FY25 Integrated Prevention Research Agenda

Office of the Under Secretary of Defense (Personnel and Readiness)

October 1, 2024

This research agenda summarizes DoD's research gaps and priorities. This document is not intended to serve as a broad agency announcement for proposals or for a request for proposals.

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Executive Summary[1]

Since Fiscal Year (FY) 2023, per the National Defense Authorization Act (NDAA) for FY22, Section 549A, the Department of Defense (DoD) has published an annual Integrated Prevention Research Agenda. The FY25 Integrated Prevention Research Agenda defines key research priorities to synchronize DoD research on integrated primary prevention and accelerate the Department's key prevention initiatives, such as implementation of the approved recommendations from the Independent Review Commission on Sexual Assault in the Military (IRC-SAM) (2021)[2] and the Suicide Prevention and Response Independent Review Committee (2023).[3] This agenda reflects the NDAA's requirement for an annual research agenda focused on the primary prevention of harmful behaviors, such as sexual assault, harassment, suicide, domestic abuse, child abuse, and retaliation. Also, as defined in the December 20, 2022, DoD Instruction (DoDI) 6400.11,[4] "DoD Integrated Primary Prevention Policy for Prevention Workforce and Leaders" (pg. 42), the research agenda "strengthens the DoD's primary prevention research portfolio by prioritizing research topics, ensuring collaboration across sectors and organizations, and reducing duplication of effort."

The Department identified the following research focus areas, subject to availability of funds, for FY25 that could provide the greatest potential to impact prevention practice within the Department:

- Assess frequency and type of pre-military risk or protective factors
- Identify interpersonal characteristics of prevention personnel that enhance work performance
- Identify implementation science principles that support local prevention practice

Assess Frequency and Type of Pre-Military Risk or Protective Factors

Pre-military experiences and characteristics can serve as risk or protective factors for perpetrating or experiencing harmful behaviors during military service. An understanding of these factors is informative for primary prevention with subgroups at increased risk for being affected by harmful behaviors. For example, adverse childhood experiences (ACEs) refer to potentially traumatic experiences during the first 17 years of life, including experiencing abuse, or neglect; witnessing harmful behaviors in the home or community; and having a family member attempt or die by suicide (Centers for Disease Control and Prevention (CDC), 2019). Volunteer era veterans are more likely than draft era veterans to have had two or more ACEs (Hein et al., 2020), and ACEs are also related to the occurrence of harmful behaviors while in the military (Campbell-Sills et al., 2018; LeardMann et al., 2022; Stein et al., 2018). Other pre-military risk factors associated with increased occurrence of harmful behaviors in the military include substance use disorders, anxiety disorders, chronic stress (e.g., health, finances), and family history of mental illness (Rosellini et al., 2017). Pre-military protective factors that contribute to overall resilience for new

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[2] Independent Review Commission on Sexual Assault in the Military. "Hard Truths and the Duty to Change - Recommendations from the Independent Review Commission on Sexual Assault in the Military," 2021

[3] Suicide Prevention and Response Independent Review Committee. "Preventing suicide in the U.S. Military: Recommendations from the Suicide Prevention and Response Independent Review Committee," 2023.

[4] DoDI 6400.11, "DoD Integrated Primary Prevention Policy for Prevention Workforce and Leaders," December 20, 2022, as amended.

military recruits and those at pre-deployment include tolerance to stress, general positive orientation or outlook, social resources, emotional and behavioral inhibition, working memory, cognitive flexibility, and attention (Campbell-Sills et al., 2018; Liu et al., 2023).

Identify Interpersonal Characteristics of Prevention Personnel that Enhance Work Performance

The Department's integrated primary prevention workforce (IPPW) requires interpersonal skills to effectively work with collaborators and communicate with leadership. Interpersonal characteristics are widely applicable in prevention (Substance Abuse and Mental Health Services Administration (SAMHSA), 2021), but these characteristics are often implicit and need to be more formally defined as part of prevention practice. *Quality communication*, which includes clear, concise, and persuasive communication, needs more formal attention as part of prevention training requirements (e.g., Furunes et al., 2018). In addition, *skills for collaboration* are an important interpersonal competency, including team-oriented actions such as sharing knowledge and resources versus working in siloed specialties (Furunes et al., 2018). An additional area of emphasis is *social-emotional intelligence*, referring to self-awareness of one's emotions, and awareness of others' emotions (e.g., Bakhti et al., 2022; Harris et al., 2022). Social-emotional intelligence includes more specific interpersonal characteristics such as empathy (actively learning, recognizing, and resonating emotionally with another's experience) (e.g., Halton & Cartwright, 2018) and cultural humility and competence (self-reflection and learning to better understand the perspectives of other cultures and experiences) (e.g., Schofield et al., 2022).

Identify Implementation Science Principles that Support Local Prevention Practice

Quality implementation is one of four primary prevention process elements in the Department's Prevention Plan of Action (PPoA) 2.0, which outlines a public health approach to prevention and the components of an effective prevention system and process. Research focusing on quality implementation is critical for decreasing the prevalence of harmful behaviors by bridging the gap between research and practice. Implementation research aims to understand how to successfully bring the evidence base into practice in real-world settings (McGinty et al., 2024; Proctor et al., 2011). For example, an overarching theme in implementation science literature is the tailoring of programs, practices, and policies in diverse contexts and populations. Program tailoring enhances participant engagement and the perceived acceptability of the intervention (e.g., Woodward et al., 2022, 2023a, 2023b) along with increased alignment with local needs. Another reoccurring theme is the importance of cultivating climates conducive to the quality implementation of prevention activities. This includes the essential support from leadership (Iverson et al., 2019; Luxton et al., 2020), as well as fostering collaborative norms and processes (Kim, 2021). Government reports have underscored the importance of collaboration across offices with overlapping responsibilities (Mihm, 2014), emphasizing the need of breaking down silos to address shared risk and protective factors across harmful behaviors, as highlighted in the PPoA 2.0 (Department of Defense, 2022).

In accordance with the NDAA FY23, Section 547, the Department will ensure that research and findings aligned to the three focus areas for FY25 are regularly incorporated, as appropriate, into the activities of the IPPW. This may include providing guidance and continuing education. Moreover, DoD is taking additional steps to institutionalize the dissemination of research results where appropriate to ensure cohesion and increase the visibility of research across the Department to eliminate redundant research and promote unity of effort.

Introduction

The Department is committed to cultivating safe and healthy climates for all members of the military community. Multiple investments support this commitment, including ongoing research, evaluation, and other evidence-building activities across DoD on the prevention of harmful behaviors. These efforts provide actionable information to commanders, policy offices, and other prevention collaborators. Research priorities will contribute to the development and implementation of effective primary prevention strategies for DoD.

