

Supplementary Table 1. First version of statements and results of first round of voting

Statement	Utility Mean (SD) Range	Feasibility Mean (SD) Range
1. Ensure education provided to athletes/service members is engaging, interactive, and allows for discussion.	8.37 (0.96) 6-9	6.68 (1.34) 4-9
2. Provide education to athletes/service members addressing the benefits of early concussion symptom disclosure.	8.32 (1.83) 1-9	7.89 (1.88) 1-9
3. Provide education to athletes/service members addressing short-term outcomes of early concussion symptom disclosure	7.32 (2.06) 3-9	7.37 (1.74) 4-9
4. Provide education to athletes/service members addressing long-term outcomes of early concussion symptom disclosure	7.21 (2.10) 3-9	6.63 (2.56) 1-9
5. Provide education to athletes/service members addressing occupation-related outcomes of early concussion symptom disclosure	7.58 (1.64) 3-9	7.26 (2.10) 1-9
6. Provide education to athletes/service members addressing athletic-related outcomes of early concussion symptom disclosure	8.11 (1.37) 5-9	7.99 (1.44) 5-9
7. Provide education to athletes/service members addressing academic outcomes of early concussion symptom disclosure	7.84 (1.64) 3-9	7.47 (2.01) 1-9
8. Provide education to athletes/service members addressing social outcomes of early concussion symptom disclosure	6.26 (2.21) 3-9	5.74 (2.38) 1-9
9. Provide education to athletes/service members that addresses concussion-related misperceptions	7.42 (1.50) 3-9	7.37 (1.57) 3-9
10. Provide education to athletes/service members that is focused on the reporting decision	6.28 (2.65) 1-9	6.11 (2.93) 1-9
11. Provide education to athletes/service members aimed at increasing their skill and confidence in concussion symptom disclosure	7.06 (2.48) 1-9	6.17 (2.60) 2-9
12. Provide education to athletes aimed at shaping team norms supportive of early concussion symptom disclosure.	7.32 (2.16) 3-9	6.58 (2.09) 2-9
13. Provide evidence-based concussion education to coaches aimed at shaping team environments supportive of early concussion symptom disclosure.	7.53 (1.98) 1-9	6.26 (2.31) 1-9
14. Provide evidence-based concussion education to sports medicine staff aimed at supporting athletes in early concussion symptom disclosure.	7.05 (2.80) 1-9	7.42 (2.06) 3-9
15. Provide evidence-based concussion education to parents/guardians aimed at supporting athletes in early concussion symptom disclosure	7.84 (1.34) 5-9	5.68 (2.11) 2-9
16. Identify if there are additional key stakeholders who are in frequent contact with athletes/service members following a concussion. Provide them with evidence-based concussion education aimed at supporting symptom disclosure.	7.00 (2.29) 1-9	5.32 (2.06) 1-9
17. Integrate messaging about the importance of complete concussion symptom disclosure through the recovery process.	7.26 (2.13) 3-9	7.16 (2.03) 3-9
18. Work with stakeholders (including athletes/service members) to select evidence-based approach(es) to concussion education that meet local needs	7.26 (2.00) 3-9	5.53 (2.41) 2-9
19. Regardless of the educational approach(es) chosen, provide practical information to all stakeholders that is locally tailored, addressing institutional resources and policies.	7.89 (1.24) 4-9	6.37 (2.09) 3-9
20. Messaging related to early concussion symptom disclosure should be shared more than once annually and from multiple sources.	7.68 (2.40) 1-9	6.95 (2.50) 1-9
21. Choose, communicate, and embody institutional values that prioritize safety over athletic performance.	7.32 (2.21) 2-9	5.89 (2.35) 1-9
22. Work with stakeholders (including athletes/service members) to identify and address organizational barriers to early concussion symptom disclosure	7.63 (1.21) 6-9	5.79 (1.69) 2-9
23. Design and integrate messages, incentives and rituals into team environments that reinforce the autonomous motivation of athletes/service members	6.72 (1.96) 1-9	4.61 (1.72) 1-8
24. Evaluate concussion education for its local effectiveness in changing athlete/service member disclosure behavior using rigorous methods.	7.26 (2.23) 2-9	5.83 (2.18) 2-9

