ARF Mapping Tool
Data Sources, Definitions, and Notes

All data used to calculate the measures presented in the ARF Mapping Tool reside within the Area Resource File System. Original data source references and definitions for each measure presented are noted below.

Total Physicians

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the *2010 Census Redistricting Data (Public Law 94-171) Summary File*, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data from the AMA Masterfile include Total Non-Federal MDs and DOs and are broken out by Specialty and Major Professional Activity for 2010. Major Professional Activity and Self-Designated Practice Specialty classifications are reported by the physicians in the Physicians' Practice Arrangements (PPA) questionnaire. The reporting period for data is as of December 31, 2010.

Total physicians include the total number of non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care.

The total physicians to population ratios are calculated by dividing the total number of total physicians by the total population and multiplying by 100,000 to derive the ratio of total physicians per 100,000 population.

Primary Care Physicians

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the *2010 Census Redistricting Data (Public Law 94-171) Summary File*, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

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Primary Care Physicians include those non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care and whose self-designated practice specialty is identified as either General Practice; Family Medicine, General; Internal Medicine, General; or Pediatrics, General as well as non-federal DOs whose specialty is either General/Family Practice; General Pediatrics; or General Internal Medicine.
The primary care physician to population ratios are calculated by dividing the total number of primary care physicians by the total population and multiplying by 100,000 to derive the ratio of primary care physicians per 100,000 population.

General Practice/Family Practice Physicians

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the

2010 Census Redistricting Data (Public Law 94-171) Summary File, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data from the AMA Masterfile include Total Non-Federal MDs and DOs and are broken out by Specialty and Major Professional Activity for 2010. Major Professional Activity and Self-Designated Practice Specialty classifications are reported by the physicians in the Physicians' Practice Arrangements (PPA) questionnaire. The reporting period for data is as of December 31, 2010.

General Practice/Family Practice Physicians include those non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care and whose self-designated practice specialty is identified as General Practice or Family Medicine, General.

The general practice/family practice physician to population ratios are calculated by dividing the total number of general practice/family practice physicians by the total population and multiplying by 100,000 to derive the ratio of general practice/family practice physicians per 100,000 population.

Internal Medicine Physicians

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the *2010 Census Redistricting Data (Public Law 94-171) Summary File*, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data from the AMA Masterfile include Total Non-Federal MDs and DOs and are broken out by Specialty and Major Professional Activity for 2010. Major Professional Activity and Self-Designated Practice Specialty classifications are reported by the physicians in the Physicians' Practice Arrangements (PPA) questionnaire. The reporting period for data is as of December 31, 2010.

Internal Medicine Physicians include those non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care and whose self-designated practice specialty is identified as Internal Medicine, General.

The internal medicine physician to population ratios are calculated by dividing the total number of internal medicine physicians by the total population and multiplying by 100,000 to derive the ratio of internal medicine physicians per 100,000 population.

Pediatricians

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the *2010 Census Redistricting Data (Public Law 94-171) Summary File*, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data from the AMA Masterfile include Total Non-Federal MDs and DOs and are broken out by Specialty and Major Professional Activity for 2010. Major Professional Activity and Self-Designated Practice Specialty classifications are reported by the physicians in the Physicians' Practice Arrangements (PPA) questionnaire. The reporting period for data is as of December 31, 2010.

Pediatricians include those non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care and whose self-designated practice specialty is identified as Pediatrics, General.

The pediatricians to population ratios are calculated by dividing the total number of pediatricians by the total population and multiplying by 100,000 to derive the ratio of pediatricians per 100,000 population.

Obstetricians/Gynecologists

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the *2010 Census Redistricting Data (Public Law 94-171) Summary File*, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data from the AMA Masterfile include Total Non-Federal MDs and DOs and are broken out by Specialty and Major Professional Activity for 2010. Major Professional Activity and Self-Designated Practice Specialty classifications are reported by the physicians in the Physicians' Practice Arrangements (PPA) questionnaire. The reporting period for data is as of December 31, 2010.

Obstetricians/Gynecologists include those non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care and whose self-designated practice specialty is identified as Obstetrics-Gynecology, General.

The obstetricians/gynecologists to population ratios are calculated by dividing the total number of obstetricians/gynecologists by the total population and multiplying by 100,000 to derive the ratio of obstetricians/gynecologists per 100,000 population.

