A Public Health Approach to Trauma:
Implications for Science, Practice, Policy, and the Role of ISTSS

Trauma and Public Health Task Force

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Creation and Purpose of the Trauma and Public Health Task Force

In November 2013, the Trauma and Public Health Task Force was appointed by the President of the International Society for Traumatic Stress Studies (ISTSS). This Task Force was established by the Board of Directors to further two key ISTSS strategies: to establish traumatic stress as a major public health issue for research, practice, and policy at all levels (e.g., from community clinics to national and international governing agencies), and to frame and promote traumatic stress as a public health issue to colleagues, policymakers, and the general public. It was an outgrowth of the Strategic Plan that the Board recently adopted. In particular, the formation of the Task Force addressed a particular component of the Strategic Plan (Goal #3, Societal Impact) that calls for ISTSS to contribute to the health and resilience of people and communities in the face of traumatic events by: promoting public awareness and informing public policy.

The Task Force was charged to identify opportunities to collaborate with other organizations with similar interests related to trauma and public health, and as a longer term goal, to develop concrete proposals for how ISTSS can accomplish these goals. In developing these proposals, the Task Force was encouraged to consider resources available (including those of other entities that can be brought to bear, staff resources, volunteer involvement, etc.), and resources needed to accomplish these proposals.

The Task Force met by telephone over the course of a year and divided the work into three components:

1) A white paper to establish the relationship between trauma and public health and create a foundation from which recommendations and Board actions could be taken both immediately and over time;

2) Recommendations for consideration by the ISTSS Board. These recommendations are based on the white paper and recognize feasibility and immediacy. These recommendations are merely a starting point and future ISTSS leaders may consider additional actions in support of promoting trauma as a public health issue; and

3) A set of case examples to exemplify public health approaches to addressing trauma will also be developed over time to accompany the white paper and help readers understand the potential broad reach of a public health approach to trauma.

The pages that follow include the white paper and the recommendations of the Task Force.

1. Public Health Impact of Trauma

Exposure to trauma is pervasive in societies worldwide. Trauma refers to events that involve actual or threatened risk of death, serious injury, or sexual violation.[1] Common traumatic events include interpersonal violence (e.g., physical abuse by caregivers, intimate partner violence, assault), rape, sexual assault, life-threatening accidents or injuries, natural disasters, civil conflict, and terrorist attacks. War-related traumatic events are also commonly experienced, both by combatants and civilians in regions experiencing armed conflict. Population-based data from high-income countries (HIC) and low and middle-income countries (LMIC) indicates that a majority of individuals will experience a traumatic event at some point in their lives, despite cross-national variation in the prevalence of specific types of traumatic events.[2-8] Trauma exposure is common not only in adults, but also in children and adolescents around the world. For example, U.S. population-based data suggest that a majority of youths have experienced at least one traumatic event before their eighteenth birthday.[9]

Traumatic events do not only occur at random, but can be influenced by individual characteristics, peer group relationships, community characteristics, and socio-political factors. At the individual level, the likelihood of experiencing particular types of trauma varies by sex, age, race/ethnicity, and sexual orientation. Approximately one in every two to three women will be the victim of gender-based violence—including rape, sexual assault, intimate partner violence, or stalking—in their lifetime.[10,11] Although these types of traumatic events are experienced less frequently by men, certain forms of interpersonal violence are much more common among men, including physical assault, being threatened with a weapon, and combat exposure.[2] Young children are at particularly high risk for experiencing certain types of traumatic events, including physical abuse by a caregiver, witnessing domestic violence, and kidnapping.[9] Approximately half of all children who will experience these types of trauma in their lifetime have been exposed before the age of eight years.[9] Adolescence is the developmental period of highest risk for exposure to many types of traumatic life experiences, including many forms of interpersonal violence (e.g., physical assault by non-family members), rape, sexual assault, accidents, injuries, and traumatic social network events.[3,12] Trauma exposure may vary as a function of minority race/ethnicity, for example, in the U.S. most forms of interpersonal violence are more commonly experienced among blacks than whites.[4] Whether a similar pattern of elevated risk for violence exposure occurs among racial/ethnic minorities in other countries is unknown. Finally, emerging evidence suggests that sexual minorities—including individuals who identify as lesbian, gay, bisexual, or transgender (LGBT)—are more likely to experience victimization including child maltreatment, bullying, physical assault, and sexual victimization over the lifespan as compared to heterosexual populations.[8,13-15] The prevalence of sexual assault is particularly elevated among gay/bisexual men and lesbian/bisexual women as compared to heterosexuals.[15]

Although individual characteristics are important in shaping risk for trauma exposure, social and contextual factors also influence the likelihood of occurrence of trauma across geographic locations. Certain types of traumas (e.g., violence) are more likely to occur in certain locations (e.g., metropolitan areas and conflict zones).[9,16] Moreover, different communities will have diverse trauma recovery trajectories based on their pre-trauma community characteristics.[17] A range of studies in the U.S. in the aftermath of terrorism and disasters (e.g., 9/11 terrorist attacks,

Hurricanes Andrew and Katarina), in Israel and Palestine, and among Iraqi asylum seekers in Europe suggest that resource loss and threats related to safety and attachment are among the strongest predictors of mental health problems following these types of wide-scale traumatic events.[18] Thus, it is important not to overlook community characteristics in considering both trauma exposure and outcome. Understanding the role of social and contextual factors in shaping health and development is a central goal of a public health approach.

