KEEP Data Report 2004

Chapter 2: Patient characteristics
Figure 2.1
Self-reported diabetes in KEEP & NHANES participants, by age, gender, & race/ethnicity


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Figure 2.2
Measured blood pressure (JNC VII) in KEEP & NHANES participants, by self-reported diabetic status

KEEP N=23,500, NHANES III N=19,216, NHANES 1999–2000 N=4,800. Excludes participants with missing values for blood pressure or self-reported diabetes.

JNC VII Hypertension
normal
systolic < 120 mmHg &
diastolic < 80 mmHg
prehypertension
systolic 120-139 mmHg or
diastolic 80-89 mmHg
stage 1
systolic 140-159 mmHg or
diastolic 90-99 mmHg
stage 2
systolic ≥160 mmHg or
diastolic ≥100 mm Hg
Figure 2.3
Elevated blood pressure (JNC VII*) in KEEP & NHANES participants, by race/ethnicity, gender, & self-reported diabetic status

KEEP N=23,507, NHANES III N=16,036, NHANES 1999–2000 N=4,463. Excludes participants with missing values for blood pressure or self-reported diabetes. *DM or CKD: systolic BP ≥ 130 or diastolic ≥ 80; no DM or CKD: systolic BP ≥ 140 or diastolic ≥ 90.
Figure 2.4
Self-reported diabetes in KEEP & NHANES participants, by measured blood pressure (JNC VII)

KEEP 23,500, NHANES III N=19,216, NHANES 1999–2000 N=4,800. Excludes participants with missing values for blood pressure or self-reported diabetes.
Figure 2.5
Warning signs for diabetes in KEEP participants, by age, gender, race/ethnicity & type of warning sign

KEEP N=24,046, N=23,312 after excluding participants with missing values for race. Excludes participants with missing values for diabetic warning signs.
Figure 2.5 (continued)

Warning signs for diabetes in KEEP participants, by age, gender, race/ethnicity & type of warning sign

KEEP N=24,046, N=23,312 after excluding participants with missing values for race. Excludes participants with missing values for diabetic warning signs.
Figure 2.5 (continued)

Warning signs for diabetes in KEEP participants, by age, gender, race/ethnicity & type of warning sign

KEEP N=24,046, N=23,312 after excluding participants with missing values for race. Excludes participants with missing values for diabetic warning signs.
Figure 2.6
Warning signs for diabetes in KEEP participants with or without self-reported diabetes, by age, gender, race/ethnicity, & type of warning sign

KEEP with self reported diabetes: N=5,850, N=5,666 after excluding participants with missing values for race. KEEP without self-reported diabetes: N=17,906, N=17,375 after excluding participants with missing values for race. Excludes participants with missing values for self-reported diabetes or diabetic warning signs.
Figure 2.6 (continued)
Warning signs for diabetes in KEEP participants with or without self-reported diabetes, by age, gender, race/ethnicity, & type of warning sign

KEEP with self reported diabetes: N=5,850, N=5,666 after excluding participants with missing values for race. KEEP without self-reported diabetes: N=17,906, N=17,375 after excluding participants with missing values for race. Excludes participants with missing values for self-reported diabetes or diabetic warning signs.
Figure 2.6 (continued)
Warning signs for diabetes in KEEP participants with self-reported diabetes, by age, gender, race/ethnicity, & type of warning sign

KEEP N=5,850, N=5,666 after excluding participants with missing values for race. Excludes participants with missing values for self-reported diabetes or diabetic warning signs.
Figure 2.6 (continued)
Warning signs for diabetes in KEEP participants without self-reported diabetes, by age, gender, race/ethnicity, & type of warning sign

KEEP N=17,906, N=17,375 after excluding participants with missing values for race. Excludes participants with missing values for self-reported diabetes or diabetic warning signs.
Figure 2.7
Measured glucose greater than the normal limit* in KEEP participants with self-reported diabetes, by age, gender, & race/ethnicity

KEEP N=5,700, N=5,523 after excluding participants with missing values for race. Excludes participants with missing values for blood glucose. *Glucose greater than the normal limit: fasting, >126 mg/dl, non fasting, >139 mg/dl.
Figure 2.8
Measured glucose greater than the normal limit* in KEEP participants with no self-reported diabetes who listed no warning signs for diabetes, by age, gender, & race/ethnicity

KEEP, N=9,789, N=9,502 after excluding participants with missing values for race. Excludes participants with missing values for blood glucose.

