Defense Health Agency

PROCEDURAL INSTRUCTION

NUMBER 6040.05
June 26, 2020

AD-CS

SUBJECT: Enterprise Processes for Translating Defense Health Program (DHP) Funded Research into Standards of Clinical Trauma Care across the DoD

References: See Enclosure 1.

1. PURPOSE. This Defense Health Agency-Procedural Instruction (DHA-PI), based on the authority of References (a) and (b), and in accordance with the guidance of References (c) through (n), establishes the Defense Health Agency's (DHA) procedures for translating DHP-funded research into standards of care throughout the Defense Trauma Enterprise (DTE).

2. APPLICABILITY. This DHA-PI applies to the Military Departments (MILDEPs), the Office of the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, the Combatant Commands (CCMDs), the DHA.

3. POLICY IMPLEMENTATION. It is DHA's instruction, pursuant to Reference (a), and in accordance with References (c) through (n) to:

a. Establish procedures for the Joint Trauma System (JTS) to develop and disseminate clinical practice guidelines (CPGs), operational planning guidance (OPG), pre-hospital guidelines, and other knowledge products designed to support the adoption of research-based standards of care for the DTE, as well as to conduct performance improvement activities to assess guideline adherence, identify lessons learned from trauma care delivery, and produce recommendations to improve guideline adherence.

b. Establish procedures for JTS, through the DHA Assistant Director (AD), Combat Support (CS), to inform and advise trauma-related translation activities that fall outside JTS direct authorities, including: provision of inputs to the Joint Capabilities Integration and Development System (JCIDS) and Component Acquisition Executive (CAE) for development of materiel products; recommendations to support identification and prioritization of research gaps through the programming, planning, budgeting, and execution (PPBE) processes; transition planning for

knowledge products; education and training to support fielding of trauma-related materiel; and planning for active, targeted dissemination and implementation (D&I) to maximize adoption of CPGs, OPG, and pre-hospital guidelines across the DTE.

4. RESPONSIBILITIES. See Enclosure 2.

5. PROCEDURES. The JTS will coordinate activities pertaining to the translation of DHP-funded research into standards of clinical trauma care across a six-phase lifecycle. JTS will inform and advise the Office of the Joint Staff Surgeon (OJSS) through the DHA AD-CS on: (1) operational gap identification, and (2) research gap prioritization. JTS will maintain awareness of DHP-funded (3) research performance activities. JTS will maintain primary responsibility for (4) knowledge product development pertaining to standards of clinical trauma care, including but not limited to CPGs, OPG, pre-hospital guidelines, and education and training products. JTS will (5) disseminate trauma-related knowledge products and support their implementation in care delivery settings through the Joint Staff, Services, CCMDs, and DHA. Finally, JTS will employ the Department of Defense Trauma Registry (DoDTR), the Joint Lessons Learned Information System, and other data sources to (6) assess and evaluate guideline adherence and document lessons learned from trauma care delivery, which will serve as a key feedback loop across the translation lifecycle (see Enclosure 3).

6. RELEASABILITY. Cleared for public release. This DHA-PI is available on the Internet from the Health.mil site at: www.health.mil/DHAPublications and is also available to authorized users from the DHA SharePoint site on the SECURE Internet Protocol Router Network at: https://info.health.mil/cos/admin/pubs/SitePages/Home.aspx.

7. EFFECTIVE DATE. This DHA-PI:

a. Is effective upon signature.

b. Will expire 10 years from the date of signature if it has not been reissued or canceled before this date, in accordance with Reference (c).

/S/
RONALD J. PLACE
LTG, MC, USA
Director

Enclosures
1. References
2. Responsibilities
3. Procedures

Glossary

ENCLOSURE 1

REFERENCES

(a) DoD Directive 5136.01, "Assistant Secretary of Defense for Health Affairs (ASD(HA))," September 30, 2013, as amended
(b) DoD Directive 5136.13, "Defense Health Agency (DHA)," September 30, 2013
(c) DHA Procedural Instruction 5025.01, "Publication System," August 24, 2018
(d) DoD Directive 3000.06, "Combat Support Agencies (CSAs)," June 27, 2013, as amended
(e) DoD Instruction 1322.24, "Medical Readiness Training (MRT)," March 16, 2018
(f) DoD Instruction 6040.47, "Joint Trauma System (JTS)," August 5, 2018, as amended
(g) DHA Procedural Instruction 3200.01, "Research and Development (R&D) Enterprise Activity (EA)," August 9, 2019
(h) Public Law 114-328 Section 708, "Establishment of Joint Trauma Education and Training Directorate," December 23, 2016
(i) Public Law 114-328, Section 707, "Joint Trauma System," December 23, 2016
(j) United States Code, Title 10
(k) Chairman of the Joint Chiefs of Staff Instruction 5123.01H, "Charter of the Joint Requirements Oversight Council (JROC) and Implementation of the Joint Capabilities Integration and Development System (JCIDS)," August 31, 2018
(l) DoD Instruction 5000.02, "Operation of the Defense Acquisition System," January 7, 2015, as amended
(m) DoD Instruction 6000.08, "Defense Health Program Research and Clinical Investigations Programs," January 22, 2014, as amended
(n) Chairman of the Joint Chiefs of Staff Instruction 3150.25G, "Joint Lessons Learned Program," January 31, 2018

