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Rural Health Care Settings: Evidence from the Michigan Pilot
Background Check Program.**

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Rural Economic Sustainability and Background Checks on Workers in Rural Health Care Settings: Evidence from the Michigan Pilot Background Check Program.

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Introduction

Health care is a growing industry in Michigan. Between 1998 and 2002 the number of nursing and residential care facilities in Michigan increased by 11%, and payroll increased by 31% (US Census Bureau). An aging population and rapid increases in obesity suggest that further increases in facilities, workers and payroll are likely. These increases are critically related to the rural economy and to the sustainability of rural communities because there is increasing demand for residential care facilities (retirement, independent living, nursing homes etc.) in rural areas.

Residential care facilities in rural areas can provide an important source of employment. For example, in Isabella County, a mostly rural county with a population of 63,351 in 2000, the number of nursing and residential care facilities more than quadrupled from 9 facilities in 1998 to 42 in 2002. Annual payroll rose 44% to nearly \$14 million and employment in these facilities jumped 66% from 633 employees in 1998 to 1039 in 2002. In this mostly rural county nursing home and residential care facilities account for nearly 5% of all employment (Census Bureau, County Business Patterns). Although not all rural communities are benefiting to this extent, the desire of aging urban residents to take advantage of rural amenities in their golden years along with age demographics suggest that long-term care facilities for the aged may play an important role in the rural economy and the sustainability of rural communities.

¹ The authors would like to thank Cedric Heraux for data and mapping assistance. Responsibility for all errors remains with the authors.

However, the dynamic of increasing rural employment may be threatened by recent policy legislation. Section 307 of the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (PL 108-173) directs the Secretary of Health and Human Services (HHS), in consultation with the Attorney General, to establish a program to identify efficient, effective and economical procedures for long-term care facilities or providers to conduct background checks on prospective direct patient access employees. This legislation has two crucial components: first, most states (including Michigan) conduct background checks on workers who are direct care-givers, such as nurses and nurses' aides. The legislation broadens the use of background checks to include workers with direct access to clients. This means that workers such as food preparers and servers would now be subject to background checks. Second, this legislation is seen as creating a template for additional legislation that will federally mandate background checks nationwide.

The importance of background checks on labor supply should not be underestimated. Anecdotal evidence from the Detroit Police Officers Association suggests that nearly ½ of Michigan residents have some sort of non-traffic criminal violation on their records. This is broadly consistent with Census Bureau data indicating that in Michigan (as in the US) there are over 4,000 crimes committed annually per 100,000 people (Statistical Abstracts of the United States, 2003, table No. 307). It is expected that more than ½ of potential health-related food service employees have some sort of criminal record since these jobs are relatively low skill, low education and low

wage jobs, all characteristics related to a higher potential involvement in criminal activity. That is, a greater proportion of the low-wage population is involved in/has been convicted of criminal activities than the proportion in the general population.

In order to implement their mandate HHS requested proposals for a pilot background check program. HHS selected Michigan as one of seven states to implement their proposal. Work presented in this paper relates to early findings from this pilot project.

This paper has three objectives:

- 1) To quantify the contributions of health and residential-care related employment to the sustainability of rural communities.
- 2) To quantify the impacts of background check policy on the supply of labor available to health and residential care facilities in rural areas.
- 3) To draw policy conclusions.

The paper proceeds with a description of Michigan rural-urban, age and employment demographics. The third section describes the expected impacts of the background checks program on health-care employment in rural areas, and on the sustainability of rural economies. The fourth section draws conclusions.

Michigan Background

Rural-Urban Demographics

Michigan has an estimated 2005 population of 10.146 million people. 71% of this population lives in the urban core, less than 5% lives in predominantly agricultural rural areas.²

Figure 1 depicts current population by county and classifies the counties into four urban-rural categories. 28 of 31 predominantly agricultural rural counties and 18 of 20 mixed-use (most of these counties are dominated by a combination of forestry and agriculture) have populations of 50,000 or under. One Urban-influenced rural county has a population of 50,000 or less; 13 of 16 urban-influenced rural counties have populations ranging from 50,001 to 150,000, and two have populations from 150,001 to 425,000. Urban core counties have populations ranging from 109,843 to 2,045,540.

Figure 2 shows projected county populations in 2030 (Woods and Poole). The number of predominantly agricultural rural counties with population between 50,001 and 425,000 increases from two in 2006 to six in 2030. The composition of mixed use rural counties remains largely unchanged, with a single mixed-use county increasing from under 50,000 to the 50,001-150,000 population category. 13 of 15 urban core counties remain in the same population category; two increased a population category. The largest county is expected to lose over 150,000 people to generate a 2030 population of 1,888,266.

As a state, Michigan is experiencing “reverse migration”, where there is a net decline in urban populations and a net increase in rural populations as an aging population seeks a less hectic lifestyle. As is the case throughout the United States, the

² Define and reference definitions of rural.

numbers of farms in Michigan is declining. However, population in predominantly agricultural rural counties has been growing from just under one-half million people in 1970 to 3/5 of a million in 2000, and is projected to grow to 3/4 of a million on 2025.

