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# **Mandatory Reporting of Nursing Home Deaths: Markers for Mistreatment, Effect on Care Quality, and Generalizability**

## **Final Report**

**National Institute of Justice Grant #2004-IJ-CX-1012**

**To:**

- **The U.S. Department of Justice**

**From:**

- **The University of Missouri-Columbia**
- **Pulaski County, Arkansas Coroner's Office**
- **The University of Arkansas for Medical Sciences**
- **The University of Wisconsin-Madison**

**November 30, 2007**

**Mandatory Reporting of Nursing Home Deaths: Markers for Mistreatment, Effect on Care  
Quality, and Generalizability: Final Report  
Grant #2004-IJ-CX-1012  
9/30/04-11/30/07**

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## Executive Summary

**Background:** As the U.S. population ages, an increasing number of Americans and their families will consider nursing homes as a care option. Mistreatment in the nursing home (either abuse or neglect) is a common topic in the press, but the subject has received very little research attention until recently. In an effort to identify mistreatment-related deaths, an Arkansas law enacted in 1999 mandated the reporting of all nursing home deaths to the local coroner. In Pulaski County, Arkansas, this law has resulted in thousands of on-site death investigations. This project is a follow-up to a previous NIH-funded project, continuing to explore the potential impact of the law and examining nursing home deaths in more detail.

**Methods:** We first expanded our database and analysis of Pulaski County Coroner's Office investigations, abstracting and analyzing all records from 1999 through 2004. In addition to this, cases from the Pulaski County Coroner's Office were matched with Minimum Data Set (MDS) data from each resident and facility to identify MDS items associated with higher suspicion for mistreatment. We then used MDS and nursing home deficiency data to examine trends in nursing home care quality inside and outside Pulaski County. We also surveyed coroners throughout Arkansas to learn more about the potential generalizability of these death investigations outside Pulaski County. Finally, a case series of autopsies from Pulaski County contributed to our knowledge base of recognized and unrecognized pathologic findings in nursing home decedents.

**Results:** From 1999 through 2004, there were 3,174 nursing home death investigations by the Pulaski County Coroner's Office. Ninety-two cases (2.9% of all investigations) were referred to the Attorney General or Office of Long-Term Care for suspicion of mistreatment. Factors associated with such referral were family dissatisfaction with care, minority race, tube feeding, the presence of a severe pressure sore, or a recent ostomy (colonostomy, tracheostomy, etc.).

Using preexisting MDS and nursing home deficiency data, we identified no differences in care quality indicators between Pulaski County and other Arkansas counties over this time period. The coroners from other Arkansas counties who returned our survey (response rate = 43%) reported that efforts are being made to enforce this law, but barriers such as lack of staff and funding limit their ability to conduct on-site investigations.

Twenty complete autopsies in Pulaski County were included in our case series. Consent rates were less than anticipated. Thirteen (65%) of the autopsy cases had a significant findings only made post-mortem, while 4 (20%) had a major ante-mortem finding which could not be substantiated post-mortem. Two decedents with undiagnosed etiologies for their dementia were discovered. Recent and remote cerebrovascular accidents (strokes) were seen in 5 (25%) of the autopsies. Five decedents with cancer (25%) were identified, including two not diagnosed in life. Three cases (15%) were accidental deaths due to consequences of falls in a nursing home. Only one case of serious (Grade III-IV) pressure ulcer was seen in a decedent, who was non-ambulatory after at least two falls.

**Discussion:** This multi-method study furthers our understanding of nursing home deaths and their investigations in several ways. We have added to the list of factors associated with a higher level of mistreatment suspicion by death investigators. The coroner survey contributes further insight into the prevailing attitudes and knowledge base regarding nursing home mistreatment, and it outlines some of the formidable barriers to generalizing such investigations to other locations. The diagnostic discrepancies uncovered in our autopsy case series underscore the importance of autopsies in the death investigation process. Despite the lack of evidence for care improvement as a result of this law, our study was limited by the use of retrospective and self-reported data. Therefore, the possibility of an undetected impact on care quality remains.