Beginning with the first Integrated Prevention Research Agenda in FY23, the Department has published an annual research agenda. As defined in DoDI 6400.11 (G.2.), and in response to NDAA FY22, Section 549A, the research agenda "strengthens the DoD's primary prevention research portfolio by prioritizing research topics, ensuring collaboration across sectors and organizations, and reducing duplication of effort." To fulfill these requirements, this document identifies specific focus areas prioritized for FY25.

DoD developed the FY25 research topics in collaboration with federal departments and agencies (e.g., CDC, Psychological Health Center of Excellence) and with researchers from civilian institutions.[5] Research priorities were identified from a research agenda framework based on their potential impact on prevention practice within the Department and alignment with NDAA FY23, Section 547, which states that:

> "The Secretary of Defense shall ensure that the findings and conclusions from the primary prevention research agenda […] are regularly incorporated, as appropriate within the primary prevention workforce […]."

The Research Agenda Framework

In FY22, the Department developed a research agenda framework (Table 1) that was subsequently approved by the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) as part of the FY23 Integrated Primary Prevention Research Agenda. The framework collaboratively develops a unity of effort across DoD and maximizes benefit from research by focusing on efforts to establish primary prevention activities that have the potential to address multiple harmful behaviors at once.

The framework structure represents a crosswalk of the human resource elements in PPoA 2.0 and each step of the prevention process. Specifically, the framework reflects the immediate and enduring prevention needs for: 1) leadership, 2) Integrated Primary Prevention Personnel, and 3) the military community through the different stages of the prevention process.

In FY22, DoD conducted a summary literature review for the entirety of the framework (i.e., all cells of Table 1). Focus areas shown in Table 1 reflect findings and gap analyses categorized into immediate needs versus enduring needs for DoD. Gaps and themes in italics align with ongoing research being conducted as part of the implementation of the DoD-approved IRC-SAM recommendations. From the many focus areas outlined in Table 1, DoD selected three for FY25 development (shown in bold).

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[5] The CDC completed this work through an Interagency Agreement. Collaboration with civilian institutions was facilitated through Intergovernmental Personnel Agreements.

Table 1. Research Agenda Framework: Prevention Focus Areas

	Leadership Focus Areas		Prevention Workforce Focus Areas		Military Community Focus Areas	
	Immediate	Enduring	Immediate	Enduring	Immediate	Enduring
Understand the Problem	• *Define leadership competencies, style, and/or type to support prevention (IRC-SAM Rec 2.1a)* • Identify optimal type and phase of leadership development to maximize effectiveness of prevention activities	• Understand how leadership actions impact Service members' perceived opportunities at work • Understand how minimum service obligations influence leadership development, climate, and harmful behaviors	• *Define prevention workforce competencies (IRC-SAM Rec 2.2a)* • Understand and develop pathway for effective integration of civilians into prevention roles, military culture, and nature of interaction with other functional communities	• Assess impact of background (e.g., veteran status, spouse, educational background) on employee fit and personnel work satisfaction • Assess impact of background (veteran status, spouse, educational background) on prevention process and job performance	• *Assess prevalence of harmful behaviors at local level (IRC-SAM Rec 3.7c)* • Define risk and protective factors at interpersonal and organizational levels • **Assess prevalence of pre-military risk or protective factors** • Understand risk and protective factors for harmful behaviors in the cyber environment	• Assess co-occurrence and/or interaction of harmful behaviors or shared risk and protective factors, developmental trajectories (e.g., adverse childhood experiences influence on subsequent behaviors) • Determine long term effects of family abuse and harm on the military family
Comprehensive Approach	• Develop practical and applicable organizational change tools for leaders to support implementation of comprehensive prevention solutions • Identify which leader relationships and networks produce buy-in and enthusiasm for integrated prevention approaches	• Incorporate applicable change management theories into development and implementation of integrated prevention approaches	• *Define training necessary for each role within the prevention workforce (IRC-SAM Rec 2.2b)*	• Identify evidence-based and/or evidence informed prevention activities that reduce multiple forms of harm or abuse • Assess the intersection of harmful behaviors, inequalities, and other factors to equip workforce with research-based tools that can be tailored for each military community	• Identify and develop multi-pronged and multi-level integrated prevention approaches for the military community • Develop standardized methods for evaluating multi-pronged and multi-level integrated approaches	• *Develop military-specific community and organizational level prevention approaches (IRC-SAM Rec 2.3b)* • Develop and evaluate how online platform(s) can contribute to an integrated approach and increase prevention effectiveness

Quality Implementation	• Develop metrics to measure organizational resistance to prevention • Define implementation challenges unique to the military environment (e.g., deployments, frequent re-assignments, Service, and occupation specific cultures)	• Assess impact of organizational characteristics (unit climate, bureaucracy, power dynamics) on leadership development and prevention effectiveness	• Assess utilization and define enhancements to maximize community of practice (SPARX Connection) • **Identify interpersonal characteristics of prevention personnel that enhance performance** • **Identify implementation science principles that support local prevention practice** • Identify capacity/needs assessments, evaluation/continuous quality improvement (CQI) tools and data that fit needs of the workforce	• Assess impact of organizational characteristics on prevention workforce performance • Assess long term effects and comparative effectiveness of specific prevention tools	• Adapt civilian approaches for military environment and demographic • Identify essential elements of effective prevention approaches for military community • Identify considerations for health equity and social determinants of health in implementation of prevention activities • Identify barriers and facilitators of prevention effectiveness in military community and develop countermeasures	• Identify effective methods for scale up and dissemination of prevention activities • Identify factors influencing effective implementation of comprehensive approaches
Continuous Evaluation	• *Develop tools and metrics to assess leader performance in prevention and impact on healthy command climate (IRC-SAM Rec 3.7)* • Identify which metrics are appropriate for evaluating leadership action (i.e., which behaviors leaders can causally influence through organizational climate and leadership action)	• Assess effectiveness of leadership actions on command climate & harmful behaviors; including organizational characteristics that enhance or constrain leaders' efforts to support prevention	• Assess effectiveness of training and continuing education on prevention workforce performance • Develop metrics to assess competence of workforce in advanced skillsets (e.g., evaluation)	• Develop and validate tools to assess performance; including measures of competence and proficiency.	• Develop standardized metrics and methods for assessing behavior change, climate, and community change in transient community • Develop data collection and access plans to enable valid cost benefit analyses to be completed prospectively	• *Assess effectiveness of community and organization level approaches (IRC-SAM Rec 2.3b)* • Assess effectiveness of comprehensive approaches that address multiple harmful behaviors • Conduct cost benefit analyses of prevention activities

Note: Gaps and themes in italics align with ongoing research being conducted as part of the implementation of the DoD-approved IRC-SAM recommendations. Bolded focus areas were selected for FY25 development.