ENCLOSURE 2

RESPONSIBILITIES

1. DIRECTOR, DHA. Under the authority, direction, and control of the Under Secretary of Defense for Personnel and Readiness, and through the Assistant Secretary of Defense for Health Affairs, the Director, DHA, will:

a. Oversee trauma standards of care delivery throughout the DTE, pursuant to DHA's role as a Combat Support Agency, as established by References (a), (b), and (d).

b. Coordinate all matters related to DoD trauma care between the Joint Staff, operational forces, research and medical communities, and relevant DoD components, as established by References (d) through (g).

2. SECRETARIES OF THE MILDEPs. In accordance with References (e) and (f), the Secretaries of the MILDEPs will:

a. Provide en route, Tactical, and Surgical trauma care research subject matter experts (SMEs) to serve on Defense Committee on Trauma (DCoTs).

b. Coordinate Service-specific trauma care research projects with the DHA and the OJSS to ensure trauma research projects align with the Combatant Commander (CCDR) validated priorities.

3. CJCS. In accordance with References (d), (j), (k), and (l), the CJCS will:

a. Establish a process to evaluate and submit CCMD DoD trauma care initiatives and medical lessons learned in support of trauma research translation initiatives, in coordination with the Joint Staff Joint Force Development Directorate through the Director, DHA and Service Surgeons General.

b. Provide oversight for the Joint Requirement Oversight Council, which oversees the JCIDS for materiel products, including but not limited to pharmaceuticals and medical devices.

c. Facilitate communications among the Joint Staff, operational forces, research and medical communities, and DHA on matters related to DoD clinical trauma care capability and research gaps.

4. CCDRs. The CCDRs will, in accordance with References (d) through (f), coordinate through the CJCS with Under Secretary of Defense for Personnel and Readiness, Assistant Secretary of Defense for Health Affairs, Director, DHA, and Secretaries of the MILDEPs to:

a. Integrate DoD trauma care guidelines into operational medicine planning, training exercises, demonstrations, and combat operations across the DTE within Geographic CCMDs, United States Special Operations Command, and United States Transportation Command, with other functional CCMDs providing support as requested in accordance with Reference (f).

b. Establish theater policy for maximizing adherence to JTS CPGs, OPG, and pre-hospital guidelines to include trauma medical readiness training requirements and knowledge, skills, and abilities (KSAs); establish processes and procedures to assess and validate adequacy of training, compliance with established clinical trauma care guidelines, and proper documentation and reporting of trauma care delivered in theater.

5. DHA AD-CS. Under the authority, direction, and control of the Director, DHA, the DHA AD-CS will:

a. Support the CCDRs, Secretaries of the MILDEPs, and the Directors, military medical treatment facilities (MTFs) through the application of DoD trauma care initiatives, standards, and education.

b. Supports the Secretaries of the MILDEPs in the development and revision of trauma-centric medical readiness training standards and monitors standard performance metrics and procedures for DoD trauma care.

c. Coordinate DHA participation in the Joint Strategic Planning System and the Adaptive Planning and Execution System to define current Joint warfighting capability needs and validate future Joint warfighting capability needs via the JCIDS, as established by References (b) and (d).

d. Coordinate DHA participation in the Joint Lessons Learned Program through integration of joint lessons learned from trauma care delivery into the Joint Lessons Learned Information System, and the Joint Training System as applicable during the planning and execution of exercise programs as established by References (k) and (n).

6. CHIEF, JTS. The Chief, JTS, will:

a. Inform Military Health System enterprise research translation processes applicable to DoD trauma care in coordination with the Services, CCMDs, DHA, and Joint Staff representatives assigned to the DCoT described in this DHA-PI, in addition to relevant responsibilities granted through Reference (f).

b. Exercise management responsibilities of the Joint Trauma Education and Training (JTET) Branch in accordance with Reference (h), providing recommendations on trauma education and training research priorities.

c. Serve as functional lead for the DoDTR, with technical support from DHA Deputy Assistant Director (DAD) Information Operations, to capture trauma care treatment and outcome data in support of performance improvement projects and research priorities.