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# **Mandatory Reporting of Nursing Home Deaths: Markers for Mistreatment, Effect on Care Quality, and Generalizability**

## **1. Introduction**

More than two-fifths (43%) of all persons who turned 65 in 1990 or later will stay in a nursing home before they die.<sup>1</sup> This places millions of older adults at risk for abuse or neglect by caregivers outside of the family. It is estimated that between 1 and 2 million older Americans suffer acts of mistreatment every year, and the actual figure is probably much higher since most episodes are unreported.<sup>2-5</sup> This estimate is comparable to that for child abuse or neglect, yet the young victims of mistreatment have received far more attention from researchers, clinicians and policy makers.<sup>2,6</sup> An enormous body of literature on the detection, prevention and treatment of child abuse or neglect has emerged since Kempe published his landmark study on the battered child syndrome in 1962.<sup>7</sup> In contrast, elder mistreatment has received relatively little attention since the first reports of “granny-battering” in the 1970s.<sup>8-11</sup> Standardized definitions of elder mistreatment were only published in 1993.<sup>12</sup> Researchers are beginning to establish the detrimental health effects of abuse and neglect, such as frequent emergency department visits and a threefold increase in mortality.<sup>13,14</sup>

Even less is known about elder mistreatment in residential long-term care facilities, where over 2.5 million older Americans live.<sup>15-17</sup> We know this sizeable population has significant risk factors for mistreatment – including cognitive impairment, behavioral abnormalities, or functional limitations – that may lead to premature death.<sup>2,3,18-25</sup> This vulnerability is heightened by the fact that many residents in nursing homes are unable to or are fearful of reporting abuse or neglect.<sup>26,27</sup> Anecdotal reports and small surveys from nursing homes suggest mistreatment of residents may be severe and widespread.<sup>9-11,26-31</sup> A recent survey

of 80 nursing home residents in Georgia found that 44% of the residents reported they had been abused, and 95% reported they had experienced or witnessed neglect.<sup>26</sup> Although this was not a random sample of residents, these troubling findings are unfortunately substantiated by a 1987 survey of nursing home staff.<sup>31</sup> The researchers surveyed staff from 31 facilities and found that more than one-third (36%) had witnessed at least one incident of physical abuse during the preceding 12 months. Ten percent of the staff members surveyed reported they had committed such acts themselves. In addition, 81% of the staff reported that they had observed and 40% had committed at least one incident of psychological or verbal abuse during the same 12-month time period. An analysis report by the Special Investigations Division of the House Committee on Government Reform of the federal Online Survey, Certification, and Reporting (OSCAR) database in 2001 asserts that abuse of residents “is a major problem in U.S. nursing homes.”<sup>32</sup> The report concluded that during a two-year period, nearly one-third of all certified facilities had at least one abuse violation that was potentially or actually harmful. In summary, while there have been no definitive studies on the prevalence of abuse and neglect of nursing home residents, there is credible evidence that the problem is significant. A systematic review of nursing home mistreatment co-authored by two of this project’s investigators is in press.<sup>33</sup> Many issues remain unclear, including markers and risk factors for severe or fatal mistreatment.

Until recently, there was no process in place to systematically review nursing home deaths and investigate for signs of abuse or neglect, but a state law now offers us this opportunity. In 1999, Arkansas enacted a law that requires all deaths in long-term care facilities to be immediately reported to the appropriate coroner.<sup>34</sup> Deaths of long-term care facility residents who die in a hospital within five days of transfer must also be reported. Mark Malcolm, Coroner for Pulaski County, Arkansas, was instrumental in this law’s development. In his

testimony before the U.S. Senate Special Committee on Aging on March 4, 2002, Mr. Malcolm reported that he and his staff had conducted approximately 2400 nursing home investigations.<sup>35</sup> From 1999 to 2003, 90 cases were referred to the State's Attorney General and the Office of Long-Term Care for further investigation. The outcome of these investigations are the subject of a U.S. General Accounting Office report released in November 2004.<sup>36</sup> In most other Arkansas counties, the law is not as strongly enforced.