Age Demographics

Michigan is aging more rapidly than the United States, and rural Michigan is aging more rapidly than urban Michigan. For example, in 1970 the median age in the United States was 27.91 yrs., 1.63 yrs. older than the median age of 26.28 in Michigan. In 2000, the median age in the United States had risen to 35.75 yrs. and that in Michigan had risen to 35.88 yrs. Projections to 2030 are that the median age in Michigan will rise to 39.77 yrs., 1.57 yrs. greater than the median age of 38.20 in the United States (Woods and Poole?).

The age pyramids shown in Figure 3 depict the aging of Michigan. Each bar in the pyramid represents the percentage of the population in that age category. The percentage of males of that age group is represented by the left portion of the bar; the percentage of women is represented by the right portion. The narrowing of the base of the pyramid between 2002 and 2030 indicates that a smaller proportion of the population will be in the younger age groups. The broadening of the top of the pyramid indicates that the proportion of the population in the oldest age groups is rising.

Figure 4 depicts current elder population (65+) by county. The predominantly agricultural and mixed-use rural counties each have elderly populations of 12,500 or less. 12 of 16 urban-influenced rural counties have elder populations of 12,500 or less; the other four have elder populations between 12,501 and 27,500.

Figure 5 shows projected elder populations in 2030 by county. Three of the predominantly agricultural rural counties increased to the 12,501-27,500 category and one skipped a category, jumping to the 27,501-60,000 category. This county (Grand Traverse County) is home to Traverse City, a popular retirement (and tourist) destination.

A measure of aging that is useful to health care economics is the retirement dependency ratio, typically defined as the number of people in the 65+ age bracket relative to the number of people in the 16-64 age bracket. This ratio increases as the proportion of the population of retirement age increases: a ratio of zero means there is no one in the population of retirement age, a ratio greater than one means that the retirement age population is greater than the working age population. As the ratio increases, it is anticipated that a greater proportion of the work force will be employed in health care occupations as an older population requires more health care.

The retirement dependency ratio has been increasing throughout Michigan, but rapidly in rural areas. Figure 6 depicts this ratio for 1970, 2000 and 2030 (projected) (Woods and Poole). In 1970 the ratio ranged from 0.13 for urban core areas to 0.20 for agricultural rural areas, as depicted in Figure 3. By 2000, the ratio had increased for all rural and urban categories. The lowest ratio was 0.17 for urban-influenced rural areas; the highest ratio was 0.25 for mixed-use rural areas. Projections for 2030 suggest that changes in the ratio over the next 30 years will be from two to four times the absolute size of the changes in the past thirty years. The urban core is projected to have the lowest ratio, at 0.26. Rural dependency ratios range from 0.35 for urban-influenced rural areas to 0.47 for mixed-use rural areas. These changes can be attributed to an aging population and to retirees who want to leave the city and retire to a more bucolic setting

Employment

Michigan employment has traditionally been dominated by the automobile industry. This causes Michigan employment statistics to be more cyclical than the national averages. For example, the Michigan unemployment rate tends to be lower than the national average in the mid- to later-part of economic expansions, and higher than the national average during recessions and the early stages of expansion. As another example, Michigan lost 283,100 manufacturing jobs between 1999 and 2004 (BLS), primarily due to the recession of 2001 and lingering aftereffects. Over that same period, Michigan created 44,400 jobs in the health care industry (BLS).³

Contributions of the Health Care Industry to Sustainable Rural Communities

Current contributions

Currently, there are approximately 14,000 jobs in nursing homes and residential care facilities located in mixed-use and predominantly rural counties. Figure 7 shows the level of employment by county in nursing and residential care facilities by urban-rural category. With one exception, in 2002 the urban core counties each employed over 1000 workers in nursing homes and residential care facilities (Bay County employed 968). Employment numbers in urban-influenced rural counties ranged from 186 to 1534 employees. Employment numbers in the mixed-use and predominantly agricultural rural counties was less than 500, with three exceptions. The maximum number of nursing home and residential care facility employees was 1039.

³ Health Care and Social Services, North American Industrial Classification System 65620000. Data on just health care services is not available prior to 2001.

Projected Contributions to Employment in 2030

We project the demand for workers in nursing and residential care by county based on the age demographics projections and the relationship between age and demand for health care. For the purposes of this pre-conference paper we model the demand for health care by running a simple linear regression (with constant) of the number of nursing and residential care workers in a county on the population aged 65 and over (in thousands). For the conference we will engage in more standard panel estimation procedures with a wider variety of explanatory variables and explore alternate functional forms. For the simple regression the coefficient on population 65+ is 71.77 with a t-statistic of 6.46 and a p-value less than 0.001. This coefficient indicates that an increase in the elder population of 1000 is associated with an increase of 72 nursing and residential care workers (endogeneity issues will be sorted out for the conference—it may be that elderly retire to counties with lots of residential care facilities).

Multiplying the projected numbers of elderly population by the regression coefficient of 71.77, we project the change in employment in nursing and residential care facilities in 2030. In missed-use rural and predominantly agricultural rural counties the projected increase in employment is nearly 17,500 jobs, a 125% increase. Additional jobs will be created in other portions of the health care industry.