d. Develop a process whereby JTS knowledge products, such as CPGs, OPG, pre-hospital guidelines, and education and training products, are informed by current trauma-related research, to include internal DoD Component science and technology (S&T) programs, interagency research, external research conducted by military allies, the civilian research community, and best practices from professional societies and relevant industries. As appropriate, invite research stakeholder participation or consultation to support development and refinement of JTS knowledge products and DCoT activities.

e. Partner with DoD Component S&T managers as signatories on knowledge transition agreements (KTAs) to incorporate relevant research findings into trauma-related knowledge products across the DTE.

f. Collaborate on trauma-related initiatives for care delivered in MTFs with applicable stakeholders, including the MHS clinical communities (e.g., surgery, critical care), to support development, dissemination, implementation, and evaluation of knowledge products.

g. Provide input to OJSS through DHA AD-CS to inform and advise trauma-related research gaps identification and prioritization, functional requirements for materiel products, CCMD requirements definition through JCIDS, and mission-essential task lists, or other areas upon the request of trauma stakeholders.

h. Maintain and improve, where appropriate, staff and processes in JTS required to develop CPGs, OPG, and pre-hospital guidelines and serve as a reference body for all clinical trauma care provided throughout the DTE. CPGs, OPGs, and pre-hospital guidelines should be reviewed at least biannually, updated as necessary based on emergent research findings, and disseminated to relevant stakeholders.

i. Provide oversight for the DCoT and direct the establishment of research subcommittees to coordinate input from representative stakeholders on DCoT products in the areas of Tactical, Surgical, and en route Combat Casualty Care (CCC).

j. Provide performance improvement reports, recommendations, and documented lessons learned from trauma care to the DoD research community and coordinate through DHA AD-CS to support the Joint Staff Surgeon, CCDRs, and the Secretaries of the MILDEPs on planning and execution of performance improvement initiatives.

k. Coordinate documentation, analysis, and identification of lessons learned from military-civilian trauma education and training partnerships in accordance with Reference (h), and incorporate lessons learned into CPGs, OPG, and pre-hospital guidelines.

l. Coordinate integration of lessons learned from military-civilian trauma education and training partnerships into the Joint Lessons Learned Program in accordance with Reference (n).

m. Provide recommendations and guidance to evaluate proficiency and currency of clinical KSAs as outlined in Reference (e).

7. DHA DAD, RESEARCH AND DEVELOPMENT. The DHA DAD, Research and Development will:

a. Incorporate recommendations and input for trauma research gaps and priorities from DHA AD-CS and subordinate components, including JTS, into DHP S&T PPBE activities.

b. Facilitate and oversee business processes, including the administration of KTAs, for transitioning trauma-related knowledge products between DHP-funded Component S&T Program Managers and JTS.

c. Follow acquisition guidance and business processes and facilitate and oversee business processes for transitioning trauma care-related medical materiel products with the DHA AD-Management/CAE, subordinate units, and Component Acquisition Project/Product Managers.

8. DoD COMPONENT S&T MANAGERS. The DoD Component S&T Managers in the application of DHP Research Development Test and Evaluation appropriations will:

a. Align DoD S&T Program funds to medical priorities to support the development, transition, and delivery of medical materiel and knowledge solutions.

b. Provide JTS visibility into the applicable DoD trauma research portfolio activities and outputs, including the Combat Casualty Care Research Program (CCCRP), and leverage JTS expertise and field experience via participation in scientific panels and work group activities that inform S&T PPBE activities pertaining to trauma research.

c. Establish KTAs in partnership with JTS, or other entities as appropriate, to support advanced planning for knowledge product development.

d. Provide S&T representatives, as available, to participate in DCoT research subcommittees and support development of DCoT products.

e. Coordinate with JTS and Component Acquisition Project/Product Managers to support development, transition, and fielding of materiel products pertaining to trauma care.

9. DHA AD-MANAGEMENT/CAE. The DHA AD-Management/CAE will:

a. Provide oversight for Component Acquisition Project/Product Managers to execute Joint acquisition programs, including acquisition of materiel products related to fulfilling operational capability gaps in trauma care.

b. Provide Medical Product Development representatives, as needed, to participate in DCoT research subcommittees and support development of DCoT knowledge products.

c. Coordinate with JTS and Component S&T Managers to support development, transition, and fielding of materiel products pertaining to trauma care.

