teens.

In 2019, California—which has the highest public school enrollment in the nation—became the first state to mandate later start times for public schools. RAND’s research played an important role in the debate on pushing back start times. The economic benefit findings were cited by advocates for the California legislation, including the bill’s author, who called the report “staggering.” The research was also cited in the California Senate Education Committee’s bill analysis.

Outside California, one of the report’s authors served on Pennsylvania’s Joint State Government Commission’s Advisory Committee on Later School Start Times at Secondary Schools, which issued a report to the state’s General Assembly recommending that districts consider later start times. And at least two Pennsylvania high schools where RAND presented these findings changed their start times in 2019. RAND’s research continues to reach new audiences, with presentations scheduled in 2020 for other school districts and school boards considering pushing back start times.
Federal Spending on Gun Policy Research

Well-informed gun policies require consideration of many factors, including the law and constitutional rights, the interests of various stakeholder groups, and information about the likely effects of the policies on different outcomes. A RAND project, Gun Policy in America, sought to provide insight into the third category: What does scientific evidence say about the effects of various firearm policies on important outcomes, such as firearm deaths, violent crime, the gun industry, and participation in hunting and shooting sports? The researchers found a shortage of high-quality studies on the effects of gun policies, leading to their recommendation that the federal government increase funding for gun research.

Specifically, the authors recommended investing in research portfolios at the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the National Institute of Justice. The report’s lead author elaborated on this point in March 2019 testimony before the House Committee on Appropriations subcommittee responsible for developing funding levels for the CDC and NIH, noting that, without an explicit appropriation from Congress, federal agencies may be reluctant to fund gun policy research.

In its 2019 year-end spending package, Congress provided $25 million for the CDC and NIH to conduct gun violence research. This funding stream—the first of its kind in 20 years—joins legislation passed in 2018 in implementing recommendations from RAND’s Gun Policy in America project.
STRONGTHENING NATIONAL SECURITY

RAND researchers offered new ideas for addressing long-standing security challenges, formulated proposals for rebuilding one of the countries most ravaged by civil war, and gave advice to officials who are tasked with ensuring that the U.S. military’s competitiveness keeps pace with technological innovation.

Preventing Terrorism

Terrorism prevention policies and programs aim to reduce the risk of terrorism through efforts outside the traditional tools of arrest, prosecution, and incarceration—for example, by countering extremist messages online, nurturing community engagement by law enforcement agencies, and educating community members to recognize warning signs of radicalization. HSOAC research released in 2019 provided recommendations to the federal government on strengthening terrorism prevention efforts in the United States. This research has played a key role in U.S. Department of Homeland Security (DHS) efforts to improve terrorism prevention policies.

One recommendation in HSOAC’s report was that terrorism prevention programs address the concerns of broader populations—school violence, for example—in addition to terrorism. To that end, DHS transitioned its Office for Terrorism Prevention Partnerships to the Office for Targeted Violence and Terrorism Prevention in April. Additionally, in September, the department released its Strategic Framework for Countering Terrorism and Targeted Violence, which is organized around four goals. HSOAC’s study formed the backbone of DHS’s declared objectives and planning for goal 3: prevent terrorism and targeted violence.

Strengthening NATO’s Amphibious Capacity

Russia’s annexation of Crimea in March 2014 has been one of the seminal geopolitical events of this century, marking the first time since the end of the Second World War that Europe’s borders have been redrawn through aggression. It has imbued NATO with newfound relevance, spurring many member countries to increase their defense expenditures and accelerate the modernization of their armed forces across operational domains.
At the beginning of 2017, U.S. Marine Corps Forces Europe and Africa asked RAND to design and facilitate a series of events to identify command-and-control (C2) constructs that would enable the execution of large-scale NATO maritime and amphibious operations. RAND oversaw three such events—a tabletop exercise in Italy, a seminar in the UK, and a wargame in Norway. The findings of these events helped persuade NATO to establish a new joint force command in Norfolk, Virginia, aimed at bolstering alliance maritime security in the Atlantic (the command was activated in July 2019) and commit to reinvigorating amphibious capabilities.

The report documenting those findings is guiding the development of NATO’s amphibious forces. The alliance’s amphibious leaders are now testing the C2 structure outlined in the report in NATO and multinational maritime exercises.

**Rebuilding Yemen**

A war of attrition between Saudi-led forces and Houthi rebels in Yemen has produced what the United Nations considers the world’s gravest humanitarian situation: More than 3 million Yemenis have been displaced, almost a quarter of a million have perished, and more than 8 million are at risk of starvation.

