

To: To Whom It May Concern

From: Thomas Roth PhD

RE: "Wellness" checks at PB SHU

Date: October 23, 2015

My name is Thomas Roth. I am the Director of The Sleep Disorder and Research Center at Henry Ford Hospital. I hold the rank of Professor at Wayne State University School of Medicine and Clinical Professor at the University of Michigan College of Medicine. I have been doing human sleep research since 1970. My research has encompassed effects of sleep deprivation, sleep fragmentation as well as sleep disorder pathophysiology and morbidity.

I have been asked to comment on the "Wellness" checks at PB SHU. It is my understanding while the goal of the program is well intentioned, it has resulted in prisoners being awoken on repeated occasions during the night. Specifically most prisoners are awoken in association with these checks. In addition, often when the prisoner is awoken he takes 10-15 minutes to fall asleep. This has the potential for resulting in sleep deprivation and sleep fragmentation. Sleep deprivation refers to the actual loss of sleep. Thus if an individual was awoken 16 times during the night and takes 10 minutes to fall back to sleep he would be deprived of almost 2.5 hours of sleep nightly. This level of sleep has been shown to have profound effects on cognitive performance, memory, mood, immune function, pain sensitivity, metabolism, and other parameters. This has been demonstrated in otherwise healthy individuals. Importantly these effects accumulate across time. Thus as these

checks are done nightly their negative effects will become greater across time. Even if some prisoners do not stay awake after the awakening, their sleep is still fragmented. Sleep is a continuous process as such it is critical to have continuous sleep without interruption. In the presence of sleep fragmentation (i.e. repeated interruptions of sleep) individuals are not able to get to the deeper and more restorative stages of sleep (i.e. slow wave sleep and REM sleep). Thus, sleep fragmentation is functionally the same as sleep deprivation. Many of the behavioral and physiological consequences of sleep deprivation have been repeated by simply arousing normal individuals repeatedly during sleep. Similarly many sleep disorders (e.g. sleep apnea and restless legs syndrome) have significant morbidity associated with their repeated arousals from sleep. Sleep apnea is a disorder where individuals stop breathing when they fall asleep. To resume breathing they must arouse. These arousals lead to increases in circulating norepinephrine levels, which are associated with negative cardiovascular effects. This effect has been shown in people with different sleep and medical disorders, and in normal people.

It is further important to recognize that this sleep disruption does not inherently reflect poor behavior on the part of guards (I have no information on this). Checking on individuals repeatedly during the night will lead to sleep problems. There is much research on disturbed sleep in Intensive Care Units in hospitals. Checking on patients for their safety has resulted in many ill effects. Today there are many initiatives to overcome the negative effects of this safety monitoring. These include, decreasing the frequency of checks, sound abatement, remote

monitoring and other initiatives. All of this work attests to the negative impact of “safety checks.”

Based on my experience as a sleep researcher, and the extensive literature of sleep deprivation, sleep fragmentation, sleep disorders, and sleep in Medical Intensive Care Units, I would recommend that the nighttime “safety checks” for PB SHU should be suspended until their impact on health and quality of life can be evaluated and methods to minimize these negative effects can be determined.

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