

Negotiated Rulemaking Committee on the
Designation of Medically Underserved Populations
and Health Professional Shortage Areas

Final Report to the Secretary

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Contents

- Executive Summary 1
- Introduction 7
 - Legislative Authority 7
 - Negotiated Rulemaking 8
 - Negotiated Rulemaking Procedure 8
 - Committee Description 8
 - History of Health Professional Shortage and Medical Underservice Designation 10
 - Current MUA/P Designation Process 10
 - Current HPSA Designation Process 12
- Conceptual Framework 14
 - Evidence-Based & Data Driven 14
 - Simplicity 14
 - Reasonableness 15
 - Consequences to Existing Safety-Net 15
 - Maintaining Separate HPSA and MUA/P Designations 16
- Rational Service Area 17
 - Discrete Geographic Base Areas 17
 - Continuous Geographic Areas 18
 - Interrelated 18
 - Distinct 18
 - Petitioning for a State-wide RSA Plan 19
 - Population RSA 19
- Population-to-Provider Ratio 21
 - Counting Primary Care Providers 21
 - Counting Primary Care Physicians 21
 - Counting NP, PA, and CNMs 21
 - Counting Full-Time Equivalency 22
 - Counting Providers for Population-Specific Designations 23
 - Excluding Certain Providers from the Count 23
 - Additional Provider “Backouts” 23
 - Counting the Population 25
 - Adjustments for Age and Gender 25
 - Transient Populations 25
 - Institutional and Group Quarters Populations 26
 - Calculating the Population-to-Provider Ratio 26
- Medically Underserved Areas 27
 - Population-to-Provider Ratio (weighted at 15 percent) 27
 - Health Status (weighted at 20 percent) 28
 - Barriers to Care (Weighted at 20 percent) 29
 - Ability-to-Pay (Weighted at 45 percent) 29
 - Variable Scaling Decisions 31
 - Weighting Decisions 31
 - Threshold for Designation 32
- Medically Underserved Populations 34

Eligible Population Groups.....	35
MUP Regular Application Process.....	35
Population-to-Provider Ratio (20 percent).....	35
Health Status (20 percent)	35
Barriers to Care (40 percent).....	36
Ability-to-Pay (20 percent)	37
Local Data Options	37
Weighting.....	38
Streamlined Application Process.....	38
Thresholds.....	38
Geographic HPSAs.....	39
Geographic HPSA Model	39
Issues Relating to the Establishment of the HPSA Thresholds.....	41
Frontier Areas:.....	42
Population Group HPSAs.....	44
Eligible Population Groups.....	44
Population Group HPSA Regular Application Process	44
Data Flexibility.....	45
Streamlined Application Process.....	45
Facility HPSA	46
Automatic Designations.....	46
Continuation of the Current Process for Public and Non-Profit Private Facility	
Designations	46
Proposed Additional New Facility Designation Process.....	47
Magnet Clinic	47
Safety Net Provider Facility Designations.....	47
Essential Primary Care Providers in a Community	48
Insufficient Provider Capacity:	48
Correctional Facility HPSA Designation	48
Federal and State Correctional Institutions and Youth Detention Facilities	48
County Correctional Institutions	49
Counting Internees.....	49
Facility-specific MUP designations	50
Exceptional Medically Underserved Population.....	50
Definition of EMUP Service Area.....	51
Guidance for EMUP Designations.....	51
Unusual Local Conditions.....	52
Updates to EMUP	52
Impact Analysis	53
Implementation and Other Recommendations Regarding the HPSA and MUA/P Designation	
Process	55
Role of State Primary Care Offices	55
Transition Plan	56
Annual Reviews and Frequency of Publication	57
Urgent Review of Certain Designations.....	58
Recommendation Relating to American Community Survey Data	58

Recommendation on Targeting Areas of Greatest Need	59
Recommendation on Reviewing and Updating HPSA and MUA/P Indicator Scaling and Methodology	60
Recommendation Relating to the Designation Application System	60

Executive Summary

Consistent with provisions of the Affordable Care Act of 2010, the Negotiated Rulemaking Committee (NRMC) on the Designation of Medically Underserved Populations (MUPs) and Health Professional Shortage Areas (HPSAs) was appointed by the Secretary of Health and Human Services (HHS) in July 2010 to consider and develop new methodologies for designating medically underserved communities and populations with health professional shortages and/or high unmet needs for health services. At least twenty-five Federal programs use these designations to help ensure that billions of dollars in Federal resources are provided to high need communities and populations. The twenty-eight members appointed to the NRMC fully recognized the importance of the designations were honored to undertake this most important and challenging assignment.

In 1998 and 2008 respectively, the Health Resources and Services Administration (HRSA) proposed new rules for designation. Experts, researchers, representatives of State primary care organizations (PCOs), and other stakeholder representatives invested considerable time and energy developing and testing proposed methodologies. In both cases, however, HRSA received hundreds of critical comments upon publication and ultimately withdrew the proposed rules. With this background, authors of the Affordable Care Act of 2010 required HHS to use the negotiated rulemaking process for developing revised underserved and shortage designation methodologies recognizing the significant challenge of developing shortage methodologies that are (a) fair and equitable; (b) effective in identifying high need areas and populations; and (c) agreeable to the various stakeholder groups and communities.

The majority of NRMC members viewed their role as defining all areas and populations of significant need, not just those areas and populations of greatest need, as the designation process is only one part of the overall system for targeting Federal resources to areas that are medically underserved or in need of health professionals. With the exception of one Federal program², shortage or underservice designation is only a first step towards eligibility for Federal resources. Most Federal programs using designations have additional procedures for targeting

² Section 1833(m) of the Social Security Act provides 10% bonus Medicare payments to all physicians who furnish medical care services in geographic areas that are designated by the HRSA as Primary Medical Care HPSAs (and to psychiatrists serving Mental Health HPSAs) under Sec. 332(a)(1)(A) of the Public Health Service Act. The Affordable Care Act (P.L. 111-148) expanded these bonus payments for general surgeons practicing in HPSAs by another 10%. (It also created a new 10% bonus for all physicians, NPs, PAs, and clinical nurse specialists delivering primary care Medicare services, whether or not those services are delivered in HPSAs.)

resources among eligible communities and organizations (e.g. objective grant reviews and/or the use of scoring factors to rank eligible areas of needs). These additional steps are necessary to assure that Federal programs adequately target resources to those areas and populations of greatest need, and the Committee drafted its recommendations in anticipation that the various health-related Federal government programs would continue to target resource allocation in this manner, utilizing shortage or underservice designation as the first step in accomplishing this goal. Most Committee members viewed their role as creating first-pass criteria for defining areas and populations of high need and they wanted their proposal to be straightforward and simple enough that communities lacking sufficient resources to mount their own designation campaigns might be identified proactively.

The Committee deliberated for 14 months, including 36 days of meetings and numerous sub-Committee meetings and conference calls to review and assess considerable data analyses and research. In this effort, the Committee received extensive technical assistance from a HRSA contractor, John Snow Inc., (a firm specializing in research, technical data analysis and evaluation) and from HRSA staff. Additionally, Committee members contributed research and their own analyses to help inform the Committee process.

Wherever possible the Committee relied on data and analysis to inform their decisions. The Committee also utilized the personal knowledge, expertise, and experience of Committee members and the population groups and organizations they represented. Data analysis alone, however, could not answer every question or resolve all relevant issues. For example, there were many different opinions regarding definitions and measures of important concepts such as “underserved,” “shortage,” and “high need.”

Consensus was defined at the first meeting of the Committee as unanimity. This was further clarified at the final meeting to be unanimity of all those present and voting (which included those on the telephone), excluding abstentions and absences.

Although the Committee did not reach a full consensus, 90 percent of voting members endorsed this Report (final vote in favor of endorsement: 21 to 2; five members were absent.). During the voting process, individual votes were taken on each of the six types of designations³. Two of these designation methodologies were unanimously endorsed by voting members; one

³ The six designation types are: 1) Geographic HPSA; 2) Population Group HPSA; 3) Facility HPSA; 4) Medically Underserved Area; 5) Medically Underserved Population; and 6) Exceptional Medically Underserved Population.

was opposed by one member; and three designation methodologies were opposed by two Committee members. (See Table 1: NRMC Votes by Member, Section, and Issue.)

The Committee urges the Secretary to implement those sections/recommendations for which consensus was reached by the Committee. Further, the Committee urges the Secretary to seriously consider the other recommendations, all of which were overwhelmingly endorsed by the Committee. If any of the recommendations are found to violate Federal law or HRSA's legal obligations, those recommendations should be severed from the whole with the remaining sections remaining in full force and effect as if the severed provisions did not exist.

While the majority of the Committee endorsed all of the recommendations included in this Report, three addenda have been submitted by Members who opted to further explain their positions with respect to the information presented herein. Most of the viewpoints described in the addenda were considered by the full Committee during its deliberations. While a few Committee members shared concerns with the final method that are expressed in their addenda, the majority very strongly supported the validity and merit of the proposed recommendations set forth in this Report.

The Committee members who endorsed this Report are confident that it contains a set of recommendations and documentation that will lead to significantly improved methodologies. Committee members expect that these methodologies will strengthen the ability of Federal programs to target areas and populations of greatest need. Below is a brief list of some of the ways that the Committee's proposal offers an improvement over the current designation methodologies:

- **Counting Providers:** The Committee's proposal recognizes that nurse practitioners, physician assistants, and certified nurse midwives provide significant primary care services in our Nation. Therefore, for the first time, these clinicians will appropriately be included in the count for purposes of developing the population-to-provider (P2P) ratio.
- **Medically Underserved Area (MUA) Designation:** The Committee's revised MUA designation process broadens the number and types of indicators that applicants may use when seeking designation. This revised process provides additional indicators of underservice beyond those available under the current MUA regulation, and the

Committee anticipates that these additional indicators will more accurately capture the needs of certain communities. The Committee's MUA proposal increases emphasis on ability-to-pay⁴ above all other components, in part because it was shown to correlate strongly with poor health status and predict poor health outcomes.

- **Medically Underserved Population (MUP) Designation:** The revised MUP designation methodology proposed by the Committee generally utilizes the same components as the MUA model; however, the MUP methodology emphasizes barriers to care above all other components since the Committee determined that barriers to care are often the most significant issue affecting primary care access for population groups. The Committee's MUP designation proposal offers applicants the ability to submit an alternative population-specific barrier and/or health status indicator, in lieu of the generally prescribed indicators for these components. Additionally, this proposal provides a flexible local data option for population groups, recognizing that data for the general population of an area may not adequately capture needs of population groups and that data for certain population groups is often non-existent.
- **Geographic HPSA Designation:** The Committee's proposal allows for designation of geographic Rational Service Areas (RSAs) with P2P ratios at or above 3000:1 without consideration of other factors. In addition, it expands the numbers of areas that would be eligible for designation by allowing RSAs with P2P ratios between 3000:1 and 1500:1 to be eligible for designation provided that they demonstrate critical needs based on an analysis of health status and ability-to-pay. Additionally, all frontier RSAs with P2P ratios above 1500:1 are eligible for designation without consideration of health status or ability-to-pay. Impact analysis of these changes suggested that the recommended methodology would reach more areas with severe provider shortages (higher P2P ratios) are reached with the existing geographic HPSA methodology.
- **Population Group HPSA Designation:** The Committee's population group HPSA designation proposal allows for designation of population groups demonstrating a P2P

⁴ Ability-to-Pay is defined throughout this Report as the percentage of the population at or below 200 percent of the Federal Poverty Level.

ratio of 2550:1 or higher.⁵ Consistent with the geographic HPSA designation methodology, the population group HPSA designation method expands eligibility by allowing population groups with P2P ratios between 2550:1 and 1250:1 to be eligible provided that they can demonstrate need based on an analysis of health status and ability-to-pay. The Committee's proposal makes more explicit that additional groups (beyond those living in poverty) are eligible for designation as population group HPSAs. The proposal also provides a flexible local data option for population groups, recognizing that data for the general population of an area may not adequately capture the needs of population group, and that data for certain population groups are often non-existent.

- **Facility HPSA Designation:** The Committee's proposal sets forth three new pathways for designation as facility HPSAs for safety-net providers, essential community providers, and "magnet" facilities. The facility HPSA proposal also broadens eligibility for correctional institutions.

While the majority of existing designations would remain eligible under these revised methodologies and many new areas would become designated, some currently designated areas would lose their designation. Currently, a total of 33.4 million people reside in areas designated as geographic HPSAs. Under the new methodology, impact analysis using national databases indicates that currently designated areas with an estimated total population of 12 million people would likely lose designation, while additional areas with an estimated 20.5 million people would be newly eligible, for a net increase of 8.5 million residents of geographic HPSAs. Likewise, of the 71 million people living in areas currently designated as MUAs, 16 million would likely lose their designation while 48 million reside in areas that would be newly eligible. These estimates were based on an assessment of national databases. The actual number and population of designations lost will likely be lower, since PCOs and other applicants will have the opportunity to provide local data that may be more current and accurate for HRSA's consideration in individual cases, particularly relating to the number of practicing primary care providers.

⁵ Establishing a lower threshold for population group HPSA designation is consistent with the current designation methodology, which sets the population group HPSA threshold 15 percent below the geographic HPSA threshold.

The Committee firmly believes that the proposed new methodologies will help to more effectively target Federal resources to high need communities and populations. For example, data analysis showed that the average population served by primary care providers for geographic HPSAs (adding Nurse Practitioners, Physician Assistants, and Certified Nurse Midwives (NPs/PAs/CNMs)) would increase from an overall ratio of 2,146:1 population-to-provider ratio (the current geographic HPSA methodology) to 3486:1 population-to-provider ratio (in areas that would be designated using the new methodology).

The Committee recognizes that there are remaining methodological areas where improvement is needed and possible, and that over time updates of the methodology will be important as new data and information become available. Therefore, the Committee unanimously recommends that HRSA work with an advisory Committee in the short run to help address several outstanding issues. Additionally, the Committee recommends that HRSA update key aspects of the methodologies every five years and undertake a major reassessment every ten years.

Introduction

On June 29, 2010, the Negotiated Rulemaking Committee on the Designation of Medically Underserved Populations and Health Professional Shortage Areas (the Committee) was chartered by the Secretary of HHS, pursuant to Section 5602 of the Patient Protection and Affordable Care Act of 2010. The purpose of the Committee was to provide advice and make recommendations on developing a new rule containing a revised methodology, criteria, and process for designating shortage/ underserved areas and populations.

The current designations, known as Medically Underserved Areas and Populations (MUA/Ps) and Health Professional Shortage Areas (HPSAs), were developed to identify areas and population groups that are experiencing medical underservice and/or a shortage of health professionals. The designations are used to identify areas, populations, and facilities eligible to apply for the resources distributed through various Federal and State programs. (See Table 2: Federal Programs Using Health Professional Shortage Areas and Other Designations of Underservice).

Legislative Authority

Section 5602 of the Patient Protection and Affordable Care Act (ACA) [Pub. L. 111-148], enacted March 23, 2010, directs the Secretary of the United States Department of Health and Human Services (HHS) to establish a negotiated rulemaking process to reexamine the methodology for designating areas and populations that are experiencing medical underservice and/or health professional shortages. The statutory bases for designation of MUA/Ps and HPSAs are set forth in Section 330(b)(3) [42 USC 254(b)(3)] and Section 332 [42 USC 254e] of the Public Health Service Act (the PHS Act), respectively. Currently, designation of MUA/Ps is carried out under the Grants for Community Health Services regulations at 42 CFR Part 51c.102(e), while regulations at 42 CFR Part 5 govern the procedures and criteria for designation of HPSAs. (See Attachment A: Statutory Language for MUPs; Attachment B: Statutory Language for HPSAs; Attachment C: Current Regulation Governing MUA/Ps; Attachment D: Current Regulation Governing HPSA Designation.)

Negotiated Rulemaking

Negotiated Rulemaking Procedure

The negotiated rulemaking process is governed by the Negotiated Rulemaking Act of 1990, Public Law 101-648 [5 USC 561-569]. As required by that Act, a Notice of Intent to Form a Negotiated Rulemaking Committee was published in the *Federal Register* on May 11, 2010 [75 F.R. 26167].

Once formed, the law requires each negotiated rulemaking committee to attempt to reach a consensus on all issues concerning their rule and any other matters the committee deems relevant to the rule.⁶ Beyond performing this specific duty, committees have discretion with regards to procedural matters, including agreement on an appropriate definition of “consensus.”⁷ In this case, the Committee agreed in their Ground Rules to define consensus as “a decision which all Committee members or designated alternates present at the meeting can agree upon” on behalf of the interests represented. (See Attachment E: Draft Negotiated Rulemaking Committee Ground Rules.) In the event that the Committee reached full consensus, Members agreed to support the consensus by not commenting negatively on the content of the resultant Interim Final Rule. In the event that consensus was not reached on some of the issues presented, the Committee members were free to comment adversely on those areas of disagreement for which consensus was not reached.

Committee Description

The Committee was comprised of 28 members, including one Federal representative from the Health Resources and Services Administration (HRSA). (See Attachment F: Negotiated Rulemaking Committee Membership). The law governing negotiated rulemaking requires that Committee membership be limited to 25 members, unless it is determined by the head of the Agency (in this case HRSA) that a larger number of members is necessary to the functioning of the Committee or the achievement of balanced membership.⁸ Due to the highly technical nature of shortage designation and the need to represent many different groups affected by the designation methodologies, HRSA determined that a larger Committee was desirable.

⁶ 5 U.S.C. § 566(a)

⁷ 5 U.S.C. § 562(a)

⁸ 5 U.S.C. § 565(b)

Committee members included technical experts on indicators of underservice and shortage, workforce and data analysis, and methodologies for combining multiple indicators, as well as representatives of affected Federal programs, provider groups, public health administrators, and other stakeholders.

The Committee approved the use of two facilitators from the Federal Mediation and Conciliation Service, who moderated the meetings, provided impartial assistance to the Members in conducting negotiations and discussion, and managed the transcripts and recordkeeping. Additionally, a designated HRSA staff member took notes at each meeting and drafted official minutes for review and approval by the Committee at the following meeting. The Bureau of Health Professions (BHP) in HRSA provided funding and administrative support for the Committee to the extent permitted by law and allowable within existing appropriations, including meeting logistics, development of agendas, relevant analyses, minutes, and other information. The information provided to the Committee and minutes of its meetings were made available to the public throughout the Negotiated Rulemaking Committee's website at: <http://www.hrsa.gov/advisoryCommittees/shortage/index.html>.

The Committee convened 14 times (36 days) over the course of 14 months. Committee members tried to represent the public's interest in assuring that the areas, populations and entities to be designated under their proposal were truly medically underserved and/or experiencing primary health care workforce shortages. The Committee also considered comments submitted orally or in writing by members of the public at each meeting in developing their recommendations.

The revised designation methods suggested by this Committee are intended to improve the designation process for underserved areas and populations and primary care HPSAs by incorporating up-to-date indicators for determining health status, ability-to-pay, and the provider-to-population ratio. These updated designation methodologies also better delineate service areas and underserved population groups and facilities and streamline the designation application process. The Committee did not address the criteria for designating dental and mental health HPSAs. Criteria for podiatric, vision care, pharmacy, and veterinary care HPSAs, no longer in use were also not addressed by the Committee.

This final Report summarizes the issues discussed during the Committee's deliberations and provides consensus-based recommendations reached by the Committee. Although the

Committee did not ultimately reach unanimous consensus, the vast majority of Committee members (21 of 28) supported the final package; two members of the Committee voted against the content of this Report; and five members were not present during the final vote.

History of Health Professional Shortage and Medical Underservice Designation

The first shortage designation, called the, “Critical Health Manpower Shortage Areas” (CHMSA), was outlined in the 1971 legislation creating the National Health Service Corps. Initial Medically Underserved Area (MUA) and Population (MUP) designations were implemented in 1975, stemming from legislation enacted in 1973 that established grant programs for Health Maintenance Organizations (HMOs) and Community Health Centers (CHCs) that would serve medically underserved populations. The Governor’s Exceptional Medically Underserved Population (EMUP) designation was created in 1986 with legislation that added the population-level designation option, if a medically underserved population could be identified [P.L. 99-280].

There have been two previous attempts to revise the regulations governing designations of MUA/Ps and primary care HPSAs, in 1998 and 2008. (See Attachment G: Proposed Revisions to Designation Methodology and Criteria [1998, 2008].) In both cases, the proposed rules were withdrawn by HRSA after receiving a large volume of public comments, which were predominantly related to widespread concerns that significant numbers of designations supporting existing safety-net programs might be withdrawn if new criteria were implemented. In their deliberations, the Committee considered all or most of the major issues and concerns that arose with the two previous attempts at rulemaking including the role of nurse practitioners, physician assistants, and nurse-midwives in primary care; the impact of methodological changes on rural and frontier areas; and the impact on the existing safety net as well as other issues. The Committee sought to reach decisions that address these issues in a way that avoids the previously perceived problems.

Current MUA/P Designation Process

The designation criteria for MUA/Ps were established under Section 330(b)(3) of the Public Health Service Act. Section 330(b)(3) of the PHS Act directs the Secretary of HHS in prescribing criteria for determining shortages to include components of health status, ability-to

pay, accessibility to health services, and availability of health professionals. The current methodology for MUA/P designation is described in regulation at 42 CFR CFR Part 51c.102(e). The basis for identifying MUA/Ps under the current regulation is computation of an Index of Medical Underservice (IMU), which is comprised of four components:

- (1) ratio of primary care physicians to population;
- (2) infant mortality rate (IMR);
- (3) percentage of the population which is age 65 and over; and
- (4) percentage of the population with incomes below the poverty level.

For MUA designations, each of the four components of the IMU is calculated for the entire population of a geographic area, while for MUPs, the ratio is computed only based on the members of the underserved population seeking designation and the primary care providers serving that population group. To apply for MUP designation, a survey may be used to ascertain which providers are available to serve the population in question. Certain types of Federally-supported providers are not counted, including National Health Service Corps (NHSC) clinicians and J-1 Visa waiver physicians. For the purpose of calculating the population-to-provider ratio, the population consists of all permanent resident civilians within the area, excluding institutionalized populations such as prisoners and residents of nursing homes.

The third and fourth components are based on census indicators, county, minor civil division, or census county division data in non-metropolitan areas and census tract data in metropolitan areas. To complete calculation of the IMU, a specified weight is applied to the data obtained on each of the four components. The result is a standardized score, and the current regulations employ the 1975 median county IMU score of 62 as the threshold value; areas or populations with lower scores are designated as underserved.