Taking a 50-year view and drawing on at least 70 interviews with key stakeholders in the United States and across the Middle East, RAND formulated the Yemen Steering Initiative (YSI), designed to integrate and facilitate international and Yemeni efforts to end the civil war; stabilize Yemen; and improve the political, economic, and security outlook of the Yemeni people.

Calling the YSI “the best piece of technical assistance” she has ever received, United Nations Resident and Humanitarian Coordinator in Yemen Lise Grande has adopted it as her official source of planning guidance for conducting United Nations operations in Yemen. In addition, in a statement prepared for an October 2019 workshop at RAND, then-U.S. Deputy Assistant Secretary of Defense for the Middle East Michael Mulroy singled out the YSI for praise: “RAND has played a critical role in working with the UN to define near and long-term objectives in the humanitarian, political, economic, and security realms, so that if and when there is a clear turning point in the conflict, the international community can turn to a concrete way ahead.”

Because of the impact the research has already had in developing the foundation for a sustainable Yemeni polity, RAND has received additional funding to continue developing the YSI.

**Helping the U.S. Army Create a Data Science Capability**

U.S. Army Secretary Ryan McCarthy announced in October 2019 that the Army intends to invest more than $700 million over the next five years in big-data platforms and artificial intelligence tools to enhance the service’s ability to conduct multi-domain operations.

A central component of that effort is the cultivation of the Army’s business information environment. The Army has developed three advanced enterprise resource planning (ERP) systems to manage its logistical and financial operations, and it is fielding an ERP system to streamline its military personnel and pay processes. To facilitate system integration and real-time strategic insights, the Army needs to develop a data science capability. To that end, a RAND team made 40 recommendations to the service in 2017. The Army has since published an enterprise data analytics strategy; created a chief analytics officer role, which it is now actively looking to fill; established an Army analytics board; and launched Deep Green, a collaborative, service-wide competition aimed at enhancing its data analytics capability.

In addition, pursuant to the RAND report’s recommendations, the Army is drafting a data analytics strategy implementation plan, developing the Army Leader Dashboard, and establishing a U.S. Department of Defense-wide data services environment.
A LOOK AHEAD TO IMPACT ON THE HORIZON

Excellent research can often take years to achieve significant impact. Here are RAND projects and programs that we believe are poised for impact in 2020 and beyond.

Stemming the Tide of the Opioid Crisis

Despite federal, state, and local efforts to address opioid-involved deaths and addiction, the crisis continues to ravage parts of the United States. RAND research examining the nation’s complex opioid problem has received broad attention from the media and policymakers alike, laying the groundwork for high-level impact in the years ahead.

Recent RAND research offers strategies to address the sharp increase in fentanyl and other synthetic opioid deaths, including why these illicit substances are becoming entrenched in certain regions. Possible suggestions include innovative techniques to address the source of synthetic opioids; creative ways to disrupt online transactions; and supervised consumption sites, where trained staff monitor for overdose or risky injection practices of already-purchased drugs. A RAND report drawing on international experiences with these sites could provide valuable insights for communities and decisionmakers.

Additional RAND research is expected in 2020 on how opioid use disorder influences family well-being, the history and potential impacts of opioid litigation, and barriers and opportunities for reversing the tide of the crisis.

Achieving a Lasting Peace in Afghanistan

The United States is still struggling to forge a durable settlement in Afghanistan acceptable to both the Afghan government and the Taliban. Indeed, the Armed Conflict Location and Event Data Project declared Afghanistan to be the deadliest country in 2018, and roughly 13,000 U.S. soldiers remain there. Perhaps the most sobering gauge of U.S. difficulties is that the Taliban presently controls more territory in Afghanistan than at any point since 9/11.

With Americans across the ideological spectrum increasingly critiquing “endless wars,” U.S. policymakers find themselves under growing pressure to wind down
their country’s involvement in Afghanistan. A just-released report depicts what a comprehensive peace agreement could look like. One of the most notable features of the report is its framing, which translates research and analysis into the format of a comprehensive peace accord.

Although there are other reports that consider various elements of a potential negotiated outcome among the United States, the Afghan government, and the Taliban, this may well be the first to present an integrated and detailed set of proposals that collectively furnish the basis for a durable Afghan peace and a responsible U.S. drawdown.

**Imagining a New Branch of the Military**

At the direction of the White House, the U.S. Department of Defense has been working to create the sixth branch of the armed forces, the Space Force. The December 2019 signing of the National Defense Authorization Act for Fiscal Year 2020 officially established the Space Force within the Department of the Air Force.

To help the Air Force stand up the new service, RAND is drawing on research in career field sustainment, organizational design, and comparative analysis, as well as deep knowledge of the Department of Defense’s current space enterprise. Researchers are working closely with the Space Force Planning Task Force and other stakeholders to help conceptualize structure and manning, as well as to share research and analysis with senior Air Force leaders and staffers at the National Space Council and the National Security Council who were involved in crafting the policy and legislation around the Space Force.