The public health impact of trauma exposure is staggering for both communities and individuals. Catastrophic events such as natural and man-made disasters and terrorist attacks can have devastating effects on the social fabric of society and on communities, not only involving injuries and loss of life, but also related to property destruction and damage to infrastructure. This aftermath, coupled with high levels of resulting migration, can create prolonged disruption in the delivery of social services and dissolution of social support networks. These community-level consequences can persist for lengthy periods of time, often fundamentally changing the physical and social landscape of a community (e.g., the Asian tsunamis, earthquakes in China and Haiti, Hurricane Katrina on the Gulf Coast of the U.S., floods in Bangladesh and Pakistan, or the terrorist attacks in Bagdad, Kabul, Kampala, London, Madrid, and New York City).[19-22] These events may have a disproportionate impact on communities in LMIC. Collective violence is ten times more common in LMIC versus HIC; for example, 88% of the 34 armed conflicts recorded in 2007 took place in lower-income settings, the majority in Asia (41%) and Africa (35%).[23,24] LMIC also carry the brunt of the migration problem caused by disasters and violence. In 2011, almost 45.2 million people worldwide were newly displaced due to conflict or persecution, with 28.8 million internally displaced persons, and 15.4 million refugees – representing the largest number of refugees in over a decade.[25] The vast majority of these refugees are from LMIC.

At the individual-level, many traumatic events, including interpersonal violence and accidents, result in serious injuries for victims. Trauma exposure is also associated with increased risk for chronic physical health conditions[26] and a wide range of mental disorders, including anxiety disorders, major depression, and substance abuse.[27-30] Posttraumatic stress disorder (PTSD) is a common and debilitating mental disorder that can occur following exposure to a traumatic event and is characterized by four symptom clusters: re-experiencing, avoidance, hyper-arousal, and negative alterations in cognition and mood.[1] PTSD is distinct from other common mental disorders in that trauma exposure is a prerequisite for diagnosis. Estimated lifetime prevalence of PTSD in the U.S. is 6.7%,[31] and other HIC have similar lifetime prevalence (e.g., 7.2% in Australia and 9.2% in Canada).[32-35] The limited data from LMIC suggests even higher lifetime prevalence of PTSD.[36,37] On the other hand, there are many expressions of traumatic stress beyond PTSD. Both cultural concepts of distress, idioms of distress and cultural syndromes may be a prominent part of the trauma response in certain cultures, and may show comorbidity with PTSD and depression.[38-40] Greater research is needed to understand traumatic stress reactions around the globe to inform theories that incorporate culture and context into models of cognition, emotion, and neurobiological responses to trauma.

Exposure to trauma appears to be particularly detrimental when it occurs in childhood or adolescence. Trauma exposure in youths disrupts numerous aspects of development in cognitive, emotional, and social domains, leading to adverse mental health and educational outcomes.[41,42]

Children exposed to trauma exhibit interference in cognitive development, including lower IQ and deficits in executive functioning.[41,43,44] These disruptions in cognitive development are further observable in long-term structural and functional changes in brain regions associated with learning and memory.[45] Children who have experienced trauma also exhibit longitudinal changes in emotional functioning, including heightened attention to anger and other potential threats, difficulties regulating emotion, elevated emotional and physiological reactions to stress, and heightened neural responses to threatening stimuli in regions involved in emotional processing.[46-50] Child trauma exposure predicts life-long problems in social relationships, including difficulty trusting others, poor quality relationships, and elevated risk of re-victimization.[51-53] Finally, mental health problems are common in children and adolescents exposed to trauma, with about 8-10% developing PTSD and an even higher proportion developing other types of psychopathology, including behavior problems, anxiety disorders, major depression, and substance use disorders.[9,29,54]

PTSD, which is inextricably linked with trauma, is in itself a profound public health burden. Individuals who develop PTSD following trauma experience impaired role functioning and reduced life course opportunities, including poor educational attainment, unemployment, and marital instability.[55] In a study of global disability, PTSD was associated with high levels of disability, and in developing countries disability associated with PTSD was higher than most common medical conditions except for headaches and chronic pain.[56]

The course of PTSD is variable. Although about 50-60% of individuals with the disorder recover within two years, a substantial minority develop PTSD that becomes chronic and lasts for many years.[2,3] Also of note, PTSD is associated with elevated risk for developing other types of mental health problems, including anxiety disorders, major depression, and substance dependence.[55,57,58] Suicidal thoughts and behaviors are alarmingly common in individuals with PTSD, and population-based data indicates that suicidal behaviors are more than six times as likely among individuals with PTSD compared to those without the disorder.[55] Recent evidence suggests that individuals who develop PTSD are also at elevated risk of developing a variety of chronic physical health problems,[59-61] including incident cardiovascular disease.[62,63] Elevated rates of adverse physical outcomes among people with PTSD are observed even after controlling for health behaviors, such as smoking, alcohol use, and exercise.

The consequences of PTSD extend far beyond the individual who develops the disorder after experiencing trauma. Disruptions in family relationships are common following onset of PTSD, in addition to heightened psychological distress in partners and family members of people with PTSD.[64] Parental PTSD can have numerous negative implications for children. Parental PTSD is associated with mental health problems, poor psychosocial adjustment, and academic difficulties in offspring.[64] Intergenerational transmission of trauma exposure and PTSD have been documented in numerous studies, indicating that parental PTSD is associated with greater exposure to trauma and heightened risk of PTSD in offspring.[65-67] The economic costs of PTSD are staggering, with work impairment associated with the disorder estimated at 3.6 days per month per person with PTSD. The annual lost productivity due to PTSD is valued at over $3 billion dollars in the U.S. alone.[55]

Because the development of PTSD is conditional on trauma exposure, PTSD may be the most preventable of mental disorders. We have the unique opportunity to reduce the population burden of PTSD both by preventing trauma exposure and by delivering timely interventions in the wake of trauma to those most at risk. The following sections explore these opportunities based on a public health approach.

2. Public Health Model of Traumatic Stress

2.1. Overview of Public Health Models

A number of public health models have been developed to provide a framework for understanding public health problems and promoting solutions. The field of public health has witnessed several major shifts in the predominant paradigms used to study the distribution of disease in populations.[68] Public health generally evolved from hygiene and tropical medicine, and as such during the early part of the 20th century focused on identifying microbial causes of infectious diseases and controlling them with vaccines or medication.

