Multilayered Approach Can Help Mitigate Challenges Posed by Common HME Precursors and IED Components

Outreach, information sharing, and partnerships among federal, state, local, tribal, and territorial public safety officers and private sector personnel are critical in developing a strategic approach in preventing and mitigating explosives attacks. This relationship will facilitate a specific and common operating picture that takes into account current and past trends, threats, and jurisdictional-response procedures. Additionally, reporting suspicious activities and behaviors aids authorities in preventing terrorism and other criminal activities. Partnerships among the various stakeholders can enhance the identification of Homemade Explosives[1]- (HME) and IED[2]-related activity, the efficacy of an attack response, and improve postattack investigations. Collaboration among stakeholders will increase awareness, improve staff effectiveness and build security consciousness, while a layered approach can promote the development of innovative solutions and adaptive security measures.

SCOPE: This product illustrates a strategic approach in countering the use of HME and IEDs. It supports the *2013 US Strategy for Countering Improvised Explosive Devices* by promoting a whole-of-government approach through integrating federal, state, local, tribal, territorial, and private sector partners. This product also provides a high-level overview of resources for information sharing, outreach and awareness in support of suspicious-activity reporting, coordinated security procedures, and attack-scene preservation. It is for federal and nonfederal government first responders, public safety personnel, emergency managers, and private sector partners.

HME precursors and IED components[3] are inexpensive, legal, and readily available—with most not requiring any ID for purchase—increasing the challenge of detecting acquisition or use in manufacturing HMEs or constructing IEDs. Some HMEs and IEDs may compose small quantities of readily available or multipurpose items, as demonstrated in the following examples, making would-be bombers difficult to identify. Detection and disruption of HME manufacturing and IED construction may occur through recognition of activities potentially related to the purchase or storage of precursors and components.

[1] HME are explosive materials made from common household or commercially available products referred to as explosive precursor chemicals.
[2] An IED is a device fabricated in an improvised manner using the following components: a switch, an initiator, a main charge (possibly HME), a power source, and a container, and may include enhancements.
[3] The list of possible HME precursors and IED components is extensive. Precursors include oxidizers, such as peroxide, as well as fuels, such as diesel. Components include laboratory equipment, personal-protective equipment, and household items. More comprehensive information is available in the "Resources" section of this product.

24 MAY 2019
AUTHORED BY NCTC, DHS, FBI

- In March 2018, a high school student allegedly attempted to detonate an IED placed inside of a backpack in his school's cafeteria. The backpack contained a metal soup can filled with gunpowder and shotgun pellets, a fuse made of masking tape, a matchbox, and three gasoline-filled water bottles attached to the can. A search of his laptop revealed that he performed online searches for explosive material and ways to make a fuse.
- In December 2017, a US lawful permanent resident attempted to detonate an IED in a subway station near the New York Port Authority Bus Terminal in New York City. The IED was made of a metal pipe filled with metal screws and explosive materials that the bomber mixed. He used Christmas tree lights and wires to make a circuit with a nine-volt battery as the power source. The individual began researching how to build IEDs on the Internet approximately one year before the attack.

INDICATORS OF SUSPICIOUS BEHAVIOR: Terrorists intending to construct and employ HMEs or IEDs may display suspicious behaviors. Awareness and vigilance by persons who may encounter the would-be attacker, including family, friends, neighbors, co-workers, and classmates, are critical to terrorism prevention, as they may identify related behaviors. Suspicious activity also provides opportunities for intergovernmental authorities and the private sector to mitigate access to HME precursors and IED components. The behaviors broadly include, but are not limited to:

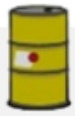
NOTE: Any determination of possible suspicious behavior or indicators should be supported by additional facts that justify reasonable suspicion. Although one activity may be insignificant on its own, the indicators should be looked at under the totality of the circumstances.