**Previous NIJ-Funded Project:** In late 2002, our team began an exploratory project entitled, "The Role of Forensic Science in Identification of Mistreatment Deaths in Long-Term Care Facilities."<sup>37</sup> Focusing upon Pulaski County, Arkansas, where investigations into nursing home deaths have been taking place since July 1999, we used a mixed method approach to examine the law's enforcement, effects and generalizability. We conducted exploratory interviews with Mark Malcolm and his staff of four current and former investigators for Pulaski County. These one-on-one interviews mapped the process of the nursing home death investigation procedures, gathered impressions about markers that might indicate mistreatment, and outlined barriers and facilitators to conducting these investigations. We also collected and abstracted nursing home death investigation reports from Pulaski County for the year 2001 (n=495), comparing the 21 decedents referred for suspicion of mistreatment and those who were not referred. Finally, a series of focus group interviews with medical examiners, coroners and geriatricians from across the country were conducted in order to determine the current state of forensic investigation of institutional deaths in the United States. Topics included the definition of institutional mistreatment, the identification of indications (if any) for death investigations of nursing home residents, and the perception of barriers that complicate the death investigations.

From the interviews with Mr. Malcolm and his staff, we gained a solid understanding of how this law works from the perspective of the Pulaski County investigators. In Pulaski County, over 90% of the nursing home deaths receive an on-site investigation, including an examination of the body for obvious signs of injury, photographs of the scene, record review, and interviews with staff. The investigators often interview family members and physicians as well if they feel further information or clarification is needed. If the investigator finds causes for suspicion of mistreatment, the body is transported to a central facility while the information is forwarded to the Arkansas Attorney General (AG) and Office of Long Term Care for further investigation. Besides obvious injuries such as pressure sores and bruising, investigators also reported that their suspicion is heightened by a general lack of cleanliness of the body or room, inconsistencies in the medical record or staff interviews, and family dissatisfaction. Respondents also provided their impressions of how Pulaski County nursing home staff initially reacted to their presence, as well as opinions as to why coroners in other Arkansas counties are not enforcing this law.

Another striking issue expressed in the investigator interviews was the law's possible impact on care quality in Pulaski County. The law was originally written and enforced in order to locate nursing homes providing substandard care. While that is still an intention, respondents felt strongly that the consistent presence of the coroner and his investigators has helped to improve care in Pulaski County nursing homes. According to them, the general appearances of the bodies and scenes have improved over the last eight years, and the percentage of cases referred to the AG since 1999 has decreased. In 1999, there were 21 referrals from July 1 to December 31. From 2000 to 2002, annual referrals decreased from 23 to 21 to 19, despite an increasing number of nursing home beds. In 2003, there were only 6 referrals. This decrease may indicate better

care, but a comparison to changes in other Arkansas counties is necessary before the enforcement of the reporting law is attributed as a contributing factor to these improvements.

Abstraction and analysis of the year 2001 investigation records revealed some factors associated with increased likelihood of AG referrals. AG referrals were more likely when pressure sores or family dissatisfaction was noted, or when the decedent was African-American or enrolled in hospice care. However, the relatively small number of cases that were referred to the AG (n=21), limited the power of our comparisons. More data were needed to allow for significance testing and multivariate analysis.

Finally, the focus groups confirmed that coroners, medical examiners and geriatricians do not feel there are clear definitions and perceptions of elder mistreatment. For many of the geriatricians, this creates an immediate problem in terms of reporting cases that have the potential of mistreatment. For coroners and medical examiners, barriers exist at multiple levels, including attitudinal issues, staffing limitations, and lack of cooperation from nursing homes. In addition to these barriers, the jurisdictions of coroners and medical examiners across the United States vary. The implementation and enforcement of a national or even state-based investigational standard would be difficult. Based on these findings, it appeared that more data were needed to understand the context for mistreatment in the nursing home, and to provide workable definitions of elder mistreatment in this setting.

Building on the findings of the previous project, we proposed this project with three specific aims in mind:

**Aim #1: Further elucidation of markers for elder mistreatment**

Markers for elder mistreatment were suggested in our previously cited NIJ project, and with this project we significantly expanded our database and analysis. All investigation records

from the Pulaski County Coroner's Office from 1999 through 2004 were abstracted and analyzed for findings associated with suspicion for mistreatment. In addition to this, referred cases from the Pulaski County Coroner's Office were matched with Minimum Data Set (MDS) data from each resident and facility to identify MDS items associated with higher AG referral rates. Additionally, a case series of autopsies from Pulaski County contributed to our knowledge base of recognized and unrecognized pathologic findings in nursing home decedents.