The creation of 17,500 rural jobs statewide is not sufficient to sustain the rural economy of Michigan. However, job creation in a few counties with relatively high projected increases in the elder population could contribute significantly to the economic viability of these counties. For example, Isabella county, mentioned in the introduction,

is projected to see an increase of 515 workers in nursing homes and residential care facilities, an increase of 1/3 in a county where health care is already starting to make a noticeable contribution to the economy. Grand Traverse County is projected to pick up nearly 1500 additional jobs. Eight mixed-use and predominantly agricultural rural Michigan counties currently employ 250 or more workers in nursing and residential homes, and are projected to more than double their elderly population by 2030. These counties could see significant benefits from these employment increases.

Impacts of Background Checks on Employment and Economies

At this point in the project the data are insufficient to determine with any accuracy the number or proportion of potential employees with disqualifying criminal backgrounds. However, estimates of the range of possible values can be made from available data on arrests and on other employment categories that rely on criminal background checks.

To be disqualified from employment under HHS rules the employee must be convicted of specified offenses.⁴ Conviction data are kept under a variety of federal, state and local judicial systems and are not available at the county level. Arrest statistics, which are available at the county level, serve as a proxy for convictions. The arrest record will overstate the number of convictions for a variety of reasons, including prosecutorial decisions not to try the defendant, plea bargains, findings of not guilty, and other reasons. Consequently the arrest record should provide an upper bound on the number of disqualifying counties.

To determine the proportion of the working age population that is disqualified in any year, we divide the estimated number of disqualified workers by the workforce. The

⁴ These offenses include ...

number of disqualified workers per year ranges from 27.9 per thousand in urban-influenced rural areas to 39.7 per thousand in mixed-use rural areas. To insure overestimating the number of disqualified workers, we use a disqualification rate of 4%.

To determine the disqualified working age population we need to aggregate the Under current Michigan law (for direct-care health workers) disqualifying offenses last for 15 years after the conviction (although HHS is trying to make this duration 15 years from end of incarceration/parole/community service). We multiply the average annual number of arrests by twenty to obtain an estimate of the number of disqualified workers.⁵

Conclusions

The first conclusion to be drawn is that the health care industries will create a significant number of new jobs in rural areas. This job creation is not sufficient in and of itself to sustain rural Michigan, but in a selected number of rural areas the job creation can provide significant positive impacts on the sustainability of rural communities and localities.

The second conclusion is that the background checks program could have significant impacts on employment rates in the health care industry. Only rough estimates of these effects can be obtained with current data, and even the magnitude of

⁵ to the extent that some workers will commit a disqualifying offense with less than twenty years remaining before retirement, this calculation will overestimate the number of disqualified workers.

the effects is not determinable. As the project unfolds, primary data collection on disqualified workers will give a better idea of the effects.

References

Bureau of Labor Statistics (BLS).

Erickcek, G. A. and B. R. Watts, 2003. An economic development benchmarking system for rural Michigan. Available on-line at
<http://www.upjohninstitute.org/regional/rural-benchmark.pdf>

Michigan State Police (MSP), Uniform Crime Reports. Available on-line at
<http://www.michigan.gov/msp>

US Census Bureau

US Census Bureau, County Business Patterns. Data available on-line at

Woods and Poole Economics, Inc. 2004 Complete Economic and Demographic Data Source (CEDDS). Washington, DC: Woods & Poole Economics, Inc, 2004.