ENCLOSURE 3

PROCEDURES

1. BACKGROUND. The mission of JTS is to:

a. Improve trauma readiness and outcomes through:

(1) Conducting evidence-driven performance improvement;

(2) Developing and disseminating knowledge products (CPGs, OPG, pre-hospital guidelines, and education and training products);

(3) Informing and advising aspects of the translation lifecycle that fall outside of its direct authority;

(4) Providing SMEs and/or recommendations through the DCoT; and,

(5) Conducting performance improvement studies and compiling lessons learned from trauma care delivery to provide key feedback loops throughout the translation lifecycle.

b. Facilitate more rapid and effective translation of research evidence into DoD trauma standards of care. JTS adapted a generalizable knowledge translation (KT) framework[1] to outline core procedures across the KT lifecycle, which includes six phases (See Figure 1). Roles and responsibilities are spread across the DoD, and translation from bench to battlefield requires many years. The procedures outlined in this enclosure are designed to improve the coordination of these activities and increase the efficiency of translating research findings into standards of clinical trauma care across the DTE. JTS serves as a central coordinating body, working to bring people and processes together to bridge the gap between research and practice.

[1] Defense Health Agency (2017, November). *Operating Manual for Conducting Knowledge Translation in the Military Health System.* Technical manual produced under USAMRAA contract W81XWH-08-D-0029-0010.

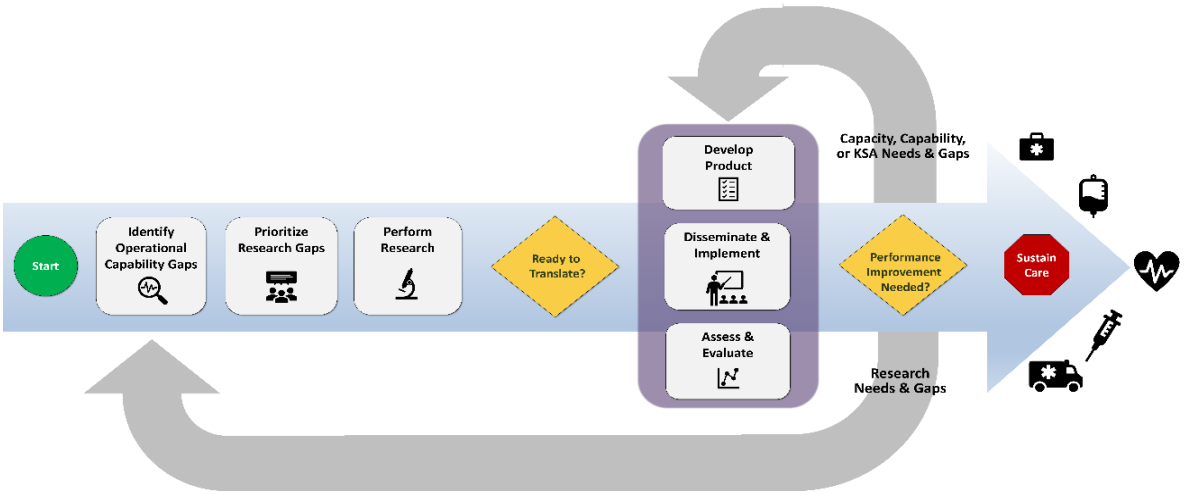

Figure 1. Trauma Research Translation Lifecycle

c. This framework outlined herein primarily focuses on the translation of research via knowledge products; however, synchronization of knowledge and materiel product lifecycles is an important secondary goal given that nearly all JTS-produced knowledge products focus on evidence-driven application of materiel (e.g., blood products, pharmaceuticals, tourniquets). This framework does not prescribe or alter DoD business processes associated with the research, development, testing, evaluation, or acquisition of materiel products related to trauma care. Operational gap identification will be performed using JCIDS, as outlined in Reference (k). Research, advanced development, and materiel product acquisitions will be performed in accordance with DoD 5000 series guidelines and will leverage existing business processes used by DHA, Services, CCMDs, and the Joint Staff, as outlined in Reference (b).

d. JTS will coordinate with relevant stakeholders and designate JTS or DCoT SMEs, as available, to inform and advise areas of the translation lifecycle that fall outside of its direct authorities, which may include but are not limited to support for the Joint Requirement Oversight Council, S&T Program Managers, Component Acquisitions Project/Product Managers, Services, and CCMDs as to provide input to shape materiel or knowledge product development, plans for procurement, research gap prioritization, training activities, fielding and testing of materiel or knowledge products, and operational planning.

2. OPERATIONAL GAP IDENTIFICATION. Define and validate operational needs and gaps based on current and future CCMD needs.

a. Operational Requirement Identification. CCMDs identify requirements to meet operational needs for personnel, equipment, and training necessary to achieve desired outcomes across the DTE in current and future battlespaces. The JTS performance improvement cycle supports the CCMDs in identifying opportunities for improvement in trauma care. Initial

identification of requirements and associated capabilities gaps initiates JCIDS (Figure 2), which will end in a validated requirement and inform Doctrine, Organization, Training Material, Leadership and Education, Personnel, Facilities, and Policy solutions. Where appropriate, an urgent requirement may serve to expedite JCIDS. Validated CCMD requirements serve as official justification for research, development, testing, evaluation and acquisition activities, alongside federal law, departmental policy, and leadership directives.