- Performing bombmaking research
- Acquiring precursor materials and components
- Processing or testing materials
- Conducting surveillance
- Testing security of a potential target

TRAINING AND OUTREACH: The DHS Office for Bombing Prevention (OBP) coordinates efforts to protect life and critical infrastructure by building capabilities within the general public and across the public and private sectors to prevent, protect against, respond to, and mitigate IED incidents.

- OBP's training curriculum to build counter-IED capabilities and enhance awareness of IED threats is available in traditional classroom settings, online independent study, and virtual instructor-led training platforms. To find OBP courses, visit https://www.dhs.gov/bombing-prevention-training.
- Bomb-Making Materials Awareness Program (BMAP): BMAP is a national outreach initiative to promote private sector point-of-sale awareness and suspicious-activity reporting to prevent the use of common household items as explosive precursor chemicals and IED components. For more information on BMAP outreach programs, visit https://www.dhs.gov/bmap.

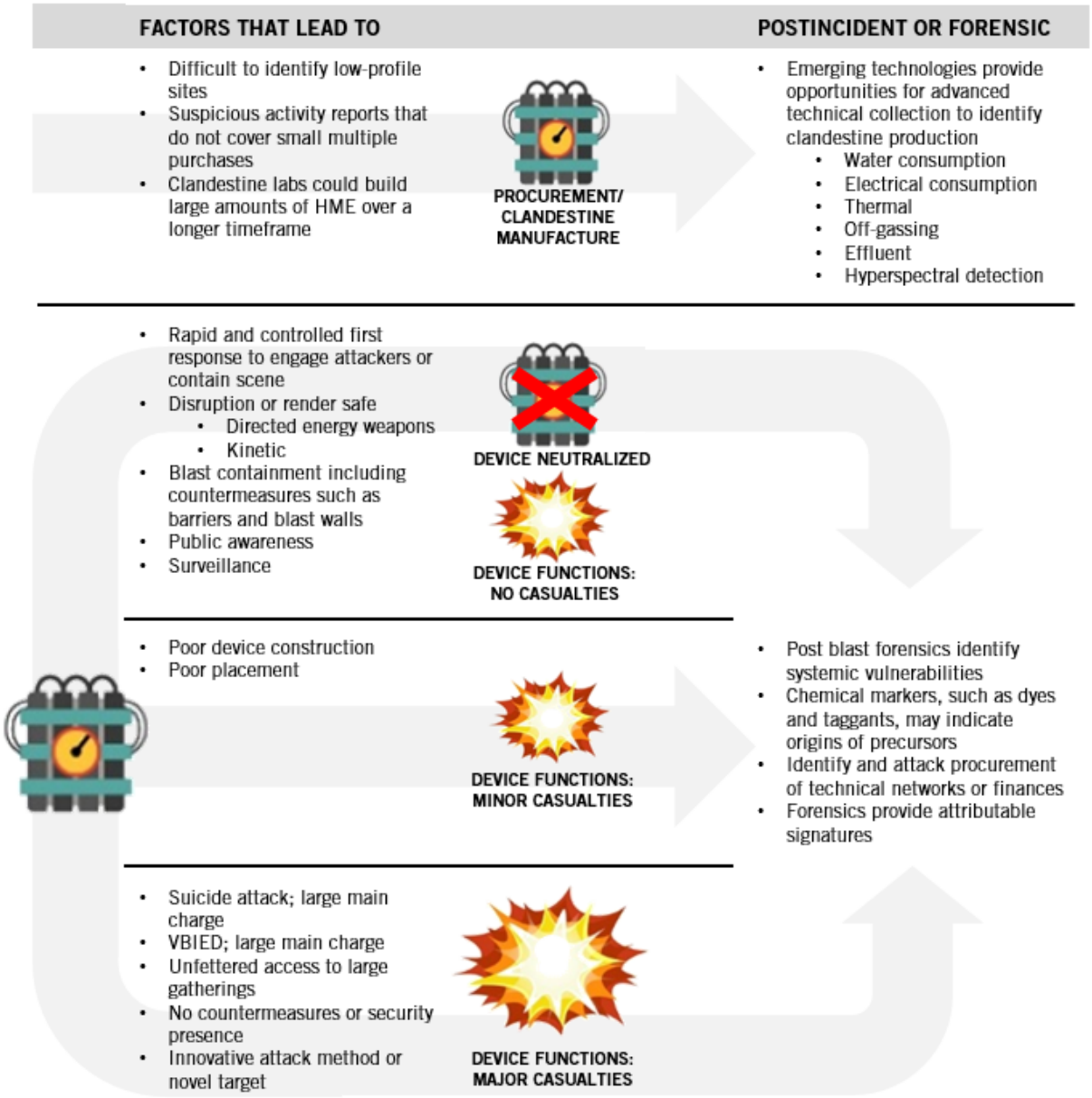
MULTILAYERED APPROACH TO MITIGATING ACCESS: The chart[4] below illustrates the factors and pathways, many of which are legal, that enable nefarious actors to acquire explosive precursors or components. The second column lists potential ways of mitigating the pathways and highlights the overlap required by interagency partners. Finally, the third column provides possible targeted solutions.