County Populations 2002

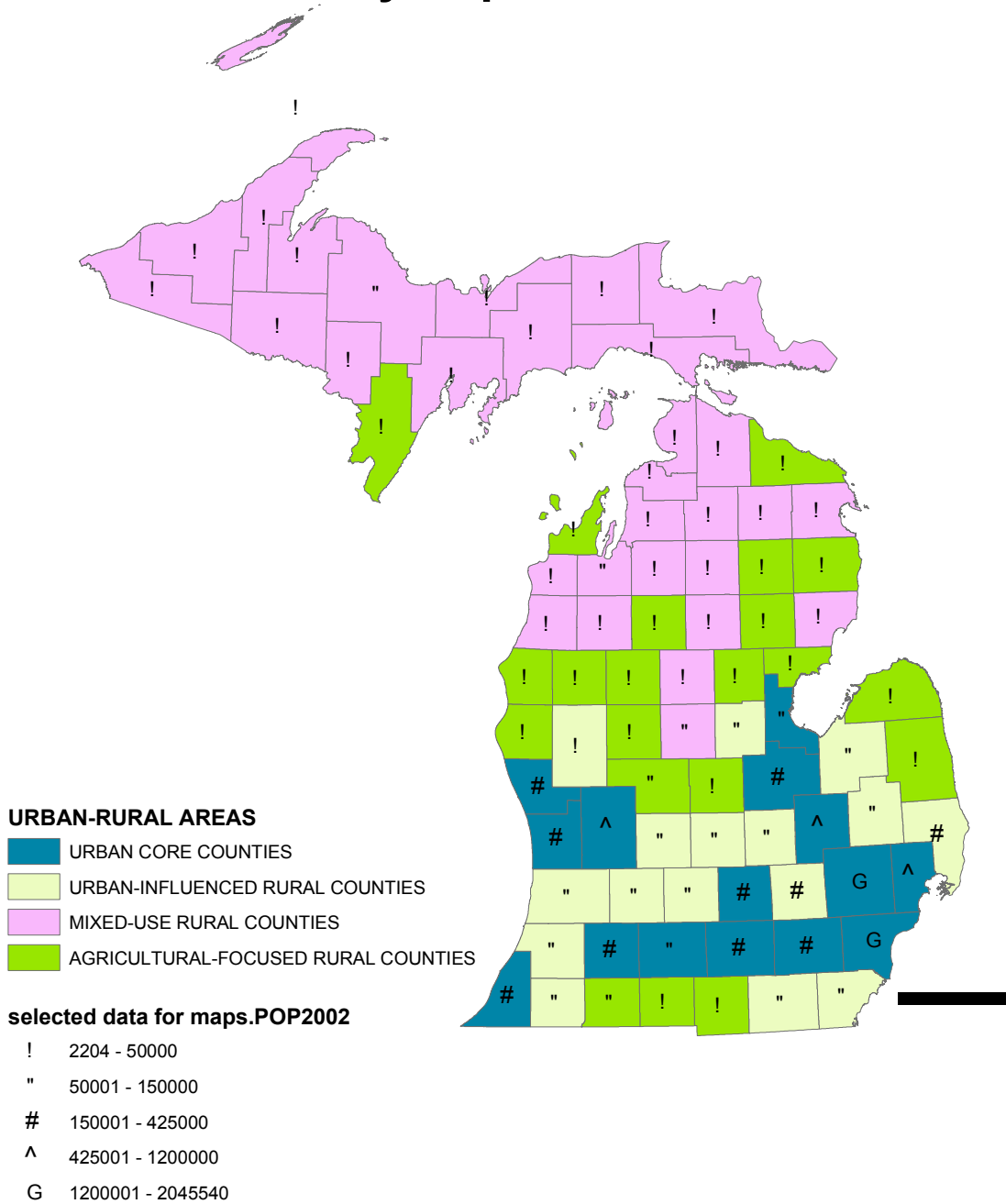


Figure 1. County type and population, 2002.
Sources: County type from Ericcek and Watts; populations from the US Census Bureau.

County Populations (Projected) 2030

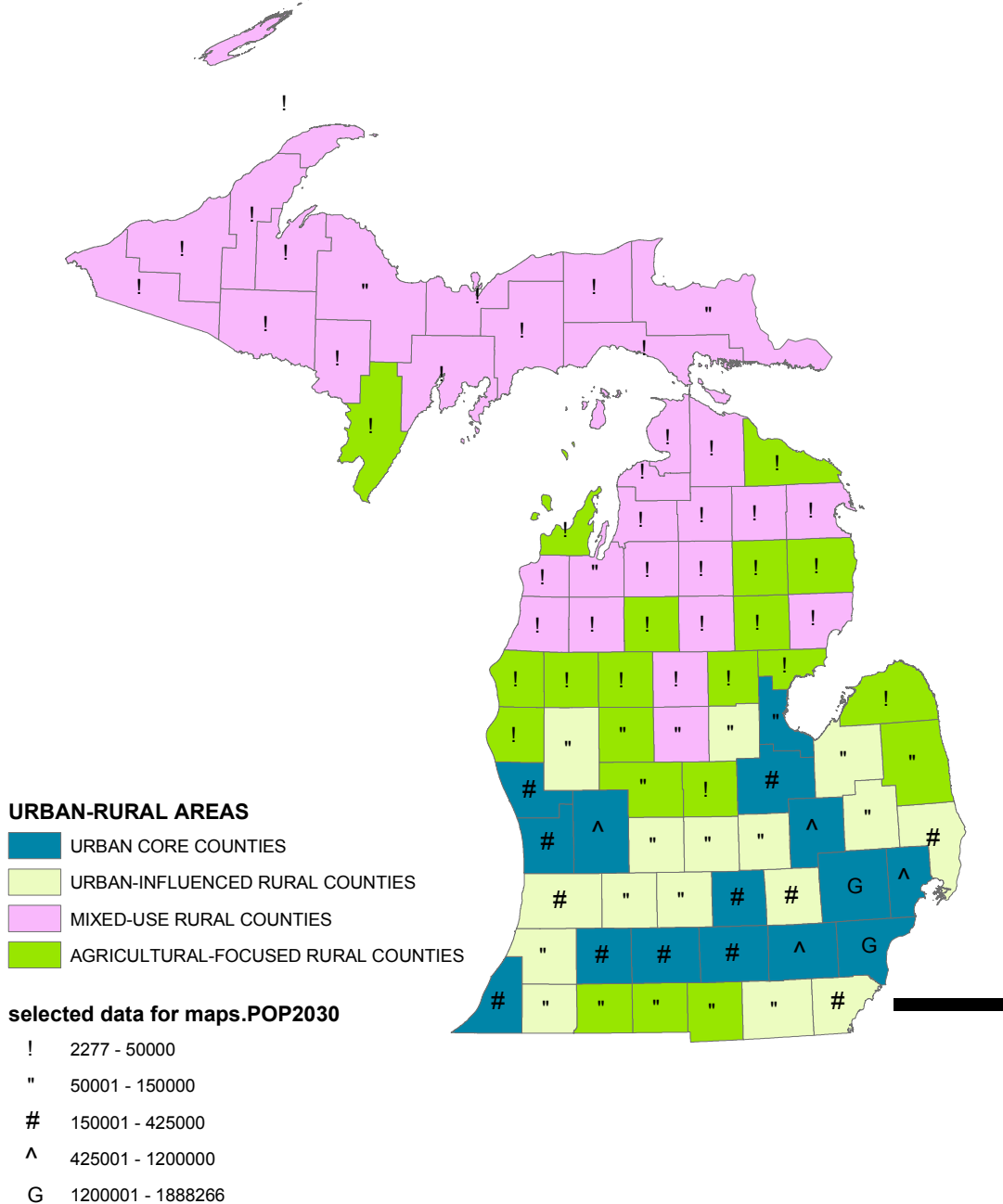


Figure 2. Projected county populations, 2030, and 2002 county type.
 Sources: County type from Ericcek and Watts; population projections from Woods and Poole.