FY23 Research Agenda Progress

Priorities from the FY23 Research Agenda, and efforts underway in addressing these priorities, are as follows:

- **Understand Service members' activities and prevention needs within the cyber environment:** Through an interagency agreement with Library of Congress Federal Research Division (FRD), DoD is exploring Service members' activities in the cyber environment (i.e., social media, internet sites including blogs and social networking sites, apps [e.g., dating apps, Jodel], and video games) to assess prevention needs. DoD is also exploring how to leverage the cyber environment to enhance prevention activities. To understand the landscape of the cyber environment, FRD began with reviewing Service-wide and Installation/Command/Unit-specific policies, procedures, and programming related to harmful behavior in the cyber environment. This will inform future directions of the study.

- **Understand how the cyber environment shapes Service member attitudes and behaviors in ways that increase or decrease harmful behaviors:** Through the agreement with the FRD, DoD is also assessing how activities in the cyber environment can increase or decrease risk and protective factors associated with various harmful behaviors. For example, FRD is reviewing published academic literature and government studies to identify how the cyber environment shapes Service member attitudes and behaviors, including information cocooning among Service members. Additionally, FRD is soliciting information from the Services on programs or initiatives related to harmful behavior in the cyber environment implemented Service-wide or at specific installations.

- **Define elements and the essential conditions necessary for the implementation and evaluation of multi-pronged, multi-level, integrated approaches in military communities:** Through an interagency agreement with the CDC's Division of Violence Prevention (DVP), DoD is conducting a review of the literature to create a comprehensive list of essential conditions that contribute to the success of multi-level prevention approaches. These approaches emphasize mutually reinforcing prevention activities at each level of the social ecology, applicable to the military environment. The envisioned end-products will complement the 2023 "Community and Organizational Level Prevention of Harmful Behaviors in the Military: Leveraging the Best Available Evidence." (Downloadable from: https://www.prevention.mil/Resources/Tools/.

- **Develop and evaluate online bystander intervention tools to mitigate risk for harmful behaviors in the cyber environment:** Through the agreement with the CDC DVP, DoD is conducting a literature review and environmental scan to identify and assess the best available evidence on bystander interventions for technology-facilitated abuse. To augment this information, DoD will also gather input from subject matter experts in various related sectors. The outputs of these efforts will inform future policy.

FY24 Research Agenda Progress

Priorities from the FY24 Research Agenda, and efforts underway in addressing these priorities, are as follows:

- **Define risk and protective factors at interpersonal and organizational levels:** In the fall of 2023, the Defense Advisory Committee for the Prevention of Sexual Misconduct (DAC-PSM) began a study on community- and organizational-level risk (e.g., gender stereotypes, institutional racism, alcohol outlet density) and protective factors (e.g., connectedness, safe housing, access to medical care and mental health services) for harmful behaviors in the military environment. The subcommittee will recommend measures of performance and measures of effectiveness for those identified factors to assist DoD's efforts to track changes over time, as well as to inform efforts to evaluate programming focused on modifying these factors to decrease harmful behaviors. In addition, through an interagency agreement with the Library of Congress Federal Research Division (FRD), DoD's Office of Command Climate and Well-Being Integration (OCCWI) (formerly known as the Violence Prevention Cell) is working to further understand the role of core values in the Services as a protective factor for harmful behaviors at the organization/community level.
- **Assess whether and to what extent sub-populations of the military community are targeted by harmful behaviors more than others:** In collaboration with DoD's Office of People Analytics (OPA), DoD's OCCWI is conducting a study to identify military sub-populations who may be at increased risk for harmful behaviors and to understand the organizational climates that may contribute to that increased risk. The study involves secondary analysis of data collected from OPA surveys, including the Workplace and Gender Relations Survey of the Active Component (WGRA), the Armed Forces Workplace and Equal Opportunity Survey (WEO), the Status of Forces Survey of the Active Component (SOFA), and the Defense Organizational Climate Survey (DEOCS). Ultimately, findings from this work may inform selected primary prevention programs and policies.
- **Seek to improve the collection and dissemination of data on hazing and bullying related to interpersonal and self-directed harm:** Through the agreement with the FRD, DoD's OCCWI is assessing current processes in the Services for summarizing, distilling, sharing, and using hazing and bullying data to inform decision-making when planning prevention activities. This work includes conducting document reviews and key informant interviews with Service representatives.

FY25 Research Focus Areas

In collaboration with prevention leads from across the Military Departments, including the Military Services, and National Guard Bureau and based on input from other leaders and subject-matter experts, DoD identified three research focus areas from the research agenda framework that could provide the greatest potential to impact prevention practice within the Department. An overview and gap analysis for each focus area is highlighted in the next section. More detailed references to published literature aligned with these areas are included in Appendix A.

Focus Area 1: Assess Frequency and Type of Pre-Military Risk or Protective Factors

Pre-military experiences and characteristics can serve as risk or protective factors for perpetrating or experiencing harmful behaviors during military service. An understanding of these factors is informative for primary prevention with subgroups at increased risk for being

affected by harmful behaviors. For example, adverse childhood experiences (ACEs) refer to potentially traumatic experiences during the first 17 years of life, including experiencing abuse, or neglect; witnessing harmful behaviors in the home or community; having a family member attempt or die by suicide; and experiencing family dysfunction and instability (Centers for Disease Control and Prevention (CDC), 2019). Volunteer era veterans are more likely than draft era veterans to have had two or more ACEs (Hein et al., 2020), suggesting a link between voluntary self-selection into the military and pre-military experience of multiple ACEs. ACEs are also related to the occurrence of harmful behaviors while in the military (Campbell-Sills et al., 2018; LeardMann et al., 2022; Stein et al., 2018). Additional research suggests that ACEs may interact with present-day factors, such as command climate, crowded living conditions, and combat exposure, in contributing to the risk of harmful behaviors in the military (e.g., Doucette et al., 2023; Murdoch et al., 2019; Wang et al., 2015). Other pre-military risk factors associated with the occurrence of increased harmful behaviors in the military include substance use disorders, anxiety disorders, chronic stress (e.g., health, finances), and family history of mental illness (Rosellini et al., 2017). Pre-military protective factors that contribute to overall resilience during military service, including for new military recruits and for Service members on deployment, include tolerance to stress, general positive orientation or outlook, social resources, emotional and behavioral inhibition, working memory, cognitive flexibility, and attention (Campbell-Sills et al., 2018; Liu et al., 2023). The military accession process assesses many of these risk and protective factors prior to individuals accessing into the military, which contribute to differences in risk and protective factors between civilian and military populations, warranting military specific research in this area.