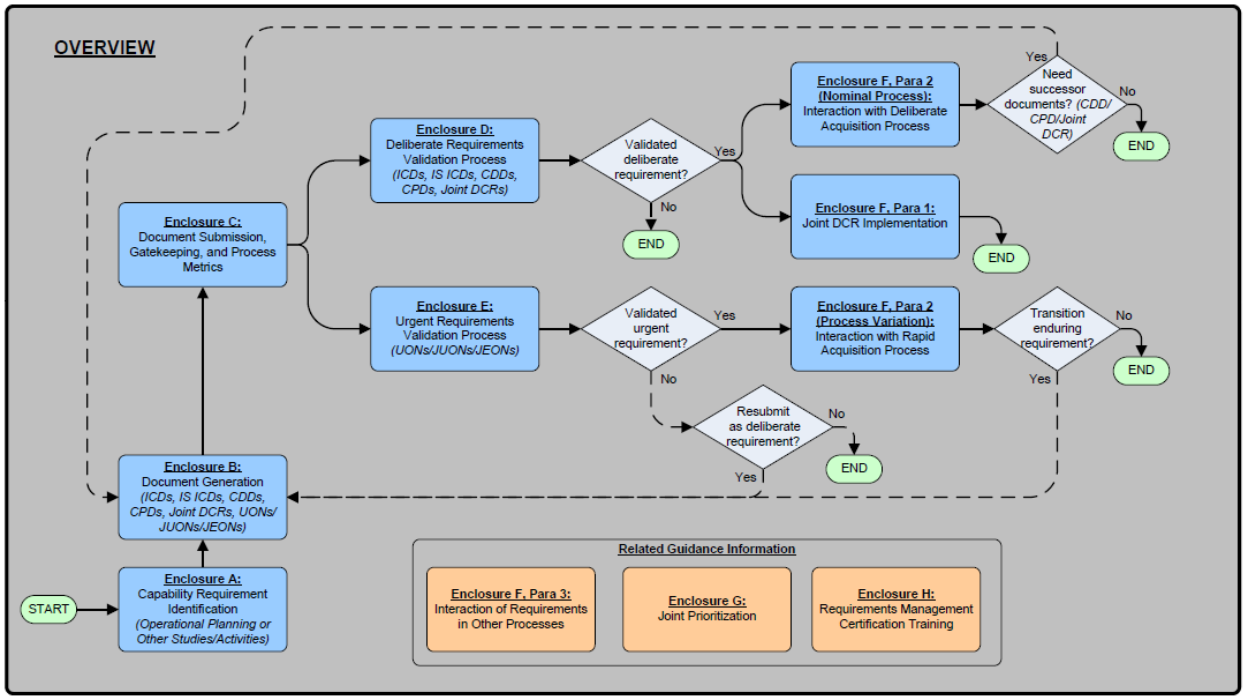

Figure 2. High-level Overview of the Joint Capabilities Integration and Development System Process

b. Trauma SME Consultation. At the request of the DHA AD-CS or Joint Staff Surgeon, the JTS Chief will provide personnel, as available, to inform and advise multidisciplinary analysis and development of recommendations for JCIDS, functional requirements for medical materiel, operational needs and gaps documentation, operational planning, and research gaps identification or prioritization. JTS performance improvement reports, based on analyses of the DoDTR, lessons learned, and other data sources, may be submitted through DHA AD-CS or OJSS to serve as an input to characterize Joint, CCMD, or unit-level adherence to DoD trauma standards of care and support identification of operational needs and gaps.

3. RESEARCH GAP PRIORITIZATION. Align trauma-related research investments to meet CCDRs requirements.

a. Convene a Research Gap Prioritization Working Group (RGPWG). At a minimum of every two years, JTS, through the DCoT, will convene an expert panel to provide consensus nominations to prioritize research gaps in the areas of Tactical, Surgical, and en route CCC using standardized methodology and criteria. Membership should include trauma care experts from all relevant stakeholder organizations, including: Joint Staff, CCMDs, Services, DHA, Uniformed Services University of the Health Sciences, Component S&T portfolio managers, and DoD civilian partners. RGPWG deliverables will serve as a key source of SME input to inform and advise trauma-related DoD S&T program activities.

