DEFENSE THREAT REDUCTION AGENCY

Detect. Deter. Defeat.

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MISSION

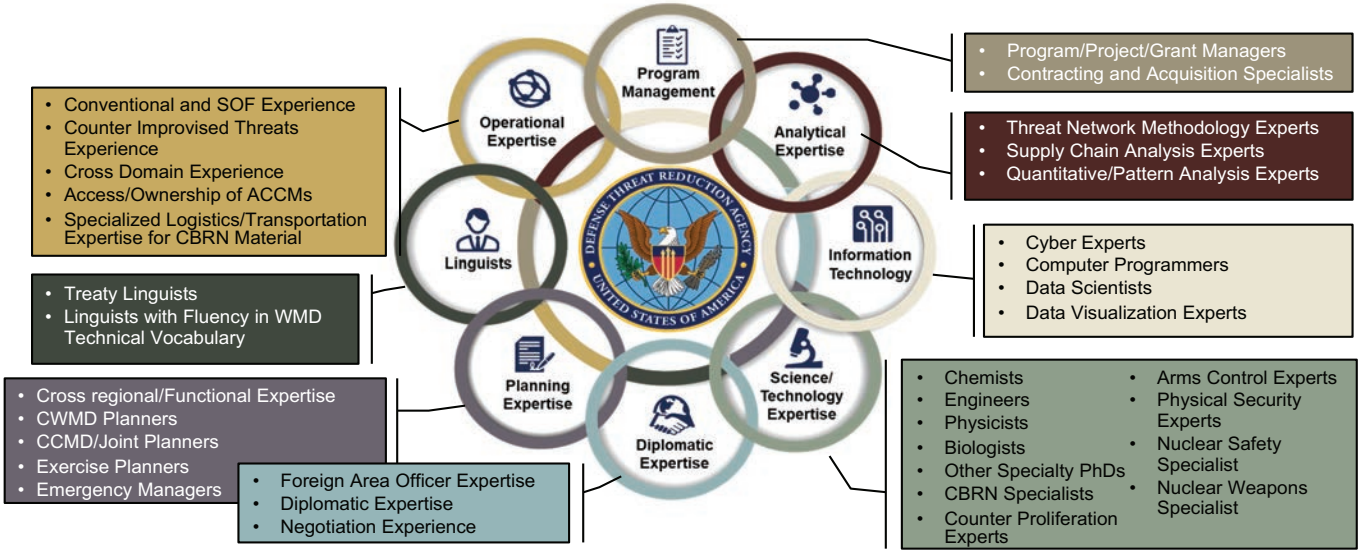
The Defense Threat Reduction Agency enables the Department of Defense (DoD), the United States Government and International partners to counter and deter weapons of mass destruction (WMD) and emerging threats.

DTRA ENABLES

DTRA, through its trans-regional focus and strong partnerships, protects U.S. National Security interests in a rapidly evolving, globalized threat environment to enable a greater understanding of our adversaries and provide solutions to WMD threats in an era of Global Power Competition.

PEOPLE

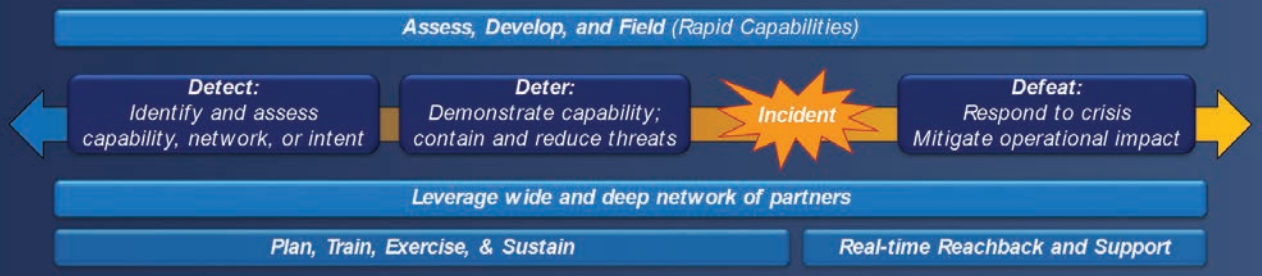
DTRA's workforce includes an integrated mix of personnel from government, military, and industry, blending a variety of skillsets and expertise to detect, deter, and defeat WMD and emerging threats.