To inform primary prevention activities, particularly for subgroups at increased risk, continued research is needed to understand the link between pre-military risk and protective factors and harmful behaviors during military service, including the interaction with present-day factors such as command climate. Information on the role of protective and compensatory experiences (PACEs) in the military population is scarce (Lamson et al., 2020). PACEs, which focus on supportive and social childhood experiences, such as having a trustworthy adult around, forming friendships, and participating in sports and religious groups (Lamson et al., 2020), may serve as protective factors for harmful behaviors.

Moreover, there is a need for research to explore how other factors in civilian settings are applicable to the military environment. These factors include past experiences of perpetrating harmful behaviors, community norms around masculinity, and acceptability of violence towards women (Holliday et al., 2018). Additionally, exploring the role of pre-military social drivers of health in preventing future harmful behaviors during military service is crucial. Social drivers of health refer to environmental conditions and demographic factors that impact a wide range of health outcomes and risk (Department of Health and Human Services, n.d.). Lastly, research is needed on factors that buffer Service members from the adverse effects of ACEs they may have experienced (e.g., engaging in healthy and meaningful relationships).

Focus Area 2: Identify Interpersonal Characteristics of Prevention Personnel that Enhance Work Performance

The Department's IPPW works with leaders to build healthy climates and create environments free from abuse and harm. Key skillsets of the IPPW are related to engaging the military community, empowering leaders with data and research, implementing prevention activities,

and sustaining progress over time. The IPPW requires interpersonal skills to effectively work with collaborators and communicate with leadership.

Interpersonal characteristics are widely applicable in prevention (SAMHSA, 2021), but are often implicit and need to be more formally defined as part of prevention practice. The ability to *communicate with quality* (e.g., clearly, concisely, and persuasively) needs to be more formally addressed as part of training requirements in prevention (e.g., Furunes et al., 2018). In addition, *skills for collaboration* are an important interpersonal competency, including team-oriented actions such as sharing knowledge and resources versus working in siloed specialties (Furunes et al., 2018). Another area of emphasis is *social-emotional intelligence*, referring to self-awareness of one's emotions, and awareness of others' emotions (e.g., Bakhti et al., 2022; Harris et al., 2022). Social-emotional intelligence includes more specific interpersonal characteristics such as empathy (actively learning, recognizing, and resonating emotionally with another's experience) (e.g., Halton & Cartwright, 2018) and cultural humility and competence (self-reflection and learning to better understand the perspectives of other cultures and experiences) (e.g., Schofield et al., 2022).

The available research on workforce interpersonal skills is limited for integrated primary prevention and a military context. Specific areas for research include the following interpersonally focused skills sets:

- Effectively delivering prevention activities (e.g., how to effectively communicate content as part of prevention programs, practices, and policies), including in ways that are culturally competent and trauma-informed,
- Communicating with military leadership about prevention in ways that are credible, distilled, and data-informed, including as part of virtually delivered communications, and
- Enhancing commitment and reducing reluctance of potential collaborators or leaders to embracing a primary prevention approach.
- Ensuring research-based policies and procedures (e.g., trainings, guidance) on implementing and supporting the above skill sets.

Focus Area 3: Identify Implementation Science Principles that Support Local Prevention Practice

The Department's PPoA 2.0 outlines a public health approach to prevention and the components of a well-functioning prevention system and process. Quality implementation is one of four primary prevention process elements in the PPoA. Research focused on quality implementation is critical in decreasing the prevalence of harmful behaviors by bridging the gap between research and practice. Implementation research aims to understand how to successfully bring the evidence-base into practice in real-world settings (McGinty et al., 2024; Proctor et al., 2011). Ultimately, implementation research aims to identify potential barriers to and facilitators of successful implementation of programs, practices, and policies.

An overall theme identified across the implementation science literature was the importance of cultivating climates conducive to the quality implementation of prevention activities. Factors

contributing to positive climates for implementation include leadership support[6] (Iverson et al., 2019; Luxton et al., 2020), and collaborative norms and processes (Kim, 2021). Leadership support contributes to a supportive climate (Iverson et al., 2019; Luxton et al., 2020) and has related benefits, such as increasing readiness to adopt evidence-based practices (e.g., Connolly, 2022). Leadership support can also be enhanced over time as part of improving the implementation climate (e.g., Curley et al., 2020). Government reports have underscored the importance of collaboration across offices with overlapping responsibilities (Mihm, 2014), emphasizing the need of breaking down silos to address shared risk and protective factors across harmful behaviors, as highlighted in the PPoA 2.0 (Department of Defense, 2022). Collaborative approaches facilitate integration, inclusiveness, and shared goals while reducing role confusion and conflict (Markey et al., 2021). Collaboration also helps to facilitate shared accountability as part of a data-informed implementation planning process (e.g., Dall'ora et al., 2020; Taylor et al., 2015).

Another overarching theme identified in the literature was on tailoring programs, practices, and policies in diverse contexts with diverse populations. Program tailoring enhances participant engagement and the perceived acceptability of the intervention (e.g., Woodward et al., 2022, 2023a, 2023b) along with increased alignment with local needs. Strategies for enhancing adaptation include the use of implementation planning processes (e.g., an implementation mapping approach to ensure alignment between program selection and the implementation context) (Watson et al., 2022) as well as participating in implementation support (e.g., communities of practice, training, technical assistance) as part of effective program tailoring (Strompolis et al., 2022).

The following gaps were identified for this focus area that can support integrated primary prevention across the Department: First, more research is needed on best practices within a military context for effective collaboration. Collaboration may be centered around implementing shared or complementary activities such as implementing key elements of integrated prevention and addressing shared risk and protective factors as described in DoD Instruction 6400.09, "DoD Policy on Integrated Primary Prevention of Self-Directed Harm and Prohibited Abuse or Harm" (Department of Defense, 2020). Second, research is needed on best practices for communicating leadership support for integrated prevention across the chain of command. Third, while current literature addresses the importance of quality adaptations across local settings, additional research is needed on how to best tailor *comprehensive* prevention approaches to diverse settings and populations while still achieving the learning objectives. Comprehensive approaches involve a combination of programs, practices, and policies across the social ecology. While specific programs, practices, and policies may have criteria for assessing implementation fidelity, it is often less clear as to how to define and assess fidelity of comprehensive approaches. Finally, more research is needed to identify and define processes for continuous improvement (e.g., when short-term outcomes are not getting accomplished or to address implementation challenges), as well as guidance for when and how to *de*-implement practices that may have limited success, and incorporating best practices for prevention sustainability planning at multiple levels within the military context.