b. Conduct Research Gap Analysis. RGPWG members will provide ratings for research needs and gaps to meet clinical and operational medical needs through the analysis of available literature, environmental scans of best practices and/or new innovations in medical technology, JTS performance improvement reports, documented lessons learned, and inputs from CCMDs, DHA, and Service research and clinical SMEs. Additional sources of information may include the Armed Forces Medical Examiner Services, Joint Trauma Analysis and Prevention of Injury in Combat data and reports, and findings from completed and ongoing trauma research translation efforts. Each of the DCoT organizations will produce a biennial research gap list using a consistent, documented methodology including input from SMEs in Tactical, Surgical, and en route CCC. DCoT will coordinate with Component S&T portfolio managers (e.g., CCCRP) and applicable civilian research initiatives to identify if there is existing/in-progress research that addresses the identified clinical gaps or whether a research gap exists.

c. Disseminate Research Gaps Report. JTS will disseminate the final report of research gaps and needs to DoD leadership via coordination with DHA AD-CS and OJSS to inform and advise formal prioritization procedures that will inform DoD-funded S&T activities. Broader, targeted dissemination to stakeholders may occur once materials are approved for public release via web, social media, email listservs, direct communications, peer-reviewed publications, conferences, or other means as appropriate.

4. RESEARCH PERFORMANCE. Conduct timely, high-quality DoD-funded research to increase knowledge and develop prototype solutions for trauma care.

a. Select and Fund Research Proposals. Component S&T managers review and rate submitted proposals and select those that align to the established research priorities for funding

and other rating criteria. Contracting offices and/or granting organizations issue awards and funding in accordance with federal, DoD, and Service regulations, directives, and policies.

b. Manage/Monitor Research Process. DHA and the Services conduct appropriate oversight and monitoring for S&T programs under their purview (e.g., via in-progress reviews, external and internal programmatic reviews). Component S&T managers execute PPBE processes for their assigned portfolios. Service laboratories execute intramural research as funded and per approved research plans. Principal investigators, in accordance with the terms and conditions of their contract or grant awards, report periodically on progress and publications.

c. Develop Transition Agreements (TAs). DoD components involved in trauma care research document an intent to translate research using an appropriate TA template completed in partnership with JTS (for knowledge products only), Advanced Developers (for materiel; e.g., DHA Program Manager for Pharmaceuticals, Devices, and Medical Support Systems), or another partner. Criteria for hand-offs, as well as roles, responsibilities, and funding sources, are core elements that must be included in the TA. Signatories involved in receiving materiel or knowledge products related to trauma are responsible for planning and securing resources for subsequent product development as agreed upon in the TA and in accordance with applicable policies, procedures, and regulations for each DoD component.

5. PRODUCT DEVELOPMENT. Develop and refine materiel (e.g., pharmaceuticals, medical devices) and knowledge products (e.g., CPGs, training curricula, treatment protocols) efficiently and maintain up-to-date standards of clinical trauma care.

a. Materiel Product Development. Materiel product development will follow DoD 5000 series regulations and U.S. Food and Drug Administration regulations in addition to other Federal and DoD policies relevant to developing, fielding, testing, or acquiring medical materiel. Materiel product development falls outside of JTS's area of direct responsibility, but JTS input may be sought by relevant parties to inform and advise materiel product functional requirements submitted through DHA AD-CS or OJSS, as well as education and training to support materiel fielding. Where a documented urgent need is present, expedited procedures may be followed to accelerate development or fielding.

b. Knowledge Product Development

(1) Establish a Knowledge Product Development Plan. JTS, in partnership with relevant stakeholders (e.g., CCCRP representatives, Service Education and Training Components, CCMD and Joint Staff representatives), builds upon initial, high-level plans established in a KTA to form a knowledge product development plan that identifies the knowledge product type, functional requirements, targeted end-user communities, criteria for dissemination,

implementation, and evaluation (DI&E), as well as a business case to include potential risks, costs, benefits, and estimated impact. These plans should be regularly updated, socialized with stakeholders for input, and submitted to leadership for approval in line with JTS internal procedures.

(2) Conduct Research Synthesis and Appraisal. JTS may use established methodologies (e.g., Cochrane Systematic Review, meta-analysis, JTS internal methodologies) to synthesize relevant military and civilian research evidence as well as to compile information gained through performance improvement analyses using data from the DoDTR, documented lessons learned, SME judgment, and other sources for the specific knowledge product under development to appraise the quality and strength of the evidence that supports clinical adoption.

(3) Develop and Validate Knowledge Products. In collaboration with relevant stakeholders (e.g., Services, CCMDs, CCCRP, professional organizations, civilian research organizations), JTS develops the knowledge product prototype in accordance with functional requirements, obtains end-user feedback from trauma care SMEs, and then refines to develop a final knowledge product. Once approved by JTS leadership, execution of DI&E activities may begin; note, however, that planning for these DI&E activities should be carried out simultaneously with knowledge product development and synced with parallel development activities for materiel products referenced in JTS guidelines.