Following World War II, the focus of public health shifted to a risk factor approach based on the notion that combinations of factors acted in concert to shape the probability of illness, particularly of chronic diseases including mental disorders.[68] Public health focused on identifying individual-level factors associated with increased probability of disease (e.g., cigarette smoking and lung cancer) and developed strategies to control risk factors through lifestyle (e.g., smoking cessation) and environmental change (e.g., reduce passive smoke exposure).[68] Over the past two decades, a modern era of public health has emerged that considers risk factors operating at multiple levels, including macrosocial, individual, and biological, and seeks to identify the mechanisms through which risk factors ultimately increase the probability of disease.[69-71] Current approaches to public health are explicitly multi-level and concerned with identifying *causes* of health states,[70,71] with the ultimate goal of preventing disease onset.

With public health problems that have more of a behavioral component, models have de-emphasized infectious agents and expanded to add wider system impacts, such as family, school, and cultural influences (e.g., Brofenbrenner's Ecological Systems Theory[72] which has been adapted in the U.S. Centers for Disease Control and Prevention Social-Ecological Model, see Figure 1).[73] In the case of lung cancer, for example, an explanatory public health model starts with the causal relationship between tobacco and lung cancer and other illnesses, but also recognizes the role of relationships (especially peer influences on young people) and the expanded role of the environment to include both the immediate community (e.g., schools and workplaces) as well as society (e.g., norms which may be reflected in policies and laws concerning age to purchase tobacco and limits to smoking in public places).

In the case of trauma related problems, the important components are the trauma itself, those who are exposed to trauma, their relationships, the variety of environmental factors playing a role in shaping the likelihood of both trauma exposure and outcome, and societal factors, attitudes, and characteristics that influence trauma likelihood and intervention. Interpersonal relationships play a key role for some forms of trauma, community characteristics (e.g., safety of neighborhoods) are important for others, and societal norms reflect the tolerance of a society for

things such as interpersonal violence. This type of multi-level model provides a public health framework for developing an array of strategies aimed at preventing the occurrence and sequelae of trauma (e.g., Figure 1).

Figure 1.

The Social-Ecological Model, A Framework for Prevention from the U.S. Centers for Disease Control and Prevention.[73]

Numerous points of intervention are possible when considering traumatic stress, including the individual experiencing trauma, key relationships that may be related to trauma occurrence, the community in which the trauma occurs, and societal factors that may influence tolerance (or intolerance) for certain trauma-related factors (e.g., societal attitudes concerning violence toward lesbian, gay, bisexual, and transgender persons; or poverty due to a disaster aggravating distress in a family). Each of these areas suggests targets for prevention. Furthermore, prevention can be targeted at multiple levels. The classic prevention framework includes three levels: primary, secondary, and tertiary.[74] The aim of primary prevention is to prevent the actual occurrence of the disease or illness. The purpose of secondary prevention is to intervene early in the disease process for cure or optimal outcomes. Tertiary prevention is aimed at preventing the disability that accompanies an illness or disease. Each of these levels of prevention can be implemented at different system levels, including society-at-large, the community, the family, and the individual. Subsequently, risk and protective factors can be translated into multi-sectoral, multi-modal, and multi-level preventive interventions involving the economy, governance, diplomacy, the military, human rights, agriculture, health, and education.[75,76]

Different types of programs and approaches are associated with each level of prevention. A more recent conceptualization of prevention is organized according to the targeted population.[77,78] Universal preventive interventions are targeted at the general public or a whole population group that has not been identified on the basis of individual risk. Selective preventive interventions are targeted at subgroups or individuals whose risk of developing a problem (e.g. a psychosocial problem or a mental disorder) is significantly higher than average. The risk may be imminent, or it may be a lifetime risk: a distinction that is important when we think for example of the

accumulation of risk factors during humanitarian emergencies. Indicated preventive interventions are targeted at high-risk individuals who are identified as having minimal but detectable signs or symptoms foreshadowing a problem or a disorder. Because this stops short of treatment, the Institute of Medicine has expanded this model to include both treatment and maintenance, and this is known as the "Continuum of Care Protractor," thereby encompassing the full continuum of health care.[78] Here we incorporate aspects of both models (see Figure 2).

Figure 2.

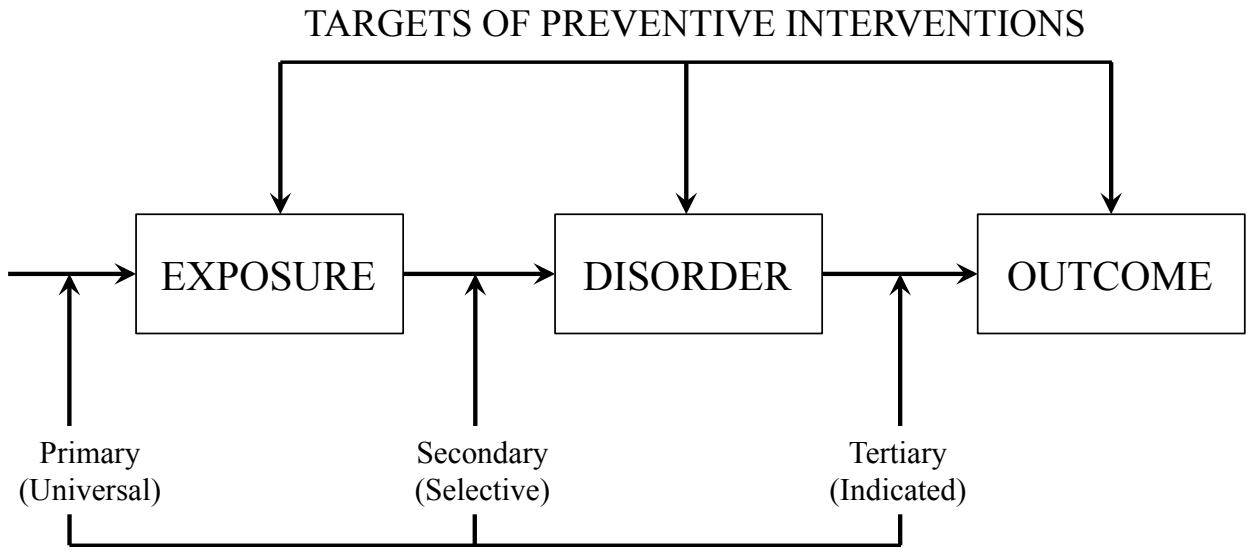

Figure 2 depicts the targets of the three major classes of preventive interventions: primary, secondary, and tertiary. Adapted from Costello and Angold (1995).[79]

2.2. Primary Prevention of Trauma

From a public health perspective, preventing exposure to trauma in the first place is an obvious strategy, and many existing programs are designed to reduce trauma exposure. Primary prevention can be targeted to all levels of the social-ecological model from the individual level to the societal level.