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[6] The fact that leadership is reflected in another column of the research agenda framework highlights the centrality of leadership support, the relationship of leadership support to the prevention workforce, and the interactivity of multiple elements in the framework.

Conclusion

Three research focus areas are outlined for FY25. First, research is needed on pre-military risk and protective factors and how these factors are linked with harmful behaviors during military service. Second, identifying interpersonal characteristics of prevention personnel that enhance work performance is needed to inform the implementation and credentialing of the IPPW. Finally, identifying implementation science principles that support local prevention practice provides direction for an enhanced prevention process.

In accordance with the NDAA FY23, Section 547, the Department will ensure that research and findings from the research agenda are regularly incorporated, as appropriate, within the activities of the IPPW, such as through guidance and continuing education. DoD is taking additional steps, including the development of a Clearinghouse for Primary Prevention Research and Evaluation, to institutionalize the dissemination of research results where appropriate to ensure cohesion and increase the visibility of research across the Department to eliminate redundant research and promote unity of effort.

Glossary

G.1. Acronyms

Acronym	Meaning
ACEs	Adverse Childhood Experiences
CDC	Centers for Disease Control and Prevention
DoD	Department of Defense
DoDI	Department of Defense Instruction
DVP	Division of Violence Prevention
FY	Fiscal Year
IRC-SAM	Independent Review Commission on Sexual Assault in the Military
NDAA	National Defense Authorization Act
NGB	National Guard Bureau
OCCWI	Office of Command Climate and Well-Being Integration
OPA	Office of People Analytics
PACEs	Protective and Compensatory Experiences
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
VPC	Violence Prevention Cell

G.2. Definitions

Bullying: Defined in DoDI 1020.03.

Child Abuse: Defined in DoDI 6400.01.

Continuous Evaluation: Routinely analyzing information and data to determine if prevention activities are changing the factors they were designed to address. This includes evaluation of activities and program outputs as well as evaluation of program outcomes.

Domestic Abuse: Defined in DoDI 6400.06.

Evaluation: The use of systematic methods to collect, analyze and use information to inform implementation of a policy, program, practice, or processes.

Evidence-Based: Effective policies, programs, practices, or processes that are evidence-based are found to be effective based on research evidence, reflecting significant expertise and investment.

Harassment (Civilian): Defined in DoDI 1020.04.

Harassment (Service member): Defined in DoDI 1020.03.

Harmful Behaviors: Self-directed harm and prohibited abuse and harm, including suicide and sexual assault, harassment, retaliation, domestic abuse, and child abuse and neglect.

Hazing: Defined in DoDI 1020.03.

Integrated Primary Prevention: Defined in DoDI 6400.09.

Military Community: Defined in DoDI 6400.09.

Practice: Discrete behavior or action contributing to prevention.

Prevalence: Defined in DoDI 6400.09.

Prevention Activities: Defined in DoDI 6400.09.

Prevention Process: Empirically validated procedures that promote effective planning, implementation, and evaluation of prevention activities.

Primary Prevention: Defined in DoDI 6400.09.

Protective Factors: Defined in DoDI 6400.09.

Research-Based Prevention Policies, Programs, and Practices: Defined in DoDI 6400.09.

Risk Factors: Defined in DoDI 6400.09.

Selected Primary Prevention: Primary prevention efforts will be selected to reduce harm by addressing the needs of groups identified to be of high risk.

Sexual Assault: Defined in DoDI 6495.02, Volume 1.

Social Drivers of Health: Conditions in the environments in which people are born, live, learn, work, play, and worship that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

Social Ecological Model: Describes the interplay between individual, relationship, community, and societal level factors that increase risk or protect people against harmful behaviors.

Suicide: Defined in DoDI 6490.16.

Appendix A: Summary of Gap Analyses and Literature Review for FY25 Focus Areas

Focus Area 1: Assess frequency and type of pre-military risk or protective factors

Introduction

Pre-military experiences and characteristics can serve as risk or protective factors for perpetrating or experiencing harmful behaviors during military service. An understanding of these factors is informative for primary prevention with subgroups at increased risk for being affected by harmful behaviors (Bernecker et al., 2018; Kessler et al., 2013; Rosellini, 2017).

After reviewing pre-military demographics, this review addresses ACEs, including the association between ACEs and joining the military, as well as the association between ACEs and experiencing or perpetrating future harmful behaviors while in the military. This review also addresses other pre-military factors that contribute to harmful behaviors during military service. It closes with a summary of gaps in the literature to inform the FY25 research agenda.

Methods

A literature review was conducted by the University of Iowa Injury Prevention Research Center team. The Center first developed a list of search terms (e.g., pre-military and risk factors). Search terms were used in PubMed to pull relevant peer-reviewed articles within the United States (2013-2024). Upon initially identifying 232 articles, the three-member research team identified the most applicable and valid sources. Each of the 232 abstracts were reviewed by at least two researchers during a blinded review process. Articles that received the required two votes of inclusion underwent a full review and analysis by the team. Sixty-eight articles were included in the full review.

Pre-Military Demographics

According to the Council on Foreign Relations data pulled in 2020, most individuals were coming into Service as middle-income civilians (Council on Foreign Relations, 2020). In 2022, the average age of enlistment for entry level Service members was 23 years old (Department of Defense, n.d.). Men were represented at a significantly higher rate than women in the U.S. pre-military class (Council on Foreign Relations, 2020). However, among minority populations, more recruits were women than men (Council on Foreign Relations, 2020). The White recruit was overrepresented from the civilian percentage in three service branches: Army, Marine Corps, and Coast Guard. The Navy and Air Force were proportional for race. When compared to the percentage of women in the civilian workforce, the female military recruit was over-represented in at least one racial subgroup within the five service branches (Army: Black women, Navy: Black women, Marine Corps: Hispanic women, Air Force: Black women, and Coast Guard: White women).