Supplementary Table 2. Revised statements and results of second round of voting

Statement	Utility Mean (SD) Range	Feasibility Mean (SD) Range
1. Actively collaborate with organizational stakeholders (including athletes/service members) to identify and address organizational barriers to concussion symptom disclosure	8.20 (0.70) 7-9	7.45 (0.94) 6-9
2. Actively collaborate with organizational stakeholders (including athletes/service members) to select approaches to athlete/service member education about concussion that are engaging, interactive, and that foster discussion	8.63 (0.60) 7-9	7.89 (0.99) 6-9
3. Provide athletes/service members with education addressing the short-term outcomes of early concussion symptom disclosure (e.g., academic, athletic, occupational)	8.85 (0.37) 8-9	8.55 (0.60) 7-9
4. Provide athletes/service members with education addressing the long-term outcomes of concussion	8.00 (2.03) 2-9	7.85 (1.76) 2-9
5. Provide athletes/service members with education that acknowledges the potential reporting dilemma (e.g., tradeoffs, concerns about what might happen next, etc.)	8.35 (1.09) 5-9	8.00 (1.08) 5-9
6. Provide athletes/service members with opportunities to practice concussion symptom disclosure procedures	8.20 (1.01) 6-9	6.95 (1.88) 3-9
7. Share evidence-based strategies (e.g., bystander education, team discussion) with medical staff, coaches and athletes/service members that shape team norms supporting concussion symptom disclosure	8.32 (0.67) 7-9	7.63 (1.07) 6-9
8. Provide opportunities for athletes/service members and their coaches/leaders to discuss and establish team/group values that are supportive of concussion disclosure	8.25 (0.79) 7-9	6.95 (1.39) 4-9
9. Provide athletes/service members with education addressing the role they can play in encouraging peers to disclose possible concussion symptoms	8.75 (0.55) 7-9	8.15 (0.81) 7-9
10. Provide coaches with evidence-based concussion education that is aimed at supporting athletes in concussion symptom disclosure.	8.90 (0.31) 8-9	8.35 (0.99) 7-9
11. Provide sports medicine staff with information about how to engage coaches in supporting athletes in concussion symptom disclosure	8.26 (1.24) 6-9	6.95 (2.22) 1-9
12. Make information about how to support athlete/service member concussion disclosure available to parents/guardians	8.35 (1.09) 6-9	8.10 (1.21) 5-9
13. Make information about how to support athlete/service member concussion disclosure available to other key site-specific stakeholders.	8.45 (0.94) 5-9	7.80 (1.40) 3-9
14. Provide athletes/service members and other key stakeholders with site specific information regarding institutional concussion resources, policies and processes	8.25 (1.33) 5-9	7.85 (1.90) 2-9
15. Share messaging about concussion symptom disclosure on an ongoing basis throughout the year and in a variety of ways	8.63 (0.68) 7-9	7.84 (1.21) 5-9
16. Communicate and document institutional values that emphasize safety and its role in athletic performance.	8.00 (1.56) 4-9	7.42 (2.01) 1-9
17. Provide education to coaches about the benefits of coaching practices that foster intrinsic sport participation motivation	6.50 (2.80) 1-9	5.65 (2.78) 1-9
18. Evaluate the effectiveness of concussion education approach(es) selected in changing athlete/service member concussion symptom disclosure behavior.	8.68 (0.48) 8-9	7.11 (1.88) 3-8
19. Provide education to coaches and sports medicine staff on how to structure team incentives to support athlete/service member willingness to disclose concussion symptoms	8.05 (1.05) 6-9	6.75 (1.62) 3-9

Supplementary Table 3. Revised statements and results of third round of voting

Statement	Utility Mean (SD) Range	Feasibility Mean (SD) Range
1. Provide athletes/service members with education addressing what is known about possible long-term manifestations of concussion and head injury	8.06 (1.53) 4-9	7.56 (1.79) 3-9
2. Provide opportunity for team members and coaches/leaders to discuss and establish team values that are supportive of concussion symptom disclosure	8.63 (0.50) 8-9	7.38 (1.36) 5-9
3. Communicate in a deliberate manner institutional values that emphasize safety and its importance in athletic performance.	8.44 (0.73) 7-9	7.88 (1.02) 6-9
4. Provide education to coaches about the benefits of coaching practices that foster intrinsic sport participation motivation and its relationship to concussion symptom disclosure	7.06 (2.14) 4-9	5.69 (2.09) 1-9

Supplementary Table 4. Statements included in final recommendations and scores from voting