*Glucose greater than the normal limit: Fasting, >126 mg/dl, non-fasting, >139 mg/dl.
Figure 2.9
Measured glucose greater than the normal limit* in KEEP participants with no self-reported diabetes & who listed one of the warning signs for diabetes, by age, gender, & race/ethnicity

KEEP, N=7,761, N=7,525 after further excluding missing race. *Glucose greater than the normal limit: Fasting, >126 mg/dl, non-fasting, >139 mg/dl, not mutually exclusive.
Figure 2.10
Self-reported hypertension in KEEP & NHANES participants, by age, gender, & race/ethnicity

Figure 2.11
Measured blood pressure (JNC VII) in KEEP & NHANES participants, by gender


**JNC VII Hypertension**
- **Normal**
  - systolic < 120 mmHg & diastolic < 80 mmHg
- **Prehypertension**
  - systolic 120-139 mmHg or diastolic 80-89 mmHg
- **Stage 1**
  - systolic 140-159 mmHg or diastolic 90-99 mmHg
- **Stage 2**
  - systolic ≥160 mmHg or diastolic ≥100 mm Hg

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Figure 2.12
Measured blood pressure (JNC VII) in KEEP & NHANES participants, by race/ethnicity

JNC VII Hypertension
- normal: systolic < 120 mmHg & diastolic < 80 mmHg
- prehypertension: systolic 120-139 mmHg or diastolic 80-89 mmHg
- stage 1: systolic 140-159 mmHg or diastolic 90-99 mmHg
- stage 2: systolic ≥160 mmHg or diastolic ≥100 mmHg

KEEP 23,056, NHANES III N=19,239. Excludes participants with missing values for blood pressure or race.
Figure 2.13
Self-reported hypertension vs. elevated measured blood pressure (JNC VII*) in KEEP & NHANES participants, by age & gender

KEEP N=23,549, NHANES III N=19,426. Excludes participants with missing values for blood pressure or self-reported hypertension. *DM or CKD: systolic BP ≥ 130 or diastolic ≥ 80; no DM or CKD: systolic BP ≥ 140 or diastolic ≥ 90.
Figure 2.14
Self-reported hypertension vs. elevated measured blood pressure (JNC VII*) in KEEP & NHANES participants, by race/ethnicity

KEEP N=22,843, NHANES III N=19,426. Excludes participants with missing values for blood pressure or self-reported hypertension. *DM or CKD: systolic BP ≥ 130 or diastolic ≥ 80; no DM or CKD: systolic BP ≥ 140 or diastolic ≥ 90.
Figure 2.15
Cardiac events or PVD in KEEP participants, by age, gender, & race/ethnicity

KEEP N=24,048, N=23,314 after excluding participants with missing values for race.

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Figure 2.16
Reported comorbidity (diabetes, BMI ≥ 30 kg/m², elevated blood pressure (JNC VII*), smoking history) in KEEP participants with a cardiac event or PVD, by age, gender, & race/ethnicity

KEEP N=3,880, N=3,776 after excluding participants with missing values for race. *DM or CKD: systolic BP ≥ 130 or diastolic ≥ 80; no DM or CKD: systolic BP ≥ 140 or diastolic ≥ 90.
Figure 2.16 (continued)
Reported comorbidity (diabetes, BMI $\geq 30$ kg/m$^2$, elevated blood pressure (JNC VII*), smoking history) in KEEP participants without a cardiac event or PVD, by age, gender, & race/ethnicity

KEEP N=20,166, N=19,536 after excluding participants with missing values for race. *DM or CKD: systolic BP $\geq 130$ or diastolic $\geq 80$; no DM or CKD: systolic BP $\geq 140$ or diastolic $\geq 90$. 