FACTORS THAT ENABLE ACCESS		OPPORTUNITIES TO MITIGATE	PARTNERSHIPS
• Online marketplace sales • Lack of regulations for rebagging precursors • Knowledge to convert dual-purpose materials • Globalized shipping • Controlling industrial chemicals • Cost on chemical-agricultural industry	 **PRECURSORS**	• Purchaser licensing • Mandatory sales reporting • Restrict amounts for nonindustrial or nonagricultural use • Adapt alternative precursors or add secondary inhibitors • Recognize and report suspicious inquiries	**WHOLE OF GOVERNMENT:** Identify gaps and capitalize on opportunities to establish regulations, laws, policies, or best practices to limit potential nefarious use.
• Blurring of inspired or directed attacks • Technical experts traveling beyond current conflict zones • Video instruction of basic or advanced chemistry • Online forums and instructions	 **KNOWLEDGE/ EXPERTISE**	• Purchaser licensing for some precursors • Mandatory sales reporting (using big data to predict illicit activity) • Reduce access to online resources • Forums may provide investigative outreach opportunities with private sector and human operations	**MANUFACTURING AND SUPPLY**: Conduct outreach to create attentiveness to suspicious purchases, inquiries, or activities for reporting further law enforcement vetting or investigation.
• Focus on attacking soft targets or public • Advance or ever-evolving concealment methods • Increasing frequency of attempted overseas suicide attacks	 **TARGETS**	• Focus on protecting public spaces from IED attacks • Channel movements through centralized checkpoints and contain explosion • Explosive-trace detection for carried parcels	**TARGETS**: Conduct outreach and training to create security conscious staff with a common understanding of the threat environment in or adjacent to their respective facilities to act as a force multiplier.

• Difficult to identify low-profile sites
• Suspicious activity reports do not cover small, multiple purchases
• Clandestine labs could build large amounts of homemade explosives over a longer time frame
• Knowledge to convert dual-purpose materials
• Globalized shipping
• Controlling industrial chemicals
• Insider/outsider theft
	
	PROCUREMENT/ CLANDESTINE MANUFACTURE
		• Emerging technologies provide opportunities for advanced technical collection to identify clandestine production
		  • Water consumption
		  • Electrical consumption
		  • Thermal
		  • Off-gassing
		  • Effluent
		  • Hyperspectral detection
			TECHNOLOGY: Perform Explosive Ordnance Disposal (EOD) public safety bomb squad (PSBS) training on innovative solutions for adaptive security measures and flexible response plans, which may increase the likelihood for detection and mitigation.