The ratio of enlisted recruits 18-24 years of age compared to civilians of the same age was higher in some states and showed overrepresentation in seven states, independent of race: Alaska, Alabama, Florida, Georgia, Hawaii, South Carolina, and Virginia (Council on Foreign Relations, 2020). This suggests that recruits were more likely to come from the above states, which have their own regional outcomes (e.g., education, mental health, ACEs, poverty). The

12 most underrepresented states and regions in the military include Iowa, Massachusetts, Minnesota, New Jersey, New York, North Carolina, North Dakota, Rhode Island, South Dakota, Utah, Vermont, and Washington D.C. (Council on Foreign Relation, 2020).

Relationship between ACEs and Entering the Military
ACEs refer to potentially traumatic experiences during the first 17 years of life, including experiencing abuse, or neglect; witnessing harmful behaviors in the home or community; having a family member attempt or die by suicide; and experiencing family dysfunction and instability (Centers for Disease Control and Prevention (CDC), 2019). Experiencing multiple ACEs can impact physical health, mental health, social and educational attainment, and other life domains (e.g., Hein et al., 2020; Merrick et al., 2018).

One study compared the ACEs scores of volunteer military veterans to veterans drafted in the prior military era and found that volunteer era veterans reported more ACEs than the draft veterans, with nearly 25% experiencing four or more ACEs (Hein et al., 2020), which suggests a link between voluntary self-selection into the military and pre-military experience of multiple ACEs. Pre-military men and women are more likely than civilians to report higher numbers of ACEs and report more frequent exposure to each of the 11 ACEs (Blosnich et al., 2014). Women who enter military training are more likely than civilian women of similar ages to have childhood exposure to sexual assault, domestic violence, physical abuse, and emotional abuse. Some women in the military have described their decision to enter the military as an escape from intimate partner violence, sexual assault, and domestic violence within their home (Dichter et al., 2018).

Relationship between Pre-Military Experiences and Harmful Behaviors in the Military

ACEs. In addition to above, ACEs are related to the occurrence of harmful behaviors while in the military. The Recruit Assessment Program—a retrospective cohort study examining the link between pre-military experiences and subsequent sexual misconduct—identified pre-service factors, including family history and childhood abuse, associated with sexual misconduct in a large sample of new Marines (LeardMann et al., 2022). Additionally, maltreatment in childhood is linked with an increased risk of self-harm in U.S. Army Service members (Campbell-Sills et al., 2018; Stein et al., 2018). Additional research suggests that ACEs may interact with present-day factors, such as command climate, crowded living conditions, and combat exposure, in contributing to the risk of harmful behaviors in the military (e.g., Doucette et al., 2023; Murdoch et al., 2019; Wang et al., 2015).

Education. Lower education attainment is associated with increased occurrence of harmful behaviors (e.g., harassment) during early years of military service, as well as positive drug screens (Rosellini et al., 2017). In addition, surveys of active-duty soldiers found that having a high school education or less indicated a higher risk for suicidality (Ahmed et al., 2023; Chu et al., 2020).

Gender. Women experience higher rates of harmful behaviors than men both pre-military as well as upon joining the military (Ditcher et al., 2018; Iverson et al., 2024). In the New Soldier Study—in which soldiers were surveyed just prior to Basic Combat Training on their previous experiences and personal characteristics as part of a larger, multi-component study of

contributing factors to harmful behaviors (Army STARRS)—men with pre-military risk factors such as stressful environments or lack of supportive social networks were more likely to perpetrate harm and abuse early in their Service careers (Bernecker et al., 2018; Campbell-Sills et al., 2018; Rosellini et al., 2017). In the Millennium Cohort Study, male active-duty members accounted for roughly three fourths of all suicide attempts (LeardMann, 2021).

Other pre-military factors include mental health and substance misuse, personality characteristics, and religiosity. Substance use disorders, anxiety disorders, chronic stress (e.g., health, finances), and family history of mental illness serve as risk factors associated with harm and abuse towards others (Rosellini et al., 2017). Pre-military protective factors that contribute to overall resilience for new military recruits and those at pre-deployment include tolerance to stress, general positive orientation or outlook, social resources, emotional and behavioral inhibition, working memory, cognitive flexibility, and attention (Campbell-Sills et al., 2018; Liu et al., 2023). The military accession process assesses many of these risk and protective factors that are specific to the experiences of military personnel. In addition, among active military personnel, high religiosity reported at the beginning of service is predictive of higher rates of sexual assault perpetration (Rosellini et al., 2017), although the potential mechanisms are unclear. However, religious attendance in civilian youth is associated with decreased likelihood for all harmful behaviors (Holliday et al., 2014; Salas-Wright et al., 2014).

Gaps in Literature
To inform primary prevention activities, particularly for subgroups at increased risk, continued research is needed on the link between pre-military risk and protective factors and harmful behaviors during military service, including the interaction with present-day factors such as command climate. Information on the role of PACEs in the military population is scarce (Lamson et al., 2020). PACEs focus on childhood experiences that are supportive and social such as having a trustworthy adult around, having friends, and participating in sports and religious groups (Lamson et al., 2020). Research is additionally needed on how other factors from civilian research are applicable to the military environment, including past experiences of perpetrating harmful behaviors, community norms around masculinity, and acceptability of violence towards women (Holliday et al., 2018). Additional research is also needed on the role of emotional intelligence (i.e., recognizing the emotional needs of others and regulating one's own emotions), given previous civilian research demonstrating emotional intelligence as a protective factor for perpetrating interpersonal harm (e.g., Sianko et al., 2019).

Another area for future research is on the role of pre-military social drivers of health in protecting against future harmful behaviors during military service. Social drivers of health are the conditions of the environment and demographic factors that affect a wide range of health, functioning, and quality-of-life outcomes and risks (Department of Health and Human Services, n.d.). Lastly, research is needed on factors that buffer Service members from the adverse effects of ACEs they may have experienced (e.g., engaging in healthy and meaningful relationships).

Focus Area 2: Identify Interpersonal Characteristics of Prevention Personnel that Enhance Work Performance

Introduction

The Department's IPPW works with leaders to build healthy climates and create environments free from abuse and harm. Key skillsets of the IPPW are related to engaging the military community, empowering leaders with data and research, implementing prevention activities, and sustaining progress over time. The IPPW requires interpersonal skills as part of working effectively with collaborators and in communicating with leadership.

More broadly, interpersonal characteristics are a critical part of workforce readiness as cited by other federal agencies (e.g., Department of Labor, 2017; Substance Abuse and Mental Health Services Administration (SAMHSA), 2021). Interpersonal characteristics are widely applicable in prevention (SAMHSA, 2021), but these characteristics are often implicit. The purpose of this review is to take stock of the evidence base for interpersonal skills in the prevention workforce or in related fields, and to identify gaps that can be addressed via future DoD research.