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Figure 2.17
Percent distribution of KEEP & NHANES participants, by BMI category

KEEP N=23,834, NHANES III N=17,689, NHANES 1999–2000 N=4,903. Excludes participants with missing values for BMI.

Body Mass Index Categories
UW: underweight: BMI<18.5
N: normal: BMI 18.5–24.9
OW: overweight: BMI 25–29.9
OB: obese: BMI 30–39.9
EOB: extremely obese: BMI ≥ 40
Figure 2.18
BMI in KEEP & NHANES participants, by gender

KEEP N=23,834, NHANES III N=17,689, NHANES 1999–2000 N=4,903. Excludes participants with missing values for BMI.

Body Mass Index Categories
UW: underweight: BMI<18.5
N: normal: BMI 18.5–24.9
OW: overweight: BMI 25–29.9
OB: obese: BMI 30–39.9
EOB: extremely obese: BMI ≥ 40
Figure 2.19
BMI in KEEP & NHANES participants, by race/ethnicity

Body Mass Index Categories
UW: underweight: BMI<18.5
N: normal: BMI 18.5–24.9
OW: overweight: BMI 25–29.9
OB: obese: BMI 30–39.9
EOB: extremely obese: BMI ≥ 40

KEEP N=23,118,
NHANES III, N=17,689,
excluding participants with missing values for BMI or race.
Figure 2.20
BMI in KEEP & NHANES participants, by U.S. Census Region

Body Mass Index Categories
UW: underweight: BMI<18.5
N: normal: BMI 18.5–24.9
OW: overweight: BMI 25–29.9
OB: obese: BMI 30–39.9
EOB: extremely obese: BMI ≥ 40

KEEP N=23,811, NHANES III N=17,689, excluding participants with missing values for BMI or region.

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Figure 2.21
Self-reported diabetes or hypertension in KEEP & NHANES participants, by BMI

Figure 2.22
BMI in KEEP & NHANES participants, by measured blood pressure (JNC VII)

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Figure 2.23
Percent distribution of KEEP & NHANES participants, by smoking status

KEEP N=22,540, NHANES III N=18,807, NHANES 1999–2000 N=4,865. Excludes participants with missing values for smoking status.
Figure 2.24
Smoking status in KEEP & NHANES participants, by race/ethnicity

KEEP N=21,897, NHANES III N=19,600. Excludes participants with missing values for smoking status or race.

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Figure 2.25
Self-reported diabetes in KEEP & NHANES participants, by smoking status

KEEP N=22,281, NHANES III N=18,783, NHANES 1999–2000 N=4,863. Excludes participants with missing values for smoking status or diabetic status.
Figure 2.26
self-reported hypertension in KEEP & NHANES participants, by smoking status

KEEP N=22,329, NHANES III N=18,635, NHANES 1999–2000 N=4,803. Excludes participants with missing values for smoking status or blood pressure.
Figure 2.27
CKD in KEEP & NHANES participants, by smoking status

CKD Definition
If calculated creatinine clearance by K/DOQI MDRD <60 ml/min/1.73 m² or;
If calculated creatinine clearance by K/DOQI MDRD ≥ 60 ml/min/1.73 m² and microalbuminuria +

KEEP N= 21,438,
NHANES III N=15,209,
NHANES 1999–2000 N=4,065. Excludes participants with missing values for smoking status or CKD status.

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Figure 2.28
Self-reported kidney problems in KEEP participants

KEEP N= 24,046.
Figure 2.29
Self-reported kidney problems in KEEP participants, by gender

KEEP N= 24,046.
KEEP N= 23,312. Excludes participants with missing values for race.
Figure 2.31
Self-reported kidney problems in KEEP participants, by U.S. Census Region

KEEP N= 24,023. Excludes participants with missing values for region.
Figure 2.32
CKD in KEEP & NHANES participants, by CKD stage & race/ethnicity

KEEP N= 12,332, NHANES III N=2,469. Excludes participants with missing values for CKD status or race.

