

“USAA, a leading insurer of active-duty troops, discovered that auto accidents in which the service members were at fault went up by 13 percent after deployments. Accidents were particularly common in the six months after an overseas tour...”

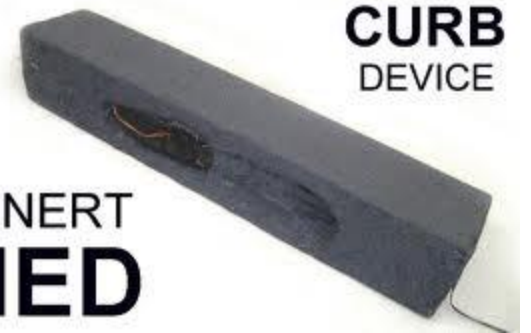
New York Times, 1/4/11, James Dao

IEDs





INERT
IED



SIMULATED
CURB
DEVICE

Goal of in-car intervention is to reduce indicators of accident risk:

- **Reduce speeding**
- **Reduce peak accelerations and decelerations**
- **Reduce root mean square successive deviations in steering wheel rotation**
- **Reduce time in spent in non-task gaze orientations**
- **Lower standard deviation of gaze fixation duration**
- **Reduce heart and respiration rates**
- **Reduce subjective distress while driving**

via the Sprout