A number of strategies are aimed at reducing the likelihood of trauma exposure in individuals. On college campuses, alcohol education programs are implemented to reduce high risk drinking which in turn may reduce exposure to traumatic events like physical assaults, accidents, or motor vehicle accidents.[80] At the relationship level, there are programs to strengthen the caring abilities and sensitivity of family caregivers as well as programs to prevent bullying in schools. At the community level, examples include lighting parking lots, streets, and campuses to prevent crime or improve efforts at increasing community policing. Even design of highways to reduce traffic accidents can be seen as an environmental response to reduce motor vehicle accidents and thus

reduce trauma occurrence. Other examples include neighborhood watch programs to prevent crime or community members preventing sexual assaults in refugee camps. At the societal level, some traumas can be prevented by promoting appropriate social norms. For example, policy changes in Australia have been successful at reducing firearm deaths and injuries.[81] Because alcohol consumption is price sensitive, especially for those under 21 years old in the U.S., changes in pricing of alcohol have been proposed as a means of reducing hazardous drinking, and thereby reducing alcohol-related traumatic events, such as family violence and crimes.[82-84] Many targets are not thought of as trauma prevention even though they serve as such, for example, increased screening at airports and at major events (e.g., World Cup), which are designed to prevent mass attacks that expose large numbers of people to trauma. Even seemingly unrelated approaches such as improving education levels, eradicating poverty, and decreasing social inequality may have positive primary prevention outcomes because these factors are important predictors of health, mental health, and human rights.[85,86] In fact, there is evidence that subjective social status is inversely associated with the occurrence of mental disorders, even after adjustment for objective social status, and PTSD has the strongest relationship with subjective social status other than drug abuse.[87]

From some of these examples, it is clear that efforts aimed at preventing trauma may have multiple beneficial outcomes. In the case of reducing the number of motor vehicle accidents, physical trauma and death are the primary targets, and psychological sequelae are the secondary. The same is true of the United Nations' (UN) efforts to decrease political violence, to install war tribunals and prosecute perpetrators, and to stimulate efforts to have international laws which condemn human rights violations or ban landmines, or similarly when governments attempt to prevent mass terrorist attacks or the re-emergence of violence. Disaster preparedness training can also have a preventive effect, such as setting quality standards for buildings in earthquake- or landslide-prone areas or river beds, setting higher quality standards for the construction of nuclear power stations, providing better access to land in areas with landslides, creating better alarm systems for floods, cyclones or hurricanes, and providing sheltered areas and evacuation plans in regions that are hit by volcano eruptions or typhoons.[88]

2.3. Secondary Prevention of Trauma-Related Sequelae

Secondary prevention can also be directed at various levels. Early intervention with those who have been trauma exposed and are symptomatic focuses on individuals within various settings and environments (rather than focusing on environments per se). There is evidence that for those exposed to trauma and disasters, ongoing non-traumatic stressors are also predictive of PTSD onset and course (as well as for other problems, such as alcohol use disorders).[89,90] Thus, minimization of these ongoing stressors may prevent the onset of PTSD and other psychiatric disorders. In fact, humanitarian relief operations aimed at large populations often focus on shelter, food, water, sanitation, and physical disease control. Voluntary repatriation of refugees may relieve the plight of forced dislocation and cultural bereavement. Other examples include psychological support for earthquake survivors or for students in schools where violence has occurred. At the relationship level, examples include shelters for survivors of domestic violence, interventions aimed at couples where domestic violence has already occurred, and foster care for children who are abused or neglected and unable to live with their parents or another relative. Some secondary prevention approaches focus on communities. For example, community

support, as in the case of vigils for survivors and their families following disasters or mass violence, is often seen as helpful. Safety considerations, such as providing food and shelter and reuniting families post-disaster, may go a long way to reassure disaster survivors and prevent the development of mental health symptoms. Such support and intervention does not occur successfully in poorly organized or disenfranchised communities; thus, efforts to develop and promote strong proactive communities and build capacity to respond to disasters can also be seen as secondary prevention.[91] From the societal point of view, policies that promote early intervention are also helpful as secondary prevention measures.

Evidence suggests that individual-level secondary prevention interventions aimed at bolstering resilience and reducing the likelihood of adverse effects following trauma are effective. For example, the military in several countries have developed pre-deployment programs to prevent PTSD,[92] and there is a recent trial showing that in some cases PTSD can be prevented following trauma exposure in children.[93]

2.4. Tertiary Prevention of Trauma-Related Disability

With the aim of preventing the progression of disease and disability, most tertiary prevention programs are squarely in the clinical arena and are seen as part of standard treatment for PTSD or other trauma-related mental health problems; however, there are some examples of societal level tertiary prevention. For example, in the international arena tertiary prevention may aim at peace-keeping and peace-enforcing troops, as well as peace agreements to prevent the reemergence of political violence. Lower rates of PTSD have been found in states that have legislated legal protections for lesbian, gay, bisexual, and transgendered individuals as compared to states that do not have protective legislation.[94] Similarly, promotion of reconciliation and mediation skills between groups on the community level may be seen as tertiary prevention.[88] On the family and personal level, most tertiary prevention programs aim at preventing the progression of disease and disability, and are seen as part of standard treatment for PTSD or other trauma-related mental health problems.

Recasting traumatic stress treatment as an approach to prevent the development of comorbidities (e.g., depression and substance use disorders) and to improve functioning (even if not eliminating symptoms entirely) may open the door for novel clinical approaches. For example, the use of service dogs may improve functioning and reduce disability by enabling someone with traumatic stress to enjoy greater societal participation – even if symptoms are not completely alleviated. At the relationship level, training foster parents of children with significant psychological problems resulting from trauma exposure may help to prevent the development of additional problems. As with secondary prevention, both community and societal support can also be helpful. They can help to establish service availability and to promote use of services by reducing stigma.