6. D&I. Simultaneously move products to the field while educating and training Service members in application of evidence-driven trauma care practices. JTS will maintain primary responsibility for disseminating knowledge products it produces. Implementation of clinical care delivery falls under DHA for care delivered in MTFs, while care delivery in operational environments falls under CCMDs. Implementation of trauma-related knowledge products pertaining to training fall under the Service Title 10 responsibility, as outlined in Reference (j), with JTET Branch playing a key role in the development of standardized curricula and establishment of KSAs.

a. Materiel Product Fielding. Materiel product fielding will follow DoD 5000 series regulations, U.S. Food and Drug Administration regulations, and applicable DHA, CCMD, and Service policies relevant to developing, fielding, testing, or acquiring medical materiel. Materiel product development falls outside of JTS's area of responsibility. However, field evaluation and fielding of new devices without adequate training, incorporation into guidelines, and establishment of a performance improvement plan will lead to less than optimal performance of the product. As such, guidelines produced by JTS should be disseminated and implemented in conjunction with materiel product fielding (e.g., blood products, hemorrhage control devices) to serve as standards of care (e.g., CPGs) and linked to applicable education and training curricula via the JTET Branch, military-civilian partnerships, and/or agreements with Joint or Service education and training components.

b. Knowledge Product D&I Planning

(1) Assess Readiness for Implementation. Assess individual beliefs, systemic barriers (e.g., information technology), organizational capacity, and other factors that may play a role in the successful adoption of the clinical practice (e.g., leadership support, access to required resources, ready access to information and materiel). If gaps exist, coordinate with appropriate stakeholders to address deficiencies. Use implementation frameworks (e.g., Promoting Action on Research Implementation in Health Services, Consolidated Framework for Implementation Research) as appropriate to structure these assessments and design implementation strategies.

(2) Develop specific, measurable, achievable, realistic, and time-bound (SMART) Objectives for Evaluation. For all D&I efforts, objectives should be established up front in the planning process using SMART metrics that clearly define success. Such SMART objectives should be aligned with policy, stakeholder priorities, and data sources. A logic model can be used to define outcomes and the inputs, activities, and outputs necessary to achieve them, as well as assumptions and perceived barriers to success.

(3) Develop DI&E Plan. JTS, in coordination with relevant DHA, Joint Staff, Service, and CCMD stakeholders and SMEs, develops an integrated DI&E plan that documents:

(a) Dissemination strategies that will be used to increase awareness of the evidence-based practice;

(b) Implementation strategies that will be used to support clinician adoption of the evidence-based practice; and

(c) Evaluation methods and infrastructure that will be used to monitor and assess outcomes and impact.

(4) Conduct D&I Pilot. A D&I pilot is recommended to test D&I strategies, as well as the knowledge product itself, in operational environments. Piloting prior to scaling is the best way to ensure a smooth transition and maximize long-term outcomes while minimizing overall costs and risks. Since piloting incurs a cost in terms of time and resources prior to full-scale fielding of products, a pilot is considered optional if operational needs require an expedited timeline. If a pilot is not conducted, it is important to document the decision-making process and anticipated risks and benefits involved.

c. Knowledge Product D&I Execution

(1) Conduct Dissemination Activities. Build awareness of new care standards and solutions by systematically spreading information to identified target audience(s) using dissemination strategies selected based on target audience profiles and best practices (e.g., weekly Trauma Conference Calls, JTS website, Deployed Medicine website and mobile application).

(2) Conduct Implementation Activities. Use evidence-driven implementation strategies (e.g., coaching, audit and feedback, clinical consultation, technical support) to provide support and feedback to end-users as they engage in relevant education and training activities that target knowledge and skill development and ultimately the adoption of evidence-based practices into trauma and CCC. Implementation pathways depend on numerous factors, including but not limited to medical occupational specialty (e.g., medic/corpsman, physician, nurse), status at the time of implementation (e.g., deployed, in garrison), Service, CCMD, and level of experience (e.g., trainee vs. experienced provider). Multi-component implementation strategies are likely to maximize effectiveness. For example, CPGs may be incorporated into training at multiple points in an end-user lifecycle (e.g., baseline, sustainment, pre-deployment, just-in-time training). Likewise, both local and organizational champions are recommended to support implementation from leadership down to the unit level and systemic efforts to develop organizational or site capacity for implementation.

