Testimony in favor of SB 281-Adding PTSD to qualifying conditions under the MMA

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As a former VA psychiatrist, the vast majority of my patients suffered from Posttraumatic Stress Disorder (PTSD) as a result of combat or military sexual trauma. Many of them were willing to admit that they used marijuana to ease some of their worst symptoms, including severe insomnia and anxiety. They reported good relief in many cases, without the side effects of benzodiazepines and other medications or the stigma associated with their use.

There is a dearth of alternatives for treating PTSD with prescription medications. Commonly used medications include benzodiazepines (which are not recommended for long-term use), antidepressants, blood pressure medications (for nightmares) and even antipsychotics, with varying measures of success and significant side effects.

In addition to having a 30% risk of PTSD, half of all combat veterans seen at the VA have pain diagnoses. Research has shown they have nearly three times the risk of receiving higher dose narcotics, with a corresponding increase in side effects, including fatal overdoses. (*Association of Mental Health Disorders with Prescription Opioids and High-Risk Opioid use in US Veterans of Iraq and Afghanistan*; Seal et al, JAMA, March 7, 2012—Vol. 307, No. 9) This is believed to be due to the additive effect of anxiety and pain, both of which are alleviated by marijuana, lessening these risks and improving the quality of life. In addition, marijuana use is associated with self-reports of reduced depressive symptoms which may also be attributed to decreased anxiety (*Mitigation of post-traumatic stress symptoms by Cannabis resin: A review of the clinical and neurobiological evidence*, Passi et al, Drug Test. Analysis 2012,4, 649–659).

Research on antidepressant use in PTSD has yielded inconsistent results. Positive studies conducted by drug companies must be interpreted in light of their long history of selectively publishing results that support the use of their pharmaceuticals. Despite claims of "minimal" side effects of serotonin selective reuptake inhibitors (SSRIs), there is a 20% dropout rate among veterans with PTSD due to relative inefficacy in combat-induced PTSD and side effects including decreased libido, impotence, sleep and appetite changes and agitation or somnolence, depending on the agent. (*Pharmacotherapy for Post-Traumatic Stress disorder in Combat Veterans, focus on Antidepressants and Atypical Antipsychotic Agents*. Alexander, P&T; January, 2012; Vol. 37 No. 1).

Like antidepressants, evidence for the effectiveness of atypical antipsychotics is inconsistent (ibid). In addition, these drugs have a high rate of serious complications including severe weight

gain, insomnia, movement disorders, agitation and diabetes, for which Vietnam veterans are at increased risk at baseline due to Agent Orange exposure. Nonetheless, given the lack of effective alternatives, they are in common use. Other agents that have been used to treat PTSD have their own side effects and in general show minimal evidence of efficacy, except for alpha-blockers used to treat nightmares.

Clinical research data is limited by restrictions on access to marijuana of standardized quality. Available evidence shows improvement in sleep latency, quality and duration, with decreased nightmares *(Mitigation of post-traumatic stress symptoms by Cannabis resin: A review of the clinical and neurobiological evidence* Passi et al, Drug Test. Analysis 2012,4, 649–659) and overall decrease in total symptom score on CAPS scale (Pilot study by Mashiah presented at 2012 conference). There is strong evidence in animal models to support subjective reports that marijuana reduces flashbacks and intrusive memories through suppression of arousal response in the amygdala to aversive triggering stimuli (Passi et al). Consistent with Dr Masiah's findings of dramatic drops in CAPS scores, patients who benefit from use of marijuana report decreased overall anxiety and other arousal symptoms, decreased emotional numbing and fewer re-experiencing symptoms.

Special attention should be paid to a growing body of literature pointing at a role for marijuana in potentiating the extinction of traumatic memories, which are highly associated with suicide when comorbid problems such as substance abuse and depression are controlled for (Amir et al, 1999; *Suicide risk and coping styles in posttraumatic stress disorder patients*. Psychotherapy and Psychosomatics, 68(2), 76-81). In my experience, these disturbing memories are among the most debilitating and distressing of symptoms, contributing to social withdrawal, substance abuse and suicidal ideation. Many animal studies have shown that constituents of marijuana can moderate the emotional response to reminders of trauma that typically trigger these memories, allowing them to be assimilated into normal memories of past experiences (e.g., *Functional Interactions between Endocannabinoid and CCK Neurotransmitter Systems May Be Critical for Extinction Learning*, Chatwa et al, Neuropsychopharmacology (2008), 1–13 *and Distinct Effects of !9-Tetrahydrocannabinol and Cannabidiol on Neural Activation During Emotional Processing*, Fusar-Pol et al, ArchGenPsychiatry.2009;66(1):95-105).

In summary, controlled studies in humans of the effects of marijuana are limited by restrictions on research, but the available data strongly support a role for marijuana in the treatment of PTSD. There is clear evidence that it can reduce anxiety and improve sleep in sufferers. Animal research points to a potentially powerful role in the treatment of the most stressful symptoms of the condition and one which is strongly correlated with suicide. The anxiety-reducing effects appear to explain reports of decreased rates of depression and alcohol abuse and to contribute to pain reduction in the substantial portion of the veteran population with pain diagnoses.