DETECT. DETER. DEFEAT.

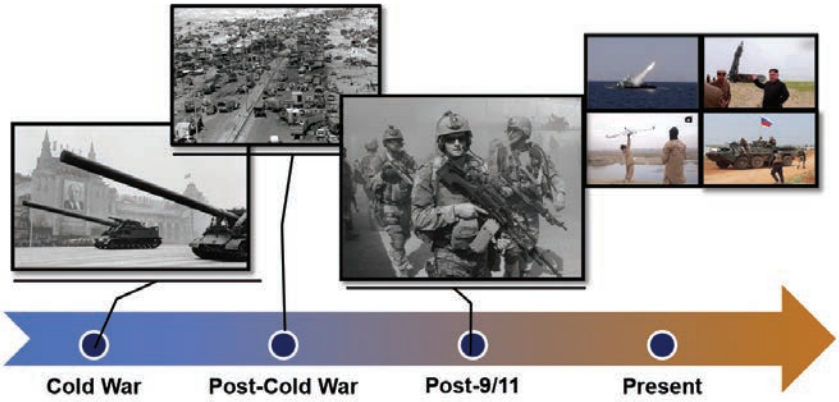
The current Department of Defense Strategy for Countering Weapons of Mass Destruction focuses on reducing incentives; increasing barriers; managing risk; and denying the effects of current and emerging WMD threats through layered, integrated defenses.

For DTRA, to counter and deter WMD and emerging threats in the pursuit of these objectives includes initiatives across the continuum of competition and conflict – both left and right of "incident," or adversary use of WMD.



WMD AND EMERGING THREATS

DTRA focuses on a specific class of threat: *Weapons of Mass Destruction*, which include chemical, biological, radiological, and nuclear agents with the potential to hold U.S. and allied interests at significant risk. The nature of WMD has changed since the Cold War, with ever-increasing complexity in development, delivery method, and attribution. While our portfolio is more complex than ever, the Agency continues to anticipate emerging threats and provide solutions to keep our adversaries at bay.



- Pace & adaptability of technological change
- Increased diversity and breadth of threats
- Rise of synthetic biology & bioinformatics
- Dual-use chemical and pharmaceutical agents (which frustrate attribution)
- "Big computing" & machine learning
- Additive manufacturing, 3-D printing
- Grey zone operations, and competition below the level of armed conflict
- Changing nature of "domain dominance"
- Opportunistic cooperation to counter U.S.
- Multi-domain, synchronous attacks
- Erosion of norms for CBRN use

DUAL ROLES

DoD established DTRA to integrate expertise and capabilities against the real and ever-evolving threat of the proliferation and use of WMD. We serve two distinct, yet highly integrated roles as both a Defense Agency and a Combat Support Agency.