[4] Derived from "Reducing the Threat of Improvised Explosive Device Attacks by Restricting access to Explosive Precursor Chemicals," National Academies of Sciences, Engineering, and Medicine; 2018

OPPORTUNITIES TO MITIGATE DAMAGE[5]: Public safety personnel may unwittingly encounter clandestine efforts to manufacture HME or construct IEDs during daily activities or when responding to calls for service, including discovery of precursors or components. Coordination with EOD/PSBS personnel will help ensure a proper response, including isolation, evacuation, and personnel safety during the mitigation of an IED-related incident.



[5] Chart derived from "Reducing the Threat of Improvised Explosive Device Attacks by Restricting access to Explosive Precursor Chemicals," National Academies of Sciences, Engineering, and Medicine; 2018

ADDITIONAL RESPONSE CONSIDERATIONS

- Efforts to manufacture HME or construct IEDs may result in telltale injuries requiring medical treatment, underscoring the importance of recognizing suspicious burns, scarring, or injuries, which when reported, may lead to further inquiry and investigation.
- Failed attempts to manufacture HME or construct IEDs may result in a fire rather than an explosion. The presence of large or unusual quantities of flammable or multipurpose products, propane canisters, gasoline, or precursor chemicals or production materials in or around the burn area may warrant further inquiries and investigation.
- Scene preservation is critical to the collection and exploitation of evidence and may need to be coordinated with responding fire and emergency medical services personnel.
- EOD personnel should coordinate their actions with other responding units to ensure procedures and policies, including limiting access, ensuring render-safe procedures, coordinating life-saving actions, performing security sweeps for additional explosives, taking precautions against secondary attacks, and providing smooth transition from life-saving actions to the investigative phase.

PERSONNEL SAFETY

- The terms *improvised* or *homemade* do not mean "less lethal," and recognizing HME precursors and IED components is critical to personnel safety. These materials, including rudimentary devices, may be inherently dangerous and must be treated accordingly until rendered safe by certified experts.
- The handling of an IED or IED components may cause detonation, and/or contaminate forensic evidence. EOD personnel are the best source of information on ever-evolving tactics and trends in HMEs and IEDs, detection methods, and safety and security measures, underscoring the importance of training and collaboration.
- To identify EOD personnel in a specific jurisdiction, contact your local FBI Field Office at www.fbi.gov/contact-us/field-offices or Naval Sea Systems Command-NSWCIHEODTD at 1-877-EOD-INFO (363-4636).

- Because explosions are relatively infrequent, blast-related injuries can present unique diagnostic, triage, and management challenges to first responders.
- Mass-casualty incidents (MCIs) are among the most difficult of incident-management scenarios, especially when the result of a terrorist attack. MCI management must be well-defined in response plans and preparations, and should be exercised regularly by public safety and private sector partners across neighboring jurisdictions. As resources allow, fire, EMS, and law enforcement should consider deploying to medical facilities to assist with patient tracking and movement, as well as evidence collection.

RESOURCES: The latest information on IED trends and tactics, as well as more general information related to CT, are available on the following US Government information-sharing systems and the Internet:

- United States Strategy for Countering Improvised Explosive Devices, 26 February 2013: https://obamawhitehouse.archives.gov/sites/default/files/docs/cied_1.pdf
- FBI: Terrorist Explosive Device Analytical Center. For more information, email tedac@ic.fbi.gov
- FBI: Counter-IED Unit, National Explosives Task Force (NETF). For more information, email NETF@ic.fbi.gov
- FBI/DHS: Bomb Threat Stand-Off Distances; https://tripwire.gov/IED/resources/docs/DHS-OJ%20Bomb%20Threat%20 Stand-off%20Card.pdf
- DHS: "What To Do—Bomb Threat"; https://www.dhs.gov/what-to-do-bomb-threat
- DHS: Office For Bombing Prevention; https://www.dhs.gov/obp
- DHS: OBP Bomb-Making Materials Awareness Program; https://dhs.gov/BMAP