**Aim #2: Identification of the presence or absence of an effect on quality of care in Pulaski County as a result of the law**

Given the reported improvement observed at the on-site investigation scenes over the past eight years, the Pulaski County investigators believe the enforcement of the reporting law is contributing to care improvements in nursing homes. In order to determine whether this is the case, we aimed to identify markers of care quality in Pulaski County over the course of this law's enforcement, and compare these markers with data from an Arkansas county where the law is not strongly enforced. This included analysis of Pulaski County investigation records, MDS information, and nursing home deficiency report data.

**Aim #3: Development of an adaptive investigative model for use by coroners and medical examiners in a variety of geographic areas (proposed under the assumption that an effect on quality of care would be identified)**

If this law is, in fact, deterring poor care in nursing homes while providing more information about markers for mistreatment, greater enforcement in other Arkansas counties will be important. Other states are also considering similar laws and/or starting elder fatality review teams. However, previous interviews with the Pulaski County Coroner and his staff, as well as

national focus group discussions, revealed that significant barriers exist to the enforcement of this law and generalizability to other locations. Over the course of this study we developed, distributed and analyzed a survey of Arkansas coroners to further outline these barriers and test the Pulaski County staff's assumptions. In addition, regarding Specific Aim #2, if evidence was found that care quality had improved in Pulaski County, this would be a powerful motivator for more widespread death investigations in the nursing home setting. However, as will be detailed in this report, we have not found such evidence, and therefore the investigative model for other coroners and medical examiners has been deferred for now.

Since the different methodologies used in this project each related to these three aims in varying degrees, the remainder of this report is organized according to these methodologies.

## **2. Coroner Investigation Findings Associated with Suspicion for Mistreatment**

### **2.1 Design and Methods**

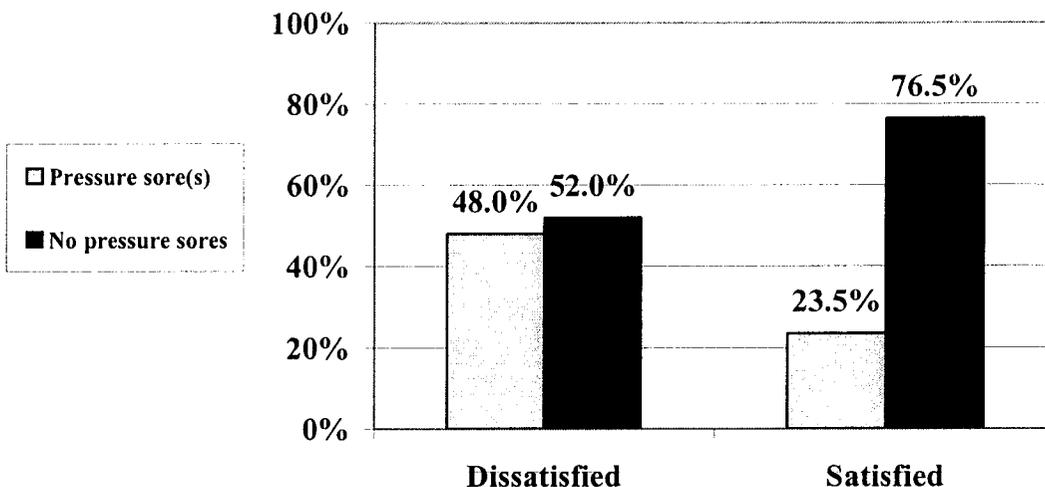
All nursing home death investigations from Pulaski County, Arkansas from July 1, 1999 (the beginning of the mandatory reporting law's enforcement period) through December 31, 2004 were obtained from the Pulaski County Coroner's Office. Details of the investigations (including demographic information, facility characteristics, and investigation findings) were abstracted and entered into an Excel database. Suspicion of mistreatment was determined by coroner referral to the attorney general and/or medical examiner. Statistical Package for the Social Sciences (SPSS) software was used for statistical comparisons between referrals and non-referrals.

## 2.2 Results

During this 5.5 year period, there were 3,174 nursing home death investigations by the Pulaski County Coroner's Office. In 684 cases (21.5%), the resident had been transferred to a hospital within the prior 5 days and died there. The decedents were primarily white and female (82.2% and 66.6%, respectively). The average age was 83.3 years. In 18.8% of the cases, coroners spoke to family members. In 8.4% of those cases in which family discussions took place, at least one family member expressed dissatisfaction with the quality of care received. This dissatisfaction could have included specific complaints about certain aspects of care (such as nutrition or cleanliness) or a more general sense of overall dissatisfaction.