DEFENSE AGENCY

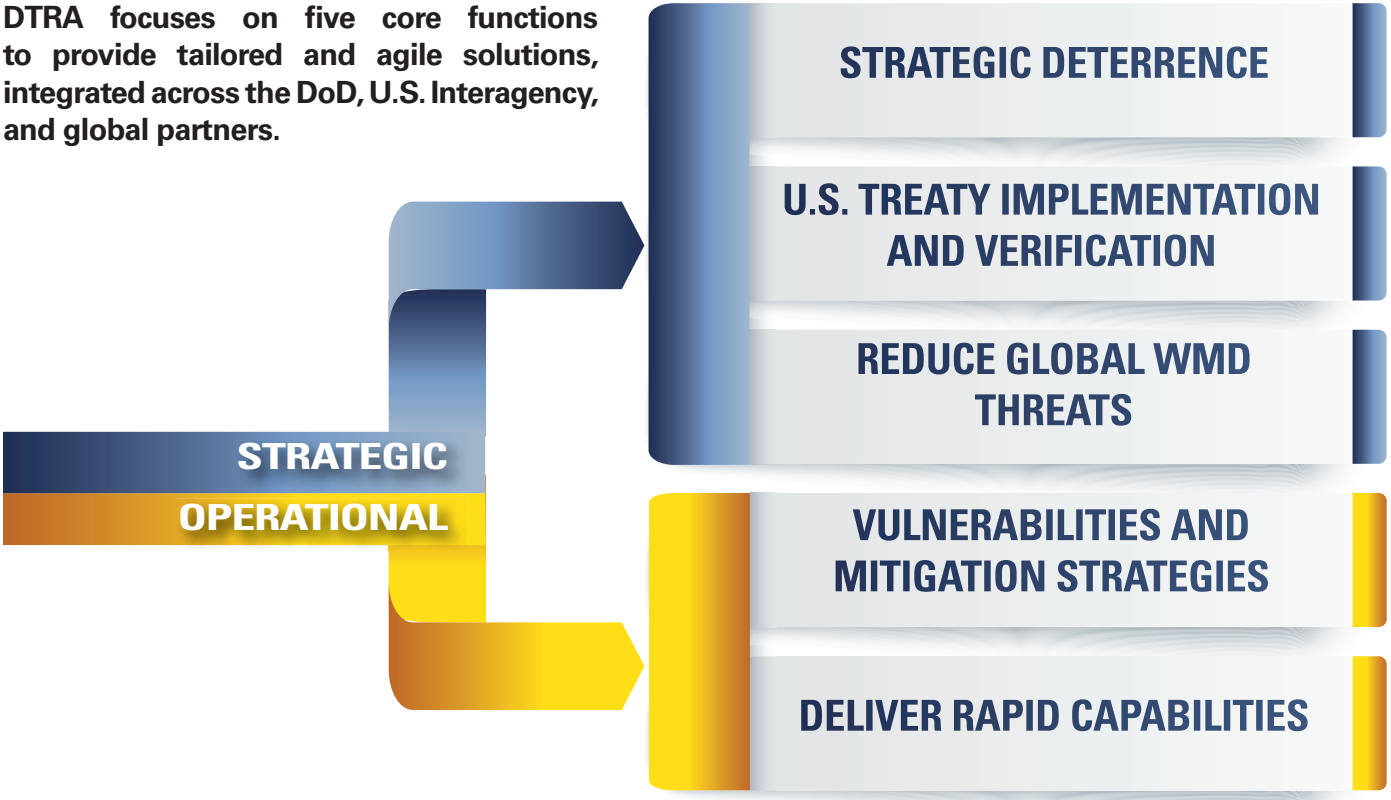
In this more strategic role, we work to reduce global WMD and emerging threats by deterring would-be adversaries' acquisition and use of such materials. Here, we support key DoD policy and priorities through cross-Service, Department-wide programs like nuclear assurance, treaty support, Building Partner Capacity, and Cooperative Threat Reduction.

COMBAT SUPPORT AGENCY

In this more operational role, we work to identify, develop, and field solutions to counter WMD and emerging threats, leveraging our unique capabilities and expertise in direct support of Joint Staff and Combatant Command (CCMD) requirements.

CORE FUNCTIONS

Within the framework of these dual roles, DTRA focuses on five core functions to provide tailored and agile solutions, integrated across the DoD, U.S. Interagency, and global partners.



STRATEGIC DETERRENCE

As China, Russia, and North Korea modernize and expand their nuclear forces, DTRA enables the Services and United States Strategic Command to ensure the U.S. strategic deterrent continues to be safe, secure, and credible. DTRA directly supports strategic response through the maintenance of nuclear readiness and modernization, mission assurance, force preparedness, and treaty verification.

DTRA partners with the Interagency for positive control over U.S. nuclear weapons, components, and materials by monitoring the status of the U.S. nuclear arsenal and maintaining nuclear security technologies, safety training, guidance, standards, and policies associated with the nuclear deterrent. We enhance resilience by focusing on critical infrastructure, site vulnerability, and control measures in place for U.S. nuclear weapons, components, and materials.

