

Primary Care Service Areas Project V2.1
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National Physician Inventory (NPI) Update

The purpose of NPI update is to provide 2006 primary care physician supply by PCSA and county based on 2006 American Medical Association Physician Masterfile (AMA MF) and 20% Centers for Medicare and Medicaid Services (CMS) Medicare Part B and Outpatient claim data.

Because residents usually do not have own UPIN and CMS claims contain services to the elderly only, both lower and upper bounds of primary care supply were provided.

Two dbf format files are:

1. PCSA-level: **hrsa_npi0908_pcsa.dbf**; 6,542 PCSAs with 56 variables
2. County-level: **hrsa_npi0908_cnty.dbf**; 3141 Counties with 12 variables

For detail information, please refer to data dictionary:

HRSA National Physician Inventory Data Dictionary 0908.xls

Data process steps:

1. AMA definition – same as the New Access Point (NAP) project

Primary care physician counted from the 2006 AMA. Only clinically active, non-federal, primary care physicians were included in the calculations.

Determination of “Active” Status

For physicians considered active—and thereby included in the count of primary care providers—they were non-federal (as defined by “present employment” variable not = 081-086) and flagged as clinically active (i.e., have ClinActive = 1 (true))

ClinActive is defined as follows:

- a. Clinically Active Indicator (variable name: ClinActive)
 - Initialize ClinActive to 1 (true).
 - Set ClinActive to 0 (false) if Type of Practice [TOP] is NOT equal to:

 '012' = Resident

'020' = Direct Patient Care
'072' = Semi-retired
'100' = No Classification

- Set ClinActive to 0 (false) if AMA's Major Professional Activity [MPA] (as derived from "type of practice" and "present employment" variables) is equal to:

'ADM' = Administration
'INA' = Inactive
'LOC' = Locum Tenens
'MTC' = Medical Teaching
'RES' = Research
'OTH' = Other
'TFG' = Temporally Foreign Physician
'UNA' = Address Unknown

- Set ClinActive to 0 (false) if age is greater than 80.

Determination of "Primary Care"

For physicians to be considered primary care providers, they are first flagged as either general primary care (PrimCare = 1) **or** OB/GYN primary care (ObgPCare = 1). The definitions of the ASAPS primary care indicators are as follows:

a. Primary Care Indicator (variable name: PrimCare)

- Initialize PrimCare to 0 (false).
- Set PrimCare to 1 (true) if primary specialty (Spec1) *is equal to*:

'ADL' = Adolescent Medicine (Pediatrics)
'AMI' = Adolescent Medicine (Internal Medicine)
'FP' = Family Practice
'FM' = Family Medicine
'FPG' = Geriatric Medicine (Family Practice)
'FPP' = Psychiatry/Family Practice
'GP' = General Practice
'IFP' = Internal Medicine/Family Practice
'IM' = Internal Medicine
'MPD' = Internal Medicine/Pediatrics
'PD' = Pediatrics

b. OB/GYN Primary Care Indicator (variable name: ObgPCare)

- Initialize ObgPCare to 0 (false).

- Set ObgPCare to 1 (true) if primary specialty (Spec1) *is equal to*:
 ‘GYN’, ‘OBG’, ‘OBS’

Determination of FTEs

Current residents (Resident = 1 (true)) and physicians who are listed as semi-retired (SemiRet = 1 (true)) are counted as active but assigned base FTEs of only 0.1 and 0.5, respectively, while physicians greater than 70 years of age also are counted as active, but receive gradually discounted FTE (i.e. 0.9 for age 71, 0.8 for age 72, 0.7 for age 73, 0.6 for age 74, 0.5 for age 75, 0.4 for age 76, 0.3 for age 77, 0.2 for age 78, 0.1 for age 79). Physicians \geq age 80 are not counted. All other clinically active, non-federal physicians are given a base FTE value of 1.0.

SemiRet and Resident are defined as follows:

- a. Semi-retired Status Indicator (variable name: SemiRet)
 - Set SemiRet to 1 (true) if type of practice (TOP) = ‘072’; else set SemiRet to 0 (false).
- b. Current Resident Indicator (variable name: Resident)

Set Resident to 1 (true) if MPA is equal to “HPR: Resident” OR type of practice (TOP) is '012 Resident'; else set to 0 (false).

Location of Physicians

Office ZIP Codes are first used to assign practice location. If office ZIP Code is missing, preferred mailing ZIP Code is used. ZIP Codes are assigned to ZCTAs based on ZIP to ZCTA 2006 crosswalk file. ZCTAs are then assigned to PCSAs based on the standard ZCTA to PCSA crosswalk file. Physicians are excluded if they practiced outside the 50 states and Washington DC.

Physician county location is based on county code on AMA MF. For physicians with missing county code, their PCSA primary county is used.

2. CMS physician definition:

Only CMS physicians identified in the claims files and who link to the AMA Masterfile by UPIN are included. The following criteria only apply to AMA non-Pediatrics.

Physicians are assigned to a primary specialty and practice location based on the plurality of their work relative value units (wRVUs) from two sources. The first is the 20% 2005/2006 Part B Physician/Supplier Claim File. Location of service and physician

specialty are listed on each claim. wRVU are assigned to each HCPCS code. The second file is the 2005/2006 20% Outpatient File that includes claims for physician services at rural health clinics and community health centers. We assume that all physician services at these locations are for primary care and that the physician specialties are primary care. HCPCS codes are not required for payment of RHC claims and in almost half of these claims the HCPCS code field was unfilled. In 2006, the HCPCS field was filled in 78% of the CHC claims, but mostly with HCPCS code 99212, a low level established office visit with a wRVU of 0.45. In contrast the average wRVU of RHC claims that had a HCPCS was 0.75. The average wRVU as found in Part B claims was 0.70 for general internists and 0.57 for family practice. This suggests that physician effort would be grossly underestimated because of incomplete HCPCS fields in RHC and arbitrarily assigned low-level HCPCS code in CHCs. To correct for this, we impute a wRVU of 0.67 for all CHC claims and for RHC claims. The final CMS specialty is Primary Care if the plurality of wRVUs specialty is primary care (TDI Specialty = FAMP, INTM, OBGN, PEDI). The final CMS location is the PCSA or the PCSA primary county with the plurality of wRVUs.

Determination CMS FTEs:

Each physician is assumed to have a FTE in accordance with AMA criteria. PCSA and county FTEs will be rounded to 0.1 FTE.

3. Population estimates:

The U.S. Census 2006 civilian population estimates are used for county tabulations. The 2006 PCSA project PCSA civilian population estimates are used for PCSA tabulations.

4. Physician rates (unadjusted):

Three types of primary care physician (PCP) supply were calculated:

- 1). PCP count with AMA specialty and location
- 2). PCP count with AMA specialty and location for residents and pediatricians, and AMA FTEs with CMS specialty and location for AMA-CMS linked MDs.
- 3). PCP count with AMA specialty and location for residents and pediatricians, AMA FTEs with CMA specialty and location for AMA-CMS linked MDs, and AMA FTEs, specialty and location for unlinked AMA MDs.

Three corresponding rates (MD to civilian population ratios) were calculated using 2006 civilian population.

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