**Considering Alternative Futures for Israeli-Palestinian Coexistence**

Fewer conflicts have proven more intractable than that between the Israelis and the Palestinians, now more than seven decades old. The prevailing view among observers of Middle Eastern geopolitics had long been that the only just and durable settlement would be a two-state solution. However, more people are now questioning its viability.

Current RAND research is examining alternatives to a two-state solution (the continuation of present trends, a federation, a confederation, annexation, and one state). Drawing on focus groups with Israelis and Palestinians, the research systematically examines Israeli, Israeli-Arab, and Palestinian attitudes toward those alternative solutions and rankings of important determinant factors. It also searches for overlap in attitudes that could guide potential policy alternatives and incentives. The analysis builds on a landmark August 2015 RAND report that tried to estimate the net costs out to 2024 of five alternative trajectories.

**Weighing the UK’s Economic Prospects After Brexit**

In a June 2016 referendum held in the UK, 51.9 percent of voters cast their ballots in favor of the UK exiting the European Union, setting in motion complex Brexit negotiations that cast doubt not only on the UK’s geopolitical heft but also, more immediately, on its economic prospects. In December 2017, drawing on insights from economic modeling and game theory, RAND published a widely discussed report that presented eight post-Brexit trade scenarios; the team also developed an online calculator that allowed users to explore five of those scenarios and generate scenarios of their own by modifying underlying economic assumptions. The report concluded that the UK would be economically worse off in most of the scenarios considered, especially those involving a “hard Brexit,” whereby trade between the UK and European Union would be governed solely by World Trade Organization rules.

RAND will soon be releasing a follow-up report that examines the potential economic implications of prolonged trade policy uncertainty associated with the renegotiation period between the UK and European Union after Brexit.
Reducing Veteran Suicide

RAND launched the Congressional Fellowship Pilot Program in 2019, creating an opportunity for a researcher to work alongside U.S. congressional committee staff to bring RAND-style expertise and analysis to an urgent legislative effort to reduce suicide among veterans.

The fellow will provide direct, non-partisan support to the committee’s professional staff to help improve their understanding of the data and science behind suicide prevention policies. The first fellowship began in November 2019 and will last until May 2020. A permanent fellowship program could extend to areas beyond veterans’ issues and help decisionmakers better address a variety of critical issues facing the United States. It would also help grow a research community within RAND with improved knowledge of the federal legislative process and ways high-quality analysis could be better utilized to improve policy.

For many years, RAND researchers have worked on temporary assignment in the executive branch of the government to facilitate knowledge sharing and to help meet strategic needs. The Congressional Fellowship Pilot Program builds on those efforts.

Enhancing Air Operations in Contested Environments

In a conflict with a peer adversary, U.S. air forces would need to quickly reach contested zones to locate, engage, and damage or destroy attacking forces. But China and Russia are investing in air defenses designed to keep U.S. air forces well away from potential conflicts in Europe or the Pacific. RAND has been working with the Air Force Warfighting Integration Capability to bring state-of-the-art technologies to bear on this problem.

One promising idea is to augment large, expensive, manned aircraft with thousands of small, inexpensive, autonomous aircraft that work together to accomplish critical tasks in contested areas. A networked “swarm” or “infestation” of such aircraft could overwhelm enemy air defenses, taking many individual losses but maintaining an overall capability to provide intelligence, targeting, and communications to strike forces operating farther away. In 2019, RAND developed the analytical foundation for this concept by looking at the technical and logistical requirements and simulating the operational utility. The U.S. Air Force and RAND are now working together to refine the concept, with the goal of experimenting with prototype systems in the coming years.
Evaluating State Census Outreach

The U.S. Census is important: Results are used to apportion seats in the House of Representatives and form the basis for allocating half a trillion dollars in federal assistance each year. States also use the data gathered from the Census to guide legislative redistricting; plan new construction for schools, libraries, roads, and highways; and help ensure adequate coverage of emergency services.

Some populations—such as non-English-speaking residents, children, and families living in non-traditional housing units—are traditionally harder to count than others. California has higher proportions of these hard-to-count residents, so the state’s lawmakers have committed more than $187 million to a statewide outreach and awareness campaign to help ensure an accurate Census count, and RAND is leading a project to measure the efficacy of these efforts.

Insight gained from RAND’s evaluation could inform more-accurate state budgeting and resource planning in California, as well as a better understanding of barriers and successful approaches to the campaign’s success, offering recommendations for future Census outreach across the nation.