Additionally, the Agency models nuclear employment effects, and examines emerging trends that could complicate U.S. deterrence operations or defense planning through joint, Interagency, and international workshops, roundtables, and exercises. This work informs consequence management analysis, improves Joint Force survivability, and signals U.S. resolve to those that challenge U.S. actions.

DTRA Inspection Teams conduct nuclear surety and readiness inspections to ensure positive control and enhance resilience within the nation's nuclear force.

DTRA staff train the Colorado National Guard's 100th Missile Defense Brigade. This Nuclear Weapons Orientation course provided an overview of the development of nuclear weapons, the management of the U.S. nuclear stockpile, and issues and challenges facing the program.

DTRA subject matter experts escort a Romanian Team during bilateral Conventional Armed Forces in Europe Treaty inspections in Ukraine and Spangdahlem, Germany.

DTRA, in cooperation with the Services and Interagency, plans and executes an annual Nuclear Weapon Accident Incident Exercise to enhance major commands' and installations' abilities to respond to and mitigate the consequences of a nuclear incident in the Continental U.S.

U.S. TREATY IMPLEMENTATION AND VERIFICATION

Effective and verifiable arms control is in the U.S. National Security interest and makes the United States and its allies and partners more safe and secure. DTRA implements the U.S. Government's Arms Control Verification activities by planning, coordinating, and providing technical assistance and advice to U.S. delegations, commissions, Interagency working groups, and other organizations engaged in arms control and nonproliferation.

DTRA subject matter experts oversee and manage activities supporting on-site inspections, monitoring operations, escort activities, and observations under various treaties and conventions, including:

- New Strategic Arms Reduction Treaty
- Nuclear Testing Treaties
- Plutonium Production Reactor Agreement
- Conventional Armed Forces in Europe Treaty
- Chemical Weapons Convention
- International Atomic energy Agency Integrated Safeguards Agreements
- Vienna Document 11

DTRA supports the Pueblo Chemical Agent Destruction Pilot Plant (PCAPP) in the achievement of a significant milestone: the successful elimination of a quarter of the mustard agent stockpiled in chemical weapons at the Pueblo Chemical Depot (PCD). This is a significant milestone toward the careful elimination of all chemical weapons in the PCD stockpile by the Congressionally-mandated deadline of December 31, 2023.

Following the Treaty's extension to February 2026, DTRA continues to support New START's nuclear arms control verification by conducting highly intrusive inspections of Russia's strategic nuclear bases on behalf of the DoD. New START enables the U.S. to assess Russian compliance and provides a vital window into Russian intercontinental-range nuclear forces and operations.

The Chemical Weapons Convention (CWC) Treaty monitors activities for international arms control treaties and agreement protocols involving activities that place operatives and inspectors "up close and personal" with some of the world's most dangerous weaponized threat agents.

DTRA participates in DEFENDER-Europe 21 -- an annual, joint and multinational exercise designed to build readiness and interoperability between U.S., NATO, and partner militaries. During the DEFENDER series, DTRA ensures full compliance with all applicable international agreements, including the Conventional Armed Forces in Europe Treaty and the 2011 Vienna Document on Confidence and Security Building Measure.

REDUCE GLOBAL WMD THREATS

Through its Building Partner Capacity (BPC) programs, DTRA works with partner nations to enhance local and regional counter-WMD capabilities. Enabling a global network of partners to counter the development, proliferation, and use of WMD and emerging threats recognizes – as outlined in the President's 2021 Interim National Security Strategic Guidance – that "many of the biggest threats we face respect no borders or walls, and must be met with collective action."

Nonproliferation

U.S. leadership in nonproliferation is essential to reducing the dangers posed by nuclear weapons. DTRA is the DoD lead for training and equipping partner nations in areas including border protection, nonproliferation, and counter-smuggling activities. The Agency enhances international cooperation, interoperability, and provides partners with the tools and training to stop trafficking of WMD, its delivery systems, and related materials.