Methods

A literature review was conducted by the University of Iowa Injury Prevention Research Center team. The Center first developed a list of search terms (e.g., interpersonal characteristics and public health). Search terms were used in PubMed to pull relevant peer-reviewed articles within the United States (2013-2024). Upon initially identifying 331 articles, the three-member research team identified the most applicable and valid sources. Each of the 331 abstracts were reviewed by at least two researchers during a blinded review process. Articles that received the required two votes of inclusion underwent a full review and analysis by the team. Forty-nine articles were included in the full review.

Findings

Most studies on interpersonal characteristics relied on interviews or surveys with current professionals in the field to report skills they utilize most and those they most need when working with others. Most research to date on interpersonal characteristics was in a healthcare context. This review highlights the following three interpersonal characteristics that were most frequently identified in the literature review: communication, collaboration, and an empowerment orientation.

Communication. Communicating prevention goals clearly and convincingly and discussing prevention options are vital to effective prevention programming. The ability to communicate with quality (e.g., clearly, concisely, persuasively) needs to be more formally addressed as part of training requirements in prevention (e.g., Furunes et al., 2018). From the perspective of healthcare practitioners in interviews (i.e., nurses, and health managers), increased communications (including staff-to-staff and staff-to-patient) helped to improve patient outcomes (Sastrawn et al., 2019). Additional surveys and interviews conducted with health prevention personnel found that effective communication is essential to patients' perception of quality-of-care (del Carmen Gimenez-Espert & Prado-Gasco, 2018). Ingredients for successful communication involve listening to an individual's concerns and priorities, followed by providing information, discussing options for programs and practices, verifying understanding, and beginning a collaborative planning process (del Carmen Gimenez-Espert & Prado-Gasco, 2018).

Collaboration. Collaboration is a cornerstone of integrated primary prevention and the prevention workforce requires associated interpersonal skills. The most frequently mentioned interpersonal skill in reviewed literature was collaboration with internal and external entities (Harrell, 2019). As part of collaboration, team-oriented actions were important, such as sharing knowledge and resources versus members working in siloed specialties (Furunes et al., 2018). Establishing trust and respect with individuals and organizations or agencies was also addressed as key features of collaboration (Clay-Williams et al., 2015; Kassam & Marcellus, 2022). A systematic meta-review found that improving collaboration requires combined efforts of organizations, teams, as well as individuals (Wei et al., 2022). In their study on healthcare personnel, Markey and his colleagues (2021) found that collaborative approaches facilitate integration, inclusiveness, and shared goals while reducing role confusion and conflict. Collaboration emphasizes inclusivity, prioritizing representativeness of the broader population, especially those with lived experience (Brockie et al., 2023; Harmon et al., 2020; Roberson, 2016). Successful collaboration entails taking precautions against historical trauma (including systemic and personal traumas) that collaborators may be carrying with them into the work (Kassam & Marcellus, 2022). Collaboration also helps to facilitate shared accountability as part of a data-informed implementation planning process (e.g., Dall'ora et al., 2020; Taylor et al., 2015).

Empowerment Orientation. An important role of the integrated primary prevention workforce is to increase collaborators' or leaders' genuine support for integrated primary prevention. A related theme in the literature was an interpersonal competency on empowerment or advancing others' capacities. A systematic review of interpersonal skills for healthcare workers found that building self-efficacy, and self-determination in patients and communities served emerged as an essential theme in staff commitment and performance (Vanbelleghen et al., 2022). Delivering feedback, using data to drive decision-making, and providing resources to support team decisions and actions feeds into this theme (Clay-Williams et al., 2015). Another aspect of an empowerment orientation is increasing motivation for change (e.g., moving towards a primary prevention approach), with an emphasis on internal motivation (Rantung et al., 2022).

Several articles also addressed *social-emotional intelligence,* referring to self-awareness of one's emotions, and awareness of others' emotions (e.g., Bakhti et al., 2022; Harris et al., 2022). Social-emotional intelligence includes more specific interpersonal characteristics such as empathy (actively learning, recognizing, and resonating emotionally with another's experience) (e.g., Halton & Cartwright, 2018) and cultural humility and competence (self-reflection and learning to better understand the perspectives of other cultures and experiences) (e.g., Schofield et al., 2022).

Gaps in Literature

The available research on workforce interpersonal skills is underdeveloped for integrated primary prevention and a military context. More specific areas of focus for future research include the following interpersonally focused skills sets:

- Effectively delivering prevention activities (e.g., how to effectively communicate content as part of prevention programs, practices, and policies), including in ways that are culturally competent and trauma-informed,
- Communicating with military leadership about prevention in ways that are credible, distilled, and data informed, including as part of virtually delivered communications, and

- Enhancing commitment and reducing reluctance of potential collaborators or leaders to embracing a primary prevention approach.
- Ensuring research-based policies and procedures (e.g., trainings, guidance) on implementing and supporting the above skill sets.

Focus Area 3: Identify Implementation Science Principles that Support Local Prevention Practice

Introduction
Quality implementation is one of four primary prevention process elements in the Department's PPoA 2.0. Specific aspects of quality implementation that are relevant to the military environment, as cited in PPoA 2.0, include effective delivery (e.g., strategies to increase engagement), maintaining fidelity (e.g., adapting trainings to a specific context or population while retaining effective elements), and the influence of supportive climates (e.g., leadership and organizational support). Research focused on quality implementation is critical in decreasing the prevalence of harmful behaviors by addressing the gap between research and practice. Implementation research aims to understand how to successfully bring the evidence base into practice in real-world settings (McGinty et al., 2024; Proctor et al., 2011). Ultimately, implementation research aims to identify potential barriers to and facilitators of successful implementation of programs, practices, and policies.

The aim of this review is to provide a high-level review of recent literature on implementation science as well as an analysis of gaps in the literature to identify implementation science principles that can support local prevention practice in the military environment.

Methods
A search of relevant literature pertaining to implementation science was conducted in January 2024 using PubMed and Web of Science databases. The search parameters included peer-reviewed journal articles that were published between January 1, 2014 and December 31, 2023); and excluded book reviews, unpublished literature, and articles published in a language other than English. After the initial literature search results were obtained and duplicative references were removed across databases (n = 370), abstracts were downloaded and reviewed by one team member to determine if the article fit the scope of the review. A second team member reviewed all abstracts to confirm their inclusion in the review. Upon reviewer agreement of included abstracts from the initial literature search, research articles were downloaded for full review (n = 199). In the final step of the review process, articles were divided and summarized by two team members with the goals of synthesizing themes across all articles, analyzing potential gaps, and identifying future directions for research. Upon further full review of articles, additional articles were excluded from the final thematic synthesis and gap analysis due to being outside the scope of the review, resulting in a total of n = 54 articles included in the final thematic synthesis and gap analysis.