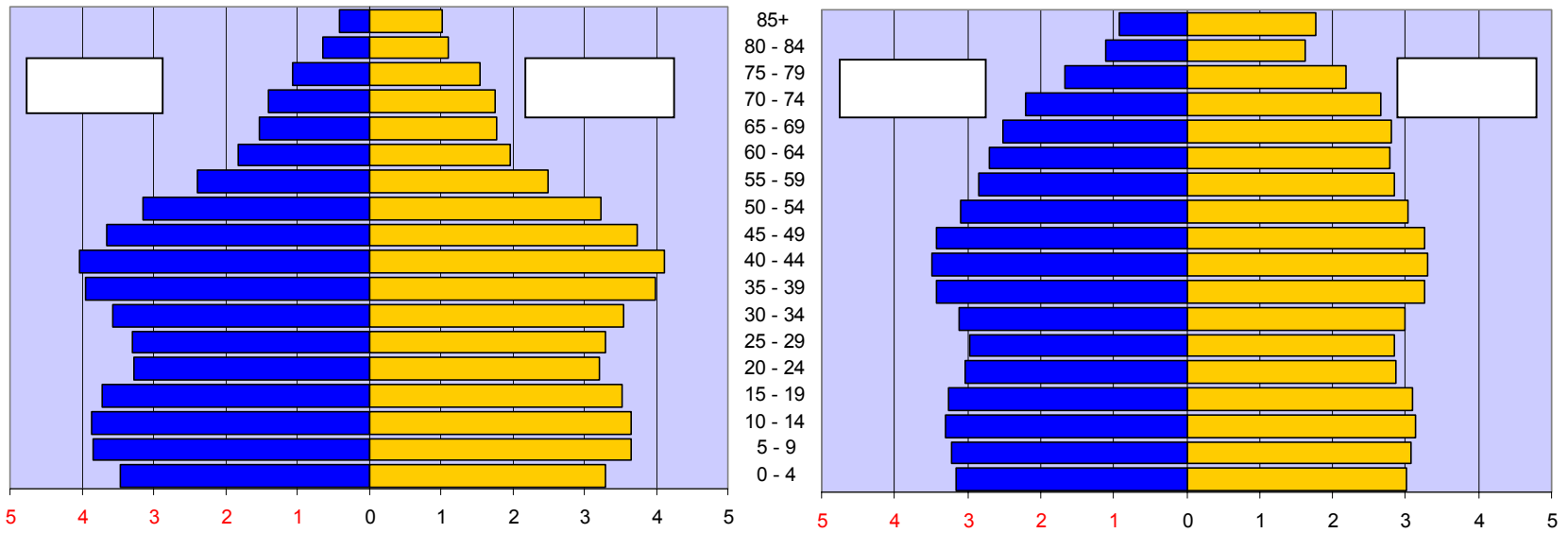


Figure 3. Michigan age demographic pyramids, 2002 and projected 2003.
 Source: US Census Bureau

County Elder Populations 2002

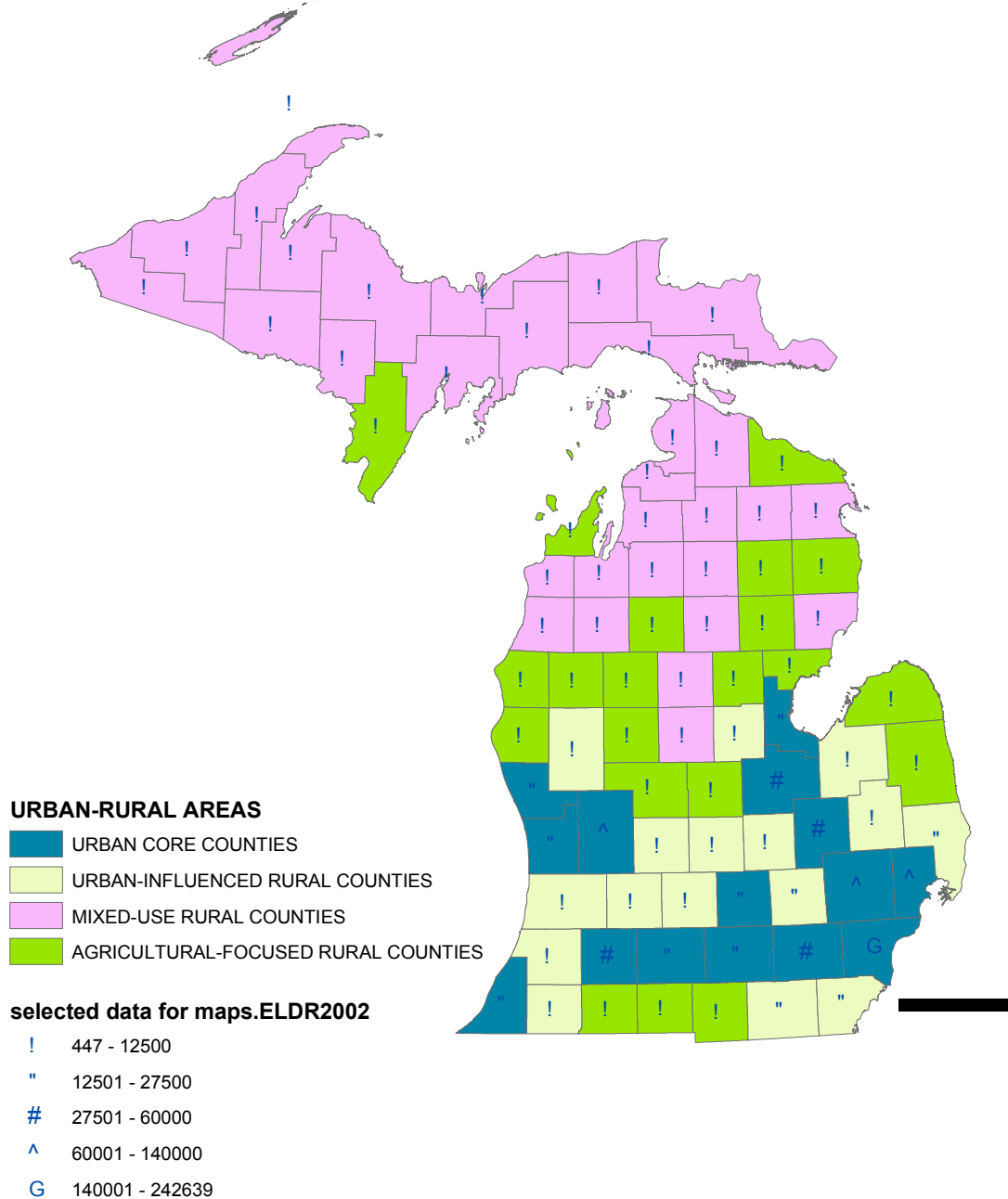


Figure 4. County type and elder population, 2002.
Source: US Census Bureau.

County Elder Populations (Projected) 2030

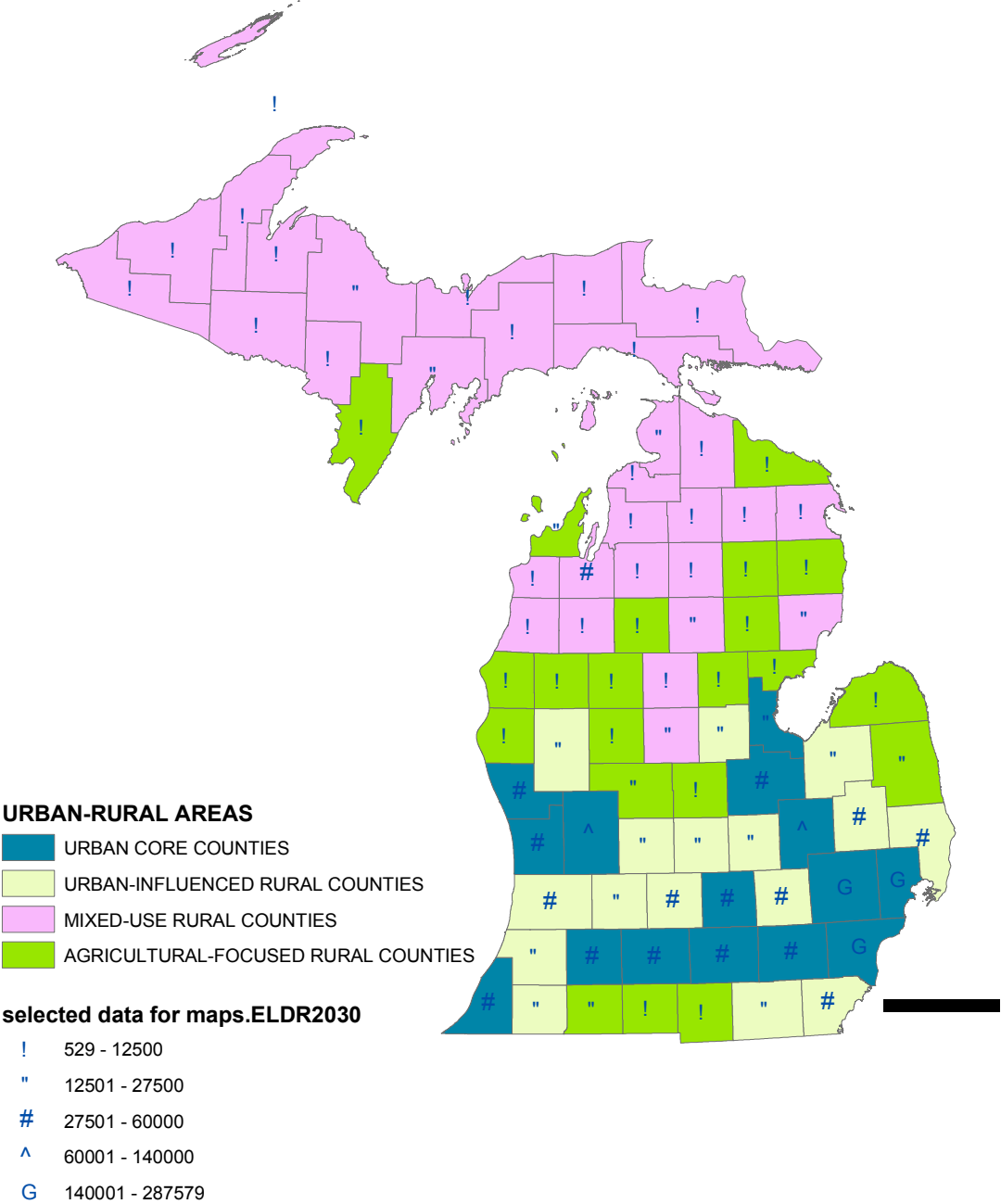


Figure 5. County type, 2002, and projected elder population, 2030.
 Source: County type is from Erickcek and Watts, population projections from Woods and Poole.

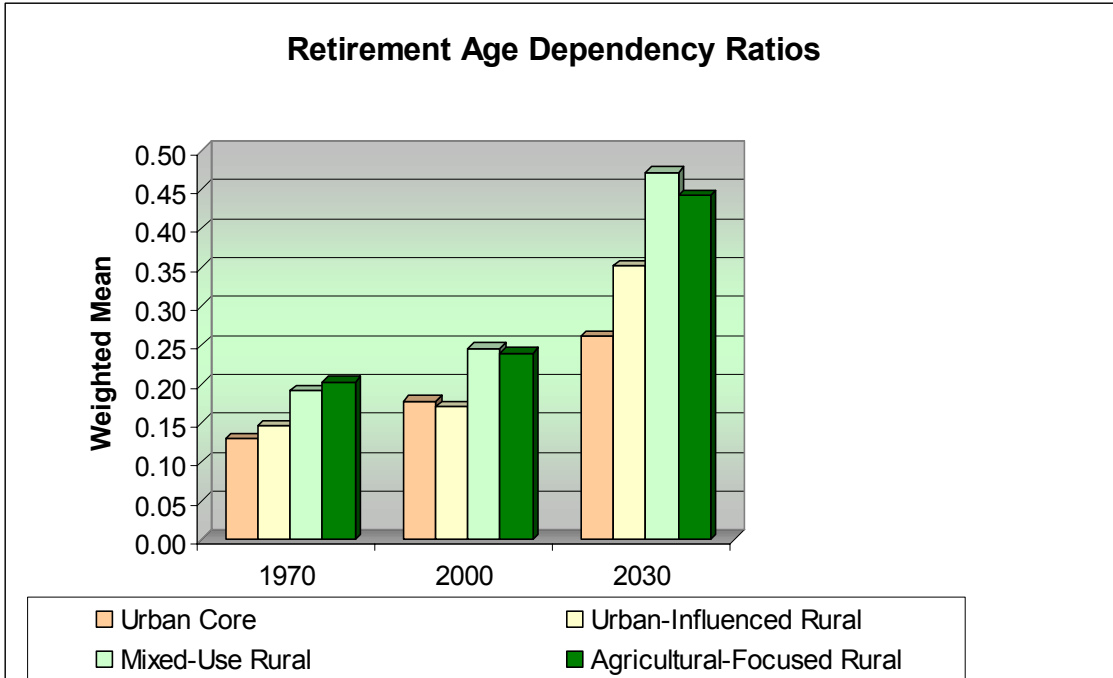


Figure 6. Retirement age dependency ratios for Michigan, by rural-urban classification. Source: Compiled from county data in Woods and Poole.

County Employee Totals 2002

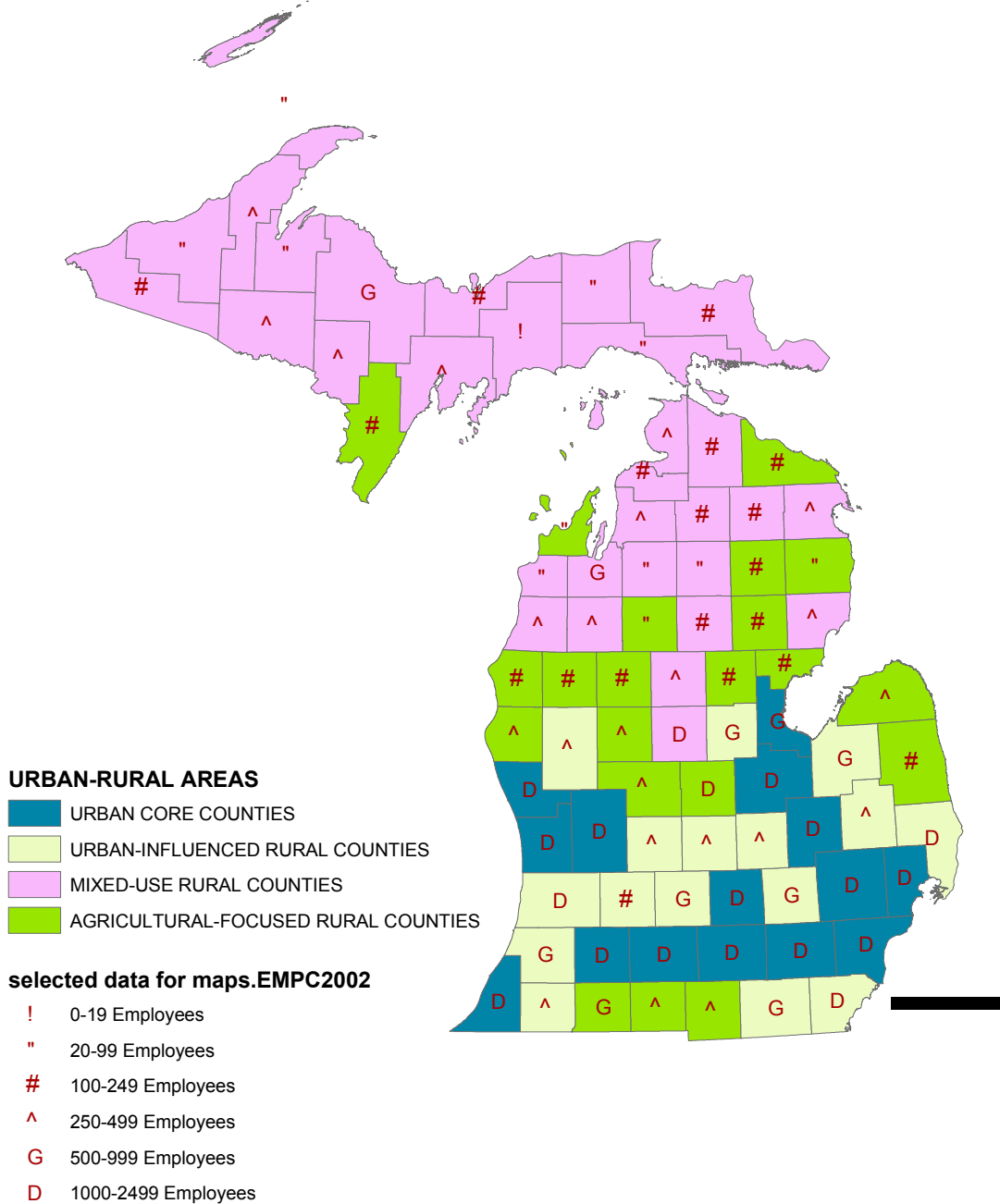


Figure 7. County type and number per county of health care employees in nursing homes and long-term residential care facilities.
 Source: County type is from Erickcek and Watts, employment figures are from the Census Bureau, County Business Patterns.

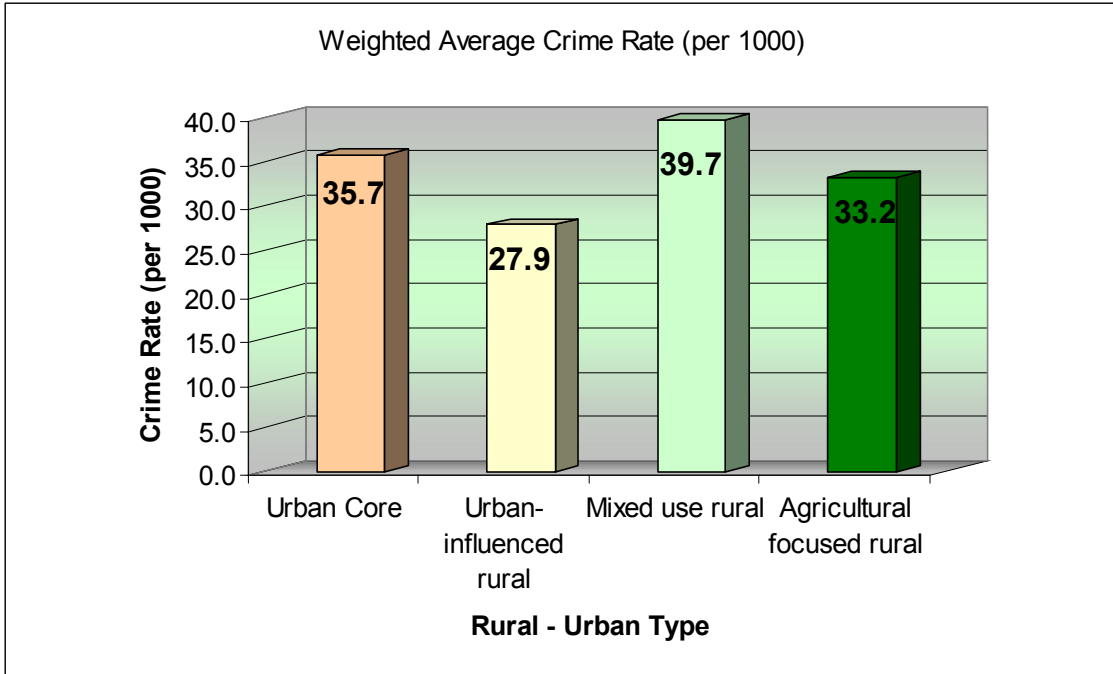


Figure 8. Weighted average crime rates per 1000 working-age population, by urban-rural category.
 Source: Calculated from Michigan State Police (MSP) and Census Bureau data.