- DHS: "Security and Resiliency Guide (SRG); Counter-Improvised Explosive Device (C-IED) Concepts, Common Goals, and Available Assistance;" https://www.dhs.gov/publication/security-resiliency-guide-and-annexes
- DHS: TRIPwire (Technical Resource for Incident Prevention); https://www.dhs.gov/tripwire
- NSI: The Nationwide Suspicious Activity Reporting Initiative; https://nsi.ncirc.gov/
- DHS/Federal Emergency Management Agency (FEMA): National Incident Management System; https://www.fema.gov/national-incident-management-system
- "Indicators And Warnings For Homemade Explosives," FBI TSWG ATF, March 2008 ISBN 978-0-16-079532-9
- Defense Intelligence Agency's manual on homemade explosives, 2012
- "IED Technical Exploitation Lexicon" 5th Edition, Joint Improvised-Threat Defeat Organization, May 2017
- US Bomb Data Center: https://www.atf.gov/explosives/us-bomb-data-center

- "Reducing the Threat of Improvised Explosive Device Attacks by Restricting Access to Explosive Precursor Chemicals," National Academies of Sciences, Engineering, and Medicine: https://www.nap.edu/catalog/24862/reducing-the-threat-of-improvised-explosive-device-attacks-by-restricting-access-to-explosive-precursor-chemicals

ADDITIONAL PUBLICATIONS are available on US Government information-sharing systems such as the Homeland Security Information Network (https://hsin/dhs.gov), Law Enforcement Enterprise Portal (https://www.cjis.gov) and Regional Information-Sharing System (https://www.riss.net):

- DHS/OBP Emergency Responder Note "AN / AL-Based Exploding Target Compound" (21 December 2016)
- DHS/OBP Extremist Threat Report-TTPs "11 December 2017 Attempted Suicide Bombing at The Port Authority Bus Terminal Subway Station in New York" (19 January 2018)
- DHS/FBI Roll Call Release Series on Suspicious Activity Reporting, June 2012-September 2013
- DHS/FBI/NCTC Fire Line on Emergency Medical Treatment Awareness, March 2014
- DHS/FBI Fire Line on Flammable Liquid Enhanced Devices, July 2013
- NCTC/FBI/DHS "Counter Terrorism Guide for Public Safety Personnel; 2018 Edition includes a section on BOMBINGS: Injury Patterns and Care also available at https://www.dni.gov/nctc/jcat/index.html

JOINT COUNTERTERRORISM ASSESSMENT TEAM | JCAT

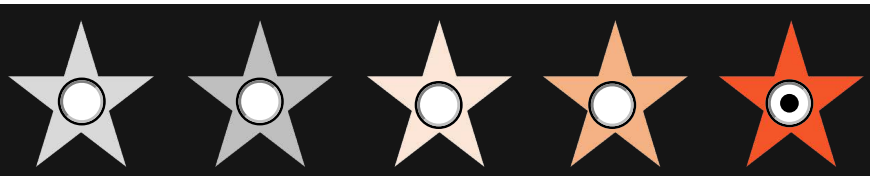
PRODUCT FEEDBACK FORM

(U) JCAT MISSION: To improve information sharing and enhance public safety. In coordination with the FBI and DHS, collaborate with other members of the IC to research, produce, and disseminate counterterrorism (CT) intelligence products for federal, state, local, tribal and territorial government agencies and the private sector. Advocate for the CT intelligence requirements and needs of these partners throughout the IC.

NAME and/or ORG:

DISCIPLINE: ☐ LE ☐ FIRE ☐ EMS ☐ HEALTH ☐ ANALYSIS ☐ PRIVATE SECTOR DATE:

PRODUCT TITLE: NCTC-FBI-DHS (U) First Responder's Toolbox - Multilayered Approach to HME and IED

POOR  GREAT

ADDITIONAL COMMENTS, SUGGESTIONS, OR QUESTIONS. HOW DOES JCAT MAKE PRODUCTS BETTER?

WHAT TOPICS DO YOU RECOMMEND?

SUBMIT