Synthesis of Themes from Literature Review
Findings of this review were consistent with key elements highlighted in implementation science frameworks, including the Consolidated Framework for Implementation Research (Damschroder et al., 2009), RE-AIM (Glasgow et al., 1999), the Expert Recommendations for Implementing Change (ERIC) project (Powell et al., 2015), and the Quality Implementation Framework

(Meyers et al., 2012). Overarching themes emerging from this review include positive climate for implementation, and effective program adaptation.

Positive Climate for Implementation. An overall theme identified across implementation science literature was on creating or maintaining climates that are facilitative of quality implementation of prevention activities. Factors contributing to positive climates for implementation included leadership support, and collaborative norms and processes. *Leadership support* contributes to a supportive climate (Iverson et al., 2019; Luxton et al., 2020) and has related benefits such as increasing readiness to adopt evidence-based practices (e.g., Connolly, 2022). The fact that leadership is reflected in another column of the research agenda framework highlights the centrality of leadership support, the relationship of leadership support to the prevention workforce, and the interactivity of multiple elements in the framework. Leadership support can either serve as a facilitator (as is the case with sufficient leadership support) or as a barrier (as is the case with insufficient leadership support) to implementation quality (Landes et al., 2017). Examples of leadership support include a formal commitment (e.g., through letters of support or memoranda of agreement) (Geraci et al., 2022), as well as ongoing leadership support and commitment throughout the implementation process (Hoyt & Repke, 2019). Leadership support can be enhanced over time as part of improving the implementation climate. For example, Curley et al. (2020) discussed the development of a leadership tool for suicide prevention efforts in the U.S. Army, the Behavioral Health Readiness and Suicide Risk Reduction Review (R4). Findings of a qualitative study indicated that this tool led to increased leadership engagement and helped to address related institutional barriers (e.g., providing space and time for addressing the prevention needs of higher risk soldiers).

Collaborative norms and processes are also part of a supportive climate for implementation, particularly in an integrated primary prevention context. The importance of collaboration across offices with overlapping work has been highlighted in several government reports (Mihm, 2014). Collaboration occurs on a continuum, including cooperating (e.g., information-sharing), coordinating (e.g., sharing resources), and collaborating (implementing shared means and/or goals) (Osher et al., 2019). Overcoming of silos is crucial for addressing risk and protective factors shared across harmful behaviors (Department of Defense, 2022). Approaches for enhancing collaboration can increase readiness for program planning and quality implementation. For example, social network interventions have shown promise in enhancing necessary linkages between implementation collaborators to prevent multiple harmful behaviors (e.g., Kim, 2021). A sociogram, which is a graphical display of potential and actual linkages between members of a group, can serve as a vehicle for enhancing collaboration, including among prevention collaborators (Popelier, 2018).

Effective Program Adaptation. Another overarching theme identified across implementation science literature was on tailoring programs, practices, and policies in diverse contexts and populations, which is addressed as part of the IPPW's development of comprehensive integrated primary prevention plans. Program tailoring enhances participant engagement and the perceived acceptability of the intervention (e.g., Woodward et al., 2022, 2023a, 2023b) along with increased alignment with local needs. Strategies for enhancing adaptation include the use of implementation planning processes, as well as participating in implementation support. *Implementation planning processes* typically include a step devoted to tailoring and adaptation. For example, in an implementation mapping approach, an implementation team

engages in a stepwise process including conducting a needs and resource assessment, which helps to ensure alignment between program selection and the implementation context (Watson et al., 2022). In addition, the Violence Prevention in Practice (Barranco et al., 2022) online tool was developed from technical packages from CDC to evaluate comprehensive prevention strategies using a five-step process that balances research-based evidence with community needs. Two articles also focused on the Getting to Outcomes Prevention Evaluation Framework (Acosta et al., 2022; Chinman et al., 2023), a comprehensive approach to planning, evaluating, and sustaining prevention activities across organizations. This framework, which includes a step on assessing contextual "fit", has been tested in military and civilian settings and has demonstrated improvements in organizational prevention capacity and in increased provider competence in tailoring programs to military contexts.

Articles also highlighted the importance of participating in *implementation support* (e.g., communities of practice, training, technical assistance) as part of effective program tailoring. Smigelsky et al. (2024) outlined "dynamic diffusion networks" (DDNs), which are comprised of professionals committed to accelerating the knowledge base and best practices related to implementation. One of the roles of DDNs is to improve understanding of contextual factors that influence the quality of implementation and how to make related adaptations in ways that are intentional and logic model based. Another promising approach, instituted by the Veterans Health Administration, was the use of Learning Health Systems (LHS) to support suicide prevention efforts. LHS includes a focus on learning about how to best adapt modifiable components of interventions while preserving fidelity and conducting rapid-cycle studies to assess the adaptations (Kilbourne et al., 2021). Implementation support also includes training and technical assistance, both of which can help to ensure quality of implementation across local settings when scaling up a broader prevention initiative (Strompolis et al., 2020). Technical assistance is an important follow-on after training to help participants apply and transfer what they learned in their day-to-day work responsibilities (Scott et al., 2022).

Gaps in Literature
The literature review highlighted several gaps in implementation science principles and strategies that can support integrated primary prevention across the Department. First, more research is needed on best practices within a military context for effective collaboration. Collaboration may be centered around implementing shared or complementary activities such as implementing key elements of integrated prevention and addressing shared risk and protective factors as described in DoD Instruction 6400.09, "DoD Policy on Integrated Primary Prevention of Self-Directed Harm and Prohibited Abuse or Harm" (Department of Defense, 2020). Second, research is needed on best practices for communicating leadership support for integrated prevention across the chain of command. Third, while current literature addresses the importance of quality adaptations across local settings, additional research is needed on how to best tailor *comprehensive* prevention approaches to diverse settings and populations while still achieving the learning objectives. While specific programs, practices, and policies may have criteria for assessing implementation fidelity, it is less clear as to how to both define and assess fidelity of comprehensive approaches involving a combination of programs, practices, and policies across the social ecology. Finally, more research is needed to identify and define processes for continuous improvement (e.g., when short-term outcomes are not getting accomplished or to address implementation challenges), as well as guidance for when

and how to *de*-implement practices that may have limited success, and on best practices for prevention sustainability planning at multiple levels within the military context.

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