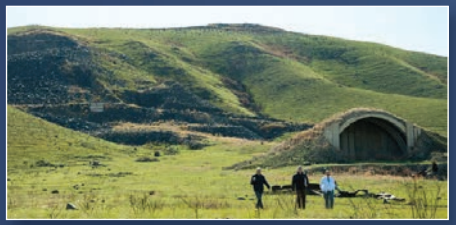
Cooperative Threat Reduction

One way DTRA builds partner capacity is through the Nunn-Lugar Cooperative Threat Reduction Program (CTR). Under guidance from USD(P) and in close collaboration with Interagency partners such as the Departments of State and Energy, the Agency works with partner nations to prevent the proliferation of WMD and eliminate chemical, biological, radiological, and nuclear (CBRN) threats to the U.S., allies, and partners.

CTR eliminates WMD stockpiles, provides support to consolidate, secure, and account for the materials, and enables partners to detect and prevent WMD trafficking around the world. CTR also includes the Biological Threat Reduction Program (BTRP) which builds capabilities to detect and track Especially Dangerous Pathogenic (EDP) diseases, and links the U.S. to over 30 foreign partners, enhancing global biosafety, biosecurity, and biosurveillance.

In 2021, the Defense Department's CTR Program celebrates 30 years of collaboration with foreign partners.

DTRA, in partnership with the Republic of the Philippines, conducts an exercise to enhance local capabilities to prepare for, protect against, and respond to CBRN incidents. The Agency has also built two full-scale Coastal Watch Centers for our Philippine partners, and conducted numerous workshops and training events. Having an effective regional network contributes to more secure borders, and prevents the proliferation of WMD and illicit materials.



DTRA celebrates a 30-year partnership with the Republic of Kazakhstan to eliminate abandoned nuclear weapons testing infrastructure, identify and secure vulnerable nuclear materials, and leverage the nation's unique territory to advance a shared goal of nuclear nonproliferation.

DTRA executes CTR efforts through improvements to local and regional biosurveillance, biosecurity, and biosafety; here, we provide support to Iraq's Field Epidemiology Training Program (FETP), which includes laboratory renovations, equipment procurement, and associated training for the Iraqi Ministries of Health, Agriculture and Higher Education. FETP reinforces sustainability and enhances Iraq's ability to monitor and respond to outbreaks (like COVID-19).

DTRA and U.S. European Command partner with the Republic of Georgia to train, equip, and build capacity to strengthen Georgia's CBRN defense and response capability. This effort will prepare Georgians to better respond to incidents involving chemical, biological, and radiological materials, and to contribute to the countering weapons of mass destruction mission globally.

VULNERABILITIES AND MITIGATION STRATEGIES

As the nature of WMD threats, delivery systems, and adversary strategy changes, it becomes increasingly critical to forecast U.S. vulnerabilities early – and develop solutions to mitigate them. DTRA brings together technical, regional, and subject matter experts to identify nascent threat activity. We map its support networks and build counter-network approaches, then build tools and methods to protect U.S. forces, mitigate risk-to-mission, and ultimately deter adversary action.

With its worldwide presence, DTRA works by, with, and through other DoD agencies, elements of the U.S. Interagency, and international partners to analyze and synthesize WMD threat intelligence. Identifying vulnerabilities and connecting disparate pieces of data, the Agency aids CCMDs (and others) to develop fuller understanding of threats and threat networks; risk-to-mission and risk-to-force; and executable options to counter and deter adversary action.

Additionally – looking inward at U.S. and partner capabilities – DTRA conducts mission assurance assessments to identify the readiness and efficacy of our own counter-WMD infrastructure and capabilities. We mitigate vulnerabilities through a robust portfolio of training, technical expertise, assistance with plans and exercises, leadership education (and decision support), and other material and non-material solutions.

This work – among DTRA's most tactical and "quick turn," and often with immediate application in the field – requires expansive data sources, advanced information technologies, agile applications development, and a tailored mix of forward-embedded and back-end fusion teams consisting of mission partners, customers, and DTRA's experienced and trained analysts. Working with our partners and customers, DTRA subject matter experts have developed and use systems such as the Mission Assurance Risk Management System (MARMS) and Catapult Information System to provide CCMDs with accessible analysis and decision support at the speed of relevance.

