I read with great interest the Clinical Guidelines for the Use of Unattended Portable Monitors in the Diagnosis of Obstructive Sleep Apnea in Adult Patients, published by the Portable Monitoring Task Force (Nancy Collop et al) of the American Academy of Sleep Medicine. Among other devices the task force evaluated the Watch-PAT 100, a novel portable monitoring device that uses peripheral arterial tone (PAT), pulse rate, actigraphy and oximetry, for sleep apnea diagnosis. The task force reviewed the evidence supporting the reliability of the Watch-PAT 100 for sleep apnea diagnosis, but concluded that “Unlike most PM devices, the arterial tone device uses a proprietary algorithm for scoring; although review of the raw data is possible, manual scoring is not.”

In view of the task force recommendation that portable monitoring devices “must allow for the display of raw data for manual scoring or editing of automated scoring,” I would like to correct the task force impression that manual scoring/editing of Watch PAT signals is not possible.

Manual scoring/editing of the Watch-PAT signals is possible and can be easily performed. As in manual scoring of conventional signals, i.e., effort, airflow/nasal pressure and oximetry that rely on simultaneous changes in all three channels, manual scoring of the Watch-PAT 100 signals can be accomplished using simultaneous changes in the peripheral arterial tone, pulse rate and oximetry. Identification of respiratory events can be accomplished based on the well documented intensive sympathetetic activation accompanying respiratory events termination. Sympathetic activation causes attenuation of the PAT signal, indicative of vasoconstriction, coupled with pulse rate acceleration in addition to the typical changes in oximetry. This pattern can be easily visually identified as demonstrated by Friemark et al who reported a 91% sensitivity and 91% specificity of manual scoring of the PAT signal to identify Cheyne Stokes respiration. In fact, the possibility for manual editing is explicitly mentioned in a recent paper using the Watch PAT to investigate residual respiratory events in patients treated with nCPAP: “Manual editing of the automated PAT scoring is possible, but was not performed to allow an assessment on the performance of the algorithm alone and not the algorithm plus operator intervention.” (Page 125). As this paper was not intended to test the reliability of the Watch PAT device, it was not reviewed by the Task force.

Another point that needs better clarification is Watch PAT failure rate. The task force mentioned the Penzel et al study that reported a substantial failure rate (19%), but did not mention that Pittman et al concluded that “technical failures are rare with use of the Watch_PAT system in the home (0% in this study)” (page 931).

REFERENCES