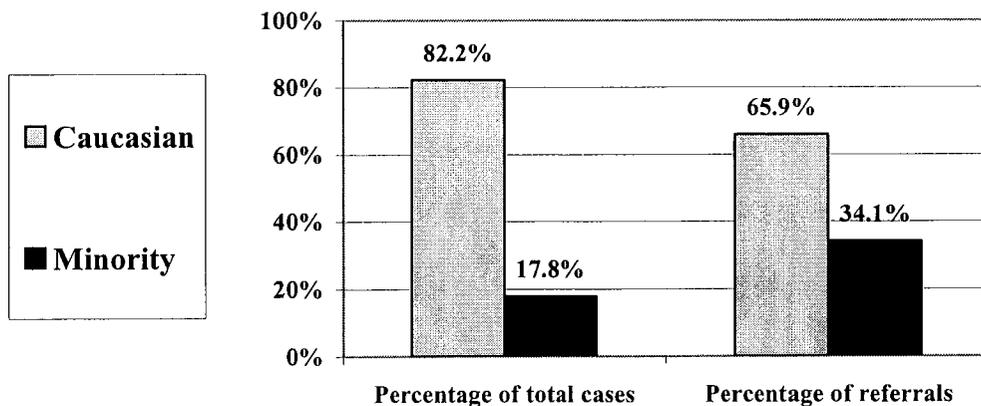
At least one pressure sore was noted in 831 (26.2%) of the cases, an identical percentage to that found in the previous study using one year of data. Among those 831 decedents, 181 (21.8%) had three or more pressure sores present. The most frequently occurring locations for pressure sores were the foot (492 sores, including those on the heels and toes), coccyx/sacral area (381), buttocks (250), ankles (110) and hips (95). Staging of the sores (or any other measure of the severity and depth of the sores) was not provided in the reports. Acknowledgement of the sores by the nursing home staff and/or the presence of a treatment plan were also not routinely reported. Minority race was associated with a higher percentage of decedents with a pressure sore (37.7% vs. 23.7% of Caucasian decedents,  $p < .001$ ). Pressure sores were present in 48.0% of cases where family members were dissatisfied with care, but they were present in only 23.5% of cases where family members were satisfied ( $p < .001$ , see below).

### Family Satisfaction vs. Presence of Pressure Sores



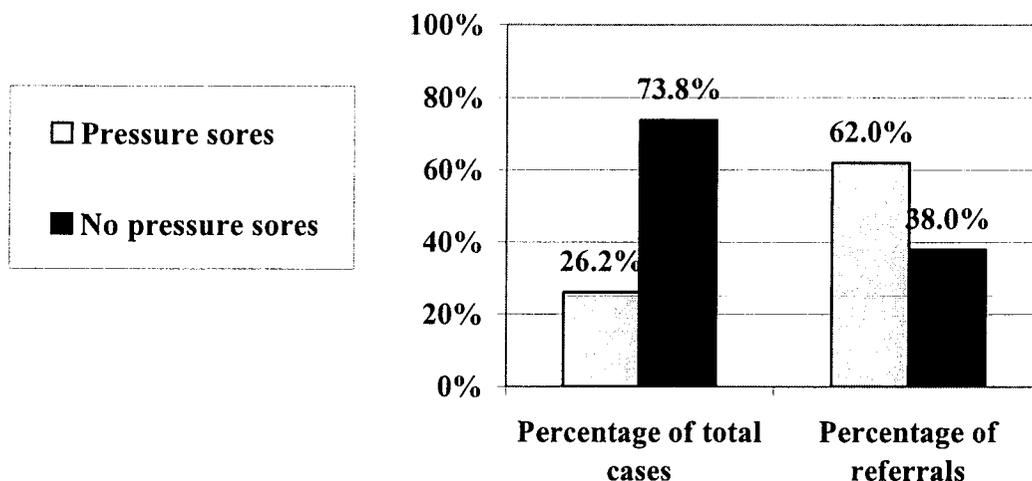
Ninety-two cases (2.9% of all investigations) were referred for suspicion of mistreatment. Thirty-six percent of the cases in which a family member was dissatisfied (18 out of 50) were referred, versus 1.4% of cases in which family members were satisfied (7 out of 514;  $p < .001$ ). Although only 17.8% of all decedents were of a minority race, 34.1% of the referred cases involved minorities ( $p < .001$ , see below).