Additionally, it should be noted that trauma-informed care is based on public health concepts of prevention.[95] A trauma-informed perspective enhances the quality of care for trauma survivors. Specifically, such a perspective includes screening for trauma exposure; use of evidence-informed practices; availability of resources on trauma for providers, survivors, and their families; and continuity of care across service systems.[96] Much work remains ahead to ensure

that all aspects of the health care sector and other public sectors (e.g., education, justice, and welfare) are trauma-informed.

3. The Essential Role of Public Health Policies

Effective public policies can help to shape societal norms concerning public health issues. Ideally, policies are informed by an evidence base. As such, they play an important role in protecting people and communities from health threats around the world. Such policies have been critical in securing the ten great public health achievements of the 21st Century, including tobacco control, motor vehicle safety, and prevention and control of infectious diseases.[97] The development and implementation of sound and timely public policies are also essential in addressing trauma as a global public health concern. Specifically, such policies must focus on preventing traumatic events, when possible, providing early intervention services for survivor communities at risk of poor post-trauma outcomes, and reducing stigma. Additionally, it is important that policymakers recognize that PTSD is not exclusively a military-related phenomenon and that attention and support are needed for research and policies that address PTSD from all types of trauma.[98]

3.1. Public Policy Challenges in Traumatic Stress

While many countries have made strides in developing public policies aimed at preventing or intervening in the aftermath of trauma, much work remains around the world. There are currently several overarching mental health policy challenges facing communities and countries plagued by violence and trauma. Because trauma and mental health problems are inextricably linked, many trauma challenges are also mental health challenges. These include ensuring that mental health is included in the global public health agenda; enhancing global mental health and trauma research; developing and maintaining a sufficient global mental health workforce; improving equitable access to prevention and mental health services; supporting integrated and trauma-informed approaches to care; and reducing stigma and discrimination associated with trauma and mental health issues.

3.2. Global Mental Health Agenda

Many have noted that mental health issues (and thus trauma related issues) have largely been ignored as a priority in the global public health agenda.[99,100] For example, the UN Millennium Development Goals (MDGs) are a set of development targets agreed to by the international community with a target date of 2015. The eight MDGs focus on eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria and other diseases; ensuring environmental sustainability; and creating a global partnership for development.[100] Recently, priorities in the UN have changed in the direction of noncommunicable diseases (NCDs).[101] The main focus of the recent World Health Organization (WHO) Global Action Plan for the Prevention and Control of NCDs is on four specific types – cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes, and on four shared behavioral risk factors – tobacco use, unhealthy diet, physical inactivity, and harmful use of alcohol. Among the other conditions of public health importance that are explicitly mentioned in

the plan are mental disorders, violence, and injuries. This indicates that mental health is gaining impetus alongside other leading public health policy priorities. However, until full parity exists for mental health concerns, alongside more traditional public health challenges, the issue of preventing trauma and intervening early in its aftermath will fail to receive sufficient global attention as a policy priority.

3.3. Gaps in International Trauma Research

Although mental health and trauma are important public health issues, significant limitations and disparities exist in the global evidence base. According to Patel[102] much work remains ahead to understand the nature and treatment of mental disorders. Greater investment is needed in global mental health research in high, middle, and low income countries. Further, cross-national population-based initiatives, such as the World Mental Health Surveys, can play an important role in understanding the prevalence, impact, and health systems' response to mental disorders.[102] More research is also needed to comprehend the broad physical health, mental health, and developmental impacts of childhood polyvictimization.[103] Additional priorities for improving global mental health research include a focus on adequately training researchers around the world, ensuring a bi-directional flow of information in the global mental health research community, and promoting global research partnerships and collaborations.[104]

Data suggest that the global trauma research literature faces similar challenges to those demonstrated in the broader mental health evidence base. A systematic review of recent peer-reviewed papers on traumatic stress revealed that the majority of publications focused on populations from HIC, were authored by researchers in HIC, and were in English.[105] These data reveal significant gaps in the trauma research field that need to be addressed at the individual, institutional, organizational, and national levels. Recommendations for building global trauma research capacity include: providing quality training and distance learning opportunities, supporting international fellowships, promoting memberships in collaborative research teams, improving accessibility of the scientific literature, and encouraging researchers to share their knowledge with policymakers and key stakeholders.[105] Leaders in the trauma field have also identified an important role for organizations like ISTSS in supporting international exchange through no-cost memberships for those in low income countries, regular meetings outside of the U.S., and the development of initiatives for international collaboration.[106] These are all initiatives that are currently underway within ISTSS.

3.4. Global Mental Health Workforce Development

Unlike other service sectors that rely heavily on equipment or supplies, mental health services are primarily dependent on human resources.[107] Many have identified shortcomings of the current global mental health workforce, including limitations on the number and types of workers trained in mental health care.[99] Some suggest that poor working conditions and low status associated with the mental health professions account for the workforce development challenges in some counties.[99]

According to the WHO,[107] an immediate and sizeable investment is needed to scale up a well-trained global mental health workforce. Evidence suggests that inaction in the area of workforce

development will further treatment gaps that could result in increased disability, poorer economic productivity, and depletion of other government resources.[107] One of the workforce development-related strategies of the global mental health movement to address the mental health treatment gap is task sharing or task shifting in LMIC. Such task shifting involves the redistribution of tasks from highly qualified health workers to health workers with shorter training and fewer qualifications in order to make more efficient use of available human resources.[108] This strategy includes an important role for mental health professionals in training and supervising primary care workers. This strategy may also involve collaboration with healers, religious practitioners, and ritual leaders, as well as the training of non-specialist health workers to offer interventions for the care of mental, neurological, and substance-abuse disorders.[109]

While significant attention must continue to focus on developing the overall mental health workforce, specific efforts must ensure that the existing and future mental health workforce is adequately trained on issues related to prevention and early intervention of trauma.[110] Several important efforts are underway by leaders in the trauma field to develop trauma-focused competencies to help mental health professionals build foundational trauma knowledge and skills.[111-113] Clearly, these new developments around the globe have significant implications for the competencies that ISTSS aims to facilitate among its membership.