General Surgeons

Source: The 2010 AMA Non-Federal M.D. and D.O. Specialty data were obtained from the 2010 American Medical Association Physician Masterfiles ©. The 2010 Census Population data are from the *2010 Census Redistricting Data (Public Law 94-171) Summary File*, U.S. Census Bureau. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data from the AMA Masterfile include Total Non-Federal MDs and DOs and are broken out by Specialty and Major Professional Activity for 2010. Major Professional Activity and Self-Designated Practice Specialty classifications are reported by the physicians in the Physicians' Practice Arrangements (PPA) questionnaire. The reporting period for data is as of December 31, 2010.

General Surgeons include those non-federal MDs and DOs under age 75 who are not hospital residents and whose major professional activity is classified as patient care and whose self-designated practice specialty is identified as General Surgery.

The general surgeons to population ratios are calculated by dividing the total number of general surgeons by the total population and multiplying by 100,000 to derive the ratio of general surgeons per 100,000 population.

Nurse Practitioners

Source: The 2010 Nurse Practitioners with an NPI are from the Centers from Medicare and Medicaid (CMS) 01/10/2011 *National Provider Identification (NPI) File*. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: The Administrative Simplification provisions of the *Health Insurance Portability and Accountability Act of 1996 (HIPAA)* mandated the adoption of standard unique identifiers for health care providers and health plans. The NPI is a unique identifier developed by CMS. Covered health care

providers and all health plans and health care clearinghouses must use the NPIs in the administrative and financial transactions adopted under HIPAA.

Data were processed using a ZIP to FIPS conversion file based on ZIP codes from the US Postal Service. Invalid ZIP codes were resolved matching city and state names and manually.

A nurse practitioner is a registered nurse provider with a graduate degree in nursing prepared for advanced practice involving independent and interdependent decision making and direct accountability for clinical judgment across the health care continuum or in a certified specialty. A nurse practitioner has completed additional training beyond basic nursing education and provides primary health care services in accordance with state nurse practice laws or statutes. Tasks performed by nurse practitioners vary with practice requirements mandated by geographic, political, economic, and social factors. Nurse practitioner specialists include, but are not limited to, family nurse practitioners, gerontological nurse practitioners, pediatric nurse practitioners, obstetric-gynecologic nurse practitioners, and school nurse practitioners.

The total nurse practitioners to population ratios are calculated by dividing the total number of total nurse practitioners by the total population and multiplying by 100,000 to derive the ratio of total nurse practitioners per 100,000 population.

Certified Registered Nurse Anesthetists (CRNA)

Source: The 2009 Certified Registered Nurse Anesthetists (CRNA) were obtained from the National Center for the Analysis of Healthcare Data (NCAHD) which is sponsored by the Edward Via Virginia College of Osteopathic Medicine. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data were provided by the National Board on Certification & Recertification of Nurse Anesthetists and include student resident and retired providers as well as actively practicing board certified registered nurse anesthetists.

The total certified registered nurse anesthetists to population ratios are calculated by dividing the total number of certified registered nurse anesthetists by the total population and multiplying by 100,000 to derive the ratio of total certified registered nurse anesthetists per 100,000 population.

Certified Nurse Midwives (CNM)

Source: The 2011 Certified Nurse Midwives (CNM) were obtained from the Association of Certified Nurse Midwives. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Total Certified Midwives are included.

Data were processed using a ZIP to FIPS conversion file based on ZIP codes from the US Postal Service. Invalid ZIP codes were resolved matching city and state names and manually.

The total certified nurse midwives to population ratios are calculated by dividing the total number of certified nurse midwives by the total population and multiplying by 100,000 to derive the ratio of total certified nurse midwives per 100,000 population.

Physician Assistants (PA)

Source: The 2010 Physician Assistants data were obtained from the American Academy of Physician Assistants (AAPA). These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Data were processed using a ZIP to FIPS conversion file based on ZIP codes from the US Postal Service. Of the 82,648 Physician Assistants with license expiration date information on the 2010 file, 290 records could not be resolved. Therefore, these were not included on the ARF.

The total physician assistants to population ratios are calculated by dividing the total number of physician assistants by the total population and multiplying by 100,000 to derive the ratio of total physician assistants per 100,000 population.

Population

Source: The 2010 Census Population and 2009 Census Population Estimates were used to calculate providers per 100,000 population ratios, depending on the year of the provider data. These data are included on the Area Resource File: Dept. of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Area Resource File (ARF), 2012, Rockville, MD.

Definition and Notes: Computed by dividing the number of providers by the total population for the respective year times 100,000.