There is also a Governors Exceptional MUP designation, established under P.L. 99-280, available if the Governor and local health officials can document unusual local conditions that impact access to health services.

Current HPSA Designation Process

The designation criteria for HPSAs were established in law in 1978 under Section 332 of the Public Health Service (PHS) Act, as amended in 1996 [P.L. 104-299]. Section 332(b) of the PHS Act directs the Secretary of HHS to consider both the ratio of available health professionals to the number of individuals in an area, or population group, and the need for health services in that area or population when establishing criteria for the designation of areas, population groups, or facilities as shortage areas. The current designation methodology is described in regulation at 42 CFR Part 5.

To be eligible for a geographic or population group HPSA designation, the rational service area involved must be natural catchment area for the delivery of health services. The area or population must have a population-to-primary care provider ratio of at least 3,500 to 1 (or 3,000 to 1 in areas with indicators of high need or insufficient capacity), and provider resources in contiguous (or adjoining) areas must be overutilized, more than 30 minutes travel time away, or otherwise inaccessible. Indicators considered in determining high need are the percent of the population with incomes below the poverty level and the rate of infant mortality or low birth weight.

In addition to geographic and population group HPSAs, a facility-level HPSA designation can be conferred on certain types of public and non-profit facilities that serve, but are not located in a HPSA, and separate criteria have been defined for the designation of Federal and State correctional facilities and youth detention facilities.

The Health Care Safety Net Amendments of 2002 [P.L. 107-251, as amended by P.L. 108-163] modified Section 332 of the PHS Act to require “automatic” facility HPSA designation of all FQHCs and those RHCs meeting the requirements of Section 334 of the PHS Act (offering a sliding fee scale for low-income patients) for at least six years, after which these entities would need to demonstrate that the areas or populations they serve meet the HPSA designation criteria then in effect. However, the Health Care Safety Net Act of 2008 [P.L. 110-355] removed the latter requirement and made the automatic HPSA designation permanent for these entities. These “automatic” facility HPSAs are given HPSA scores using available national data for their location [from the primary care service areas (PCSAs) database], but may submit local data to be used in the HPSA scoring process if community-level data are believed to be more accurate or complete than national data.

Unlike MUA/Ps, which have no statutory requirement for update frequency, HPSAs are required to be periodically updated. The statute requires an annual review of HPSA designations. This has been implemented by requesting State entities to submit updates each year for any and all HPSA designations in their State which have not been updated in the previous 3-4 years, and to submit updates for other HPSAs whenever significant changes occur.

Conceptual Framework

The Committee identified several key concepts to guide them during their analysis and evaluation of methodological alternatives. These concepts were selected to reflect the Committee's desire to have a relatively simple, data-driven designation process for increasing access and placing providers in areas of greatest need, without dramatically impacting the overall number of designations or the existing safety net programs.

Evidence-Based & Data Driven

The proposed new methodologies should be based on scientifically-recognized methods, and the contribution of each indicator to the overall component should be informed by evidence or some scientifically verifiable relationship, as much as possible. (For example, the Committee decided to count an OB/GYN physician as 25 percent of 1.0 full-time equivalent (FTE) primary care provider after reviewing published, peer-reviewed articles, and studies which suggested that this was a reasonable estimate of the portion of time spent by these physicians providing primary care.)

Simplicity

The Committee's proposed methodological approaches are intended to be understandable and usable by those seeking or affected by designation in order to make it easier for communities to apply for designation or to receive it proactively (especially for those communities unable to mount an application). Where multiple indicators seem to measure the same underservice/shortage component, the Committee attempted to minimize the number of correlated indicators utilized in the designation methodologies. In that vein, the Committee's proposed new HPSA designation methodology continues to use the population-to-provider ratio as a fundamental metric of underservice, since such ratios are well-recognized and understood by HPSA-related program participants. This also provides some continuity between a new proposal and the current designation methodologies.

Reasonableness

The Committee decided that the new criteria should be reasonable and have “face validity” meaning that they should be based on indicators that a prudent layperson would recognize as indicators of underservice and that “look like” they measure what they are supposed to measure. When data analysis suggested that a multitude of indicators correlated with underservice, the Committee looked to other data and experiences to identify those indicators that met its “face-validity” test. For example, poverty and poor health status satisfy this test because they were found to correlate with other underservice indicators and are recognized as measures of underservice by health care researchers.

Consequences to Existing Safety-Net

The Committee further decided that the development of new designation criteria and processes should consider the potential impact on existing safety-net providers and the communities they serve, since many currently designated areas and/or populations are served by Federal programs such as the NHSC, FQHCs and RHCs. As such, the impact of these changes on currently designated areas and populations had to be taken into consideration so as to minimize disruption to existing health care delivery systems. The Committee sought to calibrate its decisions to take into account the impact of its recommendations on currently designated areas and populations. The intent was not that all currently-designated areas, populations, and facilities maintain their current designations, but that the new designation methodology more accurately identifies areas and populations of need. The Committee considered the impact of such potential losses and disruption of well-used services balanced against the potential benefits in terms of designating newly-identified underserved population

Maintaining Separate HPSA and MUA/P Designations

The Committee recommends maintaining the current distinction between these two major types of shortage/underservice designations: health professional shortage and health service shortage. Although the legislative requirements for the two designation types are similar in many respects, they are rooted in distinct legislative histories and each has unique practical applications.

The MUA/P designation, first authorized by the Health Maintenance Organization Act of 1973 and later referenced in legislation authorizing the Community Health Center program, is generally used in determining eligibility for grants for Community Health Centers; eligibility for certification as a Federally Qualified Health Center (FQHC) or FQHC Look-Alike (which in turn are eligible for cost-based Medicare/Medicaid reimbursement); and is also used (along with primary care HPSAs) in identifying areas that may be served by Centers for Medicare and Medicaid-certified Rural Health Clinics. The MUA and MUP designations target Federal resources to those areas and populations where individuals have poor health status, low ability-to-pay, limited availability of primary care providers, and barriers to accessing primary care. This determination is presently done based on whether the area or population meets a threshold “Index of Medical Underservice” score.

In contrast, the HPSA designation process, created in 1978, is statutorily tied to the National Health Service Corps program, the Federal program that offers recruitment incentives, in the form of scholarship and loan repayment support, to health professionals committed to providing care in areas with health professional shortages. The HPSA designation process outlined in Section 332 of the PHS Act is the mechanism through which areas, populations and facilities’ health professional capacity is assessed to determine eligibility for NHSC placements.

The Committee recognizes that there is certain overlap among the goals of HPSAs and MUAs. However, the Committee agreed that the designation processes should remain distinct to emphasize the statutorily defined purposes for the separate designations and the differences in the programmatic interventions linked to each designation process.

Rational Service Area

Under the current HPSA designation process applicants must demonstrate that any geographic service area they wish to designate (or use as the basis for a population group HPSA designation) is a rational service area (RSA), based on a defined set of criteria. Over the past 20 years, the same approach has been used for both HPSAs and MUA/Ps, as the regulatory language regarding MUA/P designation is not as specific as it is for HPSAs.

The Committee recommends maintaining the requirement that all geographic HPSAs and MUAs be RSAs, and that population group HPSAs and MUPs also generally be defined within population RSAs. In establishing a definition for RSA, the Committee analyzed the current HPSA RSA criteria in terms of geographic units, distance and travel time, and boundary/contiguous area placement, and decided to maintain these general concepts with some minor modifications. For example, the Committee recommends that applicants be allowed to use Geographic Information System (GIS) tools to measure travel distances, travel times and geographic isolation.

The Committee proposes to define an RSA as an area that meets the following four criteria: (a) RSAs must be made up of discrete defined geographic base areas, (b) RSAs should be located in continuous areas, (c) Different parts of the RSA must be interrelated, and (d) RSAs must be distinct from adjacent contiguous areas.

Discrete Geographic Base Areas

The building blocks for RSAs must generally be discrete census tracts (CTs). Alternatively, where defined and relevant, applicants may use the following discrete basis areas: Minor Civil Divisions (MCD), Census County Divisions (CCD), or Zip Code Tabulation Areas (ZCTAs). In most cases, counties or PCSAs (comprised of either Census Tracts or ZCTAs) may also be used as base areas, if found to meet the Interrelated and Distinct criteria below. Where applicable, the proximity of two or more population centers within the service area should not necessarily create a “natural” bifurcation of care seeking within the service area.

Continuous Geographic Areas

All service area components must be continuous to one another; components of one service area may not overlap with components of other service areas of the same designation type, and the service area may not exclude any location within the boundaries of the geographic area.

Interrelated

A service area would be considered “interrelated” if a preponderance of the service area population could reasonably be expected to receive primary care services within the service area (based on travel distance/travel time and other considerations) when it is adequately resourced. Applicants can demonstrate interrelatedness by showing that the resident civilian population of a proposed RSA is reasonably characterized as having common socioeconomic and demographic barriers to primary care access; is an area bounded by physical barriers such as mountains, rivers, airports, parks, etc. that isolate it from surrounding communities, or that the service area is currently defined as a Primary Care Service Area (PCSA), a utilization-based service area in the United States reflecting the travel of Medicare beneficiaries to primary care clinicians. Alternatively, applicants could demonstrate interrelatedness by showing that an area is currently served by an existing Federally recognized safety net primary care clinic site, or that the service area is a county or county-equivalent.

Distinct

Service areas would be considered distinct from adjacent service areas if: 1) the service area population is isolated from the nearest source of accessible care by at least 30 minutes of travel time, on public roads, under travel conditions normal to the service area, or 2) if a population, because of distinct demographic characteristics (e.g. poverty rates, racial/ethnic composition, etc.) faces isolation from nearby resources in contiguous areas, or 3) if clinician capacity of the adjacent service areas is unable to accommodate the primary care needs of the service area.⁹ The Committee would require the use of generally accepted Geographic Information System (GIS) tools to determine service area isolation, such as Google maps or

⁹ The threshold of over-utilization should be defined as 80 percent of optimal provider capacity (2000:1) for the contiguous area.

MapQuest, or an acceptable technological successor, in lieu of the terrain guidelines outlined in the current HPSA regulation. Isolation would be calculated using GIS tools that measure from a central location in the population center of the service area to the nearest accessible and available clinician in the adjacent service area, adjusted for usual traffic conditions, public transit availability, available transportation routes, topography, and/or weather conditions. Public transit time may be used if it is generally available to residents of the service area, since travel time on public transportation may require traveling and connecting in non-direct ways that may impact travel time.

Petitioning for a State-wide RSA Plan

States have the option of submitting State-wide RSA plans and the Committee recommends that HRSA accept such plans. A service area plan petition must include official support of the State Primary Care Association (PCA) and State Office of Rural Health. A rational State service area plan shall include all geographic areas of the State and each proposed service area within the State must satisfy the conditions of discrete, continuous, interrelated and distinct. Designation applications, originating from States with a HRSA approved State service area plan, should not be required to include contiguous area analysis. The Committee recommends that HRSA accept revisions to Statewide service area plans periodically under procedures initiated by HRSA. States with existing service area plans may retain them in the transition to an updated designation methodology, but should adjust them as needed during the transition period to accommodate features of the new HPSA/MUP criteria.

Population RSA

To qualify for population group HPSA or MUP designation under the proposed regular application process, the Committee recommends requiring applicants to produce data indicating that the service area for which population group data are provided is a RSA for that population group. Such “population RSAs” include areas in which the population can both reasonably access the services provided and support the Federal resources assigned or allocated to serve the population. Population RSAs can be much smaller than regular RSAs (e.g. a concentrated homeless or LEP population), or much larger if the population is diffused in the general

population (e.g. HIV disease, people with disabilities, LGBT populations, etc). Large agricultural areas may be appropriate for migrant and seasonal farmworker populations.

Population-to-Provider Ratio

Counting Primary Care Providers

The Committee recommends some significant revisions to the process of counting primary care clinical providers in recognition that the provision of primary care has changed since enactment of the HPSA and MUA/P legislation. Members support broadening the definition to include in the count not only primary care physicians but also Nurse Practitioners, Physician Assistants, and Certified Nurse Midwives (NP/PA/CNMs) who are engaged in furnishing primary care. Committee members also recommend revising the types of activities that count towards full-time practice.

Counting Primary Care Physicians

The Committee would continue the process of including those Doctors of Medicine (MD) or Doctors of Osteopathy (DO) who are general or family physicians, general pediatricians, or general internists as 1.0 FTE, based on a 40 hour work week. The Committee would also now include MDs and DOs in adolescent medicine and geriatrics in the count as 1.0 FTE. Obstetricians and Gynecologists (OB/GYNs), considered as 1.0 FTE primary care clinicians under the current HPSA regulation, would remain included in the count but with lower weighting. The Committee recommends weighting OB/GYNs as 0.25 FTE.¹⁰ The Committee would continue the current practice of excluding hospitalists and ER-only physicians, as well as excluding those physicians suspended under Fraud and Abuse Control programs.

Counting NP, PA, and CNMs

The significant expansion over the past decade in the numbers of NPs, PAs, and CNMs practicing in primary care settings has made their inclusion in the counts of primary care clinicians essential to the validity of a revised designation process, particularly in those States and areas where these clinicians practice, in effect, as independent providers of care. The Committee recommends including those NP, PA, and CNMs that are practicing in primary care

¹⁰ Literature reviews conducted by HRSA's National Center for Health Workforce Analysis demonstrate that OB/GYN physicians spend 20-30 percent of their time providing primary care.

settings in the primary care provider count, as well as PAs specializing in OB/GYN. PAs or NPs trained as non-primary care specialists and/or assisting physician specialists would be excluded.

The Committee would apply a 0.75 weighting to NPs, PAs, and CNMs relative to primary care physicians. The 0.75 relative weighting provides an estimate of contribution to primary care clinician team counts for shortage designation purposes only, based in part on productivity studies. (See Attachment H: Productivity Studies of Providers). It does not represent the general relative cost or value of NP/PA/CNM services compared to physician services. The Committee also acknowledges that these providers often deliver a different set of services than a physician, and that weighting them at 1.0 would overstate the assessment of primary care capacity based on the productivity figures reviewed by the Committee. After much debate on the issue, the Committee felt that it was important to make this weighting adjustment to prevent underestimating an area's need for primary care clinicians (including physicians), particularly since many States currently limit the scope of practice for NPs, PAs, and CNMs. There was concern that counting these clinicians as 1.0 FTEs in determining designation would disadvantage areas which are served by NPs, PAs, and CNMs and that have few or no physicians in their quest to qualify for designation and possible placement of physicians. PAs specializing in OB/GYN would be included as .25 FTE, in a manner consistent with the weighting for OB/GYN physicians because they perform deliveries.

Counting Full-Time Equivalency

After some debate, the Committee voted to continue using 40 hours as the basis for "full time" due to precedent and concerns about underestimating need in some areas (especially rural areas) if 32 hours were used as full-time. Full-time equivalency for clinical providers working less than full time, or splitting their time between two or more sites, should be counted by calculating the hours worked per week at a specific site divided by the full-time (40 hour) base. For example, a provider who practices 20 hours per week will be considered 0.5 FTE (20 hours/40hours) for the purposes of counting FTE primary care providers. The Committee also decided to continue the practice of counting a maximum of 40 hours of practice time per provider, thereby limiting the maximum contribution of a clinician to 1.0 FTE, in acknowledgement that clinicians working excessive hours should not be considered an optimal model of care.

The Committee recommends continuing to include in the FTE count paid hours spent not seeing patients (e.g. CME leave, vacation, etc.) and, for the first time, hours spent on telemedicine and mentoring residents, since such time contributes to the provision of care. Non-patient care related activities, such as non-clinical administrative activities, legal, clinical teaching, research, professional society duties, and other non-patient care related activities (with the exception of mentoring) would remain excluded from time counted. The Committee also recommends changing current practice by excluding rounds, admitting, discharging, calls, and consultations in hospitals from the FTE count in an attempt to create parity between areas with and without hospitals and hospitalists.

Counting Providers for Population-Specific Designations

Population-specific designations will continue the practice of counting only those clinical primary care providers serving the population group, rather than all providers within the geographic area. FTE will be counted based on the portion of each clinician's practice hours currently dedicated to seeing members of the population group being evaluated. The number of providers serving a population group may be determined by surveying individual provider practices and organizations that serve the specific populations (e.g. advocacy groups and/or disease-specific support and services groups). (See Attachment I: Sample Survey of Primary Care Providers).

Excluding Certain Providers from the Count

The Committee recommends continuing the current practice of excluding provider time spent working exclusively for the government, military, Veterans Administration facilities, corporate or college health, long term care institutions, and correctional facilities, as this part of the provider's time is not available to the general public. The Committee further defined that providers working in 'Urgent/Convenience Care' settings should not be counted as they do not provide a full model of primary care with continuity and health management attributes.

Additional Provider "Backouts"

The Committee opted to continue and expand the practice of "backing out" providers associated with Federal programs to avoid the potential for a "yo—yo" effect which can result from the counting of these program-supported resources in determining community capacity.

Specifically, the “yo-yo” effect is seen when an area is first designated and an intervention such as a grant award or practitioner placement occurs as a result of the designation. Subsequently, newly placed practitioners are counted, which changes the P2P ratio and results in a loss of designation. As a result, there is a removal or loss of the program intervention, and then the area again becomes eligible for designation. This could be disruptive to the continuity of services within the community affected and contrary to HRSA’s goal of establishing a stable local primary care resource.

The Committee acknowledges that these providers would still need to be quantified in the community, prior to being removed from any population-to-provider calculations, in order to assess the total capacity in the community.

The Committee recommends continuing to exclude NHSC Scholars and Loan Repayment recipients from the P2P count, as well as J-1 VISA waiver physicians.

Foreign medical graduates (FMGs) with an H-1B Visa will remain included in the provider count, since they have no Federal service obligation, as will all individuals transitioning to permanent residency or citizenship, unless they have a restricted license.

In a departure from current policy and practice, the Committee also recommends excluding State Loan Repayment Program (SLRP) recipients and those with State service obligations, as well as a new class of ‘organizationally program affiliated’ providers who work at HRSA grant-funded health centers (section 330 of the PHS Act), FQHC look-alikes, and those hospital-based or independent RHCs that offer a sliding fee scale to low-income patients. Four members of the Committee were concerned that the provider exclusions proposed by the Committee were greater than needed to prevent the yo-yo effect and that in fact, backing out all of these provider types would prevent existing designated sites from losing designation status. Such an outcome could have bearing for the allocation of program resources by allowing areas with uncounted provider resources to look equal to or worse than other locations with few or no provider resources. For example, these Members were concerned by the notion of counting an area that has an FQHC health center staffed with three FQHC providers as having zero capacity; equivalent to an area or site with no providers under the proposed methodology. These members were also not convinced that the “yo-yo” effect was as significant as was being presented. However, other Committee members representing rural and frontier areas explained

first-hand experience with the “yo-yo” effect, where few providers and low population numbers can result in drastic population-to-provider ratio changes if even one provider were to leave.

Clinicians serving in Indian Health Service (IHS) sites (except for those with an IHS Scholarship and Loan Repayment obligation) and practices receiving Medicare incentive payments would remain in the count.

Counting the Population

The Committee recognizes that it is generally desirable to continue the current methodology for counting the population based on the resident civilian count in an area, with the following adjustments, where appropriate:

Adjustments for Age and Gender

A decision was made to make adjustments to the weighting of the population to account for differing health service requirements based on age and gender of the population in a rational service area. The Committee recommends using Medicare Expenditure Panel Survey (MEPS) data to provide the age/gender use rates for individuals without impeded access to care. The age/gender specific rates will be applied to the age/gender distribution of the service area population, with the result divided by the average utilization based on the age/gender distribution of the overall U.S. population, to obtain an age/gender adjustment factor for the local area. (See Attachment J: Multiplier for Calculating Age/Gender Adjustment.) The age/gender adjustments may not be possible for population designation, where it may not be feasible to determine the age/gender distribution.

Transient Populations

The Committee recommends continuing to allow applicants to consider the effect of transient populations on the need of an area for primary care professionals. Transient populations include migrant farmworkers or other out-of-area workers, seasonal residents, and tourists (notably in areas where tourism is a major component having an impact on the health services of an area). The Committee recommends counting all transient populations based on the length of time in the community; however they also recommend continuing the current discounting formula for tourists only, which applies an additional weight of 0.25 to the length of

time calculations for tourists: effective tourist contribution = 0.25 x (fraction of year tourists are present in the area) x (average daily number of tourists during the portion of the year they are present).

Institutional and Group Quarters Populations

The Committee recommends continuing to exclude institutionalized individuals and some residents of group quarters from population counts for area and population group designations, although such populations are counted for the purposes of some specific facility HPSA designations. This is consistent with current practices. Institutionalized individuals include those in prisons and correctional facilities or U.S. Immigration and Customs Enforcement ICE facilities, and nursing homes. In addition, residents of college dormitories and military quarters are excluded as they are generally served by a closed health care system.¹¹

Calculating the Population-to-Provider Ratio

The population-to-provider ratio is calculated using the population as the numerator and the number of FTE primary care clinicians as the denominator. The resulting ratio is then multiplied by the age/gender adjustment factor (described above) to obtain the final P2P ratio.

¹¹ In drafting the final Report, it became clear that decisions about whether or not to continue excluding providers and residents of nursing homes and college dormitories differed in two sections of the Report. To avoid inconsistency, a decision was proposed by some Committee members and conveyed to HRSA that there was a desire to continue the current practice of excluding both of these population groups and providers.

Medically Underserved Areas

Section 330(b)(3) of the PHS Act defines an MUP as “the population of an urban or rural area designated by the Secretary as an area with a shortage of personal health services, or a population group designated by the Secretary as having a shortage of such services.” As stated on page 14, the statute also sets forth four statutory components for defining medical underservice.

The Committee addressed the four statutory components of the MUA/P designation methodologies, and re-defined the components¹² by incorporating new indicators, assigning weights to the indicators,¹³ and adjusting the weighting among the components. (See Figure 1: Final MUA Model). After carefully considering many alternative scenarios, the Committee developed a revised index known as the Index of Primary Care Needs (IPCN) to distinguish it from the earlier IMU. The Committee utilized all reasonably available evidence including literature reviews and data analysis to select the indicators for inclusion in the MUA model and assign the weights to each of the components in relation to one another. In the absence of any obvious “yardstick” for identifying the IPCN threshold for MUA designation, the Committee also recommends that the threshold for designation be set such that the highest scoring one-third (33 percent) of the U.S. population would be eligible for designation under this revised methodology.

Population-to-Provider Ratio (weighted at 15 percent)

The Committee’s proposed MUA model assigns a 15 percent weight to P2P for purposes of developing an IPCN. This weight was selected, in part, to assure that urban areas/populations would not be disproportionately, and negatively, affected by a higher P2P ratio. Urban areas/populations can have sufficient numbers of clinicians, yet still experience problems with access to care. The Committee also decided that a lower weight for P2P relative to the other three MUA components was appropriate because: (1) P2P is the dominant component in the selected HPSA designation methodology (see pages 15-16); and (2) the other components of

¹² The term “component” is used throughout this Report to refer to the four components of the MUA/P and HPSA designation referenced in statute for consideration. These include: Availability of Health Professionals; Health Status; Access Barriers to Care; and Ability-to-Pay.

¹³ The term “indicator” is used throughout this Report as a means of defining those factors that will be used to measure each of the components of the MUA/P or HPSA designation. For example, the indicators for measuring health status are SMR and either LBW or diabetes.

MUA designation are shown to provide a stronger assessment of the underserved beyond the availability of primary care health professionals.

Health Status (weighted at 20 percent)

In determining the most appropriate health status indicators for inclusion, the Committee weighed the evidence for and against a wide range of indicators.¹⁴ After much deliberation, the Committee recommends a combination of SMR weighted at 50 percent and the greater of either the rate of LBW births or diabetes prevalence also weighted at 50 percent. In other words, SMR would count for 10 percent (50 percent of 20 percent) of the overall IPCN score, and LBW or diabetes prevalence would count for another 10 percent. In sum, the total weighting for health status [SMR + either LBW or diabetes] indicators would be 20 percent for purposes of calculating the IPCN score. The Committee selected these indicators because they are direct indicators of health status (mortality and morbidity) and provide the most consistent data at the RSA level.

The Committee selected SMR because it takes into account all causes of mortality and reflects health status of an entire population. It is also a widely recognized metric of health status by health care researchers and policy makers, and can be calculated without using the age of death for mortality locally. Likewise, the Committee selected LBW because it is a widely recognized statistic based on standardized data collection and reporting. The Committee decided that LBW was a better indicator than the currently used IMR, as infant mortality is a rare and declining event influenced less by primary care than by secondary and tertiary care. Applicants will also have the option of using diabetes prevalence as a health status indicator instead of LBW, as it is an increasingly prevalent chronic disease and data for this indicator can be obtained at the county or regional level. The Committee recommends combining two health status indicators sensitive to primary care in the MUA designation process to account for populations across the life-cycle continuum.

¹⁴ Both direct and indirect measures were considered including the following direct measures: Standardized Mortality Rate (SMR), Low Birth Weight (LBW) or Infant Mortality Rate (IMR), diabetes and/or asthma prevalence, rate of hospitalization for ambulatory-care sensitive conditions and indirect measures or “social determinant indicators” such as: years of education, percentage of families with single-parent heads of household, and percentage of the population with incomes at or below the Federal poverty level.

Barriers to Care (Weighted at 20 percent)

Barriers to care are not direct indicators of underservice, but rather indicators of risk factors that can contribute to access problems in underserved communities. After extensive research including a literature review¹⁵ of more than 17 barriers, the Committee recommends a menu of five possible barriers from which applicants may select two. The menu includes: (1) the percent of the population with limited English proficiency (LEP) or Hispanic ethnicity; (2) the percent of the population that is of a non-white racial group (e.g. those who identify as non-white); (3) the population density of the area (whether urban or rural), or the travel time from a frontier¹⁶ or other rural area to the border of a defined urban area; (4) the percent of the population with a physical, mental, or emotional disability¹⁷; or (5) the percentage of the population that is both uninsured and at or below 400 percent of the Federal Poverty level. This model weights the applicant's two barrier selections equally (in a similar manner to the two health status indicators described above) and combines them to produce an overall barrier score.¹⁸

The Committee recommends weighting health status and barriers to care equally at 20 percent each, because it considered both to be equally important in determining the level of underservice for communities or populations.

Ability-to-Pay (Weighted at 45 percent)

Another critical component of underservice mentioned in statute is the ability of those within an area or population to pay for primary health care. During its deliberations, the Committee considered three options for determining ability-to-pay: percent of the population in poverty, percent unemployed, and percent uninsured.

The Committee opted to continue utilizing the percentage of individuals at or below the official Federal Poverty level, since research indicated that it was the strongest predictor of

¹⁵ Sources included the Commonwealth Fund, the Robert Wood Johnson Foundation, Kaiser Family Foundation, George Washington University Center for Health Policy, Institute of Medicine, UCLA Center for Health Policy Research, Urban Institute, Healthy People 2020, and AHRQ.

¹⁶ For purposes of this Report, Frontier areas are defined as counties with 6 persons or less per square mile, consistent with the current definition used by the HHS Office of Rural Health Policy.

¹⁷ Behavioral Risk Factor Surveillance System (BRFSS) produces data that can be utilized for this purpose. The BRFSS survey question is as follows: Are you limited in any way in any activity because of physical, mental, or emotional problems? 1) Yes; 2) No; 7) Don't Know/Not Sure; 9) Refused. The American Community Survey (ACS) produced by the Census Bureau, will, in 2013 begin reporting data related to those reporting disabilities.

¹⁸ The percentage of the population that is Hispanic, uninsured, at or below 400 percent of the Federal Poverty Level are all defined by the Census.

ability-to-pay. The component was redefined as the percentage of individuals at or below 200 percent of the Federal Poverty level because the current practice of counting only those individuals below 100 percent of the Federal poverty level would probably not capture many unemployed and underemployed individuals. Nor would a 100 percent poverty level component capture the "working poor" who may have problems accessing primary health care due to low income and ineligibility for Medicaid. As further justification, the Committee notes that authorizing legislation and/or program regulations for various Federal programs frequently use an income percentage level above 100 percent of the Federal poverty level in determining eligibility for program benefits.

Some Committee members were concerned that the official Federal poverty level did not contain corrections for regional cost-of-living differences (except for Alaska and Hawaii) and consequently, significant populations living at subsistence levels in high cost-of-living areas might be excluded from the official poverty count. For this reason, the Committee explored the possibility of using of a new alternate U.S. poverty methodology, now in development, which incorporates regional differences. The alternate poverty methodology was originally expected to be available for experimental use following the 2010 Census, however, the Committee learned that the actual availability of this new poverty measure has been postponed and decided to utilize 200 percent of the Federal Poverty Level.

The Committee considered using unemployment statistics as an indicator for measuring ability-to-pay, but rejected it since it tended to undercount the under-employed and the unemployed who are no longer seeking work. Additionally, the measure was considered unstable and prone to large local fluctuations. The Committee also considered using the percent uninsured as an indicator for measuring ability-to-pay. The Committee determined, however, that this measure alone was not a sufficient indicator since persons at very high income levels may choose to be uninsured because they can afford health care as needed. The Committee supported an indicator that combined the percent uninsured with the percent of individuals with incomes at or below 400 percent of the Federal poverty level; however, rather than using this indicator to measure ability-to-pay, the Committee included it on the list of the five possible barriers to care (as discussed above.)

Variable Scaling Decisions

The Committee developed an Index after converting the component indicators to a comparable scale. In developing the scale a range of options was considered by the Committee including percentile rank, natural breaks (Jenks), standard deviations, and equal intervals. After extensive deliberation and testing, the Committee selected a “clipped equal interval scale” which applies the values calculated for each of the “Universal Service Areas” developed for nationwide impact testing of the proposed methodology¹⁹. The full range of values was “clipped” by removing outliers at both ends of the scale and assigning them the highest or lowest values (1 or 100) as applicable. For the two most skewed variables (population density and travel time) the values were first converted to a logarithmic scale before being evaluated for outliers. The scaling ranges for all variables can be found in the attached Tables 3a-1.

Weighting Decisions

As described on page 14, the MUA statutory language prescribes four components that the Department must consider in defining underservice without providing guidance on how to combine or weight these components to best measure underservice. With the help of JSI, the Committee reviewed the potential national impact of MUA models by State and RSA to examine the impact of alternative approaches to weighing and combining the components. The Committee also considered literature reviews to inform their expert opinions in an effort to determine how best to weight each of the four MUA components for purposes of the designation methodology. The Committee conducted factor analysis on the indicators of interest during the deliberations. The results were used as a reference for Committee decisions to show how the indicators clustered into components and weighted within those components. Factor analysis was intended to assess underlying correlations between input indicators and remove redundancies by clustering these indicators into a common component. This tool was also initially explored as a potential guide in weighting the four components against one another, but was ultimately discarded as factor analysis is highly influenced by correlations of indicators within components and is not well designed to capture weights across the resulting distinct components.

¹⁹ The Universal RSAs consist of State-defined RSAs for the five States that have defined RSAs State-wide; counties in certain States where current designations are predominantly whole counties; and PCSAs in other States. There were 6075 Universal RSAs defined for impact analysis.

For the purposes of MUA/P designation, there is not a single indicator or ‘dependent variable’ for underservice against which to run a regression analysis to obtain weights. Further, the Committee was unable to base weighting decisions solely on factor analysis as it was not clear what the underlying variance was actually describing. Despite its limitations for weighting across components, factor analysis did demonstrate a strong correlation between low income prevalence and each of the other components. This observation, coupled with the concern regarding the recent Census Report²⁰ discussing the growing rate of poverty, led the Committee to weight ability-to-pay higher than each of the other components.

In the end a combination of factor analysis and observation of how different weightings captured or excluded specific populations (rural, Hispanic, etc.) guided the weighting decisions.

A few members of the Committee expressed concern that the revised MUA model weighted poverty too heavily in comparison to the other components. They pointed out that poverty did not necessarily reflect underservice as circumstances of persons in poverty (as it relates to health access) vary significantly depending on the strength of the local safety net and the influence of Medicaid. Even though some Members disputed the weights given to the poverty component, all Members acknowledged the importance of including poverty and giving it more weight in the MUA model. While the majority of the Committee members were sympathetic to the concerns of the dissenting viewpoints recognizing that not all impoverished people have the same level of underservice, they strongly felt that poverty was the greatest predictor of underservice and should be emphasized within the revised MUA model.

Threshold for Designation

The majority of Committee members agreed to recommend a threshold of 33 percent of the population with the greatest need, as measured by the indicators and weighting of components. In arriving at this decision, the Committee ranked all RSAs from highest to lowest need and deliberated where to set the threshold. The Committee discussed whether the threshold should be based on a designation process that tightly targets the highest need communities for potential consideration in Government expenditure decisions or on a process that identifies communities in need of additional resources and health services that gives Federal programs the

²⁰ Information contained in the following press release: http://www.census.gov/newsroom/releases/archives/income_wealth/cb11-157.html.

ability to further target the actual resources. Committee members who endorsed the notion of designating all communities with needs proposed setting the threshold at the bottom half of the population, while those who thought that designation should be limited to the highest need communities, advocated for a threshold of the bottom 25 percent of the population. Committee members were unaware of Federal programs that set eligibility limits which could be used to provide guidance during these deliberations, and attempts by the Committee to identify a 'break point' in the distribution of resulting scores did not identify any such value. In the absence of any obvious 'break point' for the threshold, the Committee made the decision to establish the threshold at the worst scoring one-third of the population.

Two Committee members disagreed with the 33 percent threshold, and expressed concern that designating such a large swath of the population would create more competition for limited Federal resources and would advantage communities that could hire grant-writing experts to more effectively compete for those resources. Most Committee members were not persuaded by these points, however, and the majority vote struck a balance between allowing more underserved communities to become eligible for designation, while acknowledging the role and responsibility of the Federal government to determine how best to target resources for the communities of greatest need.

Medically Underserved Populations

The MUP designation was created in recognition that certain population groups within geographic areas may not have access to primary health care equal to that of the general population of the area. Currently, the MUP designation process mirrors the MUA process, with applicants utilizing data specific to the population group in order to calculate the P2P ratio. For example, under the current system, those applying for MUP designation for the Medicaid population in a rational service area (RSA) would need to provide data regarding the FTE level of primary physician care provided to Medicaid recipients in that RSA in order to develop the P2P ratio. The other components of the current MUP model (infant mortality rate, the percentage of the population age 65 and older, and the percentage of the population below poverty) are typically calculated based on the data for the entire geographic area in which the population group resides.

Under the revised MUP methodology, the Committee would continue to follow the approach of closely replicating the proposed new MUA model. However, the Committee recommends a different weighting formula for the four index components than used for MUAs. Additionally, the revised MUP methodology builds in some added flexibilities relating to data submission. The Committee recognizes that data for the general population may not adequately reflect the primary care needs of specific population groups and/or data specific to those population groups may not exist. The revised MUP methodology, therefore, allows applicants to submit data specific to the population group for each of the four MUP components, where locally available. The Committee also recommends creating two separate paths to MUP designation—a regular application process and a streamlined application process.

Another revision recommended for future MUP designation is with regard to the types of providers excluded (or “backed out”) for the purposes of calculating the P2P ratio. In addition to excluding those clinicians already listed on pages 25-27 (“Excluding Certain Providers from the Count” and “Additional Provider Backouts”) the Committee also recommends excluding clinicians supported by certain other HRSA programs that provide primary care to underserved populations such as people with HIV disease.

Eligible Population Groups

Certain population groups are widely recognized in national reports (e.g., Healthy People 2020) as experiencing health disparities. These population groups include, but are not limited to the following: low income and uninsured; lesbian, gay, bisexual and transgender (LGBT) populations; people with HIV infection; people with mental health, physical, sensory, cognitive, or developmental disabilities; individuals with low English proficiency (LEP); Native Hawaiians; incarcerated populations; and immigrants and refugees. The Committee expects that these populations, as would others, be considered for population HPSA as well as MUP designation.

MUP Regular Application Process

The Committee proposes significant flexibility with respect to the types of data that can be submitted by MUP applicants, recognizing that applicable data elements may be unavailable on a national basis for many population groups, and that available national databases may not capture the unique characteristics of such population groups in local areas. The Committee's recommendations for options relating to data submission for components in the "regular" MUP process are described below and presented in the attached Figure 2: Final MUP Model.

Population-to-Provider Ratio (20 percent)

The Committee anticipated that information regarding provider services to specific population groups may be unavailable. Applicants, therefore, may need to survey local providers and/or organizations that represent or support those population groups. The Committee recommends that the attached sample survey tool be made available. (See Attachment I: Sample Survey of Primary Care Providers.)

Health Status (20 percent)

The Committee recommends that MUP applicants use relevant local health status data from nationally maintained data sets (e.g. those maintained by CDC, NCHS and/or other Federal agencies) and/or data sets widely recognized in national reports (e.g. Healthy People 2020), for SMR and LBW or diabetes. If there is a lack of data from nationally maintained datasets on the specific local population for which designation is requested, applicants may use SMR and LBW

or diabetes data for the general population of the same RSA in which the population group resides.

Alternatively, where available, applicants may use unique local, State, or tribal data for SMR and LBW or diabetes. (See pages 39-40 for a description of the local data option). If the applicant believes that available SMR and LBW or diabetes data do not reflect the significant health disparities experienced by the population seeking designation, the applicant may substitute up to two other indicators of disparities in health outcomes relating to primary care, so long as the substitute indicator(s) meet specified criteria as described below.

If MUP applicants choose to substitute different health status indicators in place of the indicators included in the MUA model, such substitutions must be: (1) direct indicators of health status; (2) nationally recognized datasets; (3) associated with primary care, and: (4) based on quantitative data from a data source accepted by State or Federal agencies charged with monitoring or intervening on health disparities. The substituted data must help demonstrate that the population group being considered for designation has significant disparities in health outcomes as compared to the general population.

Barriers to Care (40 percent)

Consistent with the MUA process, MUP applicants must provide data relating to two of the five MUA barriers. Data should be derived from applicable nationally maintained datasets specific to the population of interest if available such as the American Community Survey (ACS) of the Census Bureau. Alternatively, applicants may use available unique local, State, or tribal data sources for barriers where national data specific to the population is unavailable. Since some population groups face specific barriers not contained in the MUA model, the Committee recommends allowing MUP applicants, in such cases, to substitute a population-specific local barrier as one of the two barrier choices. Examples for the population-specific local barriers include, but are not limited to, barriers to access resulting from (a) geography, (b) discrimination based on sexual orientation, gender identity, or HIV status or other stigmatization; (c) people with physical, sensory, cognitive, or disabilities; and (d) literacy or culture.

If MUP applicants choose to substitute an indicator of a population-specific local barrier, that barrier must be recognized by State or Federal agencies as a significant barrier to obtaining primary care. Data for population-specific local barriers must be quantitative, accepted by State

or Federal agencies charged with addressing primary care access, and must show that the population subject to designation has a significant barrier to access when compared to the general population.

Ability-to-Pay (20 percent)

As with MUA applicants, those applying for MUP designation must submit data on the percentage of the specific population group with incomes at or below 200 percent of poverty, using a nationally maintained dataset offering local data specific to the population for which designation is sought. If it is not possible to obtain information relating to the percentage of the population group with incomes at or below 200 percent of poverty, applicants may use data from national datasets for the general population of the geographic area in which the population resides. Alternatively, applicants may use unique local data for this indicator, if available.

Local Data Options

Recognizing that data for the general population of an area may not adequately capture the needs of specific population groups, and that national data for these population groups are often non-existent, the Committee recommends allowing for flexibility with respect to the type of data that can be submitted for population group designations (including MUPs and population group HPSAs). The unique local data option would be exercised only in cases where nationally compiled data for the local area are not available.²¹ Applicants using the unique local data option would be required to specify the data source, coverage years, geographic area, population group, and methodology used.

The majority of the Committee was comfortable with the proposal of a local data option given the unique nature of population group designations. One Committee member voiced a minority view that the local data option may result in more population group designations without a full understanding of the number or the impact of those increased designations. The majority of Committee members acknowledged the role and responsibility of the Federal government to determine how best to target resources for the population groups of greatest need. In addition, most Committee members were comfortable allowing HRSA to determine the acceptability of unique local data based on the standards prescribed above. Reviewing local data

²¹ Unique local data refer to other local, State, or Tribal data.

sets are consistent with current HRSA practices and guidelines. HRSA also currently permits submission of unique local data for EMUP designation and for purposes of determining the P2P ratio for population designations.

Where unique local indicators are used, HRSA will need to determine the national data scale for that indicator and make a judgment about when underservice is indicated for that unique indicator.

Weighting

The Committee recommends following the general MUA approach to weighting of the components with certain adjustments. The Committee recommends adjusting the weighting among the four components in the MUP model (as described above) because barriers to care are frequently the most significant issue affecting primary care access for specific population groups.

Streamlined Application Process

MUP applicants can use a “streamlined” process to designate certain population groups, which involves describing the boundaries of the service area involved and providing a local population count with respect to the population group. These population groups were chosen based on statutory language identifying them as special underserved populations, and/or populations with well-recognized health status or access problems. Population groups that can apply under this streamlined population-based designation include: members of Federally recognized Indian Tribes and Alaskan Natives; “special medically underserved populations” named in Section 330(g)(h) and (i) of the PHS Act such as migrant and seasonal farmworkers, individuals experiencing homelessness, and public housing residents.

The Committee recognizes that additional data may be required when programs attempt to rank areas of need, a process similar to the current automatic HPSA scoring process used today.

Thresholds

The Committee recommends a MUP threshold representing 33 percent of the population, in a manner consistent with the MUA model described on page 34-35.

Geographic HPSAs

By statute (Section 332 of the PHS Act), HPSA designations reflect the adequacy, availability, and accessibility of the health professional workforce to meet the needs of the population in an area. It is primarily a measure of supply relative to need and demand for health care providers. Currently, to qualify for a geographic primary care HPSA designation, applicants need only demonstrate that they are located in a RSA for primary care and have a P2P ratio above 3500:1 (3000:1 for areas that can demonstrate unusually high need or insufficient capacity under prescribed criteria).

The Committee spent much time deliberating over the new geographic HPSA designation methodology. Originally, the Committee considered using an index model analogous to that of the MUA designation methodology, but with differently weighted components to reflect the different purposes and uses of the geographic HPSA and MUA designations. The index model for HPSA designation was ultimately discarded because Committee members thought that it was important to continue designating areas with very high P2P ratios on the basis of physician shortage alone as HPSA designation is intended to address shortages of clinicians. Although a pure index model was rejected, the Committee thought that health status and potentially other access and/or ability-to-pay components could help indicate problems in areas with ‘marginal’ but less-than adequate P2P rates, where barriers to accessing the available providers might be higher.

Geographic HPSA Model

The Committee recommends setting an upper P2P threshold (3000:1) and a lower P2P threshold (1500:1). Applicants falling above the 3000:1 P2P threshold would be deemed designatable without consideration of any additional data relating to health status or low income. Areas below the 1500:1 threshold will not be designated under this new approach regardless of health status or low income, while those areas between the thresholds would be evaluated for designation using a combination of P2P and other components. (See Figure 3: Final Geographic HPSA Model). These thresholds were selected based on distribution of P2P values among the ‘Universal Service Areas’ used for testing, as well as a review of literature and recent studies regarding primary care practice productivity.

As mentioned previously in this Report, the Committee would continue to require that applicants for geographic HPSA designation show that areas they are seeking to designate are RSAs. (See pages 19-22).

The Committee considered a number of approaches for scoring applications with P2P ratios between the two thresholds. Under the Committee's final revised methodology, areas with P2P ratios between the thresholds (P2P ratios between 3000:1 and 1500:1) would be scored on an index comprised of the SMR and the percentage of the population with income at or below 200 percent of the Federal Poverty level (these indicators are also utilized in the MUA model and described in further detail on pages 30-32. Each of these indicators would be weighted at 50 percent to produce a maximum combined weighting score on a 100 point scale. The calculation for scoring geographic HPSA applicants in this middle range would be carried out as follows:

$$\textit{weighted SMR (up to 50 points) + weighted percent of low income (up to 50 points) = index score.}$$

For areas in the mid-range, as the P2P ratio improves, approaching what would be considered "adequate capacity" for a healthy population (toward 1500:1 P2P ratio), increasing emphasis is placed on the SMR and percent of population with low income components in considering designation. The designation threshold curves as the emphasis on these components increases, allowing areas that otherwise would not have qualified (based on the P2P ratio alone) to be eligible for designation based on significantly higher SMR and low income rates as provider availability improves toward the low threshold. Areas scoring lower than the threshold curve for a given P2P value would be designated, while areas on the positive side of this threshold would not. The high and low limits of the P2P ratio and the arc of the curve between those limits were set in part based on current resource constraints with regard to the Medicare Incentive Program (MIP), which gives statutorily set bonuses to physicians delivering Medicare services in geographic HPSAs.

Issues Relating to the Establishment of the HPSA Thresholds

The Federal representative advised the Committee of potential added cost implications resulting from the new HPSA designation methodology. Specifically, the Medicare Incentive Program (MIP) must, by law, pay a 10 percent bonus to all physicians, NPs, PAs, and clinical nurse specialists (both primary care clinicians and general surgeons) delivering Medicare-reimbursed services in geographic HPSAs if they receive fee-for-service reimbursement for Medicare services. It is important to note that many members of the Committee did not think that it was part of their charge to define need to fit within a discrete financial Medicare spending limitation; rather, they thought that the Committee was charged with defining methodologies and criteria to identify all areas of need. These Members thought that consideration of resources to meet those needs was a separate consideration. Although the Committee was very cognizant of the Federal budget constraints, most Members did not want that to be the only factor driving the decisions regarding the definition of need and many were displeased with the pressure to limit the number of HPSA designations due to MIP resource constraints. In the end, the Committee recognized the importance of this consideration and agreed to honor and be generally guided by this constraint.

Two specific concerns were raised during deliberations about the geographic HPSA methodology:

- 1) Lowering the HPSA Threshold: Two members of the Committee expressed concern with aspects of the proposed geographic HPSA model, including that opening up eligibility to communities with P2P thresholds below 3000:1 would inappropriately create increased competition for scarce resources.

Despite this concern, the majority of Committee members emphasized that it was their primary responsibility to identify needs of all communities and populations, including some communities in the mid range of the P2P ratio with reduced health status and/or ability-to-pay issues that affect their ability to obtain care.

- 2) Setting the Curved Threshold for HPSAs Between (3000:1-1500:1 P2P ratios): Some members also expressed concern about the basis for the formula that was used to draw the arc of the curve for purposes of determining who would be designated in areas with P2P ratios between 3000:1 and 1500:1.

Despite these concerns, the overriding majority of Committee members accepted the basic concept behind the curved threshold and were comfortable delegating to HRSA the discretion to set the arc of the curve so long as the arc emphasized areas with high P2P ratios and worse health and ability-to-pay. As stated above, the curved threshold explored in the modeling simulations conducted for the Committee was drawn based in part on current Medicare Incentive Program (MIP) resource constraints. The Committee expects HRSA to utilize similar considerations going forward and is willing to give HRSA the discretion to determine how to establish the curve.²²

Frontier Areas:

Additionally, the Committee recommends revising the geographic HPSA designation methodology to allow for a scoring adjustment that addresses the unique needs of frontier areas. (See Figure 4: Final Frontier Geographic HPSA Model). After analyzing impact data relating to various HPSA model variants, the Committee recognized that the well known needs of frontier areas were not adequately captured by any of the alternate designation methodologies explored by the Committee thus far. Specifically, the Committee was concerned that impact analysis indicated that most models left out a substantial number of frontier areas, which are likely to be much more sensitive to the number of providers when compared to the low-density population than to income levels, mortality rates, or other health status indicators. To adjust for this, the Committee recommends eliminating the requirement to measure SMR and the percent of low income in the middle P2P range for frontier areas, effectively establishing one P2P threshold of 1500:1 for frontier areas. Under this approach, all frontier areas with P2P ratios above this threshold would be designated as geographic HPSAs; all areas below this threshold would not be designated. The Committee thought that a lower threshold for frontier areas was justified on the basis that clinicians (whether physicians, NPs, PAs, or CNMs) working in frontier communities cover large territories and cannot be as efficient as clinicians located in urban areas, a position supported by health center Uniform Data System Reports.²³ Additionally, the loss of even one

²² The Committee assumes that the curve selected by HRSA will respect the Committee's position and weight health status and ability-to-pay more heavily as the curve moves toward the lower threshold.

²³ Data from Community Health Centers reveal lower average productivity for frontier health centers, roughly 73 percent of the productivity of health centers in metropolitan areas.

primary care clinician in a frontier community has the potential to be particularly devastating, since these communities often rely on a very small number of clinicians. Lastly, State regulations regarding the ability of NPs to practice independently varies from State to State.

Population Group HPSAs

Current population-based HPSA designations are modeled upon the geographic HPSA process with a few key differences: (1) a lower population-to-provider (P2P) threshold ratio for designation (3000:1); (2) a computation of the P2P ratio based on the number of persons in the population group relative to the number of primary care clinicians actually serving that specific population, and; (3) automatic designation for American Indians and Alaska Natives.

After deliberating on the topic of population group HPSAs, the Committee recommends revising the designation process by building in data flexibilities and creating two distinct paths to population group HPSA designation—a regular application process and a streamlined process.

Eligible Population Groups

The Committee expects that the populations listed in the MUP (see page 36) and/or others would be considered for population group HPSA as well as MUP designation.

Population Group HPSA Regular Application Process

The Committee proposes a population group HPSA designation process that closely mirrors the proposed geographic HPSA designation methodology, but uses data specific to the applicant population group with regard to the P2P ratio, SMR, and percentage of low income population. Current population HPSA regulations set the P2P threshold at 15 percent below the geographic HPSA threshold. The Committee recommends continuation of this standard by setting the population group HPSA upper P2P threshold at 2550:1 and the lower P2P threshold at 1250:1. Eligible population groups with P2P ratios above the 2550:1 P2P threshold would then be designated without having to submit data on SMR, and percentage of low income (at or below 200 percent of the Federal poverty level). Those with P2P thresholds below 1250:1 would not be designated. (See Figure 5: Final Population Group HPSA Model.)

For purposes of determining the P2P ratio, the Committee recommends following the model set forth in the MUP section. (See page 37).

Data Flexibility

For population groups with thresholds between 1250:1 and 2550:1, the Committee recommends using the same components as utilized in the geographic HPSA methodology (SMR and 200 percent at or below poverty), but that these be specific to the population group. Data should be from national data sets, such as the ACS, similar to sources used for the geographic HPSA if available. If unavailable, unique local data from recognized local, State, or tribal sources can be substituted. Applicants utilizing unique local data must specify the data source, coverage years, geographic area, population group, and methodology used. This alternative procedure for gathering local data would only be available to those applicants unable to locate relevant local data from national data sets, and is not to be utilized if such national data exist.

The Committee created a third option for applicants to use if local population-specific SMR or income data are unavailable. In such instances, applicants would have the option to use either national rates/data for the unique population or local rate/data for the general population residing in the same population RSA.

Streamlined Application Process

Similar to the process recommended for streamlining specific groups for MUP designation, HPSA applicants serving certain established population groups need only perform a local population count with respect to the population group. Such applicants would not be required to repeat the well-established and accepted justification, specifically that these specific groups meet population group HPSA criteria. Streamlining the application process should save the HRSA, PCOs, and local applicants' considerable time and resources. The Committee recognized that additional data may be required when programs attempt to rank areas of need, a process similar to the current automatic HPSA scoring process used today.

The established population groups that can apply under a streamlined population group HPSA designation include: members of Federally Recognized Indian Tribes and Alaskan Natives; and Populations named in Section 330(g), (h), and (i) of the PHS Act, including migrant and seasonal farmworkers, individuals experiencing homelessness, and public housing residents.

Facility HPSA

The Committee revised the criteria for facility HPSA designation by creating new pathways to designation for magnet facilities (facilities used predominantly by a single population such as HIV/AIDS, deaf or hard of hearing, persons with disabilities, limited English proficiency, etc.), safety-net providers, and essential primary care providers in a community. Additionally, the Committee recommends expanding the types of correctional institutions eligible for designation and creating a facility dependent medically underserved population (MUP) designation for populations served by certain facility HPSAs. The Committee's revised approach to facility designation is described below.

Automatic Designations

FQHCs and those RHCs meeting the requirements of the NHSC statute for the availability of services (Sec. 334 of the PHS Act) would remain automatically eligible for designation as facility HPSAs, as is statutorily required.

Continuation of the Current Process for Public and Non-Profit Private Facility Designations

The Committee recommends continuing the current process of allowing public and non-profit private facilities not located in designated geographic or population HPSAs, but serving residents of these HPSAs, to apply for facility designations provided that they can demonstrate service to existing designated areas or population groups. Such applicants can utilize patient origin studies to document that significant numbers of their patients come from nearby HPSAs and submit travel time/distance data to demonstrate that the facility is accessible to these HPSAs. Applicants may also produce data indicating that they are located in a socio-demographically similar area, thus eliminating the access barriers that sometimes result because of socio-demographic factors. Applicants must also demonstrate that there is insufficient capacity of primary care clinicians at the facility to adequately service the community.

Proposed Additional New Facility Designation Process

The Committee proposes an additional new facility designation process. To qualify, applicants would be required to show that they: 1) serve a community or population group that is eligible for, but did not meet the threshold for, geographic or population-based HPSA designation, 2) function as a public or non-profit private facility offering services to everyone, regardless of insurance coverage or ability-to-pay, 3) function as either a magnet clinic, safety net clinic, or an essential primary care provider in a community, as described below, and 4) have insufficient provider capacity to meet the needs of the population served by the facility, as discussed further below.

Magnet Clinic

Magnet clinics tend to draw patients from long distances seeking culturally sensitive care. A magnet clinic is defined as one where more than 50 percent of encounters are provided by primary care clinicians to one or two populations groups nationally recognized²⁴ as experiencing health disparities. Such populations may include, but are not limited to those listed in the MUP section. (See page 36).

Safety Net Provider Facility Designations

Safety net providers are facilities delivering significant percentages of their primary care services to low-income individuals at or below 200 percent of the Federal poverty level, or to individuals who are uninsured, have Medicaid or State Children's Health Insurance Program coverage (or other means- tested public insurance programs²⁵), and/or are American Indians or Alaskan Natives receiving services through either the Indian Health Services or Tribal health programs. To qualify, a certain percentage of the facility's patients must be in one of these population groups: 40 percent of the facility's patients if the facility is located in a metropolitan area; 30 percent of the facility's patients if the facility is located in a rural (non-frontier) area; or 20 percent of the facility's patients if the facility is located in a frontier area.²⁶

²⁴ Such as in Healthy People 2020 or subsequent Federal reports focused on health disparities.

²⁵ Such as State general assistance programs.

²⁶ These levels reflected the average health center Uniform Data System (UDS) data on users for sites in metro, rural, and frontier areas.

Essential Primary Care Providers in a Community

Essential primary care providers in a community are facilities located in a RSA providing primary care services to at least 70 percent of the population of that area, including underserved and uninsured populations.

Insufficient Provider Capacity:

Under the proposed revised facility designation process, a medical facility could demonstrate insufficient provider capacity by satisfying at least two of four criteria:

- The P2P ratio for the facility exceeds 1500:1, counting all patients seen in the facility during the last year.²⁷ Exclusions from the provider count are those listed in the MUP Section. (See page 22, Population RSA).
- The wait for appointments is more than 14 days for new patients and 7 days for established patients, or the practice is closed to new patients;
- Patient encounters per clinician exceed 4400 per year;
- The average patient care hours per clinician exceed 40 hours per week; or.
- There is excessive use of emergency room facilities for routine primary care.

Correctional Facility HPSA Designation

Federal and State Correctional Institutions and Youth Detention Facilities

All security levels of Federal and State correctional institutions and youth detention facilities would be eligible to apply for designation as a facility-based HPSA if the facility houses at least 200 internees (or is specifically designed to incarcerate individuals with serious mental illnesses, substance abuse concerns, elderly, terminally ill, or sex offenders, where at least 50 percent of the total internees fall into the specifically designated category) and the ratio of the number of internees to primary care providers serving the institution is at least 1000:1. County jails would also be eligible. These recommendations revise current regulations, which only

²⁷ This number was selected because it is 25 percent over the median from UDS data for all providers, MD and NP/PA. Plan to monitor as the larger P2P discussion evolves.

include medium and maximum security facilities of State and Federal correctional institutions and youth detention facilities.

The Committee recommends broadening the security levels to include minimum security correctional facilities because correctional health service professionals interviewed by Committee members suggested that the current structure of correctional facilities and correctional health services does not differentiate between security levels as it had in the past. Currently, many facilities provide health services to multiple security levels of inmates in the same facility.²⁸

County Correctional Institutions

The Committee recommends permitting county correctional institutions to apply for facility HPSA designation using the methodology set forth above for Federal and State correctional institutions and youth detention facilities. This decision was made after hearing a presentation of the primary health care needs of those incarcerated in county correctional institutions and some debate regarding the statutory language.

Counting Internees

Consistent with current regulations, Federal, State, and county internees would be calculated as follows:

- If the number of new inmates per year and the average length-of-stay (ALOS) are not specified, or if the information provided does not indicate that intake medical examinations are routinely performed upon entry, then the number of internees will be equal to the number of inmates.
- If the ALOS is specified as one year or more, and intake medical examinations are routinely performed upon entry, then the number of internees will equal the average number of inmates plus (0.3) times the number of new inmates per year.
- If the ALOS is specified as less than one year, and intake examinations are routinely performed upon entry, then the number of internees equals the average number of inmates plus (0.2) times $(1 + \text{ALOS}/2)$ times the number of new inmates per year where ALOS equals the length of stay (in fractions of years).

²⁸ Per conversations with the University of Massachusetts, the contractor for the MA State Correctional system, as well as representatives from the Federal Bureau of Prisons and the National Institute of Corrections.

Facility-specific MUP designations

The Committee recommends creating a facility-specific MUP designation to address concerns that some safety-net facilities, despite serving populations that are clearly underserved, might be located in areas that no longer meet MUA/P criteria.

Two paths to facility -specific MUP designation are suggested. First, certain populations served by magnet facility HPSAs (including LGBT populations, people with HIV infection, and people with physical, sensory, developmental or cognitive disabilities) would be eligible for MUP designation so long as the facility complies with the FQHC requirements in Medicaid (Section 1905(1)(2)(B)) in force as of January 2, 2011 or was previously funded as a health center under section 330 of the PHS Act and continues to comply with the Medicaid FQHC requirements referenced above. The second path to facility-dependent MUP designation is for populations served by facilities designated as safety-net facility HPSAs. Populations served by safety-net facilities can qualify for designation under this process only if they no longer qualify for community-level MUA/P designation under the regulation and policies in effect at the time they seek such a designation.

Exceptional Medically Underserved Population²⁹

The Exceptional Medically Underserved Population (EMUP) designation under PHS Act Section 330(b)(D) was established by P.L. 99-280. This provision allows populations that face “unusual local conditions which are a barrier to access to or the availability of personal health services” to apply for shortage designations even though they may not satisfy established MUA/P criteria. The request for EMUP designation must include a written recommendation from the Governor or other CEO of the State, and may include recommendations of other local officials. The process also allows for experts to weigh in with opinions on the proposed exceptional designation of an appropriately needy population in a locality.

²⁹ A different authority for “Governor’s Designations” of additional shortage areas for RHC purposes only was created in the Omnibus Budget Reconciliation Act of 1989 under section 6213(c). These “areas designated by the Governor of a State and certified by the Secretary as having a shortage of personal health services,” or GDSCs, satisfy the “location requirements” for RHCs (as do MUAs, geographic HPSAs and population group HPSAs). They are not themselves HPSAs or MUPs and so were not covered by the NRMIC’s charge.

Definition of EMUP Service Area

The EMUP service area does not necessarily need to be an existing RSA or PCSA as defined for geographic designations. An EMUP may have their own unique service area boundaries, if the unusual local conditions which form the basis of their barriers to access or availability of personal health services, cross the boundaries of (or are a subset within) an existing RSA or PCSA. However, an EMUP's service area boundaries must define an area both small enough in size that the population can both reasonably access the services provided and large enough in population to support the State and/or Federal resources assigned or allocated to serve that population.

Guidance for EMUP Designations

Currently, EMUP applicants must describe the unusual local conditions, access barriers, and/or availability indicators which demonstrate a need for an EMUP designation. The Committee recommends continuation of this approach, and that HRSA specifically require the following of EMUP applicants:

- 1) Areas or population groups must show that they do not qualify for designation under the regular MUA/P criteria;
- 2) Applicants must show that an unusual local condition (not covered by the regular MUA/P criteria) limits their access to local resources available to other area residents³⁰;
- 3) Applicants must provide information explaining why the area or population group is “exceptional” by identifying what makes this population or area stand out from other similar areas, the surrounding areas, the county, and the State. Applicants should provide a comparison of local, regional, State, and/or national data for whatever factors are involved to show they are worse than the rest of the State and/or nation; and
- 4) The Governor or Chief Executive of the requesting State must certify that the area/population group involved is underserved due to its unique circumstances.

³⁰ For example, applicants must provide at least two examples of unique high morbidity/mortality and or significant changes in community profile compared to national or State norms (identifying the data and source of data).

Unusual Local Conditions

Unusual local conditions are barriers to accessing primary medical care or an indication of medical underservice not covered by the regular MUA/P criteria; documented data showing high disease or mortality rates for the requested population group; and/or significant negative changes in a community profile (including, but not limited to, high unemployment, high increase in school lunch program enrollment, high increase in enrollment in the WIC program, major employer closures or other community distress).

Updates to EMUP

In deviation from current practice, the Committee recommends that EMUP designations be updated every five years.

Impact Analysis

The Committee, via a HRSA contract with John Snow, Inc. (JSI), reviewed an extensive array of analyses of the national impact of the proposed new designation methodologies on both the designation status of existing service areas (i.e. currently designated HPSAs and MUAs) and on a defined “universal” set of RSAs that allowed for estimating the impact on the entire country, including areas not currently designated. Universal RSA estimates utilized a combination of proxy service areas including: Statewide service area plans where available,³¹ and for the remainder of the States, either Primary Care Service Areas (PCSAs)³² or whole counties, depending on which option was deemed most appropriate given the State’s designation history. While PCSAs are defined by current access patterns, reflecting the current distribution of primary care provider resources, and therefore may not define ideal service areas for some communities, they can serve as a valuable proxy for an RSA in those States and areas where whole counties are not a reasonable basis for defining RSAs.

The impact testing examined the anticipated effect of these proposed methodological changes on existing geographic HPSAs and MUAs and on universal RSAs (described above). The most detailed available data were gathered on all variables adopted by the Committee, and a range of small area estimation techniques was used to produce data for geographies that were smaller than, or congruent with, the lowest geographic level for which public national data could be obtained. The impact was measured with respect to a variety of indicators including the number of service areas/communities designated; the population covered; the frontier/other-rural/urban continuum effects; the impact on providers currently participating in HRSA-HHS programs such as FQHCs, the NHSC, and RHCs, an assessment of the effects on Centers for Medicare and Medicaid Services (CMS) resources (e.g. the Medicare Incentive Program); and a number of socio-demographic and health status indicators.

The Committee views that the aggregate results of this impact analysis (in terms of estimated total numbers, types, and populations of areas that would be designated and de-designated nationally) represent a reasonable approximation of the likely results of the actual designation process under the Committee’s suggested new rule. Due to some gaps in available national data for use in testing, and the ability of States/communities to define and provide data

³¹ The following States currently have Statewide RSA plans: Maine; Vermont; Arizona; Minnesota; and California.

³² PCSAs are primary care service areas defined by the Dartmouth Institute based on the practice patterns for Medicare patients utilizing primary care services to estimate reasonable primary care service areas within which most residents obtain care.

for local service areas that better target need, the Committee anticipates that the impact estimates included in this Report are likely to be a conservative estimate of the actual number and population of areas and population groups that will qualify for designation once service area revisions and local data are provided, and are probably an overestimate of the negative impact on existing programs.

Despite considerable effort, it was not possible to run full impact testing of the population group designation methodologies (population group HPSA and MUP) or facility designation methodologies, as the data requirements and specialized nature of the barriers and other variables for various population groups and facility types make testing difficult if not impossible at a national level. A partial impact test was run for the low income population group.

Two impact tables summarize the results for the HPSA and MUA geographic models recommended by the Committee. (See Tables 4 and 5: Impact Analysis of Geographic HPSA Model and Impact Analysis of MUA Model, respectively.) These tables make it possible to compare data for the existing designations (Column A) to the results with the Committee's new methodology applied to the universal RSAs (Column B) and the results of applying the Committee's proposed methodology to the existing designated area boundaries (Column C).

Implementation and Other Recommendations Regarding the HPSA and MUA/P Designation Process

The Committee recommends a process to implement the new designation regulations utilizing State PCOs, and establishment of a plan to ease the transition between the old and new regulations. The Committee also offers recommendations relating to the frequency of publication of lists of designations and to the withdrawal of designations. The Committee recommends that, after publication of the interim final rule, the HRSA submit to the PCOs the anticipated results of applying the criteria in the interim final rule for each currently designated MUP and primary care HPSA and for all universal rational service areas within its State, based on the data and information available (i.e., current national data similar to that used in the impact testing which supported the Committee's recommendations). The PCO would then be asked to provide comments to the HRSA, including either their concurrence with designation of the potentially designatable areas in their State as presented based on national data, or their desire to revise the service areas used or provide alternate, more current and accurate data in support of a different set of designations in their State.

The Committee recommends that HRSA support communications activities relating to explaining the revisions put forth in the interim final rule to convey a strong message to the diverse group of interested stakeholders. HRSA should craft communications of varying levels of complexity that can reach a wide range of stakeholders in a manner that anticipates the questions and concerns of a variety of groups. Recommended communications tools include: press releases, fact sheets, and power point presentations. The Committee recognizes that a well-crafted message that is readily available to stakeholders and other consumers will ensure a consistent and factual delivery of the salient aspects of the revisions incorporated in the future rule based on this Report, and views communication as a vital link to successful implementation and transition.

Role of State Primary Care Offices

Under the original MUA/P and HPSA regulation, health systems agencies (HSAs), State health planning and development agencies (SHPDA), and comprehensive health planning agencies (CHPs) were listed as the lead entities to recommend new designations or designation changes. These entities are now largely defunct. For the new regulation, the Committee recommends that the PCOs for each State act as the lead entity for submission of applications for designation as HPSAs and MUA/Ps; in doing so, PCOs may seek the assistance of local communities, and other appropriate State or local entities. Community applicants may still develop applications for HPSA and MUA/P designation themselves. In doing so, communities

may seek the assistance of the PCO in applying for designation; or PCOs may initiate applications as part of their ongoing assessment of State wide needs. Designation applications will need to be submitted via HRSA's on-line application processing system. If an individual application is received by HRSA, it will be provided to the PCO for input. When PCOs submit designation applications to HHS, notification will be made to various State entities including the Governor, head of the State health department (or other health Agency designated by the Governor), appropriate local officials within the State, the State Primary Care Association (PCA) (or other State organization, if any, that represents FQHCs and other community-based primary care organizations in the State), State Offices of Rural Health, affected State medical and other health professional societies, and when appropriate the chief administrative officer of a public facility proposed for designation.

The Committee recommends that HRSA continue requiring each State PCO to coordinate the processing of applications for designation of communities in its State with other interested State entities. HRSA should ask PCOs to submit an Action Plan for the review of shortage designations coincident with the implementation of the future rule based on this Report. HRSA should, through its on-line Application Submission and Processing System, provide national data, relative scoring information based on the established criteria, and relevant mapping data for areas eligible for designation so that PCOs can utilize this information in their applications. This should allow areas with the greatest shortage or medical underservice to compete for designation on par with those perhaps better resourced areas that can afford better advocacy.

To ensure successful implementation, the Committee strongly recommends that HRSA provide regional face-to-face training in an interactive environment to provide interested parties a detailed understanding of the changes and the requirements of each new shortage designation methodology. At completion of the training, the PCOs should be well versed to convey the message to local and State constituents and prepared to implement the new requirements. The Committee also recommends subsequent periodic trainings (available via webinar and pre-recorded) to allow for review and reinforcement.

Transition Plan

As the transition is made from the current designation process to the new designation process for HPSAs and MUA/Ps, the Committee recommends that HRSA re-evaluate 25 percent of the existing HPSA and MUA/P designations each year over a four year period starting with the oldest first. The Committee recommends requiring PCOs to submit Action Plans every year for the HRSA's review and approval,

containing a plan for the evaluation of a minimum of 25 percent of the existing HPSA and MUA/P designations each year for 4 years, to equal a 100 percent review over a four year period after publication of the Interim Final Rule. (Currently, there is no required review and update of MUA/Ps, so this will be a major change for MUA/Ps, while maintaining the previous schedule for annual review of HPSAs more than 3 years old.)

Any PCOs failing to complete the required reviews on schedule should request an extension and approval from HRSA to maintain compliance.

Annual Reviews and Frequency of Publication

Consistent with the current statutory requirement for HPSAs, the Committee recommends that under the revised MUA/P and HPSA regulations, the Secretary should conduct annual reviews of both MUA/Ps and HPSAs. These reviews should focus on identifying and reviewing all those MUA/Ps and HPSAs within each State whose designations, because of age or other factors, are out-of-date and required to be updated. The Committee recommends a review and update of every MUA/P and HPSA at least every four years, with more frequent reviews of some areas to be conducted based on significant local changes as appropriate. The lists of areas required to be reviewed each year should be shared by HRSA with State PCOs for their review and comment.

In cases where review results in the proposed withdrawal of a designation, the HPSA statute requires the Secretary to afford interested persons and groups in the affected area an opportunity to submit data and information concerning the proposed action before it is finalized. MUP statutory language requires the Secretary to consult the Governor, local State officials (such as PCOs) and PCAs. The Secretary may further request State and/or local entities to provide such data and information as necessary to evaluate particular requests for designation or withdrawal of designation. The data requested by the Secretary must be submitted within 30 days of the request, unless an extension is granted. The Committee proposes that the new rule apply these provisions consistently in reviewing both HPSA and MUP designations for continuation or withdrawal.

The Committee proposes that each State PCO be in charge of coordinating the responses from relevant entities in their State to proposed new HPSA or MUP designations or proposed withdrawals of such designations, including responses from those entities directly dependent on the designation, PCAs, and State health professional associations.

Urgent Review of Certain Designations

The Committee recommends that if a clinician dies, retires, or leaves an area that is not already designated as HPSA (or MUA/P), causing a sudden and dramatic change in primary medical care services available to that area's population, PCOs be allowed to submit an urgent request to the Secretary on behalf of the affected community that the area be immediately evaluated for designation as a HPSA and/or MUA/P. The Committee recommends that HRSA review such urgent requests within 30 days of receipt. The Committee would recommend limiting the number of urgent reviews that could be submitted by a PCO in a given year to no more than five percent of the total number of designations the State had at the end of the preceding calendar year.

Recommendation Relating to American Community Survey Data

Data from the American Community Survey (ACS) will likely be extensively utilized in determining future eligibility for HPSA and MUA/P designation. ACS is the primary source for county, sub-county, census tract (CT) and ZCTA roll-up service area information including poverty, racial and ethnic figures, limited English proficiency, the percentage of the population facing disabilities and those uninsured (the latter two data points will be available beginning in 2013). HRSA should use ACS data as well as other data to populate its automated designation assessment system as applicants may need or desire to access the information or provide this information to their State PCOs or to HRSA as part of an exploratory assessment or application for shortage designation. The ACS data is also likely to be available through the HRSA Data Warehouse.

ACS information is gathered through a sample survey, which, over a five year period, provides enough data for the U.S. Census Bureau to feel confident in making five-year roll-up estimates down to the geographically defined block level. The frequency of data availability for an area is governed by the population size of the geographic area. For places with populations over 65,000, updated data is published annually. Areas with populations between 20,000 and 65,000 have rolling three-year estimates of their data, while areas with fewer than 20,000 individuals have rolling five-year data estimates. With every statistic, the ACS provides a margin of error which offers a confidence interval within which the true estimate most likely resides (with 90 percent confidence). Areas with smaller populations have smaller samples, so their 90 percent confidence intervals are relatively wider.

Recognizing a need to equalize data estimation procedures across geographic areas seeking HPSA and MUA/P designation, the Committee recommends requiring the use of five-year ACS data estimates for all HPSA and MUA/P applications. In developing this recommendation, the Committee considered that 41

percent of all counties have populations under 20,000 and thus will have only five-year estimates available and that most RSAs are likely to consist of areas which in whole or in part have only five-year data available.³³ The Committee consulted with the Census Bureau on the use of ACS datasets. The Census Bureau recommends that the same type of period estimates be employed whenever ACS data are used to compare areas of different sizes. Additionally, the Census Bureau recommends that the measure of uncertainty (margin of error) should be incorporated in some manner whenever ACS data are included.³⁴

The following additional specific recommendations were put forth by the Committee with regard to the use of ACS data:

1. If the margin of error percentage for the estimate is equal to or larger than five percent, i.e. is plus or minus five percent of the estimated number, the applicant should be permitted to use the appropriate outer limit of the 80 percent confidence interval for the estimate.
2. HRSA should develop a standard set of tables for the ACS data required to support the designation process for RSAs defined for potential designation of geographic HPSAs and MUA/Ps.
3. HRSA should work with the Census Bureau to routinely provide for public use the latest ACS data required by the MUA/P and HPSA designation process, by appropriate geography.

Recommendation on Targeting Areas of Greatest Need

The Committee's proposal was developed on the underlying principle of identifying all underserved areas and populations in the U.S., recognizing that the aggregate total level of need identified by the proposed methodologies will likely exceed the level of resources available to meet those needs. The Committee strongly encourages the programs that use these designations as an initial eligibility requirement to assure that their additional program requirements and processes target new resources to the areas and populations of greatest need within the scope of all designated areas and populations (along with satisfying other program criteria). HRSA's Bureau of Clinician and Recruitment Services administers the National Health Service Corps, which is statutorily bound to serve HPSAs of greatest need. Likewise, HRSA's Bureau of Primary Health Care which administers the Health Center program targets funding for new health centers through the use of "need for assistance worksheets" and other criteria in the grant review process. The designation methodologies proposed by the Committee involve scoring which can be used to measure

³³ A Compass for Understanding and Using ACS Survey Data, What Users of Data for Rural Areas Need to Know, Table 1, Major Geographic Areas and Types of ACS Estimates Published. Census Bureau Website: <http://www.census.gov/acs/www/Downloads/ACSRuralAreaHandbook.pdf>

³⁴ Conversation with Dr. Alfredo Navarro, Assistant Division Chief for ACS Statistical Design with the U.S. Census Bureau.

relative need of different areas and population groups and provide data elements which may be of assistance in targeting for the programs.

Recommendation on Reviewing and Updating HPSA and MUA/P Indicator Scaling and Methodology

The Committee recommends that HRSA conduct a review of the indicator scaling used in the MUA/P and HPSA designation criteria every five years, and conduct a full review of the MUA/P and HPSA designation methodology (including the indicators used) every ten years, considering public comments, new evidence, new data sources, and expert opinion in making adjustments to the designation processes. The Committee further recommends that these adjustments be subject to public notice and comment.

Recommendation Relating to the Designation Application System

The Committee recommends that HRSA regularly update its on-line designation application systems with the most current and reliable data available from national sources.

Negotiated Rulemaking Committee on the
Designation of Medically Underserved Populations
and Health Professional Shortage Areas

(10/31/11)

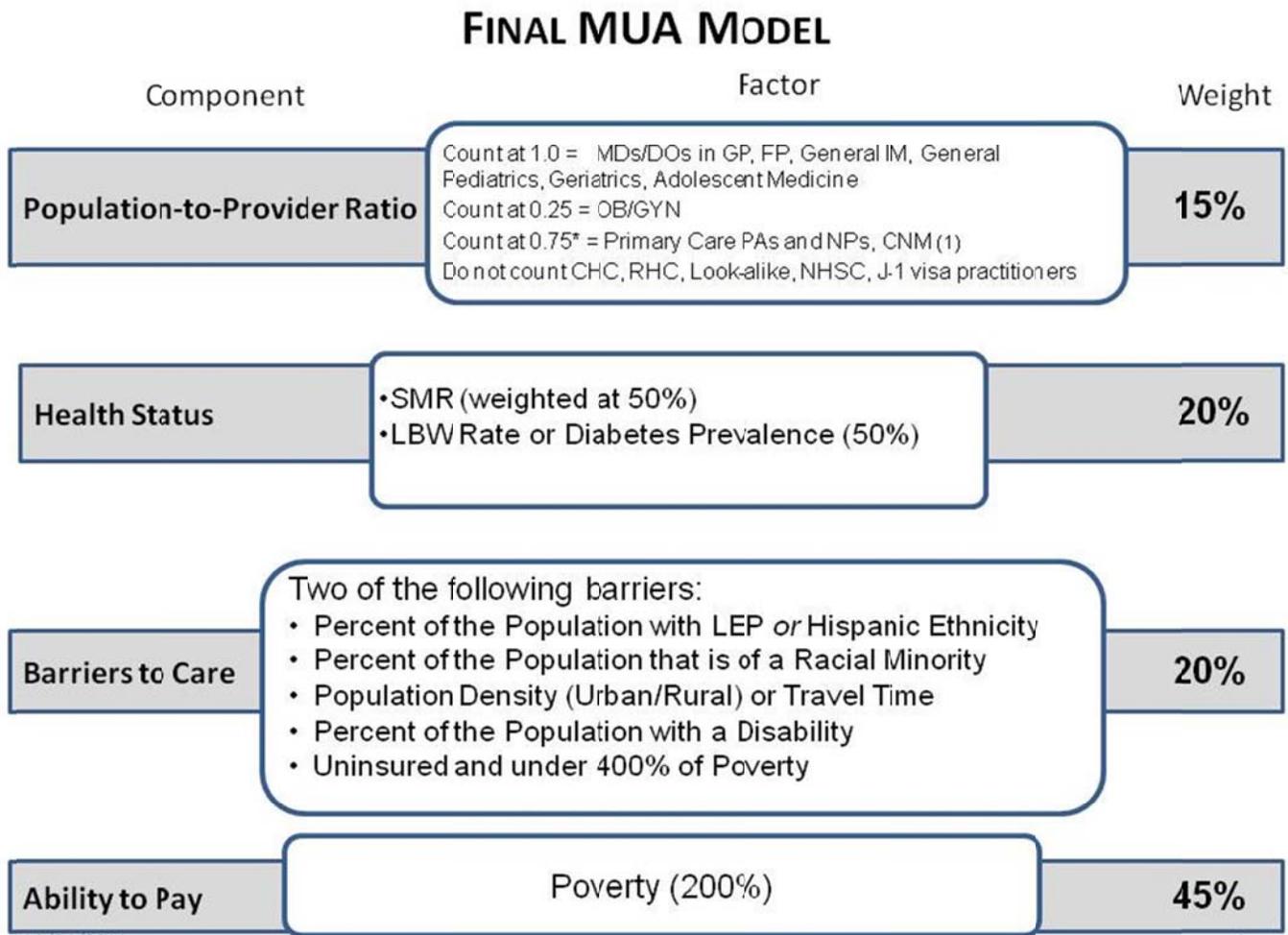
Appendices and Addenda

Contents

Figures.....	i
Figure 1: Final MUA Model	ii
Figure 2: Final MUP Model	iii
Figure 3: Final Geographic HPSA Model	iv
Figure 4: Final Frontier Geographic HPSA Model	v
Figure 5: Final Population Group HPSA Model	vi
Tables	vii
Table 1: NRMC Votes by Member, Section, and Issue.....	viii
Table 2: Federal Programs Using Health Professionals Shortage Areas and Other Designations of Underservice	x
Table 3a: Scaling Range for Low birthweight.....	xv
Table 3b: Scaling Range for Uninsured, under 400% federal poverty level	xvi
Table 3c: Scaling Range for Hispanic.....	xvii
Table 3d: Scaling Range for Low English proficiency.....	xviii
Table 3e: Scaling Range for Minority race	xix
Table 3f: Scaling Range for Diabetes prevalence.....	xx
Table 3g: Scaling Range for Disability.....	xxi
Table 3h: Scaling Range for Standardized mortality ratio	xxii
Table 3i: Scaling Range for Population density (log transformed).....	xxiii
Table 3j: Scaling Range for Population to provider Ratio.....	xxiv
Table 3k: Scaling Range for Travel time (log transformed).....	xxv
Table 3l: Scaling Range for Low income, under 200% of federal poverty level.....	xxvi
Table 4: Impact Analysis of Geographic HPSA Model.....	xxvii
Table 5: Impact Analysis of MUA Model	xxix
Attachments.....	Error! Bookmark not defined.
Attachment A: Statutory Language for MUPs	Error! Bookmark not defined.
Attachment B: Statutory Language for HPSAs.....	Error! Bookmark not defined.
Attachment C: Designation of MUAs.....	Error! Bookmark not defined.
Attachment D: Designation of HPSAs.....	Error! Bookmark not defined.
Attachment E: Draft Negotiated Rulemaking Committee Ground Rules.....	Error! Bookmark not defined.
Attachment F: Negotiated Rulemaking Committee Membership.....	Error! Bookmark not defined.
Attachment G: Proposed Revisions to.....	Error! Bookmark not defined.
Designation Methodology and Criteria (1998, 2008)	Error! Bookmark not defined.
Attachment H: Productivity Studies of Providers	Error! Bookmark not defined.
Attachment I: Sample Survey of Primary Care Providers.....	Error! Bookmark not defined.
Attachment J: Multiplier for Calculating Age/Gender Adjustment.....	Error! Bookmark not defined.
Addenda to the Report	Error! Bookmark not defined.
Additional Views of NRM Committee Members	Error! Bookmark not defined.
Addendum to the Report to the Secretary	Error! Bookmark not defined.
Addendum Minority Report.....	Error! Bookmark not defined.

Figures

Figure 1: Final MUA Model



10/24/2011

1

Figure 2: Final MUP Model

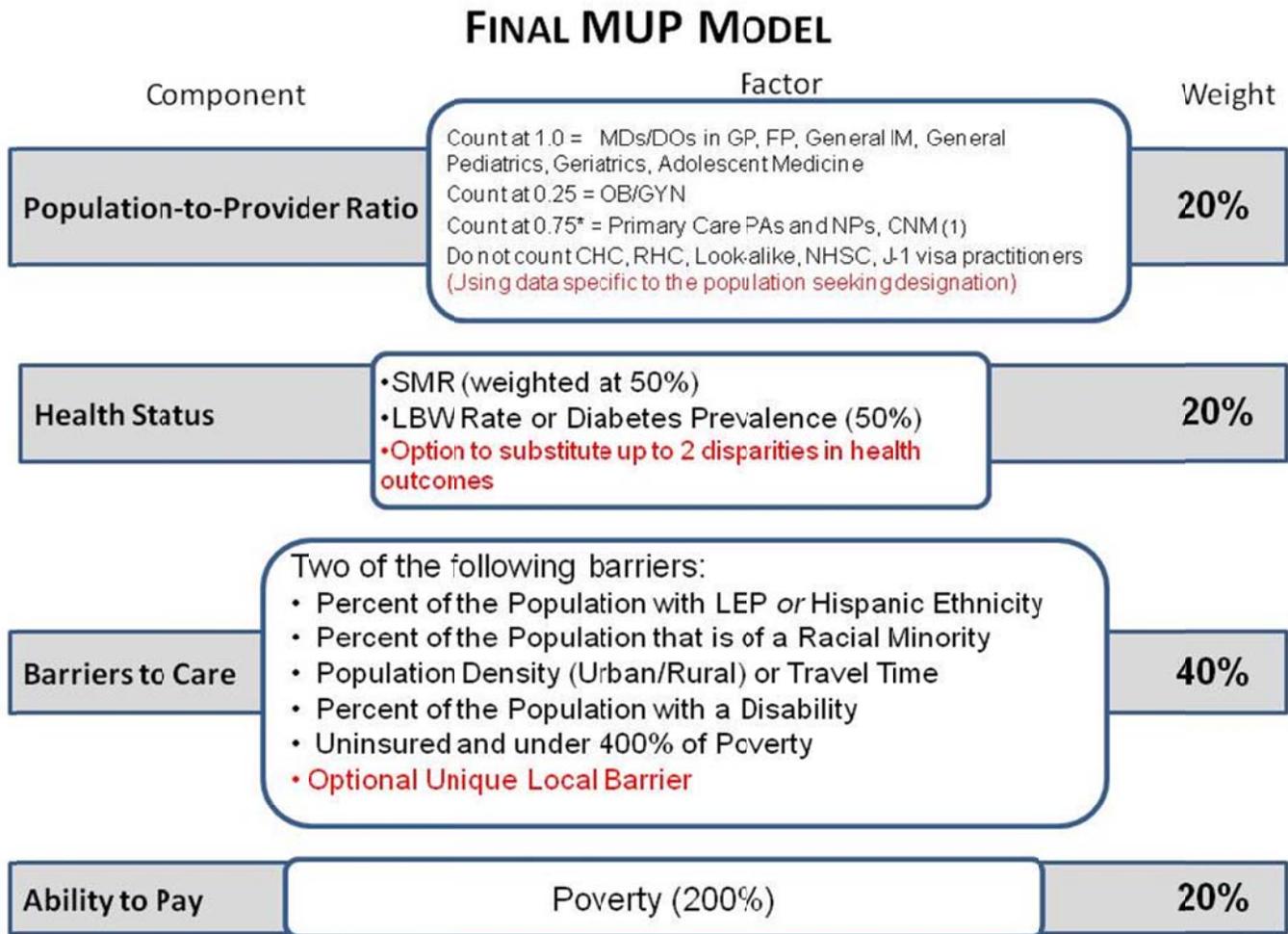


Figure 3: Final Geographic HPSA Model

FINAL GEOGRAPHIC HPSA MODEL

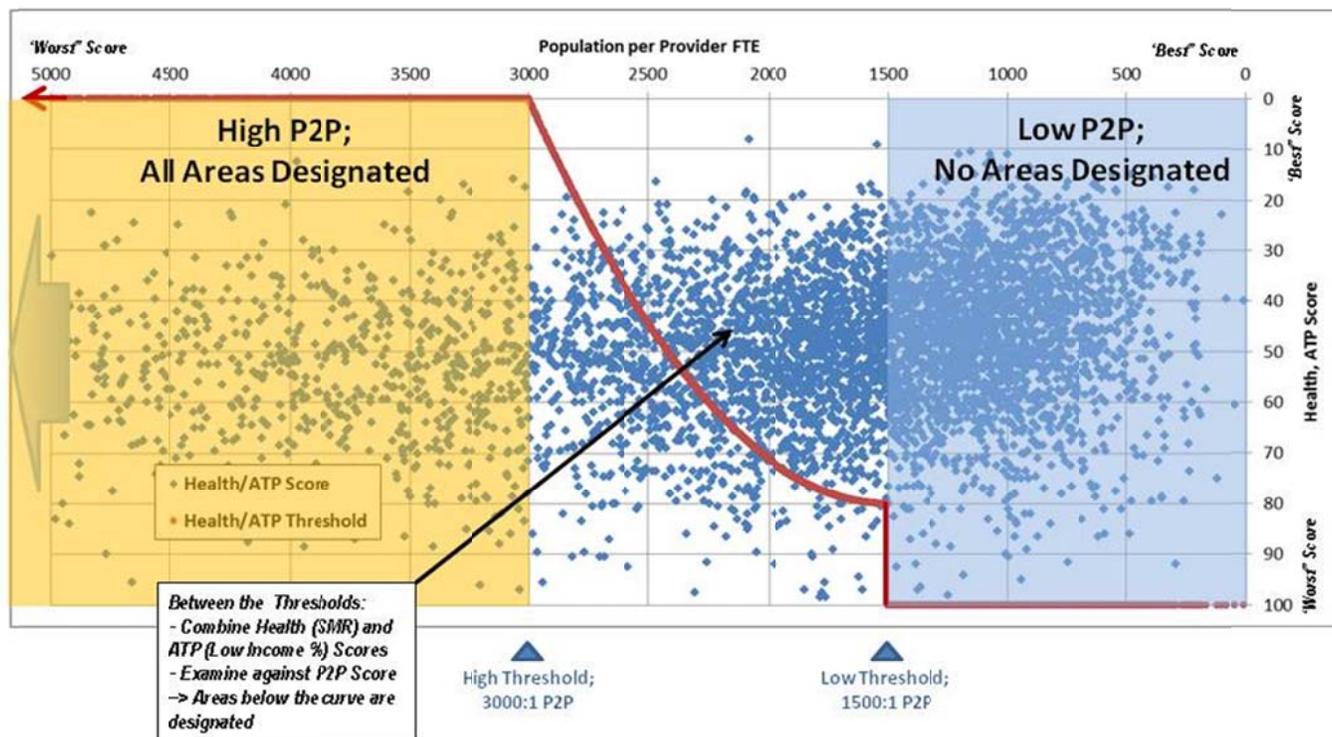


Figure 4: Final Frontier Geographic HPSA Model

FINAL GEOGRAPHIC HPSA MODEL – FRONTIER AREAS

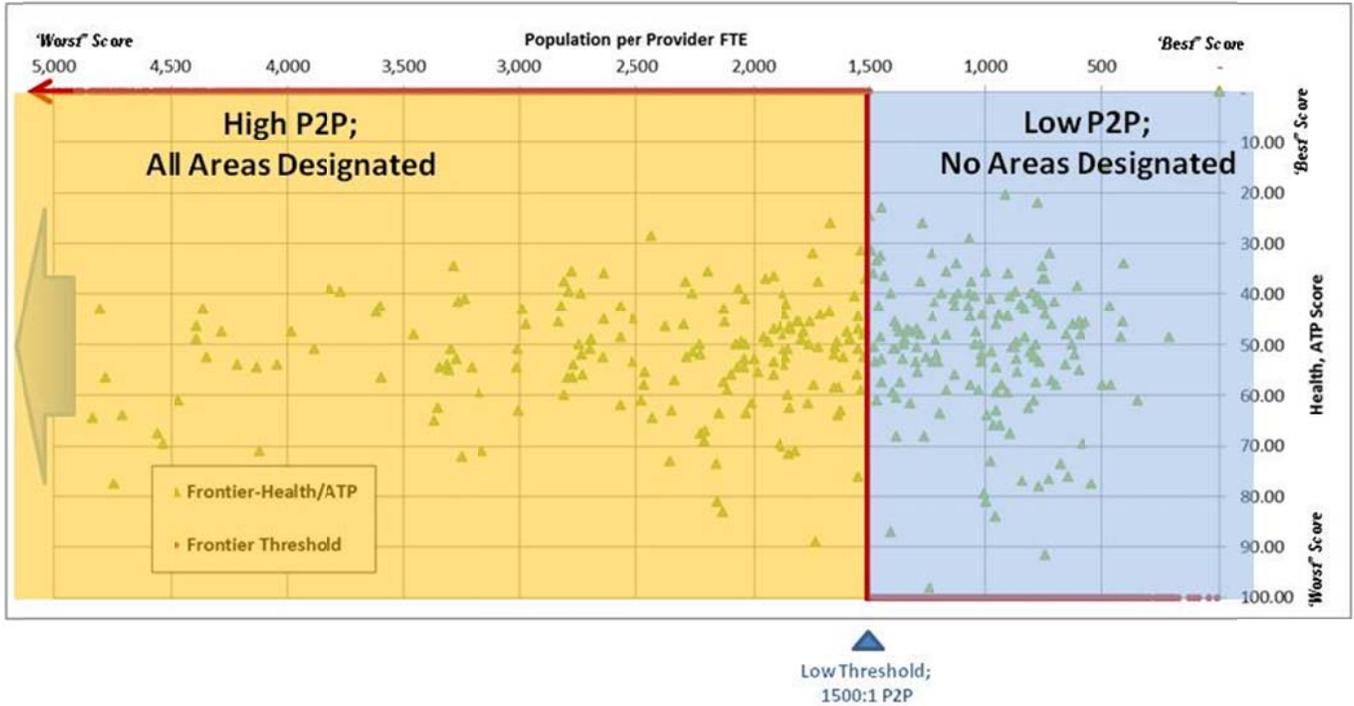
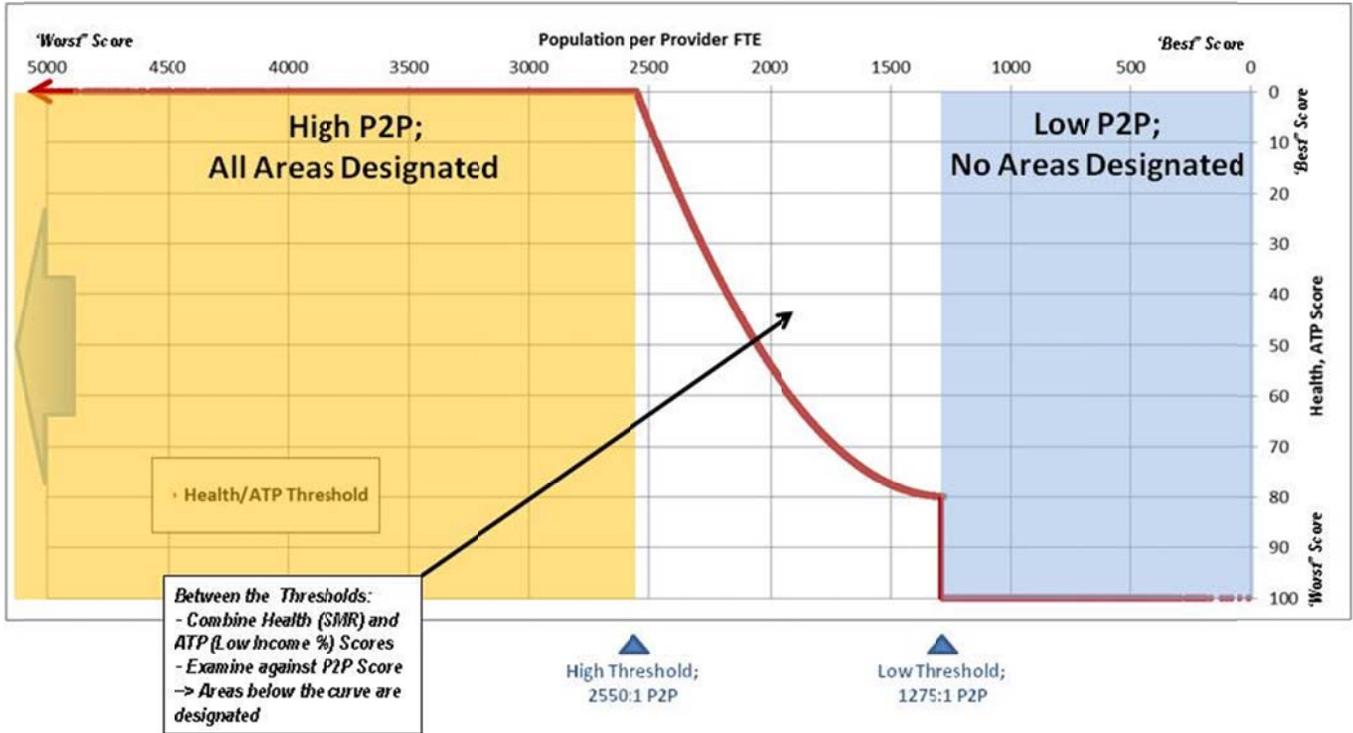


Figure 5: Final Population Group HPSA Model

FINAL POPULATION HPSA MODEL



Tables

Table 1: NRMC Votes by Member, Section, and Issue

**Negotiated Rulemaking Committee on the Designation of Medically Underserved
Populations and Health Professional Shortage Areas
SUMMARY OF FINAL VOTES**

October 12-13, 2011

Vote on Full Report/Recommendations (10/13/2011)			
	YES	NO	Not Present
Marc Babitz, MD			X
Andrea Brassard, RN, DNSc, MPH, FNP	X		
Roy C. Brooks	X		
Jose Camacho, JD	X		
Kathleen A. Clanon, MD, FACP	X		
Beth Giesting			X
David Goodman, MD, MS			X
Daniel Hawkins	X		
Sherry Hirota	X		
Steve Holloway	X		
Barbara L. Kornblau, JD, OTR/L	X		
Tess Kuenning, RN	X		
Alice Larson, PhD	X		
Nicole Lamoureux			X
Timothy McBride, PhD, MS		X	
Lolita McDavid, MD, MPA	X		
Alan Morgan, MPA	X		
Gail Nickerson	X		
Charles Owens	X		
Robert Phillips, MD, MSPH	X		
Alice Rarig, Ph.D, MPH	X		
Patrick Rock, MD			X
Edward Salsberg, MPA	X		
William Scanlon, PhD		X	
Sally Smith	X		
John Supplitt	X		
Donald Taylor, PhD, MPA	X		
Elisabeth B. Wilson, MD, MPH	X		
TOTAL	21	2	5

Voting by Chapter and Issue

Negotiated Rulemaking Committee Report Voting by Section and Issue				
	YES	NO	Abstention	Not Present
Introduction Chapter	23	0	0	5
Conceptual Framework Chapter	23	0	0	5
Recommendations to Secretary in the absence of overall consensus	23	0	0	5
Rational Service Area Chapter	22	0	0	6
Contiguous Area Threshold	21	0	2	5
Population-to-Provider Chapter	18	3	0	7
Provider Exclusions or "Back outs"	16	4	0	8
MUA Chapter	16	2	2	8
MUP Chapter	18	2	3	5
Geographic HPSA Overall	21	2	0	5
Use of Curved Threshold for Mid-range	22	0	1	5
Population HPSA Chapter	21	1	1	5
Facility HPSA Chapter	18	0	1	9
Facility- County Correctional Facilities	15	5	0	9
Exceptional Medically Underserved Population Chapter	23	0	0	5
Five year updates for EMUPs	23	0	0	5
Implementation Chapter	22	0	0	6
American Community Survey	23	0	0	5
Other Recommendations				
Providing Advice to the Secretary on Targeting Resources	23	0	0	5
Advisory Committee Concept	23	0	0	5
Severability Language	21	0	1	6

Procedural Vote by the Committee: Committee approved the interpretation of an abstaining vote to be that the voter is neither for nor against the proposal and their abstaining would not block consensus. The Committee approved this definition with 23 yes votes, zero no votes, and zero abstentions.

Table 2: Federal Programs Using Health Professionals Shortage Areas and Other Designations of Underservice

PROGRAM	AGENCY	DESIGNATION USED	GRANT ELIGIBILITY	ENHANCED REIMBURSEMENT or PAYMENTS	FUNDING PREFERENCE	HEALTH PROFESSIONAL TRAINING	HEALTH PROFESSIONAL PLACEMENT	PROGRAM OUTPUT/ IMPACT	FEDERAL FUNDING (includes 2011 President's Budget)
INFRASTRUCTURE DEVELOPMENT									
Community health center program – planning and operational grants ³⁵	HRSA	MUA MUP	YES	YES	NO	NO	NO	2010 Grantees: 1133 Sites: 7892	2010- \$2.1B 2011- \$2.4B Plus \$1B ACA fund; \$508M Medicare reimbursement ³⁶
Federally qualified health center look-alike program	HRSA	MUA MUP	NO	YES	NO	NO	NO	87 Entities; 300 Sites	NA
Rural Health Clinic program	CMS	HPSA: Rural ³⁷ geographic and population-group HPSAs only MUA: Rural MUAs only Other: Rural areas designated by a state’s governor as shortage areas	NO	YES	NO	NO	NO	3700+	\$818 M

³⁵ Special Medically Underserved Populations defined as Migrant/Seasonal Farmworkers, Homeless, and Residents of Public Housing are used for eligibility for funding for these specific programs.

³⁶ Medicare funding to all FQHCs , including Look-a-Likes and Tribal organizations.

³⁷ Rural classification based on Census definitions.

PROGRAM	AGENCY	DESIGNATION USED	GRANT ELIGIBILITY	ENHANCED REIMBURSEMENT or PAYMENTS	FUNDING PREFERENCE	HEALTH PROFESSIONAL TRAINING	HEALTH PROFESSIONAL PLACEMENT	PROGRAM OUTPUT/ IMPACT	FEDERAL FUNDING (includes 2011 President's Budget)
Electronic Health Records-HPSA Incentive Payment Increase	CMS	Geographic primary care HPSA	NO	5 year payment limit increased to \$4400 per provider	NO	NO	NO	NO	2011-2016
Medicare Telehealth Services	CMS	Rural HPSA	NO	NO	NO	NO	NO		
WORKFORCE DEVELOPMENT, TRAINING, AND DISTRIBUTION									
National Health Service Corps Scholarship/ Loan Repayment/ SLRP	HRSA	HPSA	NO	NO	NO	YES	YES	FY 2009: Base - 88 Scholarships 949 Loan Repayments ARRA - 70 Scholarships 829 Loan Repayments SLRP - 763 Serving	2010-\$141.4 M 2011-\$168.6 M Plus \$290 M ACA fund
Indian Health Scholarship Program-awards for American Indian/Alaska Native students	IHS	HPSA	NO	NO	NO	YES	YES		

PROGRAM	AGENCY	DESIGNATION USED	GRANT ELIGIBILITY	ENHANCED REIMBURSEMENT or PAYMENTS	FUNDING PREFERENCE	HEALTH PROFESSIONAL TRAINING	HEALTH PROFESSIONAL PLACEMENT	PROGRAM OUTPUT/ IMPACT	FEDERAL FUNDING (includes 2011 President's Budget)
J-1 visa waivers for physicians at the request of federal agencies	Variety of Federal Agencies	HPSA MUA MUP	NO	NO	NO	NO	YES	FY 2010-HHS approved 9 placements	Not applicable
J-1 visa waivers for physicians at the request of state health departments (Conrad Program)	State Health Depts	HPSA MUA MUP	NO	NO	NO	NO	YES	FY 2009-809 placements	Not applicable
Medicare Incentive Payment program -10% bonus for physician services	CMS	HPSA: Geographic HPSAs only	NO	YES	NO	NO	NO		\$215 M
National Interest Waivers for Immigrant Physicians	USCIS	HPSA: Geographic HPSAs only MUA	NO	NO	NO	NO	YES		Not applicable
Scholarships for Disadvantaged Students Program	HRSA	HPSA MUA MUP Other medically underserved communities ³⁸	NO	NO	YES	YES	NO	350 grants; 18,000 students	2010-\$49.2 M 2011-\$49.3 M

³⁸ A medically underserved community is an urban or rural area or population that (1) is eligible for HPSA designation; (2) is eligible to be served by a community health center, migrant health center, or a grantee serving residents of public housing or the homeless; (3) has a shortage of personal health services, as determined under criteria issued by the Secretary of Health and Human Services relating to rural health clinics; or (4) is designated by a state governor (in consultation with the medical community) as a shortage area or medically underserved community.

PROGRAM	AGENCY	DESIGNATION USED	GRANT ELIGIBILITY	ENHANCED REIMBURSEMENT or PAYMENTS	FUNDING PREFERENCE	HEALTH PROFESSIONAL TRAINING	HEALTH PROFESSIONAL PLACEMENT	PROGRAM OUTPUT/ IMPACT	FEDERAL FUNDING (includes 2011 President's Budget)
Native Hawaiian Health Scholarship Program	HRSA	MUA HPSA	NO	NO	NO	YES	YES-2 nd priority for placement	FY 2010- 11 Scholarships awarded	2010-\$1.5 M
Title VIII Nurse Education and Practice and Quality	HRSA	HPSA MUA MUP Other medically Underserved Communities	NO	NO	YES	YES	NO		2010-\$39.8M 2011-\$39.9M
Title VII Primary Care Training and Enhancement	HRSA	HPSA MUA MUP Other medically underserved communities	NO	NO	YES	YES	NO		2010-\$238M 2011-\$79.2M
Title VII Faculty Fellowship	HRSA	HPSA MUA MUP Other medically underserved communities	NO	NO	YES	YES	NO		
Title VII Mental/Behavioral Health Education And Training	HRSA	HPSA MUA MUP Other medically underserved communities	NO	NO	YES	YES	NO		2010-\$2939 2011-\$2945

PROGRAM	AGENCY	DESIGNATION USED	GRANT ELIGIBILITY	ENHANCED REIMBURSEMENT or PAYMENTS	FUNDING PREFERENCE	HEALTH PROFESSIONAL TRAINING	HEALTH PROFESSIONAL PLACEMENT	PROGRAM OUTPUT/ IMPACT	FEDERAL FUNDING (includes 2011 President's Budget)
Title VII Public Health Training Centers	HRSA	HPSA MUA MUP Other medically underserved communities	YES	NO	YES	YES	NO		
Title VII Health Administration Traineeships	HRSA	HPSA MUA MUP Other medically underserved communities	NO	NO	YES	YES	NO		
Title VII Primary Care Medicine and Dentistry	HRSA	HPSA MUA MUP Other medically underserved communities	NO	NO	YES	YES	NO		2010-\$54.4M 2011-\$54.4M
HPSA Surgical Bonus Program	CMS	Geographic Primary Care HPSAs	NO	Eligible for 10% bonus	NO	NO	NO		Starts in 2011; estimated \$5M/year
Residency Distribution	CMS	Geographic Primary Care HPSAs	NO		Priority for redistribution of residency slots	YES	NO	Redistribute up to 180 slots	\$180M
Federal Employee Health Benefits	OPM	States with \geq 50% of residents in HPSAs	NO	YES; providers receive bonus payment	NO	NO	NO		

Table 3a: Scaling Range for Low birthweight

93 (1.5%) outliers removed (abs(z-score) >3)

Min Max Int. length
 22.84947 133.084274 1.102348081

Interval	# of RSAs	Min	Max
1	15	<=22.84947	23.95181
2	0	23.95181	25.05416
3	1	25.05416	26.15651
4	2	26.15651	27.25886
5	2	27.25886	28.36121
6	4	28.36121	29.46355
7	4	29.46355	30.56590
8	2	30.56590	31.66825
9	4	31.66825	32.77060
10	0	32.77060	33.87295
11	3	33.87295	34.97529
12	4	34.97529	36.07764
13	7	36.07764	37.17999
14	5	37.17999	38.28234
15	4	38.28234	39.38469
16	7	39.38469	40.48704
17	5	40.48704	41.58938
18	4	41.58938	42.69173
19	9	42.69173	43.79408
20	13	43.79408	44.89643
21	20	44.89643	45.99878
22	20	45.99878	47.10112
23	18	47.10112	48.20347
24	17	48.20347	49.30582
25	18	49.30582	50.40817
26	31	50.40817	51.51052
27	23	51.51052	52.61286
28	30	52.61286	53.71521
29	42	53.71521	54.81756
30	68	54.81756	55.91991
31	95	55.91991	57.02226
32	78	57.02226	58.12460
33	131	58.12460	59.22695
34	91	59.22695	60.32930
35	132	60.32930	61.43165
36	124	61.43165	62.53400
37	170	62.53400	63.63634
38	167	63.63634	64.73869
39	161	64.73869	65.84104
40	201	65.84104	66.94339
41	202	66.94339	68.04574
42	219	68.04574	69.14809
43	209	69.14809	70.25043
44	188	70.25043	71.35278
45	187	71.35278	72.45513
46	195	72.45513	73.55748
47	219	73.55748	74.65983
48	210	74.65983	75.76217
49	153	75.76217	76.86452
50	153	76.86452	77.96687

Interval	# of RSAs	Min	Max
51	167	77.96687	79.06922
52	155	79.06922	80.17157
53	145	80.17157	81.27391
54	108	81.27391	82.37626
55	139	82.37626	83.47861
56	113	83.47861	84.58096
57	100	84.58096	85.68331
58	109	85.68331	86.78565
59	94	86.78565	87.88800
60	77	87.88800	88.99035
61	67	88.99035	90.09270
62	68	90.09270	91.19505
63	71	91.19505	92.29740
64	70	92.29740	93.39974
65	59	93.39974	94.50209
66	37	94.50209	95.60444
67	60	95.60444	96.70679
68	47	96.70679	97.80914
69	37	97.80914	98.91148
70	44	98.91148	100.01383
71	32	100.01383	101.11618
72	49	101.11618	102.21853
73	35	102.21853	103.32088
74	12	103.32088	104.42322
75	28	104.42322	105.52557
76	25	105.52557	106.62792
77	20	106.62792	107.73027
78	22	107.73027	108.83262
79	27	108.83262	109.93496
80	24	109.93496	111.03731
81	26	111.03731	112.13966
82	21	112.13966	113.24201
83	17	113.24201	114.34436
84	28	114.34436	115.44670
85	8	115.44670	116.54905
86	16	116.54905	117.65140
87	18	117.65140	118.75375
88	17	118.75375	119.85610
89	18	119.85610	120.95845
90	14	120.95845	122.06079
91	14	122.06079	123.16314
92	12	123.16314	124.26549
93	15	124.26549	125.36784
94	12	125.36784	126.47019
95	12	126.47019	127.57253
96	12	127.57253	128.67488
97	9	128.67488	129.77723
98	8	129.77723	130.87958
99	4	130.87958	131.98193
100	86	131.98193	>=133.0843

Table 3b: Scaling Range for Uninsured, under 400% federal poverty level

16 (0.3%) outliers removed (abs(z-score)>3)

Min Max Int. length
 0.010687 0.281258 0.002705711

Interval	# of RSAs	Min	Max
1	6	<=0.01069	0.01339
2	4	0.01339	0.01610
3	9	0.01610	0.01880
4	11	0.01880	0.02151
5	12	0.02151	0.02422
6	14	0.02422	0.02692
7	11	0.02692	0.02963
8	20	0.02963	0.03233
9	26	0.03233	0.03504
10	27	0.03504	0.03774
11	29	0.03774	0.04045
12	33	0.04045	0.04316
13	45	0.04316	0.04586
14	47	0.04586	0.04857
15	37	0.04857	0.05127
16	35	0.05127	0.05398
17	52	0.05398	0.05668
18	43	0.05668	0.05939
19	72	0.05939	0.06210
20	74	0.06210	0.06480
21	60	0.06480	0.06751
22	66	0.06751	0.07021
23	67	0.07021	0.07292
24	78	0.07292	0.07562
25	104	0.07562	0.07833
26	100	0.07833	0.08104
27	96	0.08104	0.08374
28	121	0.08374	0.08645
29	124	0.08645	0.08915
30	129	0.08915	0.09186
31	123	0.09186	0.09456
32	115	0.09456	0.09727
33	115	0.09727	0.09998
34	106	0.09998	0.10268
35	131	0.10268	0.10539
36	125	0.10539	0.10809
37	125	0.10809	0.11080
38	134	0.11080	0.11350
39	129	0.11350	0.11621
40	116	0.11621	0.11892
41	137	0.11892	0.12162
42	126	0.12162	0.12433
43	122	0.12433	0.12703
44	126	0.12703	0.12974
45	127	0.12974	0.13244
46	117	0.13244	0.13515
47	125	0.13515	0.13786
48	119	0.13786	0.14056
49	89	0.14056	0.14327
50	122	0.14327	0.14597

Interval	# of RSAs	Min	Max
51	113	0.14597	0.14868
52	102	0.14868	0.15138
53	103	0.15138	0.15409
54	78	0.15409	0.15680
55	116	0.15680	0.15950
56	92	0.15950	0.16221
57	92	0.16221	0.16491
58	77	0.16491	0.16762
59	74	0.16762	0.17032
60	93	0.17032	0.17303
61	66	0.17303	0.17574
62	81	0.17574	0.17844
63	65	0.17844	0.18115
64	74	0.18115	0.18385
65	55	0.18385	0.18656
66	48	0.18656	0.18926
67	52	0.18926	0.19197
68	62	0.19197	0.19468
69	32	0.19468	0.19738
70	36	0.19738	0.20009
71	36	0.20009	0.20279
72	38	0.20279	0.20550
73	40	0.20550	0.20820
74	39	0.20820	0.21091
75	34	0.21091	0.21362
76	45	0.21362	0.21632
77	21	0.21632	0.21903
78	37	0.21903	0.22173
79	31	0.22173	0.22444
80	33	0.22444	0.22714
81	30	0.22714	0.22985
82	17	0.22985	0.23256
83	19	0.23256	0.23526
84	21	0.23526	0.23797
85	16	0.23797	0.24067
86	15	0.24067	0.24338
87	9	0.24338	0.24608
88	9	0.24608	0.24879
89	10	0.24879	0.25150
90	15	0.25150	0.25420
91	5	0.25420	0.25691
92	8	0.25691	0.25961
93	9	0.25961	0.26232
94	8	0.26232	0.26502
95	4	0.26502	0.26773
96	2	0.26773	0.27044
97	7	0.27044	0.27314
98	2	0.27314	0.27585
99	2	0.27585	0.27855
100	21	0.27855	>=0.2813

Table 3c: Scaling Range for Hispanic

186 (3.1%) outliers removed (abs(z-score)>3)

	<u>Min</u>	<u>Max</u>	<u>Int. length</u>
	0	0.577648	0.005776481
Interval	# of RSAs	Min	Max
1	182	0	0.00578
2	708	0.00578	0.01155
3	768	0.01155	0.01733
4	570	0.01733	0.02311
5	448	0.02311	0.02888
6	319	0.02888	0.03466
7	250	0.03466	0.04044
8	230	0.04044	0.04621
9	169	0.04621	0.05199
10	152	0.05199	0.05776
11	122	0.05776	0.06354
12	133	0.06354	0.06932
13	96	0.06932	0.07509
14	95	0.07509	0.08087
15	73	0.08087	0.08665
16	65	0.08665	0.09242
17	86	0.09242	0.09820
18	73	0.09820	0.10398
19	59	0.10398	0.10975
20	57	0.10975	0.11553
21	56	0.11553	0.12131
22	46	0.12131	0.12708
23	46	0.12708	0.13286
24	49	0.13286	0.13864
25	36	0.13864	0.14441
26	34	0.14441	0.15019
27	29	0.15019	0.15596
28	39	0.15596	0.16174
29	30	0.16174	0.16752
30	27	0.16752	0.17329
31	33	0.17329	0.17907
32	26	0.17907	0.18485
33	26	0.18485	0.19062
34	26	0.19062	0.19640
35	27	0.19640	0.20218
36	20	0.20218	0.20795
37	30	0.20795	0.21373
38	14	0.21373	0.21951
39	24	0.21951	0.22528
40	18	0.22528	0.23106
41	24	0.23106	0.23684
42	31	0.23684	0.24261
43	16	0.24261	0.24839
44	23	0.24839	0.25417
45	18	0.25417	0.25994
46	14	0.25994	0.26572
47	18	0.26572	0.27149
48	12	0.27149	0.27727
49	13	0.27727	0.28305
50	17	0.28305	0.28882

Interval	# of RSAs	Min	Max
51	17	0.28882	0.29460
52	17	0.29460	0.30038
53	10	0.30038	0.30615
54	9	0.30615	0.31193
55	4	0.31193	0.31771
56	14	0.31771	0.32348
57	11	0.32348	0.32926
58	12	0.32926	0.33504
59	5	0.33504	0.34081
60	10	0.34081	0.34659
61	12	0.34659	0.35237
62	13	0.35237	0.35814
63	12	0.35814	0.36392
64	13	0.36392	0.36969
65	11	0.36969	0.37547
66	7	0.37547	0.38125
67	10	0.38125	0.38702
68	8	0.38702	0.39280
69	6	0.39280	0.39858
70	9	0.39858	0.40435
71	7	0.40435	0.41013
72	8	0.41013	0.41591
73	6	0.41591	0.42168
74	12	0.42168	0.42746
75	9	0.42746	0.43324
76	8	0.43324	0.43901
77	5	0.43901	0.44479
78	5	0.44479	0.45057
79	4	0.45057	0.45634
80	5	0.45634	0.46212
81	11	0.46212	0.46789
82	9	0.46789	0.47367
83	8	0.47367	0.47945
84	5	0.47945	0.48522
85	6	0.48522	0.49100
86	7	0.49100	0.49678
87	8	0.49678	0.50255
88	6	0.50255	0.50833
89	9	0.50833	0.51411
90	5	0.51411	0.51988
91	4	0.51988	0.52566
92	10	0.52566	0.53144
93	4	0.53144	0.53721
94	4	0.53721	0.54299
95	5	0.54299	0.54877
96	4	0.54877	0.55454
97	3	0.55454	0.56032
98	12	0.56032	0.56610
99	6	0.56610	0.57187
100	193	0.57187	>=0.5776

Table 3d: Scaling Range for Low English proficiency

178 (2.9%) outliers removed (abs(z-score)>3)

Min Max Int. length
 0 0.275119 0.002751191

Interval	# of RSAs	Min	Max
1	367	0	0.00275
2	537	0.00275	0.00550
3	539	0.00550	0.00825
4	541	0.00825	0.01100
5	418	0.01100	0.01376
6	342	0.01376	0.01651
7	286	0.01651	0.01926
8	252	0.01926	0.02201
9	217	0.02201	0.02476
10	178	0.02476	0.02751
11	138	0.02751	0.03026
12	137	0.03026	0.03301
13	136	0.03301	0.03577
14	106	0.03577	0.03852
15	85	0.03852	0.04127
16	78	0.04127	0.04402
17	73	0.04402	0.04677
18	73	0.04677	0.04952
19	51	0.04952	0.05227
20	63	0.05227	0.05502
21	54	0.05502	0.05778
22	45	0.05778	0.06053
23	57	0.06053	0.06328
24	46	0.06328	0.06603
25	61	0.06603	0.06878
26	53	0.06878	0.07153
27	44	0.07153	0.07428
28	29	0.07428	0.07703
29	39	0.07703	0.07978
30	32	0.07978	0.08254
31	26	0.08254	0.08529
32	43	0.08529	0.08804
33	23	0.08804	0.09079
34	30	0.09079	0.09354
35	32	0.09354	0.09629
36	28	0.09629	0.09904
37	21	0.09904	0.10179
38	18	0.10179	0.10455
39	19	0.10455	0.10730
40	21	0.10730	0.11005
41	16	0.11005	0.11280
42	20	0.11280	0.11555
43	15	0.11555	0.11830
44	18	0.11830	0.12105
45	22	0.12105	0.12380
46	18	0.12380	0.12655
47	18	0.12655	0.12931
48	22	0.12931	0.13206
49	19	0.13206	0.13481
50	12	0.13481	0.13756

Interval	# of RSAs	Min	Max
51	8	0.13756	0.14031
52	10	0.14031	0.14306
53	17	0.14306	0.14581
54	11	0.14581	0.14856
55	11	0.14856	0.15132
56	4	0.15132	0.15407
57	14	0.15407	0.15682
58	15	0.15682	0.15957
59	11	0.15957	0.16232
60	18	0.16232	0.16507
61	11	0.16507	0.16782
62	7	0.16782	0.17057
63	11	0.17057	0.17333
64	12	0.17333	0.17608
65	7	0.17608	0.17883
66	11	0.17883	0.18158
67	7	0.18158	0.18433
68	7	0.18433	0.18708
69	9	0.18708	0.18983
70	12	0.18983	0.19258
71	5	0.19258	0.19533
72	4	0.19533	0.19809
73	8	0.19809	0.20084
74	6	0.20084	0.20359
75	16	0.20359	0.20634
76	5	0.20634	0.20909
77	6	0.20909	0.21184
78	3	0.21184	0.21459
79	6	0.21459	0.21734
80	12	0.21734	0.22010
81	10	0.22010	0.22285
82	4	0.22285	0.22560
83	2	0.22560	0.22835
84	4	0.22835	0.23110
85	4	0.23110	0.23385
86	2	0.23385	0.23660
87	6	0.23660	0.23935
88	8	0.23935	0.24210
89	11	0.24210	0.24486
90	1	0.24486	0.24761
91	2	0.24761	0.25036
92	3	0.25036	0.25311
93	8	0.25311	0.25586
94	4	0.25586	0.25861
95	4	0.25861	0.26136
96	6	0.26136	0.26411
97	2	0.26411	0.26687
98	2	0.26687	0.26962
99	6	0.26962	0.27237
100	184	0.27237	>=0.2751

Table 3e: Scaling Range for Minority race

117 (1.9%) outliers removed (abs(z-score)>3)

Min Max Int. length
 0 0.733028 0.007330281

Interval	# of RSAs	Min	Max
1	8	0	0.00733
2	129	0.00733	0.01466
3	389	0.01466	0.02199
4	456	0.02199	0.02932
5	419	0.02932	0.03665
6	312	0.03665	0.04398
7	219	0.04398	0.05131
8	195	0.05131	0.05864
9	173	0.05864	0.06597
10	182	0.06597	0.07330
11	157	0.07330	0.08063
12	135	0.08063	0.08796
13	118	0.08796	0.09529
14	116	0.09529	0.10262
15	113	0.10262	0.10995
16	102	0.10995	0.11728
17	112	0.11728	0.12461
18	133	0.12461	0.13195
19	81	0.13195	0.13928
20	78	0.13928	0.14661
21	76	0.14661	0.15394
22	80	0.15394	0.16127
23	73	0.16127	0.16860
24	56	0.16860	0.17593
25	71	0.17593	0.18326
26	65	0.18326	0.19059
27	56	0.19059	0.19792
28	50	0.19792	0.20525
29	65	0.20525	0.21258
30	65	0.21258	0.21991
31	55	0.21991	0.22724
32	63	0.22724	0.23457
33	59	0.23457	0.24190
34	59	0.24190	0.24923
35	51	0.24923	0.25656
36	54	0.25656	0.26389
37	42	0.26389	0.27122
38	43	0.27122	0.27855
39	45	0.27855	0.28588
40	45	0.28588	0.29321
41	49	0.29321	0.30054
42	41	0.30054	0.30787
43	52	0.30787	0.31520
44	35	0.31520	0.32253
45	38	0.32253	0.32986
46	38	0.32986	0.33719
47	34	0.33719	0.34452
48	28	0.34452	0.35185
49	26	0.35185	0.35918
50	35	0.35918	0.36651

Interval	# of RSAs	Min	Max
51	37	0.36651	0.37384
52	29	0.37384	0.38117
53	25	0.38117	0.38850
54	25	0.38850	0.39584
55	27	0.39584	0.40317
56	24	0.40317	0.41050
57	28	0.41050	0.41783
58	23	0.41783	0.42516
59	26	0.42516	0.43249
60	24	0.43249	0.43982
61	17	0.43982	0.44715
62	24	0.44715	0.45448
63	22	0.45448	0.46181
64	24	0.46181	0.46914
65	18	0.46914	0.47647
66	17	0.47647	0.48380
67	19	0.48380	0.49113
68	16	0.49113	0.49846
69	21	0.49846	0.50579
70	15	0.50579	0.51312
71	16	0.51312	0.52045
72	11	0.52045	0.52778
73	18	0.52778	0.53511
74	21	0.53511	0.54244
75	15	0.54244	0.54977
76	13	0.54977	0.55710
77	15	0.55710	0.56443
78	11	0.56443	0.57176
79	14	0.57176	0.57909
80	7	0.57909	0.58642
81	8	0.58642	0.59375
82	12	0.59375	0.60108
83	15	0.60108	0.60841
84	15	0.60841	0.61574
85	4	0.61574	0.62307
86	8	0.62307	0.63040
87	12	0.63040	0.63773
88	16	0.63773	0.64506
89	11	0.64506	0.65240
90	7	0.65240	0.65973
91	9	0.65973	0.66706
92	4	0.66706	0.67439
93	6	0.67439	0.68172
94	9	0.68172	0.68905
95	7	0.68905	0.69638
96	8	0.69638	0.70371
97	6	0.70371	0.71104
98	9	0.71104	0.71837
99	5	0.71837	0.72570
100	126	0.72570	>=0.733

Table 3f: Scaling Range for Diabetes prevalence

25 (0.4%) outliers removed (abs(z-score)>3)

Min Max Int. length
 0.03399 0.152313 0.001183231

Interval	# of RSAs	Min	Max
1	4	<=0.03399	0.03517
2	3	0.03517	0.03636
3	0	0.03636	0.03754
4	2	0.03754	0.03872
5	4	0.03872	0.03991
6	3	0.03991	0.04109
7	3	0.04109	0.04227
8	1	0.04227	0.04346
9	1	0.04346	0.04464
10	2	0.04464	0.04582
11	6	0.04582	0.04701
12	2	0.04701	0.04819
13	0	0.04819	0.04937
14	2	0.04937	0.05056
15	4	0.05056	0.05174
16	7	0.05174	0.05292
17	13	0.05292	0.05410
18	24	0.05410	0.05529
19	13	0.05529	0.05647
20	35	0.05647	0.05765
21	22	0.05765	0.05884
22	29	0.05884	0.06002
23	55	0.06002	0.06120
24	33	0.06120	0.06239
25	62	0.06239	0.06357
26	55	0.06357	0.06475
27	39	0.06475	0.06594
28	47	0.06594	0.06712
29	52	0.06712	0.06830
30	79	0.06830	0.06949
31	89	0.06949	0.07067
32	108	0.07067	0.07185
33	118	0.07185	0.07304
34	140	0.07304	0.07422
35	132	0.07422	0.07540
36	146	0.07540	0.07659
37	133	0.07659	0.07777
38	155	0.07777	0.07895
39	168	0.07895	0.08014
40	164	0.08014	0.08132
41	152	0.08132	0.08250
42	137	0.08250	0.08369
43	118	0.08369	0.08487
44	191	0.08487	0.08605
45	150	0.08605	0.08724
46	138	0.08724	0.08842
47	156	0.08842	0.08960
48	140	0.08960	0.09079
49	109	0.09079	0.09197
50	157	0.09197	0.09315

Interval	# of RSAs	Min	Max
51	133	0.09315	0.09433
52	142	0.09433	0.09552
53	114	0.09552	0.09670
54	115	0.09670	0.09788
55	124	0.09788	0.09907
56	112	0.09907	0.10025
57	109	0.10025	0.10143
58	105	0.10143	0.10262
59	88	0.10262	0.10380
60	85	0.10380	0.10498
61	114	0.10498	0.10617
62	77	0.10617	0.10735
63	91	0.10735	0.10853
64	79	0.10853	0.10972
65	65	0.10972	0.11090
66	115	0.11090	0.11208
67	56	0.11208	0.11327
68	66	0.11327	0.11445
69	57	0.11445	0.11563
70	57	0.11563	0.11682
71	47	0.11682	0.11800
72	72	0.11800	0.11918
73	48	0.11918	0.12037
74	56	0.12037	0.12155
75	54	0.12155	0.12273
76	42	0.12273	0.12392
77	52	0.12392	0.12510
78	26	0.12510	0.12628
79	30	0.12628	0.12747
80	24	0.12747	0.12865
81	30	0.12865	0.12983
82	38	0.12983	0.13101
83	29	0.13101	0.13220
84	17	0.13220	0.13338
85	26	0.13338	0.13456
86	25	0.13456	0.13575
87	17	0.13575	0.13693
88	17	0.13693	0.13811
89	14	0.13811	0.13930
90	11	0.13930	0.14048
91	8	0.14048	0.14166
92	6	0.14166	0.14285
93	12	0.14285	0.14403
94	9	0.14403	0.14521
95	2	0.14521	0.14640
96	10	0.14640	0.14758
97	6	0.14758	0.14876
98	5	0.14876	0.14995
99	3	0.14995	0.15113
100	32	0.15113	>=0.1523

Table 3g: Scaling Range for Disability

98 (1.6%) outliers removed (abs(z-score)>3)

Min Max Int. length
 0.068052 0.319827 0.002517751

Interval	# of RSAs	Min	Max
1	7	<=0.06805	0.07057
2	1	0.07057	0.07309
3	2	0.07309	0.07561
4	1	0.07561	0.07812
5	5	0.07812	0.08064
6	3	0.08064	0.08316
7	2	0.08316	0.08568
8	2	0.08568	0.08819
9	2	0.08819	0.09071
10	5	0.09071	0.09323
11	6	0.09323	0.09575
12	4	0.09575	0.09827
13	3	0.09827	0.10078
14	4	0.10078	0.10330
15	1	0.10330	0.10582
16	5	0.10582	0.10834
17	8	0.10834	0.11085
18	11	0.11085	0.11337
19	12	0.11337	0.11589
20	14	0.11589	0.11841
21	4	0.11841	0.12092
22	32	0.12092	0.12344
23	20	0.12344	0.12596
24	20	0.12596	0.12848
25	35	0.12848	0.13100
26	38	0.13100	0.13351
27	43	0.13351	0.13603
28	29	0.13603	0.13855
29	40	0.13855	0.14107
30	62	0.14107	0.14358
31	75	0.14358	0.14610
32	76	0.14610	0.14862
33	63	0.14862	0.15114
34	49	0.15114	0.15366
35	100	0.15366	0.15617
36	123	0.15617	0.15869
37	197	0.15869	0.16121
38	95	0.16121	0.16373
39	197	0.16373	0.16624
40	237	0.16624	0.16876
41	180	0.16876	0.17128
42	130	0.17128	0.17380
43	189	0.17380	0.17632
44	145	0.17632	0.17883
45	208	0.17883	0.18135
46	145	0.18135	0.18387
47	221	0.18387	0.18639
48	408	0.18639	0.18890
49	177	0.18890	0.19142
50	115	0.19142	0.19394

Interval	# of RSAs	Min	Max
51	188	0.19394	0.19646
52	144	0.19646	0.19898
53	172	0.19898	0.20149
54	118	0.20149	0.20401
55	111	0.20401	0.20653
56	136	0.20653	0.20905
57	95	0.20905	0.21156
58	82	0.21156	0.21408
59	62	0.21408	0.21660
60	72	0.21660	0.21912
61	99	0.21912	0.22163
62	58	0.22163	0.22415
63	137	0.22415	0.22667
64	80	0.22667	0.22919
65	77	0.22919	0.23171
66	78	0.23171	0.23422
67	55	0.23422	0.23674
68	43	0.23674	0.23926
69	86	0.23926	0.24178
70	57	0.24178	0.24429
71	31	0.24429	0.24681
72	44	0.24681	0.24933
73	27	0.24933	0.25185
74	29	0.25185	0.25437
75	18	0.25437	0.25688
76	50	0.25688	0.25940
77	23	0.25940	0.26192
78	20	0.26192	0.26444
79	13	0.26444	0.26695
80	14	0.26695	0.26947
81	19	0.26947	0.27199
82	17	0.27199	0.27451
83	16	0.27451	0.27703
84	11	0.27703	0.27954
85	22	0.27954	0.28206
86	13	0.28206	0.28458
87	12	0.28458	0.28710
88	9	0.28710	0.28961
89	10	0.28961	0.29213
90	7	0.29213	0.29465
91	12	0.29465	0.29717
92	4	0.29717	0.29969
93	7	0.29969	0.30220
94	5	0.30220	0.30472
95	7	0.30472	0.30724
96	8	0.30724	0.30976
97	2	0.30976	0.31227
98	14	0.31227	0.31479
99	10	0.31479	0.31731
100	100	0.31731	>=0.3198

Table 3h: Scaling Range for Standardized mortality ratio

52 (0.9%) outliers removed (abs(z-score)>3)

Min Max Int. length
 51.2266 157.3077 1.060811001

Interval	# of RSAs	Min	Max
1	8	<=51.2266	52.28741
2	1	52.28741	53.34822
3	2	53.34822	54.40903
4	1	54.40903	55.46984
5	1	55.46984	56.53066
6	4	56.53066	57.59147
7	3	57.59147	58.65228
8	6	58.65228	59.71309
9	9	59.71309	60.77390
10	5	60.77390	61.83471
11	1	61.83471	62.89552
12	7	62.89552	63.95633
13	9	63.95633	65.01714
14	9	65.01714	66.07795
15	17	66.07795	67.13877
16	10	67.13877	68.19958
17	8	68.19958	69.26039
18	21	69.26039	70.32120
19	19	70.32120	71.38201
20	19	71.38201	72.44282
21	18	72.44282	73.50363
22	26	73.50363	74.56444
23	32	74.56444	75.62525
24	31	75.62525	76.68606
25	40	76.68606	77.74688
26	55	77.74688	78.80769
27	52	78.80769	79.86850
28	58	79.86850	80.92931
29	51	80.92931	81.99012
30	53	81.99012	83.05093
31	66	83.05093	84.11174
32	94	84.11174	85.17255
33	103	85.17255	86.23336
34	118	86.23336	87.29417
35	118	87.29417	88.35499
36	111	88.35499	89.41580
37	117	89.41580	90.47661
38	140	90.47661	91.53742
39	108	91.53742	92.59823
40	123	92.59823	93.65904
41	124	93.65904	94.71985
42	139	94.71985	95.78066
43	130	95.78066	96.84147
44	177	96.84147	97.90228
45	155	97.90228	98.96310
46	184	98.96310	100.02391
47	146	100.02391	101.08472
48	184	101.08472	102.14553
49	180	102.14553	103.20634
50	138	103.20634	104.26715

Interval	# of RSAs	Min	Max
51	131	104.26715	105.32796
52	158	105.32796	106.38877
53	168	106.38877	107.44958
54	166	107.44958	108.51039
55	149	108.51039	109.57121
56	155	109.57121	110.63202
57	136	110.63202	111.69283
58	125	111.69283	112.75364
59	119	112.75364	113.81445
60	115	113.81445	114.87526
61	97	114.87526	115.93607
62	87	115.93607	116.99688
63	77	116.99688	118.05769
64	94	118.05769	119.11850
65	90	119.11850	120.17932
66	83	120.17932	121.24013
67	72	121.24013	122.30094
68	61	122.30094	123.36175
69	57	123.36175	124.42256
70	53	124.42256	125.48337
71	50	125.48337	126.54418
72	43	126.54418	127.60499
73	44	127.60499	128.66580
74	48	128.66580	129.72661
75	35	129.72661	130.78743
76	38	130.78743	131.84824
77	35	131.84824	132.90905
78	22	132.90905	133.96986
79	23	133.96986	135.03067
80	32	135.03067	136.09148
81	25	136.09148	137.15229
82	24	137.15229	138.21310
83	18	138.21310	139.27391
84	21	139.27391	140.33472
85	12	140.33472	141.39554
86	13	141.39554	142.45635
87	15	142.45635	143.51716
88	12	143.51716	144.57797
89	16	144.57797	145.63878
90	14	145.63878	146.69959
91	9	146.69959	147.76040
92	6	147.76040	148.82121
93	13	148.82121	149.88202
94	6	149.88202	150.94283
95	5	150.94283	152.00365
96	4	152.00365	153.06446
97	8	153.06446	154.12527
98	2	154.12527	155.18608
99	6	155.18608	156.24689
100	52	156.24689	>=157.3077

Table 3i: Scaling Range for Population density (log transformed)

15 (0.2%) of outliers removed (abs(z-score)>3.0)

Min Max Int. length
 -1.9480905 11.1315826 0.130797733

Interval	# of RSAs	Min	Max
1	11	11.0009	>=11.132
2	4	10.8701	11.0009
3	4	10.7393	10.8701
4	3	10.6085	10.7393
5	3	10.4777	10.6085
6	6	10.3469	10.4777
7	5	10.2161	10.3469
8	10	10.0853	10.2161
9	11	9.9545	10.0853
10	13	9.8237	9.9545
11	13	9.6929	9.8237
12	11	9.5621	9.6929
13	22	9.4313	9.5621
14	23	9.3005	9.4313
15	31	9.1697	9.3005
16	22	9.0389	9.1697
17	31	8.9081	9.0389
18	45	8.7773	8.9081
19	30	8.6465	8.7773
20	52	8.5157	8.6465
21	45	8.3849	8.5157
22	37	8.2541	8.3849
23	56	8.1233	8.2541
24	47	7.9925	8.1233
25	53	7.8617	7.9925
26	43	7.7309	7.8617
27	64	7.6001	7.7309
28	66	7.4693	7.6001
29	65	7.3385	7.4693
30	55	7.2078	7.3385
31	58	7.0770	7.2078
32	60	6.9462	7.0770
33	75	6.8154	6.9462
34	58	6.6846	6.8154
35	64	6.5538	6.6846
36	57	6.4230	6.5538
37	56	6.2922	6.4230
38	72	6.1614	6.2922
39	68	6.0306	6.1614
40	63	5.8998	6.0306
41	78	5.7690	5.8998
42	100	5.6382	5.7690
43	81	5.5074	5.6382
44	83	5.3766	5.5074
45	109	5.2458	5.3766
46	114	5.1150	5.2458
47	128	4.9842	5.1150
48	129	4.8534	4.9842
49	127	4.7226	4.8534
50	141	4.5918	4.7226

Interval	# of RSAs	Min	Max
51	150	4.4610	4.5918
52	182	4.3302	4.4610
53	187	4.1994	4.3302
54	183	4.0686	4.1994
55	202	3.9378	4.0686
56	199	3.8070	3.9378
57	200	3.6762	3.8070
58	199	3.5454	3.6762
59	182	3.4146	3.5454
60	171	3.2838	3.4146
61	161	3.1530	3.2838
62	149	3.0222	3.1530
63	125	2.8914	3.0222
64	100	2.7606	2.8914
65	115	2.6298	2.7606
66	105	2.4990	2.6298
67	83	2.3682	2.4990
68	63	2.2374	2.3682
69	59	2.1066	2.2374
70	53	1.9758	2.1066
71	50	1.8450	1.9758
72	57	1.7142	1.8450
73	38	1.5834	1.7142
74	50	1.4527	1.5834
75	44	1.3219	1.4527
76	49	1.1911	1.3219
77	45	1.0603	1.1911
78	42	0.9295	1.0603
79	34	0.7987	0.9295
80	27	0.6679	0.7987
81	26	0.5371	0.6679
82	26	0.4063	0.5371
83	21	0.2755	0.4063
84	9	0.1447	0.2755
85	18	0.0139	0.1447
86	17	-0.1169	0.0139
87	6	-0.2477	-0.1169
88	7	-0.3785	-0.2477
89	9	-0.5093	-0.3785
90	3	-0.6401	-0.5093
91	4	-0.7709	-0.6401
92	3	-0.9017	-0.7709
93	3	-1.0325	-0.9017
94	3	-1.1633	-1.0325
95	3	-1.2941	-1.1633
96	1	-1.4249	-1.2941
97	1	-1.5557	-1.4249
98	1	-1.6865	-1.5557
99	0	-1.8173	-1.6865
100	8	<=-1.9481	-1.8173

Table 3j: Scaling Range for Population to provider Ratio

15 (0.2%) of outliers removed (abs(z-score)>3.0)

Min Max Int. length
 -1.9480905 11.131582 0.13079773

Interval	# of RSAs	Min	Max
1	273	630.6528	<=624.3463
2	10	637.0880	630.6528
3	7	643.6559	637.0880
4	9	650.3607	643.6559
5	8	657.2066	650.3607
6	12	664.1981	657.2066
7	10	671.3401	664.1981
8	13	678.6372	671.3401
9	7	686.0948	678.6372
10	10	693.7181	686.0948
11	14	701.5127	693.7181
12	17	709.4844	701.5127
13	6	717.6394	709.4844
14	12	725.9840	717.6394
15	13	734.5250	725.9840
16	13	743.2694	734.5250
17	20	752.2244	743.2694
18	13	761.3979	752.2244
19	17	770.7979	761.3979
20	20	780.4328	770.7979
21	27	790.3117	780.4328
22	18	800.4439	790.3117
23	17	810.8393	800.4439
24	22	821.5082	810.8393
25	26	832.4617	821.5082
26	26	843.7112	832.4617
27	28	855.2688	843.7112
28	21	867.1476	855.2688
29	34	879.3609	867.1476
30	24	891.9232	879.3609
31	35	904.8497	891.9232
32	31	918.1563	904.8497
33	36	931.8601	918.1563
34	36	945.9792	931.8601
35	34	960.5327	945.9792
36	39	975.5410	960.5327
37	46	991.0258	975.5410
38	49	1007.0101	991.0258
39	43	1023.5185	1007.0101
40	48	1040.5771	1023.5185
41	53	1058.2140	1040.5771
42	58	1076.4591	1058.2140
43	52	1095.3443	1076.4591
44	44	1114.9040	1095.3443
45	57	1135.1750	1114.9040
46	60	1156.1968	1135.1750
47	63	1178.0118	1156.1968
48	58	1200.6659	1178.0118
49	62	1224.2084	1200.6659
50	62	1248.6925	1224.2084

Note the Min/Max values for the Population:Provider (P2P) ratio appear reversed because lower numbers equate to better provider availability and therefore are opposite to the direction of the scale for other variables.

Interval	# of RSAs	Min	Max
51	74	1274.1760	1248.6925
52	79	1300.7214	1274.1760
53	75	1328.3963	1300.7214
54	73	1357.2745	1328.3963
55	83	1387.4361	1357.2745
56	85	1418.9688	1387.4361
57	92	1451.9680	1418.9688
58	116	1486.5387	1451.9680
59	79	1522.7958	1486.5387
60	92	1560.8656	1522.7958
61	84	1600.8878	1560.8656
62	98	1643.0165	1600.8878
63	92	1687.4223	1643.0165
64	99	1734.2952	1687.4223
65	115	1783.8465	1734.2952
66	108	1836.3125	1783.8465
67	123	1891.9584	1836.3125
68	95	1951.0821	1891.9584
69	92	2014.0202	1951.0821
70	110	2081.1542	2014.0202
71	99	2152.9181	2081.1542
72	101	2229.8081	2152.9181
73	117	2312.3936	2229.8081
74	89	2401.3318	2312.3936
75	98	2497.3850	2401.3318
76	103	2601.4427	2497.3850
77	104	2714.5490	2601.4427
78	107	2837.9375	2714.5490
79	74	2973.0774	2837.9375
80	86	3121.7313	2973.0774
81	86	3286.0329	3121.7313
82	90	3468.5903	3286.0329
83	87	3672.6251	3468.5903
84	81	3902.1641	3672.6251
85	88	4162.3084	3902.1641
86	77	4459.6161	4162.3084
87	77	4802.6635	4459.6161
88	59	5202.8855	4802.6635
89	61	5675.8751	5202.8855
90	51	6243.4626	5675.8751
91	57	6937.1807	6243.4626
92	51	7804.3282	6937.1807
93	48	8919.2323	7804.3282
94	53	10405.7710	8919.2323
95	29	12486.9252	10405.7710
96	28	15608.6565	12486.9252
97	14	20811.5420	15608.6565
98	9	31217.3129	20811.5420
99	9	62434.6259	31217.3129
100	465	No providers	62434.6259

Table 3k: Scaling Range for Travel time (log transformed)

81 RSAs (1.3%) removed (outliers; abs(z score)>3)

Min Max Int. length
 -0.7985 6.59514 0.07393646

Interval	# of RSAs	Min	Max
1	1329	≤-0.7985	-0.72456354
2	10	-0.7245635	-0.65062708
3	3	-0.6506271	-0.57669062
4	10	-0.5766906	-0.50275416
5	5	-0.5027542	-0.4288177
6	7	-0.4288177	-0.35488124
7	10	-0.3548812	-0.28094478
8	14	-0.2809448	-0.20700832
9	12	-0.2070083	-0.13307186
10	12	-0.1330719	-0.0591354
11	10	-0.0591354	0.01480106
12	13	0.0148011	0.08873752
13	15	0.0887375	0.16267398
14	10	0.162674	0.23661044
15	16	0.2366104	0.3105469
16	11	0.3105469	0.38448336
17	21	0.3844834	0.45841982
18	8	0.4584198	0.53235628
19	19	0.5323563	0.60629274
20	21	0.6062927	0.6802292
21	15	0.6802292	0.75416566
22	13	0.7541657	0.82810212
23	18	0.8281021	0.90203858
24	22	0.9020386	0.97597504
25	20	0.975975	1.0499115
26	20	1.0499115	1.12384796
27	30	1.123848	1.19778442
28	21	1.1977844	1.27172088
29	18	1.2717209	1.34565734
30	14	1.3456573	1.4195938
31	19	1.4195938	1.49353026
32	15	1.4935303	1.56746672
33	23	1.5674667	1.64140318
34	20	1.6414032	1.71533964
35	17	1.7153396	1.7892761
36	15	1.7892761	1.86321256
37	15	1.8632126	1.93714902
38	12	1.937149	2.01108548
39	22	2.0110855	2.08502194
40	19	2.0850219	2.1589584
41	11	2.1589584	2.23289486
42	33	2.2328949	2.30683132
43	12	2.3068313	2.38076778
44	13	2.3807678	2.45470424
45	26	2.4547042	2.5286407
46	32	2.5286407	2.60257716
47	51	2.6025772	2.67651362
48	27	2.6765136	2.75045008
49	54	2.7504501	2.82438654
50	63	2.8243865	2.898323

Interval	# of RSAs	Min	Max
51	51	2.898323	2.97225946
52	78	2.9722595	3.04619592
53	77	3.0461959	3.12013238
54	91	3.1201324	3.19406884
55	125	3.1940688	3.2680053
56	112	3.2680053	3.34194176
57	126	3.3419418	3.41587822
58	130	3.4158782	3.48981468
59	158	3.4898147	3.56375114
60	153	3.5637511	3.6376876
61	170	3.6376876	3.71162406
62	138	3.7116241	3.78556052
63	165	3.7855605	3.85949698
64	177	3.859497	3.93343344
65	167	3.9334334	4.0073699
66	174	4.0073699	4.08130636
67	156	4.0813064	4.15524282
68	158	4.1552428	4.22917928
69	134	4.2291793	4.30311574
70	138	4.3031157	4.3770522
71	134	4.3770522	4.45098866
72	122	4.4509887	4.52492512
73	108	4.5249251	4.59886158
74	104	4.5988616	4.67279804
75	100	4.672798	4.7467345
76	59	4.7467345	4.82067096
77	91	4.820671	4.89460742
78	67	4.8946074	4.96854388
79	55	4.9685439	5.04248034
80	50	5.0424803	5.1164168
81	51	5.1164168	5.19035326
82	38	5.1903533	5.26428972
83	41	5.2642897	5.33822618
84	25	5.3382262	5.41216264
85	26	5.4121626	5.4860991
86	19	5.4860991	5.56003556
87	15	5.5600356	5.63397202
88	18	5.633972	5.70790848
89	6	5.7079085	5.78184494
90	3	5.7818449	5.8557814
91	6	5.8557814	5.92971786
92	2	5.9297179	6.00365432
93	1	6.0036543	6.07759078
94	0	6.0775908	6.15152724
95	0	6.1515272	6.2254637
96	1	6.2254637	6.29940016
97	1	6.2994002	6.37333662
98	3	6.3733366	6.44727308
99	3	6.4472731	6.52120954
100	2	6.5212095	>6.595

Table 3I: Scaling Range for Low income, under 200% of federal poverty level

17 (0.3%) outliers removed (abs(z-score) >3)

Min 0.022222 Max 0.708237 Int. length 0.006860151

Interval	# of RSAs	Min	Max
1	2	<=0.02222	0.02908
2	3	0.02908	0.03594
3	2	0.03594	0.04280
4	3	0.04280	0.04966
5	6	0.04966	0.05652
6	12	0.05652	0.06338
7	15	0.06338	0.07024
8	21	0.07024	0.07710
9	27	0.07710	0.08396
10	37	0.08396	0.09082
11	39	0.09082	0.09768
12	38	0.09768	0.10454
13	38	0.10454	0.11140
14	40	0.11140	0.11826
15	35	0.11826	0.12512
16	53	0.12512	0.13198
17	45	0.13198	0.13884
18	51	0.13884	0.14570
19	57	0.14570	0.15256
20	67	0.15256	0.15943
21	44	0.15943	0.16629
22	59	0.16629	0.17315
23	74	0.17315	0.18001
24	70	0.18001	0.18687
25	71	0.18687	0.19373
26	70	0.19373	0.20059
27	75	0.20059	0.20745
28	81	0.20745	0.21431
29	84	0.21431	0.22117
30	69	0.22117	0.22803
31	80	0.22803	0.23489
32	86	0.23489	0.24175
33	89	0.24175	0.24861
34	83	0.24861	0.25547
35	83	0.25547	0.26233
36	126	0.26233	0.26919
37	101	0.26919	0.27605
38	131	0.27605	0.28291
39	126	0.28291	0.28977
40	140	0.28977	0.29663
41	99	0.29663	0.30349
42	133	0.30349	0.31035
43	137	0.31035	0.31721
44	125	0.31721	0.32407
45	139	0.32407	0.33093
46	147	0.33093	0.33779
47	124	0.33779	0.34465
48	142	0.34465	0.35151
49	122	0.35151	0.35837
50	144	0.35837	0.36523

Interval	# of RSAs	Min	Max
51	141	0.36523	0.37209
52	120	0.37209	0.37895
53	129	0.37895	0.38581
54	126	0.38581	0.39267
55	119	0.39267	0.39953
56	122	0.39953	0.40639
57	114	0.40639	0.41325
58	97	0.41325	0.42011
59	103	0.42011	0.42697
60	107	0.42697	0.43383
61	101	0.43383	0.44069
62	81	0.44069	0.44755
63	89	0.44755	0.45441
64	70	0.45441	0.46127
65	82	0.46127	0.46813
66	78	0.46813	0.47499
67	50	0.47499	0.48185
68	67	0.48185	0.48871
69	56	0.48871	0.49557
70	52	0.49557	0.50243
71	53	0.50243	0.50929
72	49	0.50929	0.51615
73	32	0.51615	0.52301
74	35	0.52301	0.52987
75	24	0.52987	0.53673
76	33	0.53673	0.54359
77	18	0.54359	0.55045
78	25	0.55045	0.55731
79	32	0.55731	0.56417
80	30	0.56417	0.57103
81	13	0.57103	0.57789
82	17	0.57789	0.58475
83	9	0.58475	0.59161
84	11	0.59161	0.59847
85	17	0.59847	0.60533
86	12	0.60533	0.61219
87	7	0.61219	0.61906
88	5	0.61906	0.62592
89	11	0.62592	0.63278
90	6	0.63278	0.63964
91	11	0.63964	0.64650
92	11	0.64650	0.65336
93	10	0.65336	0.66022
94	11	0.66022	0.66708
95	7	0.66708	0.67394
96	4	0.67394	0.68080
97	10	0.68080	0.68766
98	3	0.68766	0.69452
99	1	0.69452	0.70138
100	19	0.70138	>=0.7082

Table 4: Impact Analysis of Geographic HPSA Model

Geography	Existing Designations (not Universal RSA, not revised model scoring)	Universal RSA's	Currently Designated Areas
Overall Designation Coverage			
% Service Areas Designated		37.3%	69.5%
Service Areas Designated	1,438	2,263	999
% Areas Designated by P2P Only		28.3%	57.0%
% Areas Designated in Mid Range		9.0%	12.5%
% Areas Excluded by P2P Only		39.9%	15.6%
Total Pop Designated	33,381,824	41,834,136	21,353,191
% Total Pop Designated		13.5%	64.0%
Metro, Non-Metro, Frontier Impact			
Metro Pop Designated	17,798,960	21,689,791	11,030,158
% Metro Pop Designated		8.9%	62.0%
Non-Metro Pop Designated	14,297,518	18,684,597	9,732,017
% Non-Metro Pop Designated		30.2%	68.1%
Frontier Pop Designated	1,285,346	1,459,748	591,016
% Frontier Pop Designated		59.8%	46.0%
% Desig Metro Pop of All Pop Designated	53.3%	51.8%	51.7%
% Desig Non-Metro Pop of All Pop Designated	42.8%	44.7%	45.6%
% Desig Frontier Pop of All Pop Designated	3.9%	3.5%	2.8%
Programmatic Impact			
FQHC Sites Designated	1,473	1,459	864
% FQHC Sites Designated		24.2%	59.2%
FQHC Look-a-Like Sites Designated	36	44	26
% FQHC Look-a-Like Sites Designated		23.7%	72.2%
NHSC (Non-FQHC) Sites Designated	399	396	239
% NHSC (Non-FQHC) Sites Designated		37.6%	60.2%
RHC Sites Designated	1,423	2,061	1,000
% RHC Sites Designated		53.1%	70.5%
10% Medicare Charges Designated	\$ 268,526,413	\$ 260,841,021	\$ 134,419,190
Summary of Demographic/Health Inputs			
Population	33,381,824	41,834,136	21,353,191
% Pop Age 65+	12.8%	12.8%	12.5%
% Racial Minority	36.4%	27.9%	35.0%
% Hispanic/Latino Population	22.3%	21.8%	22.2%
% LEP (Limited English Proficiency)	10.0%	9.8%	9.5%
% Single Parent Households	40.7%	33.9%	39.6%
% Less than HS Education	22.0%	20.3%	22.5%

Geography	Existing Designations (not Universal RSA, not revised model scoring)	Universal RSA's	Currently Designated Areas
% Unemployed	9.3%	8.1%	9.4%
% Uninsured & Below 400% FPL	16.8%	15.9%	17.3%
% In Poverty	20.6%	16.7%	20.6%
% Low Income	44.2%	39.1%	44.5%
Population Density (Pop / Sq Mi.)	18.72	29.81	27.38
% Usual Source of Care	21.7%	21.9%	21.9%
Rate - ACSC	82.01	80.59	83.70
% Diabetes	10.0%	9.5%	10.2%
% Disability	19.4%	19.7%	19.7%
SMR	109.32	107.16	112.01
Rate - Low Birth Weight	90.06	81.40	91.55
Rate - Infant Mortality	7.97	7.02	8.13
% Non Physicians - After Backout	30.0%	31.4%	33.4%
% Non Physicians - Total	29.8%	29.4%	32.7%
Population to Provider (P2P)	2,145.50	3,513.80	3,486.20

Table 5: Impact Analysis of MUA Model

Geography	Existing Designations (not Universal RSA, not revised model scoring)	Universal RSA's	Currently Designated Areas
Overall Designation Coverage			
% Service Areas Designated		47.1%	76.5%
Service Areas Designated	3,347	2,861	2,559
Total Pop Designated	70,715,969	102,583,355	54,918,772
% Total Pop Designated		33.2%	77.7%
Metro, Non-Metro, Frontier Impact			
Metro Pop Designated	40,418,301	63,351,782	29,882,904
% Metro Pop Designated		25.9%	73.9%
Non-Metro Pop Designated	28,989,371	37,758,633	24,045,887
% Non-Metro Pop Designated		61.0%	82.9%
Frontier Pop Designated	1,308,297	1,472,940	989,981
% Frontier Pop Designated		60.3%	75.7%
% Desig Metro Pop of All Pop Designated	57.2%	61.8%	54.4%
% Desig Non-Metro Pop of All Pop Designated	41.0%	36.8%	43.8%
% Desig Frontier Pop of All Pop Designated	1.9%	1.4%	1.8%
Programmatic Impact			
FQHC Sites Designated	3,045	3,303	2,610
% FQHC Sites Designated		54.9%	85.7%
FQHC Look-a-Like Sites Designated	65	107	61
% FQHC Look-a-Like Sites Designated		57.5%	93.8%
NHSC (Non-FQHC) Sites Designated	581	730	526
% NHSC (Non-FQHC) Sites Designated		69.4%	90.5%
RHC Sites Designated	2,363	2,905	1,990
% RHC Sites Designated		74.9%	84.2%
Summary of Demographic/Health Inputs			
Population	70,715,969	102,583,355	54,918,772
% Pop Age 65+	12.9%	12.6%	12.9%
% Racial Minority	34.0%	34.9%	38.1%
% Hispanic/Latino Population	19.1%	25.5%	21.7%
% LEP (Limited English Proficiency)	9.2%	12.2%	10.3%
% Single Parent Households	40.0%	38.9%	43.1%
% Less than HS Education	21.0%	21.4%	23.5%
% Unemployed	8.9%	8.7%	9.8%
% Uninsured & Below 400% FPL	16.5%	17.5%	17.8%
% In Poverty	20.6%	19.7%	23.2%
% Low Income	43.8%	43.5%	48.3%
Population Density (Pop / Sq Mi.)	34.98	47.81	32.76

% Usual Source of Care	21.3%	22.8%	21.8%
Rate - ACSC	81.80	82.37	85.97
% Diabetes	10.2%	10.0%	10.6%
% Disability	19.9%	19.9%	20.2%
SMR	109.62	109.53	113.72
Rate - Low Birth Weight	89.97	88.61	93.45
Rate - Infant Mortality	7.85	7.69	8.22
% Non Physicians - After Backout	26.1%	23.8%	25.5%
% Non Physicians - Total	26.3%	24.1%	26.0%
Population to Provider (P2P)	1,381.10	1,458.40	1,446.30