3.5. Access to and Inequities in Mental Health Care

In many countries, a wide gap exists between the need for mental health services and the availability of treatment.[107] There are a number of explanations for this gap, including a lack of human and financial resources dedicated to mental health. According to the WHO,[107] mental health is often a poorly funded priority. This is particularly challenging for LMIC, which are home to over 80% of the global population, but utilize less than 20% of the mental health resources.[114] The WHO World Mental Health Survey Consortium recently published comprehensive figures on the global burden of mental disease and the efforts to provide services worldwide.[115] These data indicate that on average LIC spend 0.5% of their health budget on mental health. For HIC this percentage is 5.1%. Further, LIC spend 73% of their mental health budget on residential care, and HIC 54%, despite many efforts to deinstitutionalize residential services. It is noteworthy that only 7% of patients in LIC receive follow-up community care as compared to 45% in HIC.[115] Similarly, 48% of the patients in LIC receive treatment for physical disorders as compared to 6% for psychiatric disorders. In HIC, 65% of the patients receive treatment for their physical disorder, while only 24% for their mental disorder. Worldwide there exists a troubling cycle of disadvantage, social exclusion, and mental disorders. The consequent treatment gap is a contravention of basic human rights, as more than 75% of those identified with serious anxiety, mood, impulse control, or substance use disorders in the World Mental Health surveys in LMIC received no care at all, despite substantial role disability.

Further, mental health resources are often inequitably distributed among countries, regions, and within communities. Such inequities can occur in access to care, use and outcomes of care, and by geographic region, race/ethnicity, gender, sexual orientation, and socioeconomic status.[116] For example, populations with low socioeconomic status have the highest need and poorest access to mental health care.[114] Evidence suggests that most mental health resources are located in or near large cities and many of these resources are heavily focused on institutional care rather than

community-based care.[99] In order to adequately address mental health and trauma focused prevention and early intervention, governments must invest more of their health budgets toward mental health and trauma-informed services and infrastructure and ensure equitable distribution of these resources, especially among those at greatest risk for trauma exposure and poorer post-trauma outcomes.

3.6. Integrated Traumatic Stress Care

Much attention around the world has focused on the benefits of integrating mental health care into primary care and other settings where people receive services.[104,116,117] Such integration of physical and mental health care is especially important for trauma exposed populations, as they often seek help in primary care rather than mental health settings.[118] While much of the global population is only seen in primary care, mental health issues (such as PTSD) often go undiagnosed in this setting.[119] Further, physical disease is often accompanied by psychological morbidity that is not always recognized by primary care providers.[117] For example, in an urban primary care setting in Cape Town, South Africa, nearly all patients had been exposed to trauma, and many met diagnostic criteria for PTSD, depression, and somatization disorder; however, no patients had been diagnosed with psychiatric disorders in primary care, and only 1% of patients were receiving any treatment for psychiatric disorders.[120] These findings suggest a need to train primary care professionals in the basics of mental and behavioral health as a critical public health measure.[117]

In addition, both mental health professionals and primary care providers should be considering the now overwhelming evidence that trauma exposure and PTSD have adverse effects on physical health.[121] PTSD treatments rarely address health-related alterations except for recent attention to PTSD-related substance use disorders. If PTSD adversely affects health behaviors such as diet and exercise, critical risk factors for many chronic diseases, this implies treatments for PTSD should address key health-related behaviors. Evidence that PTSD and other trauma-related mental health outcomes are associated with earlier mortality,[122] increased risk of cardiovascular disease,[62,123] and type 2 diabetes,[124] for example, suggests that at the very least, mental health professionals need to refer patients to primary care for screening and monitoring.

Many efforts are underway to integrate physical and mental health and provide trauma-informed training to health care providers, including in the Department of Veterans Affairs in the U.S. and a variety of European countries. This includes a policy of routine screening by health care providers for trauma exposure and resources to assist providers in addressing trauma and PTSD in primary care.[118] Similar practices and policies are underway in other systems around the world; however, integration of mental health and trauma-informed services remains the exception and not the rule in many communities.

Several authors suggest that a true public health approach requires mental health integration beyond primary care to include sectors such as education, justice, welfare, and labor through partnerships with government, non-governmental organizations, and the faith-based community.[125] While the mental health system may be considered as a hub, other sectors can play a critical role, such as the economic sector (e.g., supporting income generation among the poor), the social sector (e.g., serving as a safety net), the education sector (e.g., addressing the

needs of children and youth), the legal sector and women's organizations (e.g., addressing human rights violations and family violence), consumers (e.g., offering self-help resources), and insurance and other companies.

3.7. Stigma and Discrimination

Stigma associated with mental health issues, such as traumatic stress, can serve as a significant barrier to mental health treatment and positive outcomes. According to the WHO,[126] those with mental health conditions are among the most marginalized and vulnerable groups in society. They are often isolated from their communities and may face restrictions in exercising their political and civil rights. In addition, they can have difficulty accessing health care, social services, and educational and employment opportunities. Those living with mental health conditions have a greater likelihood of disability and premature death, as compared to the general population.[126]

Efforts to address stigma and discrimination related to mental health issues are underway in many parts of the world. Among the strategies used to address mental health stigma include social activism, public education, and contact with persons with mental illness. For example, in military conflicts in Africa and the Middle East, women who survive sexual violence are often marginalized. Using radio or television, or negotiating with elders and community leaders to provide education may help to prevent survivors from being ostracized. A recent meta-analysis of outcomes studies revealed that both education and contact had positive effects on reducing stigma for adults and adolescents with a mental illness.[127] Further, public health leaders suggest that continued efforts to support services and policies that combat stigma and promote the well-being of those with mental illness must focus on creating a culture of social inclusion, with attention on the resiliency and strengths of this community.[128] This focus may be particularly well suited to addressing mental health stigma among survivors of traumatic events, given the significant attention to issues of resiliency in the traumatic stress field.