CKD Stages
Stage 1: eGFR ≥ 90, microalbuminuria +
Stage 2: eGFR 60–89, microalbuminuria +
Stage 3: eGFR 30–59
Stage 4: eGFR 1–29
Stage 5: eGFR <15 or patient on dialysis
Figure 2.33
Warning signs for kidney disease in KEEP participants, by age, gender, & race/ethnicity

KEEP N=24,046, N=23,312 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs.
Figure 2.33 (continued)
Warning signs for kidney disease in KEEP participants, by age, gender, & race/ethnicity

KEEP N=24,046, N=23,312 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs.
Figure 2.33 (continued)  
Warning signs for kidney disease in KEEP participants, by age, gender, & race/ethnicity  

KEEP N=24,046, N=23,312 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs.
Figure 2.34
Warning signs for kidney disease in KEEP participants with or without CKD, by age, gender, & race/ethnicity

KEEP with CKD: N=11,011, N=11,479 after further excluding participants with missing values for race. KEEP without CKD: N=11,835, N=11,479 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs, CKD defined by eGFR, or albuminuria.
Figure 2.34 (continued)
Warning signs for kidney disease in KEEP participants with or without CKD, by age, gender, & race/ethnicity

KEEP with CKD: N=11,011, N=11,479 after further excluding participants with missing values for race. KEEP without CKD: N=11,835, N=11,479 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs, CKD defined by eGFR, or albuminuria.
Figure 2.34 (continued)

Warning signs for kidney disease in KEEP participants with CKD, by age, gender, & race/ethnicity

KEEP N=11,011, N=11,479 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs, CKD defined by eGFR, or albuminuria.
Figure 2.34 (continued)
Warning signs for kidney disease in KEEP participants without CKD, by age, gender, & race/ethnicity

KEEP N=11,835, N=11,479 after further excluding participants with missing values for race. Excludes participants with missing values for kidney disease warning signs, CKD defined by eGFR, or albuminuria.
Figure 2.35
Positive tests for microalbuminuria in KEEP participants with or without a warning sign for CKD, by age & race/ethnicity

KEEP with a warning sign: N=10,810, N=10,454 after further excluding participants with missing values for race. KEEP without a warning sign: N=13,236, N=12,858 after further excluding participants with missing values for race.
Figure 2.36
Albumin/creatinine ratios greater than the normal limit* in KEEP participants with or without a warning sign for CKD, by age & race/ethnicity

KEEP with a warning sign: N=10,810, N=10,454 after further excluding participants with missing values for race. KEEP without a warning sign: N=13,236, N=12,858 after further excluding participants with missing values for race. *Normal albumin/creatinine ratio is <30 mg/g.
Figure 2.37
Risk factors in KEEPER & NHANES participants, by U.S. Census Region

KEEP N=20,831, NHANES III DM N=19,593, HTN N=19,426, CKD N=15,853, smoking N=19,600, obesity N=17,689. Excludes participants with missing values for CKD status, smoking status, diabetes, hypertension, BMI, or region.
Figure 2.38
Family history of diabetes, hypertension, or kidney disease in KEEP participants, by participant’s self-reported diabetic status

KEEP N=22,171, NHANES III N=18,474, NHANES 1999–2000 N=4,786. Excludes participants with missing values for diabetes or for family history of diabetes, hypertension, or kidney disease.
Figure 2.39
Family history of diabetes, hypertension, or kidney disease in KEEP & NHANES participants, by participant’s measured blood pressure (JNC VII)

KEEP N=22,153, NHANES III N=18,152, NHANES 1999–2000 N=4,211. Excludes participants with missing values for blood pressure or for family history of diabetes, hypertension, or kidney disease.
Figure 2.40
KEEP participants with a family member who has had a cardiac event (heart attack or stroke before age 55) or PVD, & who have suffered the same cardiac event as a family member

KEEP N=24,048.
Figure 2.41
Family history of diabetes, hypertension, or kidney disease in KEEP participants, by participant’s CKD stage

KEEP N=21,279, NHANES III N=14,968, NHANES 1999–2000 N=4,009. Excludes participants with missing values for CKD status or for family history of diabetes, hypertension, or kidney disease.