PROGRAMS OF RECORD THAT CONNECT DOD TO OUR NATIONS CRITICAL INFRASTRUCTURE

Mission Assurance Risk Management System (MARMS):
Risk-informed decision-making, resource investment, and improved synchronization across DoD Mission Assurance-related programs.

Catapult Information System:
Cloud-based data analytic platform that provides a real-time, continuously updated repository of intelligence on improvised threats and worldwide improvised threat networks.

DTRA's worldwide team of experts leverages a broad base of analytical approaches, sources, and tools to develop executable options. Our impact can be broad and global (as these examples show), and also deeply focused on a single problem-set (as it was during the COVID pandemic).

DELIVER RAPID CAPABILITIES

Finally, DTRA provides technology development and capability investments that mitigate the risks of surprise, respond to the Joint Force's urgent technical requirements, and maintain the U.S. military's strategic and operational superiority in countering WMD.

Chemical Biological Technologies

Lead DoD science and technology to anticipate, defend, and safeguard against chemical and biological threats for the warfighter and the Nation.

Nuclear Technologies

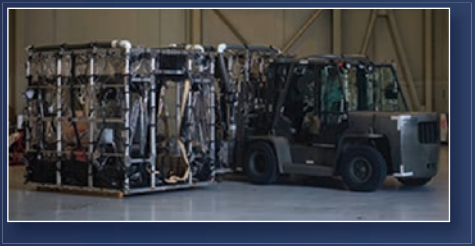
Develop capabilities that enable an effective nuclear deterrent, integrate conventional forces to operate effectively in a nuclear environment, and counter nuclear threat networks.

Counter WMD Technologies

Develop, demonstrate, and transition innovative technologies and capabilities to actively counter the full spectrum of chemical, biological, radiological, nuclear, and emerging threats.

Research and Enabling Capabilities

DTRA's Basic and Applied Research Program fosters and enables farsighted, high payoff research focused on unique challenges. This includes test activities which provide end-to-end test & evaluation planning, execution, and analysis, and high performance computing capabilities which contribute to the development of software tools and high-fidelity numerical modeling and simulation.



DTRA collaborates with Interagency and DoD partners, and led development of the Transport Isolation System (TIS) – an infectious disease containment unit. The TIS, developed during the 2014 Ebola crisis and later deployed during COVID-19, is designed to minimize aircrew, medical attendant, and airframe transmission risk while performing in-flight patient medical care.

DTRA works closely with Services, Federally Funded Research and Development Centers, University Affiliated Research Centers, and others on significant technology advancements. Here, research and development efforts with the U.S. Army's Combat Capabilities Development Command, the Massachusetts Institute of Technology, and Lawrence Livermore National Laboratory produced "Second Skin" personal protective technology – a delicate balance between warfighter comfort and superior CBRN protection.

Our Joint Science and Technology Office (JSTO) – part of DoD's Chemical and Biological Defense Program – partners across the DoD to assist the "Scientist in the Foxhole" program in better understanding warfighter needs and operating conditions. The program works to ensure developing capabilities remain relevant and user-friendly to the warfighter.

Here, the Agency oversees research to evaluate the environmental stability of non-spore-forming simulants of biological threat agents. The Captive Aerosol Growth and Evolution System (CAGES) – a new, state-of-the-art test apparatus – allows scientists to test this interaction.

REACHBACK

DTRA Reachback provides 24/7 chemical, biological, radiological, nuclear, and high yield explosives subject matter expertise and decision support capability for planning, operations, and post-event analysis. It is used by CCMDs and partner nations, the Office of the Secretary of Defense, the Joint Staff, the Intelligence Community, other U.S. Government agencies, first responders and serves as the technical operations hub for the U.S. Government's Interagency Modeling and Atmospheric Assessment Center (IMAAC).

Subject Matter Experts with advanced degrees in fields including chemistry, physics, hydrology, meteorology, nuclear engineering, virology, epidemiology, and more offer deep analysis of technical questions from combat operations to domestic support, with the help of the whole-of-DTRA's decision support tools.

