1. Full Title: Variation In the AHI According to Hypopnea Definition
   Abbreviated Title (Length 26): Hypopnea Definitions

2. Writing Group (list individual with lead responsibility first):
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3. Timeline:
   Target Start: Sept 1 1997;
   Target Finish date Dec 1 1997.

4. Rationale:
   There exist wide differences in methods for detecting and quantifying hypopneas both for
   clinical and research purposes. A recent survey of accredited sleep laboratories revealed
   that no two (of 45) laboratories used the same definition and measure of hypopnea [1].
   Our own review of the peer reviewed literature also revealed widely divergent
   approaches for defining hypopnea in research studies. Little attention has been previously
   directed towards assessing how variations in definitions influence the overall AHI. Since
   the AHI is commonly dichotomized based on single threshold values (to indicate
   affection-status), such differences could be anticipated to influence case finding and
   prevalence estimates.

   Variations in the AHI according to differences in definitions may also influence the
   magnitude of risk relations (with apnea risk factors and outcomes such as hypertension).

   The unique SHHS software allows computation of numerous summary measures of AHI,
   based on different hypopnea definitions. Hypopneas can be distinguished based on a
   definition using amplitude changes in breathing alone, versus definitions that also require
   different degrees of desaturation and/or arousal.

5. Main Hypothesis:
Differences in the use of corroborative data (linked desaturation and arousals) to identify hypopneas and apneas will result in:

a. Large differences in the distribution (median, range, interquartile values) of the AHI; and

b. Large differences in prevalence estimates based on given cutoff values.

c. The RDI based on higher desaturation values is more strongly correlated with mean blood pressure than RDIs unlinked with desaturation.

d. The RDI based on linked desaturation can be scored more reliably than RDI unlinked to desaturation, or linked with arousal (NOTE: this will have been addressed in the PSG Methods paper, and thus, these data will be discussed only briefly in this paper.)

6. Data (variables, time window, source, inclusions/exclusions):
We propose comparing the distributions of each of AHI summary measures to quantify the extent to which AHI differs according to differences in associated corroborative data. We also will examine how differences in associations between AHI and known sleep apnea risk factors (age, BMI, male sex) and hypertension differ according to variations in the hypopnea definition. The within and between scorer reliability for each of the AHI measures also will be compared, referencing work submitted or in press.

Variables: RDI-ND/A; RDI2%D, RDI3%D; RDI-A; RDI3%D/A; RDI4%d; RDI4%DA; RDI5%; BMI; age; gender; mean systolic blood pressure (defined as the average systolic and diastolic value at the time of the home hook-up), data on use of anti-hypertensive drugs; quality codes on study quality and scoring codes.

Time window, source, inclusions/exclusions: All polysomnographic data that have been fully scored by August 1.