4. The Role of ISTSS in Promoting Trauma as a Public Health Issue

The ISTSS Trauma and Public Health Task Force identified several overarching public policy challenges of relevance to addressing trauma as a global public health issue. As the premier society for the exchange of professional knowledge and expertise in the field of traumatic stress, ISTSS can play an important role in addressing these challenges. Below are examples of what ISTSS has already done to address these challenges as well as recommendations for what more ISTSS might do to address these concerns. Any consideration of these recommendations should take into account how ISTSS can add unique value, and the scope of ISTSS participation should be consistent with ISTSS resources.

1. **Promote the Inclusion of Trauma in the Global Public Health Agenda and Infuse a Public Health Perspective in ISTSS Activities**

    a. What ISTSS has already done to address this challenge:
        i. From 1993-2014, ISTSS participated in consultative status with the Economic and Social Council of the UN to engage in education and

advocacy on issues including human rights; violence, war and refugees; crime and justice; rights of women and children; health and mental health; emergency planning; and poverty and development concerns.

ii. In 2003, ISTSS leaders collaborated with several UN agencies to produce the edited book entitled *Trauma Interventions in War and Peace: Prevention, Practice, and Policy*.[129]

iii. In 2008, ISTSS co-sponsored an educational briefing in the U.S. House of Representatives on *Addressing the Mental Health Needs of Service Members, Veterans, and their Families: Innovative Strategies for Prevention, Treatment, and Recovery*.

iv. In 2011, ISTSS submitted written testimony to the U.S. House of Representatives Foreign Affairs Committee on the issue of sexual assault in the Peace Corps.

b. What more ISTSS might do to address this challenge:

i. Ask the Scientific Program Committee and Global Meetings Committee to include a public health focus or track of programing at the ISTSS Annual Meeting or the ISTSS Global Meetings outside of North America and reach out to professionals in public health and related disciplines to invite them to participate and attend.*

ii. Establish a committee focused on addressing the "societal impact" goal of the ISTSS strategic plan. Request that this committee develop specific criteria for vetting and determining ISTSS participation in key public health policy issues.*

iii. Share relevant resources, such as the Trauma and Public Health Task Force Report and the Global Collaboration on Child Abuse and Neglect resources, with key public health stakeholders and policymakers around the world (e.g., APHA, WHO).

iv. When appropriate, support efforts of and collaborate with ISTSS members who maintain relationships with key global public health stakeholders (e.g., WHO, UN, PAHO) on trauma and public health-related initiatives.*

v. Ask the committee focused on addressing the "societal impact" goal of the ISTSS strategic plan and the ISTSS Website Editor to work together to:

1. highlight/link to trauma relevant public health resources and information*, and
2. highlight efforts of ISTSS members to inform trauma and public health research, practice, and policy.*

2. Address Gaps in International Trauma and Public Health Research

a. What ISTSS has already done to address this challenge:

i. In 2000, the designated theme for the ISTSS Annual Meeting was "*Public Health Perspectives on Trauma Treatment and Research: A Continuum of Care from Primary Prevention to Clinical Services*".

ii. Several ISTSS Annual Meetings have included keynote addresses with a public health focus.
iii. The *Journal of Traumatic Stress* (*JTS*) has included select articles from a trauma and public health perspective.
iv. Since 2005, ISTSS included *JTS* in the World Health Organization HINARI Programme, which enables LMIC to gain access to one of the world's largest collections of biomedical and health literature.
v. At the 2014 ISTSS Annual Meeting, ISTSS hosted a "Paper in a Day" session to foster collaborations between young researchers from around the world.

b. What more ISTSS might do to address this challenge:
i. Work in collaboration with a peer reviewed journal to develop a special issue, or recurring highlighted articles, on trauma and public health.
ii. Implement a communications plan to educate funders regarding the need to incorporate public health approaches to trauma research.

3. Develop and Maintain a Trauma-Informed Global Public Health Workforce

a. What ISTSS has already done to address this challenge:
i. In 2000, ISTSS participated in the creation of the *Guidelines for International Training in Mental Health and Psychosocial Interventions for Trauma-Exposed Populations in Clinical and Community Settings*.[130]
ii. Since 2001, ISTSS has awarded 37 Travel Grants to support a limited number of trauma professionals from LMIC attending the ISTSS Annual Meeting.
iii. In 2005, ISTSS drafted and disseminated an official statement on torture and its impact, and the special roles and ethical obligations of health and social care professionals in responding to torture.
iv. ISTSS has offered a sliding scale rate based on country of origin for Annual Meeting registration fees since 2005 and for membership dues since 2006.
v. From 2007-2009, leaders and members of ISTSS participated in The European Network for Traumatic Stress Training and Practice (TENTS-TP) process.
vi. In 2008, ISTSS established a Global Meetings initiative to host regular ISTSS sponsored meetings outside of North America.
vii. In 2013, leaders and members of ISTSS participated in the New Haven Trauma Competency process.
viii. In 2014, ISTSS established a no-cost corresponding membership for those in low income countries (pilot currently underway in Africa).

b. What more ISTSS might do to address this challenge:
i. Ask the Scientific Program Committee to invite/develop Pre-Meeting Institutes at the Annual Meeting to build skills and knowledge on public health topics.*

ii. Ask the Distance Education Committee to work with trauma and public health experts to:
    1. develop webinars/online education content to help trauma researchers and clinicians understand a public health perspective and develop their skills in this area*, and
    2. review the content of the ISTSS Advanced Training in Traumatic Stress Certificate Program to ensure that it incorporates a public health perspective into the requirements.
iii. Expand the current ISTSS corresponding membership campaign in Africa to include specific outreach to public health professionals in Africa.*
iv. Seek funding to expand the Travel Grant program for the ISTSS Annual Meeting and invite participation of trauma professionals with public health relevant interests.
v. Implement a communications plan to outreach to educators regarding the need to incorporate public health approaches to trauma research, prevention, and intervention into curricula.*