**data seamlessly merged, time-stamped,
and geo-tagged :**

ECG

respiration

vehicle speed/acceleration

steering wheel rotation

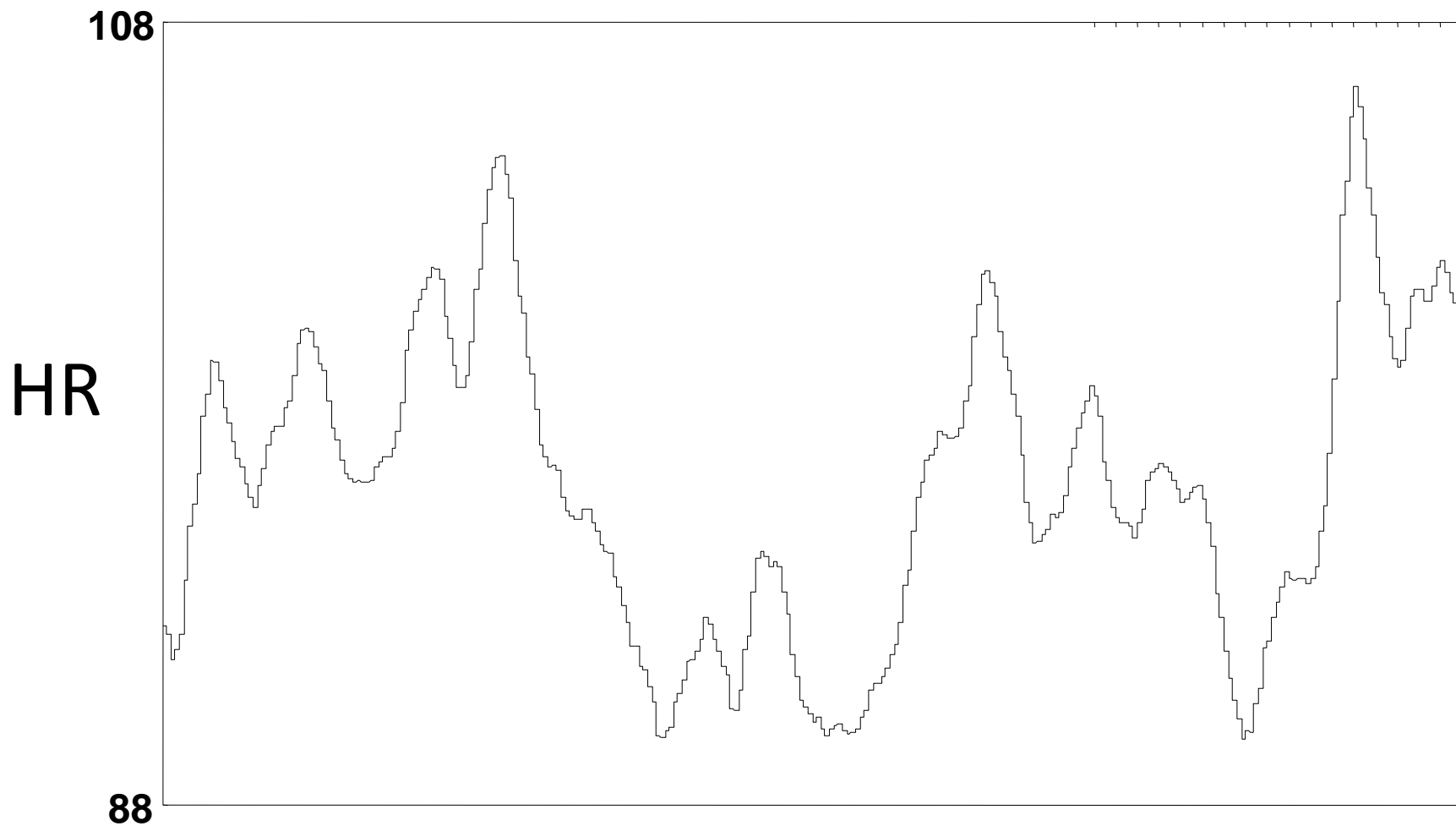
accelerator pedal motion

interventional time-points

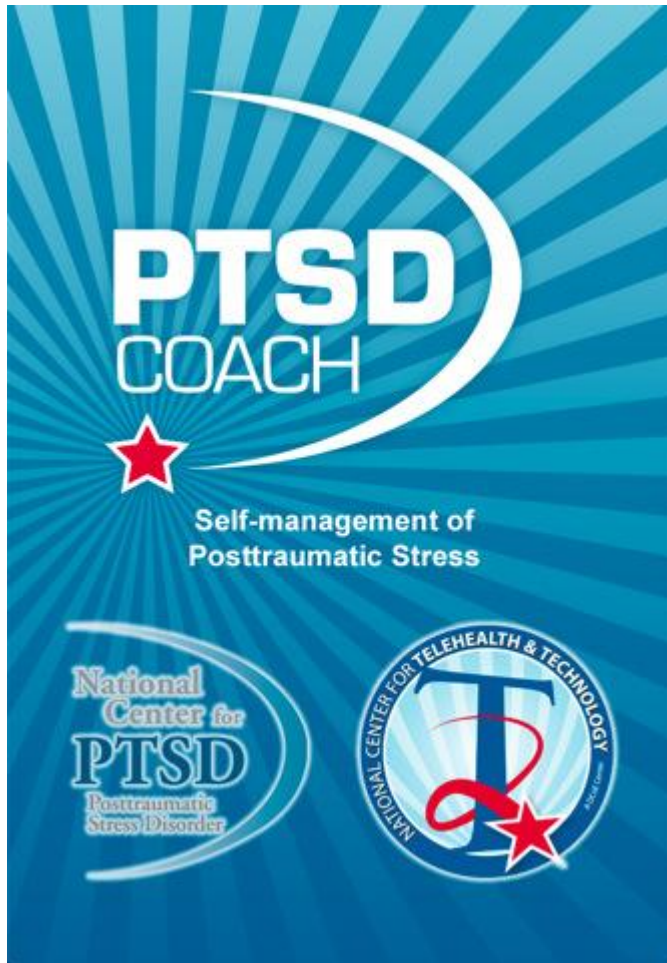
behavioral observations/alarms

contextual information

subjective distress

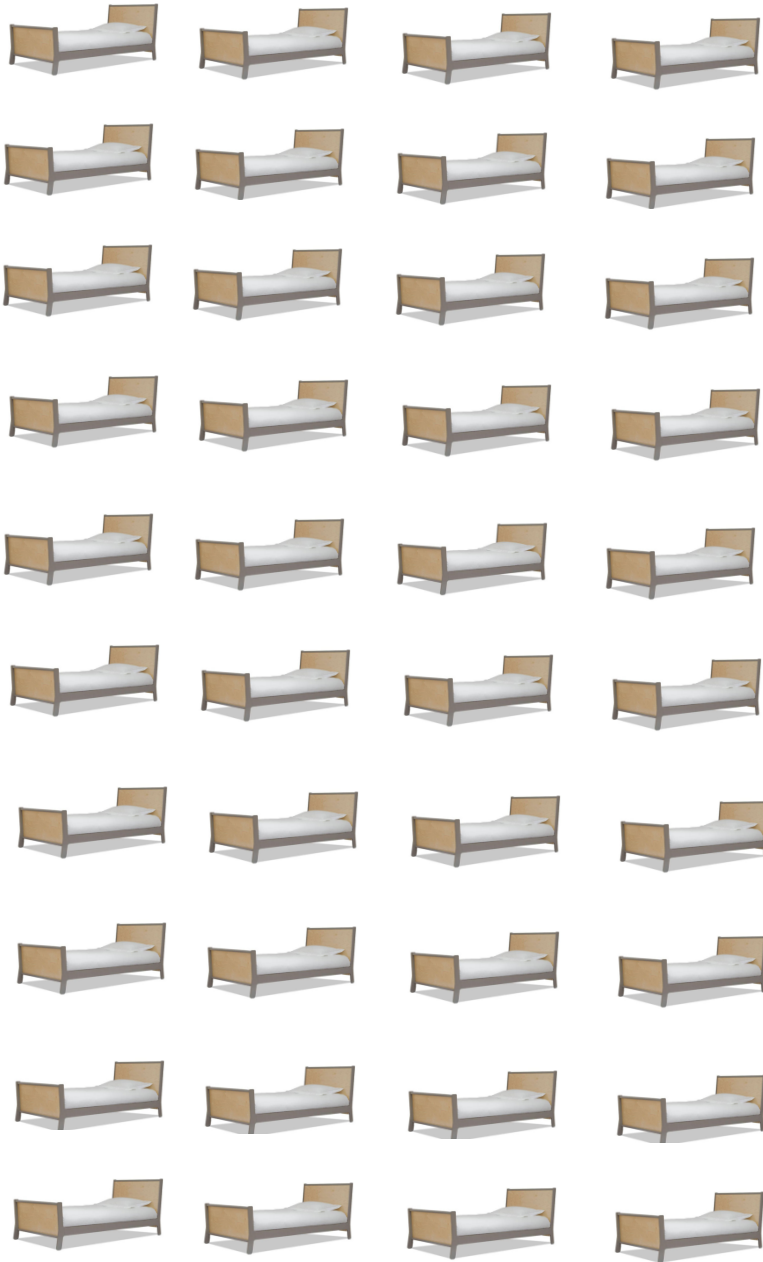


5-minutes of driving



40,000+ downloads

rev. 2 will include continuous heart rate



- heart rate
- heart rate variability
- respiration rates
- respiratory events
- snoring
- periodic limb movements
- position changes
- twitches

~3.6E+11 bytes/patient/year

The Frontier of Sleep – continuous metabolic monitoring

**1. sleep is a physiologically distinct,
disease-relevant state**

**2. sleep provides an opportunity for
minimum-burden, long-term
measurement**