### Referred Cases vs. Race/Ethnicity



Pressure sores were associated with an increased referral rate. Although 26.2% of all investigated decedents had at least one pressure sore, there was a pressure sore present in 62% of the referred cases ( $p < .001$ , see below).

### Referred Cases vs. Pressure Sores



## 2.3 Discussion

This expansion of the original one-year database to a 5.5 year database supported and strengthened the original findings of minority race, family dissatisfaction and the presence of pressure sores as the main factors associated with suspicion for mistreatment. Although the small referral number limits our ability to identify the independent risk factors, it appears that these factors are linked to each other. Among the 92 referred cases, over one third (39%) had at least two of the above factors (minority race, family dissatisfaction, or a pressure sore) present. The temporal relationship of these factors (i.e. whether the presence of a pressure sore preceded and led to the family's dissatisfaction) could not be ascertained with these data. Likewise, we do

not know if the association between minority race and pressure sores is due to worse health status on admission to the nursing home or to poorer care quality while in the nursing home. This finding suggests another potential example of an important racial care disparity that merits further study.

### **3. Linkage and Analysis of MDS Data and Deficiency Reports**

#### **3.1 Design and Methods**

The Minimum Data Set is concisely defined at the website for the Centers of Medicare and Medicaid Services (CMS, at <http://www.cms.hhs.gov/MDSPubQIandResRep/>):

The Minimum Data Set (MDS) is part of the federally mandated process for clinical assessment of all residents in Medicare or Medicaid certified nursing homes. This process provides a comprehensive assessment of each resident's functional capabilities and helps nursing home staff identify health problems... MDS assessments are required for residents on admission to the nursing facility and then periodically, within specific guidelines and time frames. In most cases, participants in the assessment process are licensed health care professionals employed by the nursing home. MDS information is transmitted electronically by nursing homes to the MDS database in their respective States. MDS information from the State databases is captured into the national MDS database at CMS.

For our MDS and deficiency analysis, we used the same records as those discussed in Section 2, in addition to 40 additional records which had initial data collected but no on-site investigation (total n = 3214). We extracted 1.2 million assessment records applicable to 123,000 Arkansas nursing facility residents from 1998 through Feb. 2006 from the national Minimum Data Set (MDS) database. Each full MDS assessment provides 529 MDS items. To match the MDS records to the death records (a methodology piloted in our previous NIJ study), we used six resident identification fields common to both databases: social security number (SSN), last name,

first name, birth date, sex and date of death. The resident identifiers from most recent MDS record for each of the 123,000 residents were extracted.

Each death record was compared to each of the 123,000 MDS residents. A score reflecting the strength of the match was assigned to each possible pairing based upon which identifiers matched (10,000 points for SSN, 1,000 for last name, 1,000 for birth date, 100 for date of death, 10 for first name and 1 for sex). If the maximum matching score was unique, that match was accepted. Of the 3,214 death records, 562 had no MDS matches or an ambiguous MDS match. None of the ambiguous matches matched on SSN. Of the 2,652 unique MDS matches, 2,429 had matching SSNs while the remaining 223 matched on both last name and date of birth.

We constructed an analytic file for the 2,652 residents with unique MDS matches. Each record of this file contained fields from the death record abstracts plus MDS items from the most recent MDS record (which might simply be a discharge tracking record), the most recent two assessments and the most recent full assessment. Since the most recent two assessments likely include a partial quarterly assessment, only the 140 MDS items available on a quarterly assessment were posted. All items were posted from the most recent full assessment. Logistic regression was used to identify independent MDS items associated with a higher likelihood for suspicion of mistreatment. Given the small number of referred cases and hundreds of candidate explanatory variables, it was expected that many MDS items would appear to be highly correlated with referral even if there is actually no relationship. Therefore, only those MDS items with very small p-values ( $<0.0001$ ) were given serious attention as predictors of referral.