4. Improve Equitable Access to Effective Integrated and Trauma-Informed Approaches to Care

a. What ISTSS has already done to address this challenge:
    i. In 2005, ISTSS developed the *ISTSS Treatment Guidelines*, presented in *Effective Treatments for PTSD, Second Edition,* to assist clinicians who provide treatment for adults, adolescents, and children with PTSD (currently being updated).
    ii. In 2005, ISTSS participated in the creation of the *ISTSS/RAND Guidelines on Mental Health Training of Primary Healthcare Providers for Trauma Exposed Populations in Conflict-Affected Countries*.
    iii. In 2011, ISTSS submitted a statement to the DSM-V Anxiety, Obsessive Compulsive (OC) Spectrum, Post-traumatic, and Dissociative Disorders Work Group to support the designation of an umbrella category of "Trauma and Stress-Related Disorders".
    iv. In 2012, ISTSS developed the *ISTSS Expert Consensus Treatment Guidelines for Complex PTSD in Adults*, to aid clinicians in making decisions about the treatment of individuals with Complex PTSD.
    i. The ISTSS website offers treatment resources, including treatment manuals, for acute stress disorder and PTSD, patient handouts, and links to high-quality web-based trainings in evidence-based practices.

b. What more ISTSS might do to address this challenge:
    i. Consider including or expanding specific content on integrated care that addresses a wider public health reach of treatment approaches in the revised *ISTSS Treatment Guidelines* and the next edition of *Effective Treatments for PTSD*.
    ii. Collaborate with key global stakeholders (e.g., APHA, WHO, professional associations) to develop brief, informative, and visually appealing

educational resources for diverse interdisciplinary audiences (e.g., health care providers, school personnel, criminal justice system, policymakers).*

iii. When appropriate, support the efforts of partner organizations to improve equitable access to prevention and mental health services.

5. Reduce Stigma and Discrimination Associated with Trauma and Mental Health Issues

a. What ISTSS has already done to address this challenge:
   i. From 2001-2006, ISTSS participated in the PTSD Alliance to provide educational resources to individuals diagnosed with PTSD and their loved ones; those at risk for developing PTSD; and medical, healthcare, and other frontline professionals.
   ii. In 2007, ISTSS developed the *Survivors Talk about Trauma video series*, which offers a personalized glimpse into the nature of trauma, how it affects us as individuals, and how treatment can reduce these effects.

b. What more ISTSS might do to address this challenge:
   i. When appropriate, support the efforts of partner organizations to reduce stigma and discrimination associated with trauma and mental health issues.

**Indicates that recommendation is relevant to addressing more than one public health policy challenge area.*

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ISTSS Trauma and Public Health Task Force Recommendations
2014

1. **Promote Inclusion of Trauma in Global Public Health Agenda and Infuse Public Health Perspective in ISTSS Activities**	2. **Address Gaps in International Trauma and Public Health Research**	3. **Develop and Maintain a Trauma-Informed Global Public Health Workforce**	4. **Improve Equitable Access to Integrated and Trauma-Informed Approaches to Care**	5. **Reduce Stigma and Discrimination Associated with Trauma and Mental Health Issues**
Ask the Scientific Program Committee and Global Meetings Committee to include a public health focus or track of programing at the ISTSS Annual Meeting or the ISTSS Global Meetings outside of North America and reach out to professionals in public health and related disciplines to invite them to participate and attend.*	Work in collaboration with a peer reviewed journal to develop a special issue, or recurring highlighted articles, on trauma and public health.	Ask the Scientific Program Committee to invite/develop Pre-Meeting Institutes at the Annual Meeting to build skills and knowledge on public health topics.*	Consider including or expanding specific content on integrated care that addresses a wider public health reach of treatment approaches in the revised *ISTSS Treatment Guidelines* and the next edition of *Effective Treatments for PTSD*.	When appropriate, support the efforts of partner organizations to reduce stigma and discrimination associated with trauma and mental health issues.
Establish a committee focused on addressing the "societal impact" goal of the ISTSS strategic plan. Request that this committee develop specific criteria for vetting and determining ISTSS participation in key public health policy issues.*	Implement a communications plan to educate funders regarding the need to incorporate public health approaches to trauma research.	Ask the Distance Education Committee to work with trauma and public health experts to: 1. develop webinars/online education content to help trauma researchers and clinicians understand a public health perspective and develop their skills in this area*, and 2. review the content of the ISTSS Advanced Training in Traumatic Stress Certificate Program to ensure that it incorporates a public health perspective into the requirements.	Collaborate with key global stakeholders (e.g., APHA, WHO, professional associations) to develop brief, informative, and visually appealing educational resources for diverse interdisciplinary audiences (e.g., health care providers, school personnel, criminal justice system, policymakers).*	
Share relevant resources, such as the Trauma and Public Health Task Force Report and the Global Collaboration on Child Abuse and Neglect resources, with key public health stakeholders and policymakers around the world (e.g., APHA, WHO).		Expand the current ISTSS corresponding membership campaign in Africa to include specific outreach to public health professionals in Africa.*	When appropriate, support the efforts of partner organizations to improve equitable access to prevention and mental health services.	
When appropriate, support efforts of and collaborate with ISTSS members who maintain relationships with key global public health stakeholders (e.g., WHO, UN, PAHO) on trauma and public health-related initiatives.*		Seek funding to expand the Travel Grant program for the ISTSS Annual Meeting and invite participation of trauma professionals with public health relevant interests.		
Ask the committee focused on addressing the "societal impact" goal of the ISTSS strategic plan and the ISTSS Website Editor to work together to: 1. highlight/link to trauma relevant public health resources and information*, and 2. highlight efforts of ISTSS members to inform trauma and public health research, practice, and policy.*		Implement a communications plan to outreach to educators regarding the need to incorporate public health approaches to trauma research, prevention, and intervention into curricula.*		

**Indicates that recommendation is relevant to more than one public health policy challenge area.*

Items in blue were identified as key recommendations by the Task Force