7. ASSESSMENT AND EVALUATION. Monitor CPG compliance and conduct performance improvement. Evaluation of the results informs performance improvement initiatives and serves as a feedback loop to inform the identification of operational and research gaps (i.e., long feedback loop), as well as recommendations for performance improvement (i.e., short feedback loop).

a. Collect Evaluation Data, Monitor D&I Activities, and Address Barriers. Use approved methods and sources identified in the DI&E plan (e.g., focus groups, electronic health record data, DoDTR data, after action reviews, and lessons learned) to gather data regarding processes and outcomes associated with D&I effectiveness. Continuously assess and address barriers and facilitators to knowledge product adoption by obtaining data from clinicians using a mixed-methods approach. Collaboratively develop and implement solutions to reduce barriers and strengthen facilitators.

b. Synthesize and Analyze Data. Synthesize data from the D&I efforts and complete quality assurance. Analyze data using relevant quantitative and qualitative methods that were identified in the initial DI&E plan in order to analyze fidelity to prescribed standards of care, as well as to measure the impact of adopting evidence-based practices and tools in closing the original clinical gap(s).

c. Identify Successes, Gaps, and Lessons Learned. Develop a summary of successes, gaps, and lessons learned that highlights the return on investment for implementing the new materiel or knowledge product and identifies potential improvements to the product development or D&I process.

d. Present Results and Recommendations. Conduct a briefing for relevant stakeholders on D&I outcomes that addresses whether the original clinical gap(s) were sufficiently addressed or if they require additional attention.

e. Provide Feedback. Leverage the evaluation results to inform the next iteration of the research gaps identification process and performance improvement efforts.

GLOSSARY

PART I. ABBREVIATIONS AND ACRONYMS

AD	Assistant Director
CAE	Component Acquisition Executive
CCC	Combat Casualty Care
CCCRP	Combat Casualty Care Research Program
CCDR	Combatant Commander
CCMD	Combatant Command
CJCS	Chairman, Joint Chiefs of Staff
CPG	clinical practice guideline
CS	combat support
DAD	Deputy Assistant Director
DCoT	Defense Committee on Trauma
DHA	Defense Health Agency
DHA-PI	Defense Health Agency-Procedural Instruction
DHP	Defense Health Program
D&I	dissemination and implementation
DI&E	dissemination, implementation, and evaluation
DoD	Department of Defense
DoDTR	Department of Defense Trauma Registry
DTE	Defense Trauma Enterprise
JCIDS	Joint Capabilities Integration and Development System
JTET	Joint Trauma Education and Training
JTS	Joint Trauma System
KSA	knowledge, skills, and abilities
KT	knowledge translation
KTA	knowledge transition agreement
MILDEPs	Military Departments
MTF	military medical treatment facility
OJSS	Office of the Joint Staff Surgeon
OPG	operational planning guidance
PPBE	programming, planning, budgeting, and execution
RGPWG	Research Gap Prioritization Working Group
S&T	science and technology

SMART	specific, measurable, achievable, realistic, and time-bound
SME	Subject Matter Expert
TA	Transition Agreement

PART II. DEFINITIONS

Unless otherwise noted, these terms and definitions are for the purposes of this DHA-PI.

CPG. Statements and recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options.

DCoT. Responsible for developing standards of optimal CCC to maximize casualty survival and medical readiness throughout the DoD. The DCoT provides evidence-driven, best practice trauma care guidelines, informs educational standards, and addresses identified shortfalls in CCC with solution-based processes. The DCoT is comprised of the Component Committees: the Committee on Tactical CCC, the Committee on en route CCC, and the Committee on Surgical CCC. The voting members of each Component Committee are a collaborative group of nominated military and federal government civilian SMEs in their respective fields of tactical, en route, and surgical casualty care.

dissemination. The distribution of an intervention or innovation to a specific audience.

DTE. The resources, assets, and processes required for the optimal delivery and management of trauma care in support of DoD operations, in both the garrison setting and across the full range of military operations. The DTE includes trauma-centric supporting activities (e.g., training, education, and research) designated to improve trauma care delivery from point of injury through rehabilitation.

implementation. The integration of a new practice within a specific setting or context using strategies to adopt and integrate evidence-based interventions and change practice patterns within the setting.

implementation science. The study of methods to promote the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings.

knowledge product. A means of translating knowledge intended to reduce the gap between research and practice. Knowledge products include, but are not limited to, clinical support tools, recommendations, and practice guidelines; policy; treatment protocols; and training products. Knowledge products are non-materiel but may accompany a materiel solution as part of a strategy to bring about practice change.

KT. A dynamic and iterative process that includes the synthesis, dissemination, exchange, and ethically sound application of knowledge to improve health, provide more effective health services and products, and strengthen the health care system.

materiel product. Equipment, apparatus, and supplies used by an organization or institution.

OPG. Operational, tactical, and logistical guidance for medical providers that are not distinctly clinical but have a significant direct or indirect impact on clinical care.

performance improvement. An approach to the continuous study and improvement of the processes of providing health-care services to meet the needs of patients and others.

research. Systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge.