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Core Based Statistical Areas and the Medicare Wage Index

Background

This document discusses the potential impact of the new Office of Management and Budget (OMB) statistical area standards on the hospital wage index and Medicare payments to rural providers. In the spring of 2003, OMB released new statistical area standards based on county population from the 2000 census. Within these standards there are two classifications of counties or county aggregates that are considered "Core Based Statistical Areas" (CBSA); the former definition of metropolitan statistical areas (MSA) (with very slight revisions) is retained, and a new statistical reporting area classification is added—"micropolitan," for counties with a core urbanized area of 10,000-49,999 persons. The remaining non-CBSA counties have urbanized populations of less than 10,000.

While 94% of counties that were classified as part of an MSA in 1999 remain so in the new standards, there has been substantial reclassification of non-metropolitan counties (Figure 1).

Figure 1: County Classification Changes from 1999 to 2003

Counties

1999 Designation	New Designation:				
	Non-CBSA	Micropolitan	Metropolitan	Total	%
Non-Metropolitan	1,371	630	285	2,286	73%
Metropolitan	6	44	805	855	27%
Total	1,377	674	1,090	3,141	100%
Percent	44%	21%	35%	100%	

Twelve percent are now part of MSAs, and 28% have been classified as micropolitan CBSAs. As would be expected, given the population definitions of micropolitan areas, the creation of this new category has resulted in a much larger shift in the number of people who now reside in a statistical reporting area. Among the population that reside in places that were non-metropolitan in 1999, 17% are in counties that are now part of MSAs, and 47% reside in micropolitan counties (Figure 2).

Figure 2: Population Classification Changes from 1999 to 2003

Population (in millions)

1999 Designation	New Designation: Non-CBSA	Micropolitan	Metropolitan	Total	%
Non-Metropolitan	19.8	25.9	9.4	55.1	19%
Metropolitan	0.1	3.3	229.8	233.2	81%
Total	19.9	29.2	239.2	288.3	100%
Percent	7%	10%	83%	100%	

Medicare's prospective payment systems (PPS) for hospitals, nursing homes and home health agencies are all adjusted by a geographic wage index that reflects differences in average hospital wages paid across local labor markets. Since 1983, the labor markets have been identified by the OMB's metropolitan statistical area assignments, with each MSA representing a single market and with non-metropolitan counties being grouped to single state-level "rural" labor markets. Labor markets are currently based on the 1999 classifications, but the Center for Medicare and Medicaid Services (CMS) has indicated that revised labor market definitions could be proposed as early as May 2004, for the FY 2005 payment year. Depending on how the new micropolitan groups are treated, CBSAs have substantial potential to alter the wage index values, and therefore the distribution of PPS payments, to rural and urban providers. Among current PPS hospitals located in counties defined as non-metropolitan in 1999, 11% are in counties now defined as metropolitan, and 44% are in counties now defined as micropolitan (Figure 3).

Figure 3: Hospital Classification Changes from 1999 to 2003

Hospitals

1999 Designation	New Designation: Non-CBSA	Micropolitan	Metropolitan	Total	%
Non-Metropolitan	680	673	166	1,519	38%
Metropolitan	3	64	2,460	2,527	62%
Total	683	737	2,626	4,046	100%
Percent	17%	18%	65%	100%	

For hospitals in 1999 metropolitan areas the shifts are much smaller—only three PPS facilities are in counties that are non-CBSAs in 2003, and 64 are in counties that are now considered part of a micropolitan area.

A substantial number of hospitals located in 1999 non-metropolitan areas (33%) take advantage of the opportunity to be reclassified into a neighboring labor market, which is available to facilities that meet certain criteria (Figure 4).

Figure 4: Hospital Reclassifications

Hospitals

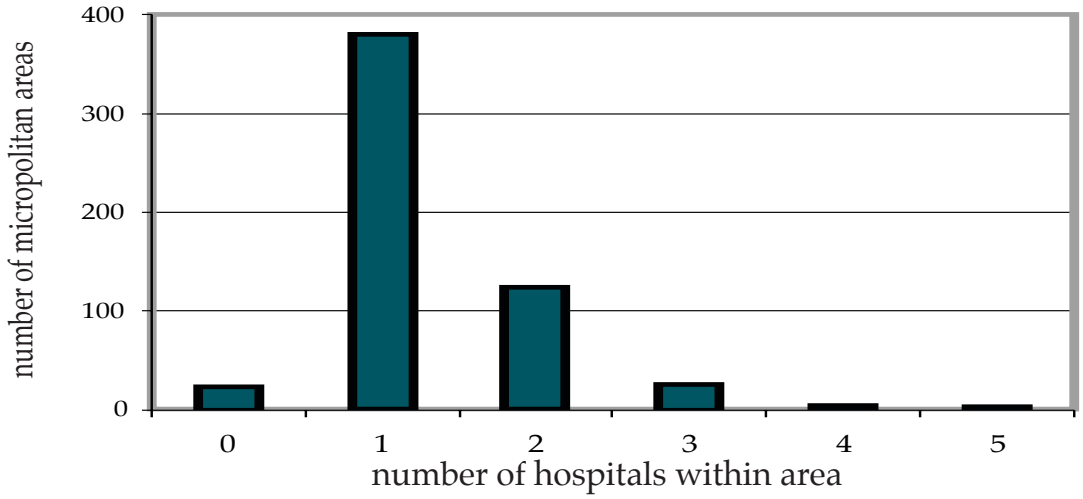
1999 Designation	New CBSA Designation:			
	Non-CBSA	Micropolitan	Metropolitan	Total
Non-Metropolitan	680	673	166	1,519
% reclassified	*16%*	*48%*	*40%*	*33%*
Metropolitan	3	64	2,460	2,527
% reclassified	*0%*	*2%*	*4%*	*4%*
Total	683	737	2,626	4,046
% reclassified	*16%*	*44%*	*7%*	*15%*

In such cases, the PPS rates of reclassified rural hospitals are adjusted by the wage index of the market to which they requested reclassification, although their wage data continue to be used in the computation of the index for the labor markets in which they are physically located. Decisions made by CMS regarding the grouping of micropolitan counties into labor markets will affect not only the wage index values in each new labor market, but also the extent to which hospitals can reclassify, as the average hourly wage (AHW) of both the market in which they are located and the one to which they are requesting reclassification will have changed.

Options for New Wage Index Market Definitions

Because the wage index is intended to adjust for market circumstances, not individual hospital costs, labor markets need to encompass multiple hospitals within an area that constitutes a viable geographic or economic unit. Under the current system, each 1999 MSA is its own labor market, and all non-metropolitan areas in each state are aggregated into a single state-wide non-metropolitan market. The addition of the new micropolitan classification raises the question of how these areas will be handled for labor market purposes. Although the new micropolitan county areas could theoretically be treated similarly to metropolitan areas, they appear to be too small to be treated as individual labor markets; the majority only contain a single hospital (Figure 5).

Figure 5: PPS Hospital Frequency Within Micropolitan Areas



In the remainder of this document, we explore three other possible options for defining labor markets using the 2003 classifications. They are:

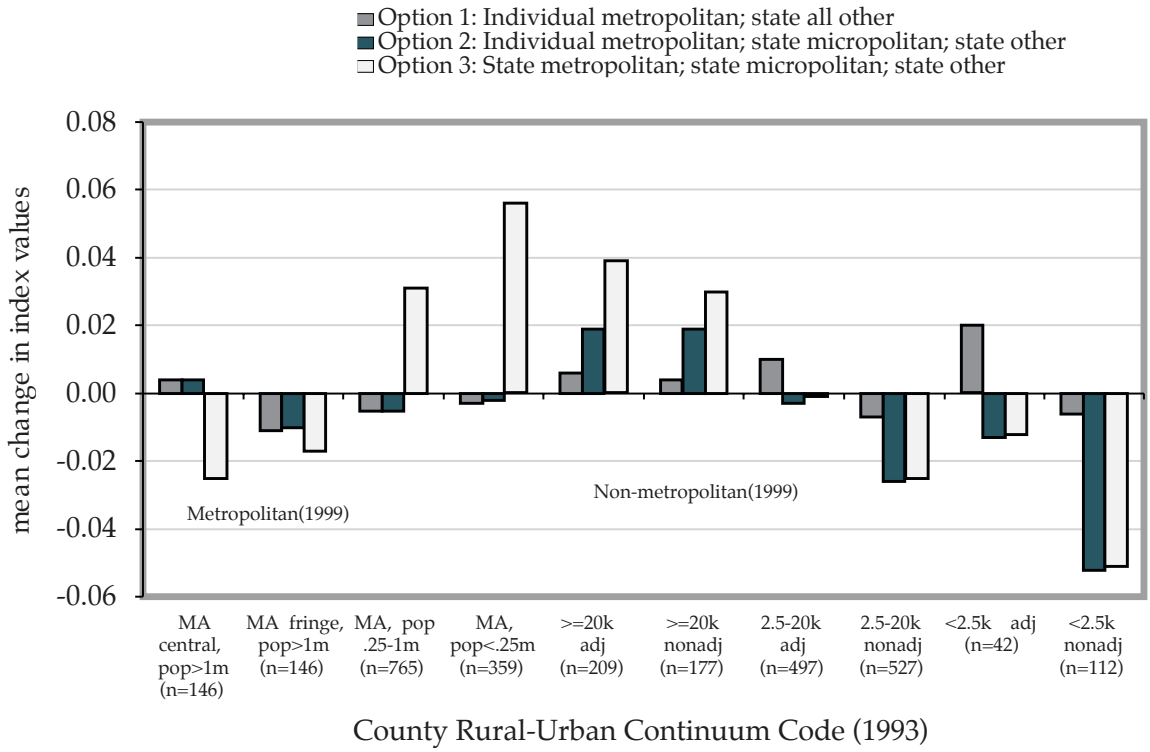
Option 1:
- Each MSA is its own labor market (as is the case currently).
- All other non-metropolitan areas within a state (micropolitan and non-CBSAs), are combined into a single, state-level aggregate market.

Option 2:
- Each MSA is its own labor market (as is the case currently).
- All micropolitan areas are combined into a single, state-level aggregate micropolitan market.
- All non-CBSAs are combined into a single, state-level aggregate non-CBSA market.

Option 3:
- All MSAs are combined into a single, state-level aggregate MSA market.
- All micropolitan areas are combined into a single, state-level aggregate micropolitan market.
- All non-CBSAs are combined into a single, state-level aggregate non-CBSA market.

Using the FY 2004 Hospital Wage Survey File and PPS Impact File, we have computed three hypothetical wage indexes, corresponding to the three options outlined above for the group of hospitals paid under PPS during FY 2004. These index values are compared to the index values from the 1999 MSA-based markets ***prior to reclassification*** (Figure 6).

Figure 6: Change in Wage Index by Rural-Urban Continuum Code Hospital Groupings



In Figure 6, hospitals are grouped according to the Rural-Urban Continuum Code category that they were assigned to prior to the new CBSAs. For each group of hospitals, the mean change in wage index value under each of the three options is graphed. For any individual hospital, the index value may be different across these options even if that hospital's labor market designation has not changed, because the overall mix of hospitals in that market may have changed. Alternatively, a hospital's index value may be different across options because that hospital is grouped in a different labor market. For any given RUCC group in Figure 6, the mean change in the index value reflects the combined effects of these two factors. For example, many of the hospitals in the group that was previously >=20,000 and adjacent to Metropolitan areas are now classified as micropolitan, and so under Options 2 and 3, where micropolitan counties are separated from the rest of non-metropolitan counties, their index value increases because they are now grouped with hospitals in other relatively large non-metropolitan counties. At the same time, under Options 2 and 3, the index values for the less populated rural places decreases, because the larger and usually higher wage non-metropolitan hospitals have been removed from the calculation.

Figure 7: Impact of Adding Aggregate State-level Micropolitan Labor Markets

	2003 CBSA Designation:			
	Non-CBSA	Micropolitan	Metropolitan	Total
Percent hospitals with at least 1 percent point increase	1%	60%	18%	23%
Percent hospitals with little change (-.01 < change <+.01%)	2%	20%	67%	47%
Percent hospitals with at least 1 percent point decrease	97%	20%	15%	30%

The impact of creating a state-level aggregate micropolitan labor market differs dramatically according to CBSA designation (Figure 7).

Almost all of the hospitals located in non-CBSAs would have a decrease in their index value, while almost two thirds of those in micropolitan counties would have increases. As can be seen in Figure 6, the least disruptive course of action is Option 1, which retains the labor market definitions of individual metropolitan areas and a single state-level non-metropolitan (micropolitan and non-CBSAs combined) area.

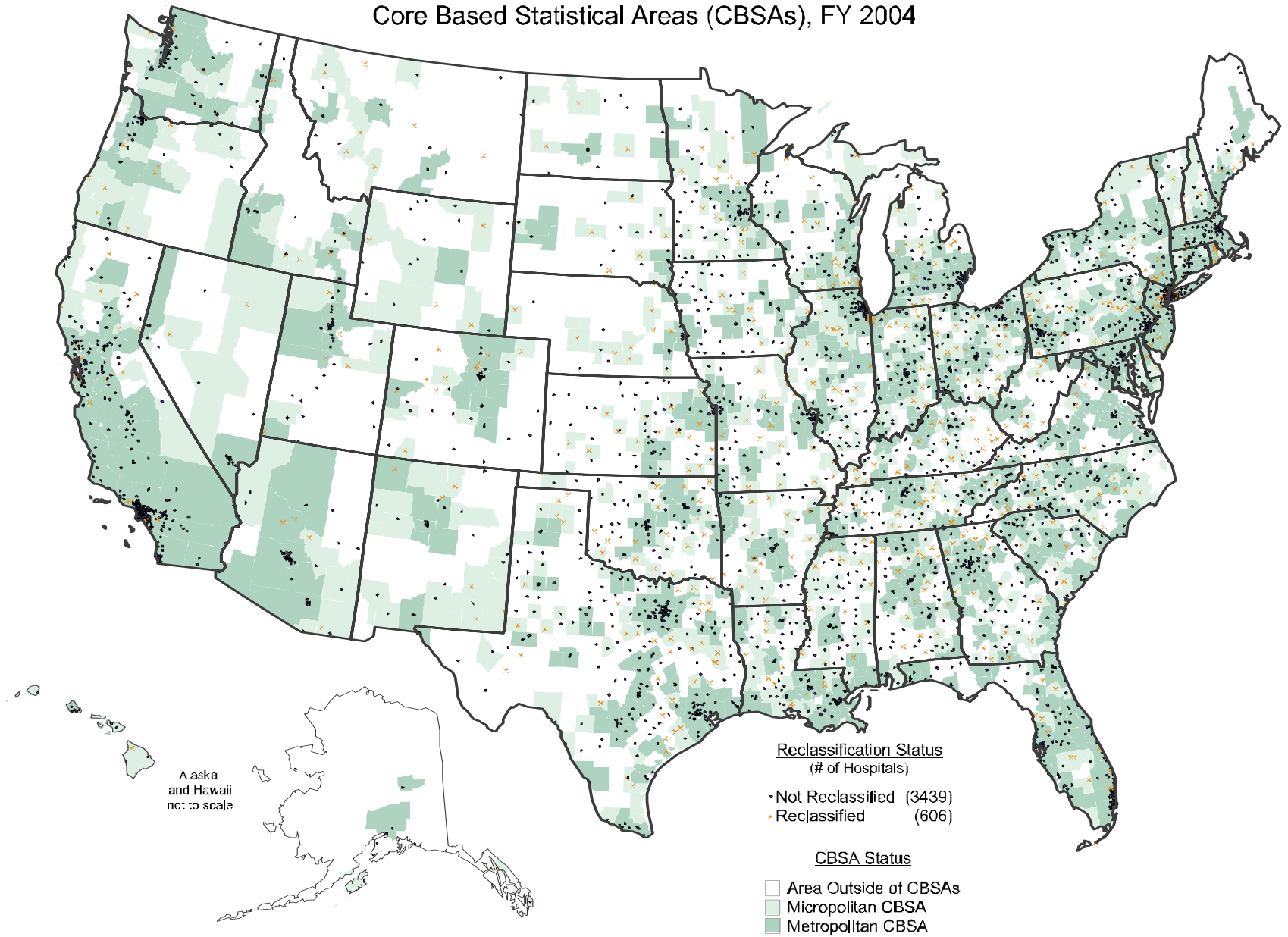
There are several problems associated with Options 2 and 3, both of which divide the group of non-metropolitan counties into two state-level aggregate markets. First, as shown in Map 1 on the opposite page, states would be divided into geographically incoherent groups, causing a "swiss cheese" effect. Second, although the hourly wages are more similar for hospitals within each of these two groups, this may reflect operational rather than market characteristics—on average the hospitals in non-CBSAs are smaller facilities with lower acuity patients than the hospitals in micropolitan areas (Figure 8).

Figure 8: Characteristics of PPS Hospitals by CBSA Status

2003 CBSA Designation	Median Values			
	# Acute Beds	Average Census	Hourly Wage	Case Mix Index
Non-CBSA	44	15	$18.35	1.02
Micropolitan	86	35	$20.15	1.17
Metropolitan	164	94	$23.31	1.33

PPS Hospitals by Wage Index Reclassification Status

Core Based Statistical Areas (CBSAs), FY 2004



Procuced By: North Carolina Rural Health Research and Policy Analysis Center. Cecil G. Sheps Center for Health Services Research. University of North Carolina at Chapel Hill.

Sources: US Census Bureau, 2003; CMS PPS Impact File, FY 2004.

Map 1. Core Based Statistical Areas and Wage Index Reclassification

Defining labor markets along lines that reflect operational differences, yet lack integrity as geographic or commercial units would be less consistent with the underlying rationale governing PPS rate setting, wherein payments are adjusted for market-level cost drivers (such as input prices) that are outside of individual providers' control.

Finally, many metropolitan areas and even state-level aggregate areas no longer have enough hospitals in them to serve as a basis to measure *market-level* wage variation. This has occurred for several reasons. First, the creation of micropolitan areas has diminished metropolitan areas in some states. Second, the exodus of small rural hospitals from PPS into the critical access hospital program has left some states with very few hospitals in non-metropolitan counties that still participate in PPS. One way to address this problem would be to stop using hospitals' hourly wage data for the index, and substitute other government wage data (e.g. county-level data collected by the Bureau of Labor Statistics). Another option might be to move to a single, occupation-mix adjusted index for all Medicare Part A providers, constructed from the combined wage survey data collected on the cost reports for hospitals, skilled nursing facilities and home health agencies.

Limitations of this Analysis

There are a number of factors that are directly relevant to wage index models that cannot be taken into account in this analysis because information is not available. First, the extent to which individual hospitals can qualify for geographic reclassification will change when the relative wage position of non-metropolitan hospitals changes within their own markets. Also, there is no reason to assume that the criteria used to allow reclassification will remain the same. In addition, the Medicare Prescription Drug, Improvement and Modernization Act of 2003 has loosened the criteria for critical access hospital eligibility, and there will likely be further movement of small rural hospitals from PPS. Although this will tend to raise the index values for remaining non-metropolitan PPS hospitals, it may also decrease the proportion of those hospitals that qualify for geographic reclassification. Finally, CMS should be implementing an occupation-mix adjustment to the computation of hospital hourly wages in the near future, and this adjustment should reduce the gap between rural and urban index values. While the effect of this could not be factored into our analysis, it should help reduce any impact that hospitals in non-CBSAs will feel if CMS decides to create separate, state-level micropolitan markets.

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