Statement	Utility Mean (SD) Range	Feasibility Mean (SD) Range
1. Provide athletes/service members with education that addresses the potential dilemma individuals face when deciding to disclose a concussion (e.g., tradeoffs, concerns about what might happen next, knowing how to report, etc.).	8.35 (1.09) 5-9	8.00 (1.08) 5-9
2. Provide athletes/service members with education that addresses short-term benefits of early concussion symptom disclosure (e.g., athletic, academic, occupational).	8.85 (0.37) 8-9	8.55 (0.60) 7-9
3. Provide athletes/service members with education that addresses what is known about possible long-term manifestations of concussion and head injury.	8.06 (1.53) 4-9	7.56 (1.79) 3-9
4. Provide athletes/service members with education that addresses concussion-related misperceptions (e.g., knowledge gaps).	7.42 (1.50) 3-9	7.37 (1.57) 3-9
5. Provide athletes/service members with education that addresses site-specific information regarding institutional concussion resources and policies (e.g., steps to take if an individual suspects they have a concussion).	8.25 (1.33) 5-9	7.85 (1.90) 2-9
6. Actively collaborate with organizational stakeholders (including coaches/commanders, primary health care providers, athletes/service members, military chain of command) to select concussion education approaches that are engaging, interactive, and that foster discussion.	8.63 (0.60) 7-9	7.89 (0.99) 6-9
7. Share messaging about concussion symptom disclosure on a regular basis and in a variety of ways (e.g., formal education, informal conversation, posters).	8.63 (0.68) 7-9	7.84 (1.21) 5-9
8. Integrate messaging about the importance of complete concussion symptom disclosure throughout the recovery process.	7.26 (2.13) 3-9	7.16 (2.03) 3-9
9. Provide coaches/leaders in the military chain of command with evidence-based concussion education that is aimed at supporting athletes/service members in concussion symptom disclosure.	8.90 (0.31) 8-9	8.35 (0.99) 7-9
10. Provide sports medicine/front line medical staff with strategies about how to engage coaches/leaders in the military chain of command in supporting athletes/service members in concussion symptom disclosure.	8.26 (1.24) 6-9	6.95 (2.22) 1-9
11. Provide easily accessible information to parents/guardians about how to support athlete/service member concussion symptom disclosure.	8.35 (1.09) 6-9	8.10 (1.21) 5-9
12. Provide easily accessible information to other key site-specific stakeholders (e.g., student-life administrators, faculty athletic representatives, leadership, chain of command) about how to support athlete/service member concussion symptom disclosure.	8.45 (0.94) 5-9	7.80 (1.40) 3-9
13. Provide athletes/service members with education that addresses the role they can play in encouraging peers to disclose possible concussion symptoms (e.g., share evidence-based bystander education programming).	8.75 (0.55) 7-9	8.15 (0.81) 7-9
14. Provide opportunity for team members and coaches/leaders in the military chain of command to discuss and establish team values that are supportive of concussion symptom disclosure.	8.63 (0.50) 8-9	7.38 (1.36) 5-9
15. Actively collaborate with organizational stakeholders (including coaches/leaders in the military chain of command, primary health care providers, athletes/service members) to identify and address organizational barriers to concussion symptom disclosure.	8.20 (0.70) 7-9	7.45 (0.94) 6-9
16. Evaluate the effectiveness of institutionally selected concussion education approaches in changing athlete/service member concussion symptom disclosure behavior.	8.68 (0.48) 8-9	7.11 (1.88) 3-8
17. Communicate in a deliberate manner institutional values that emphasize safety and its importance in athletic performance/military readiness.	8.44 (0.73) 7-9	7.88 (1.02) 6-9