We also tabulated facility-level quarterly Quality Indicator / Quality Measure (QIQM) values from the first quarter of 1999 through the third quarter of 2006. QIQMs are generated from specific responses to MDS elements and identify residents who either have or are at risk for

specific functional problems needing further evaluation. The results for facilities in Pulaski County were compared to those for facilities elsewhere in Arkansas, quarter by quarter. The QIQMs included 26 standard measures (some split between high-risk and low-risk residents) plus two aggregate measures developed for this analysis. QIQM #27 was calculated for each facility and quarter as the average of the statewide percentile rankings of the 26 standard QIQMs for that facility (excluding the composite values for the risk-adjusted QIQMs). QIQM #28 was computed as the percent of QIQMs for the facility that exceed the statewide 90<sup>th</sup> percentile. Tabular and graphical presentations of the individual and aggregate QIQM results over time for facilities inside and outside Pulaski County were constructed.

We assembled deficiency citations for the most recent survey date prior to each calendar year end from 1999 through 2006. Facilities without a survey in the 18 months prior to each year end were excluded from that year's tabulations. Deficiencies were classified as "Health Deficiencies" if the scope/severity category was "B" or greater. "Severe Health Deficiencies" included those in categories at or above "F" except for "G". "Substandard Care Deficiencies" include severe health deficiencies in F-tag categories "0221" to "0225", "0240" to "0258", or "0309" to "0333". Average deficiency counts by type for Pulaski County facilities and statewide facilities were tabulated and the ratios of Pulaski to statewide values were graphed by year.

### **3.2 Results**

Based upon information from the most recent matching MDS record, additional cases were dropped from subsequent analysis. Only cases where the latest MDS record indicated death within 31 days (before or after) of the abstracted date of death or discharge within the 100 days

prior to the abstracted date of death were retained. This reduced the number of cases from 2,652 to 1,862, of which 63 were known referrals for suspicion of mistreatment.

We investigated MDS items from the most recent assessment, changes in items from the most recent two assessments and items from the most recent full assessment. Using our conservatively low p values for statistical significance, only cases with level 4 pressure sores, or with tube feeding, or with recent ostomy (and artificial orifice, such as a colostomy or tracheostomy) appeared to exhibit unusually high independent correlation with suspicion for mistreatment.

Results for our QIQM analysis are listed in Appendix A. Although some indicators did change over time throughout the state, we found no significant trends for change over this time period that were different in Pulaski County compared with other Arkansas counties. The same is true for deficiency surveys, shown on the last page of Appendix A.

### **3.3 Discussion**

Although the fivefold expansion of our database increased the power of our analysis, the resultant number of referred cases included in this MDS analysis was still relatively small. Nevertheless, the identification of severe pressure sores, tube feeding and/or recent ostomy creation suggests that residents with these conditions merit careful consideration and clear documentation of care. Regarding the facility analyses of QIQMs and deficiency reports, we were somewhat surprised to find no temporal changes within Pulaski County that differed from other Arkansas counties. We continue to consider other measures of care quality which could be collected and analyzed.

## **4. Mailed Survey to Arkansas Coroners**

### **4.1 Design and Methods**

The survey was developed based on the results of the previous research conducted in Pulaski County on the implementation and impact of this law. In addition to general information about the coroners and their offices, this survey collected attitudes about, awareness of, and enthusiasm for the mandatory reporting law, thereby gauging the potential acceptance and generalizability of a nursing home death investigation protocol. County coroners and their addresses were located through a state website (<http://www.arcounties.org/counties/>). Surveys were mailed to all coroners, followed by a reminder postcard. A second mailing of the survey occurred approximately one month after the initial mailing. Responses were entered into a database and analyzed using SPSS. Responses to open-ended questions were read independently by Drs. Lindbloom and Brandt for content and organized into categories. Not all questions were answered by all respondents. In some cases, the respondent chose not to respond and in other cases, the question was not appropriate for that individual.

### **4.2 Results**

Out of 74 coroners (the Pulaski County Coroner was not mailed a survey due to the involvement that office has had with previous research), we received 32 surveys (43.2% response rate).

#### **Characteristics of Arkansas County Coroners and Their Offices**

Respondents were asked how long they had been county coroners. Of the 31 respondents who answered this question, 54.8% (n=17) had been in the position for more than 10 years, 22.6% (n=7) had been in the position for six to ten years, and 22.6% (n=7) had been in the

position for one to five years. All the respondents had been elected into the position. Of 31 respondents, 71.0% (n=22) were funded on a part-time basis and 29.0% (n=9) were full-time.