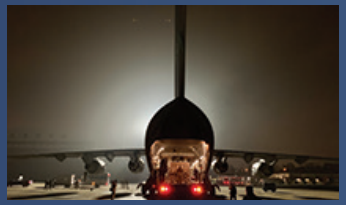
- ATMOSPHERIC PLUME MODELING
- EPIDEMIOLOGICAL MODELING
- DEPLOYABLE PERSONNEL / TRAINING
- NUCLEAR WEAPON EFFECTS PHENOMENOLOGY
- MITIGATION MODELING
- OTHER SPECIALTY MODELS

COVID-19 SUPPORT

COVID19

In support of the USG, DTRA leveraged longstanding partnerships across the Interagency, EUCOM, CENTCOM, INDOPACOM, and AFRICOM to address critical PPE shortages, test kits, laboratory equipment, training, and expertise to aid in the global fight to combat COVID-19.

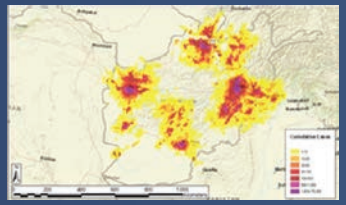
DTRA supported the rapid deployment of COVID-19 diagnostic swab kits from Italy to the United States during the early days of the pandemic, when commercial shipment was essentially non-existent. These swab kits were a critical component of an expanded U.S. pandemic response and "drive-through" testing capabilities highlighted by the President of the United States.



DTRA supported USTRANSCOM missions employing the DTRA-developed Transport Isolation System (TIS), moving nearly 100 U.S. military and DoD COVID-19 positive patients from five countries to Germany for treatment. The TIS allows for constant inflight patient medical care while protecting the aircrew, medical personnel, and aircraft from contamination or infection.

DTRA subject matter experts worked closely within the DoD to respond to over 300 requests for information from CCDRs, Interagency partners, and NATO, using epidemiological models to help forecast the spread of COVID-19 cases and identify regional requirements for things like hospital beds and ventilators.

DTRA trained Georgian scientists at the DTRA CTR-constructed Richard Lugar Public Health Research Center in Tbilisi to develop a COVID-19 molecular diagnostic testing capability, which enabled Georgia to limit the impact of the disease to just five deaths in 18 months. The Georgian Vice Prime Minister stated that the training DTRA provided helped the country be more prepared in its response to the coronavirus.



Guinea's Ministry of Health used the Mobile Diagnostic Laboratory (MDL) in Conakry to confirm the first case of COVID-19 in Guinea. The MDL, provided by DTRA during the 2014 West Africa Ebola outbreak, is designated by the Ministry of Health as the sole laboratory in Guinea to handle and test all suspected COVID-19 specimens.

HERITAGE & EVOLUTION

DTRA's history is long and storied; we trace our roots all the way back to the Manhattan Project in 1947. As the threats have changed, so have we. A mission that began strictly as a weapons development program quickly adapted to include weapons effects and survivability, as nuclear technology proliferated. During the Cold War, we turned to stockpile stewardship and hardening targets. Post-Cold War, the DTRA mission implemented non-proliferation and arms control activities, and in the 1990s began to delve into expanded definitions of Weapons of Mass Destruction, including chemical and biological threats.

DTRA itself was established in 1998, and since that time has been entrusted with some of the Department's most critical "emerging threat" missions. We have developed knowledge and capabilities to counter and defeat not only chemical, biological, radiological, and nuclear threats, but matured the DoD counter-Improvised Explosive Device (C-IED) and counter-small Unmanned Aerial Systems (sUAS) portfolios as well, before transitioning them successfully to the U.S. Army.

As technology changes – as the United States National Security landscape changes – DTRA leads the way to Detect, Deter, and Defeat WMD and Emerging Threats.

Manhattan Project
1942-46

Armed Forces Special Weapons Project (AFSWP)
1947-58

Defense Atomic Support Agency (DASA)
1959-70

Defense Nuclear Agency (DNA)
1971-95

Defense Special Weapons Agency (DSWA)
1996-98

Defense Threat Reduction Agency (DTRA)
1998 - Present

On-Site Inspection Agency (OSIA) 1988-98

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