Supplementary Table 5. Mind Matters Task Force Participants

Name	Position and Institution	Position
Steve Corman, PhD	Arizona State University, Tempe AZ	Professor, Hugh Downs School of Human Communication
Bradley Adame, PhD	Arizona State University, Tempe AZ	Associated Professor, Human Downs School of Human Communication
J. Douglas Coatsworth, PhD	Colorado State University, Fort Collins CO	Professor and Director of the Applied Developmental Science Program
Christopher D'Lauro, PhD	Air Force Academy, CO	Associate Professor of Psychology
Alissa Wicklund, PhD	Orthopedic & Spine Center of the Rockies, Fort Collins, CO	Neuropsychologist
Heidi Wayment, PhD	Northern Arizona University, Flagstaff AZ	Professor, Social and Health Psychology
Debbie Craig	Northern Arizona University, Flagstaff AZ	Professor and Program Director of Athletic Training Education
Ann Huffman, PhD	Northern Arizona University, Flagstaff AZ	Professor, Industrial-Organizational Psychology
Julianne Schmidt, PhD, ATC	University of Georgia, Athens GA	Associate Professor, Department of Kinesiology (Exercise Science, Athletic Training)
Michelle Weber Rawlins, PhD	A.T Still University, Mesa AZ	Post-Doctoral Scholar
Johna Register-Mihalik, PhD	University of North Carolina, Chapel Hill NC	Assistant Professor, Department of Exercise and Sport Science
Melissa Kay, PhD, ATC	Southern Mississippi University, Hattiesburg MS	Assistant Professor of Athletic Training
Jeff Milroy, DrPH, MPH	University of North Carolina, Greensboro NC	Assistant Professor, Public Health Education
Dee Warmath, PhD	University of Georgia, Athens GA	Assistant Professor, Consumer Economics
Andrew Winterstein ATC, PhD	University of Wisconsin, Madison WI	Clinical Professor, Department of Kinesiology
William Ernst, PhD	Chestnut Hill College, Philadelphia PA	Associate Professor of Psychology
Meredith Kneavel, PhD	LaSalle University, Philadelphia PA	Associate Dean, School of Nursing and Health Sciences
Steven Broglio, PhD	University of Michigan, Ann Arbor MI	Professor of Athletic Training
Mike McCrea, PhD	Medical College of Wisconsin, Milwaukee WI	Professor of Neurosurgery and Neurology
Tom McAllister, MD	Indiana University, Indianapolis IN	Professor and Chairman, Indiana University School of Medicine, Department of Psychiatry
Robert Bowlsby	Big 12 Conference	Conference Commissioner
Nicki Moore, PhD	Colgate University, Hamilton NY	Director of Athletics
Paul Pasquina, MD	Uniformed Services University of the Health Sciences, Bethesda MD	Professor and Department Chair, Physical Medicine and Rehabilitation
Christian Ellsworth	University of Northern Iowa, Cedar Fall IA	Student-Athlete
Julie Ruppert	Northeast Conference	Conference Commissioner
R.T. Floyd	University of West Alabama, Livingston AL	Athletics Health Care Administrator
Mariah Wysocki	Bloomfield College, Bloomfield NJ	Student-Athlete
Terry Ruppert	Wilmington College, Wilmington OH	Vice President of Athletics Administration/Director of Athletics
Scott McGuinness	Washington and Jefferson College, Washington PA	Director of Athletics
Charles Brown, PhD	Pennsylvania State University, Behrend, PA	Faculty Athletics Representative
NJ Kim	Emory University, Atlanta GA	Student-Athlete
Carol Mills	Indiana University-Purdue University, Indianapolis IN	Student-Athlete
Ross Silverman, JD MPH	Indiana University-Purdue University, Indianapolis IN	Professor, Fairbanks School of Public Health

NCAA and Department of Defense Staff¹

Elizabeth Fudge, Office of the Assistant Secretary of Defense for Health Affairs, Health Readiness Policy & Oversight Executive Officer, Lead Program Analyst

Dallas Hack, MD MPH, NCAA Sport Science Institute, Contractor

Kathy Lee, MS, United States Defense Health Agency, Defense and Veterans Brain Injury Center Deputy Director, Defense and Veterans Brain Injury Center

Kimberly McCoy-Stafford, U.S. Army Office of the Surgeon General

MAJ Cecilia Najera, PhD, U.S. Army Office of the Surgeon General, TBI Program Office

Therese West, DNP MSN, Casualty Care Research Program, Defense Health Program Manager

Theresa Lattimore, MSN NP-C, U.S. Army Office of the Surgeon General Director, Army Traumatic Brain Injury Program

Brian Hainline, MD, NCAA Sport Science Institute, NCAA Chief Medical Officer

Lydia Bell, PhD, NCAA Research, Associate Director

Eric Hartung, EdD, NCAA Research, Associate Director

Emily Kroshus ScD MPH, University of Washington & NCAA Contractor

Keke Liu, MA, NCAA Research, Associate Director

John Parsons PhD ATC, NCAA Sport Science Institute, Managing Director

Brian Burnsed, NCAA Communications, Associate Director

LaGwyn Durden, ATC, NCAA Sport Science Institute, Director

Jessica Kerr, JD, NCAA Office of Legal Affairs

Paul Roetert, PhD, NCAA Sport Science Institute, Director

Jessica Wagner, MPH RN, NCAA Sport Science Institute, Associate Director

¹Participated in Task Force meetings but were not eligible to vote on consensus statements