Modeling the Will to Fight

Military strategists since Sun Tzu and Carl von Clausewitz have emphasized will to fight as a critical element—and, in some cases, the critical element—of combat effectiveness. Will to fight at the national and tactical-operational levels is a major determinant in the outcomes of, arguably, all wars. Russia (as well as other potential U.S. adversaries) understands this, as it tries to weaken the resolve of the United States and its allies and prepare the Russian public for conflict. Yet considerations about will to fight are rarely incorporated into U.S. and partner planning, training, advising, intelligence analysis, or warfighting.

Not accurately assessing partner and adversary will to fight has led to strategic surprise, poor investment in resources, and mission failure. RAND developed two models to describe will to fight, one at the tactical level and another at the national level. The research teams are testing these models and expect to incorporate the concept of will to fight into the analysis of potential future conflicts to help leaders, strategic thinkers, planners, and combat advisers improve their assessments of various conflict scenarios and mitigation.
Helping the U.S. Army with Recruitment

Historically, U.S. Army Recruiting Command has allocated recruiting resources by the size of the recruiting mission and did not account for the national or local environment, such as the unemployment rate. RAND developed a suite of recruiting-related tools—the Recruiting Resource Model, Recruit Selection Tool, and Recruiting Difficulty Index—to help the Army better understand the impact of various factors on forecasted recruiting outcomes. Used in conjunction with existing models of recruiter requirements, these tools will allow the Army to more optimally assign a mission and allocate resources, as well as track the leading indicators of difficult recruiting environments and shift resources as needed. The models continue to be improved, but initial results already are informing resource planning.

Assessing the U.S. Department of Defense Strategy on Artificial Intelligence

Recognizing the potential for artificial intelligence (AI) to revolutionize its approach to national defense, the U.S. Department of Defense (DoD) has articulated an ambitious vision and strategy for AI, with the Joint Artificial Intelligence Center (JAIC) as the focal point. At the request of Congress, RAND researchers assessed this AI strategy by examining DoD’s organizational structure, its capacity to advance nascent capabilities and foster their adoption, and the adequacy of such resources as talent and data.

RAND researchers found that DoD has challenges in several areas; that DoD has yet to provide the JAIC with the needed visibility, authorities, and resources; and that the baselines and metrics needed to assess progress are lacking. The researchers recommended that the JAIC develop a five-year strategic road map. They also recommended that DoD leverage new advances in AI while improving the verification and testing of AI systems, and they emphasized that data are critical resources, whose collection and curation, sharing, and protection should be continually improved.

Imagining the Unimaginable

The U.S. Department of Defense is increasingly pursuing efforts to better predict adversaries’ near- and far-term moves and the tools they’ll use to accomplish them. RAND has played a key role in many of these efforts. To support the under secretary of defense for research and engineering’s Quick Reaction Assessment Team, a new RAND project is using a novel approach to envision the technology that will affect the U.S. military in the year 2040. The team is looking at wildcard scenarios, with unique combinations of emerging or existing technologies, that fundamentally challenge joint military operations. For example, imagine a world in which ubiquitous sensors, instantaneous and augmented-reality social media interactions, and 8G mobile communication networks make it impossible to conceal a sizable force deployment or movement for any length of time.

The RAND team is using two approaches: one that solicits and evaluates challenges using a traditional expert elicitation and a second that crowdsources potential challenges from RAND staff members and then has them compete for virtual investors. The most-promising entries will be developed into scenarios and presented to the under secretary.

"Achievements like these underscore the utility of rigorous, objective research and analysis and the payoffs of sustained investments in RAND by clients, grantors, and donors alike. I thank the entire RAND community for another inspiring year, in terms of both impact and the potential for more in the coming year."

MICHAEL D. RICH
Improving Gender Diversity in the U.S. Coast Guard: Identifying Barriers to Female Retention
www.rand.org/t/RR2770

www.rand.org/t/RR2133

Later School Start Times in the U.S.: An Economic Analysis
www.rand.org/t/RR2109

www.rand.org/t/RR2088

Practical Terrorism Prevention: Reexamining U.S. National Approaches to Addressing the Threat of Ideologically Motivated Violence
www.rand.org/t/RR2647

NATO’s Amphibious Forces: Command and Control of a Multibrigade Alliance Task Force
www.rand.org/t/RR2928

The Future of Fentanyl and Other Synthetic Opioids
www.rand.org/t/RR3117

Envisioning a Comprehensive Peace Agreement for Afghanistan
www.rand.org/t/RR2937

Will to Fight: Analyzing, Modeling, and Simulating the Will to Fight of Military Units
www.rand.org/t/RR2341

The Department of Defense Posture for Artificial Intelligence: Assessment and Recommendations
www.rand.org/t/RR4229

The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

For more information on this publication, please visit www.rand.org/t/CP401-2019