Most of the respondents had occupations beyond that of being a coroner. Twenty (20) respondents indicated that they were funeral home owners/directors and 6 stated that they were embalmers or morticians. The following table provides the occupations mentioned and the number of individuals who noted them.

<b>Occupation</b>	<b>Number</b>
Funeral home owner/director	20
Embalmer/mortician	6
Law enforcement/fire fighter/EMT	4
Health care provider (physician, RN)	3
Other (real estate, insurance, state employee)	3
Electrician	2
Mechanic	1

Respondents were asked about the number of personnel in their offices. Slightly over 80% (80.6%, n=25) of the respondents had 5 or less employees in their offices, while the remainder had from 6 to 12 additional personnel. The average number of additional personnel was 3.5.

Respondents were also asked how many administrative staff (e.g., secretaries) were employed in their offices. Over half of the respondents (56.7%, n=17) had no administrative staff and 33.3% (n=10) had 1 administrative staff person. The range was 0 to 3.

### **Nursing Homes and the Arkansas Nursing Home Law**

In 1999, Arkansas enacted a law that requires all deaths in long-term care facilities to be immediately reported by the facility to the appropriate coroner or medical examiner, who should then conduct an investigation. If any evidence of mistreatment (abuse or neglect) is found, the case should be forwarded to law enforcement and the appropriate prosecuting attorney.

Several survey questions were asked in regard to this law. First, respondents were asked if they were aware of this law. Of the 32 who responded to this question, only one indicated that they were not aware of the law. Next, respondents were asked about the responsiveness of their county nursing homes to the law. Most respondents (87.5%; n=28) indicated that nursing homes contact them after every nursing homes death. Three respondents stated that nursing homes contact them some of the time.

Respondents were also asked about their office's responsiveness to this law. A majority (58.1%; n=18) stated that they had performed more than 20 nursing home death investigations. However, 22.6% (n=7) had performed no investigations. The remaining respondents (n=6; 19.3%) performed from 1 to 20 investigations. 66.7% (n=20) of the respondents stated that of the investigations they had performed, all had occurred after the passage of the law while 20.0% (n=6) stated that they had not performed any investigations. The remainder of respondents (n=4) indicated that either slightly more or less than half of their investigations had been performed post passage of the law.

The respondents were asked if they knew what procedures to follow when the law was initially passed. 71.0% (n=22) indicated that they did while 29.0% (n=9) said they did not. If they had problems during the initial implementation of the law, respondents were asked to specify the problems they had in following procedures. The main problems listed were:

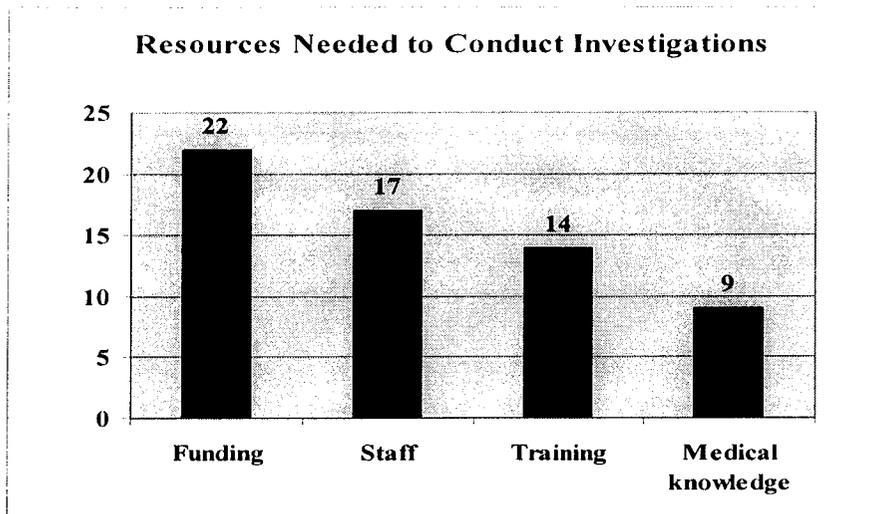
- the nursing homes were unaware of the law;

- the nursing homes were unwilling to provide the coroner with the decedents' paperwork;
- the expectations of the coroner were not clear;
- the lack of funding for this law makes the investigations difficult to conduct.

Respondents were provided a description of Pulaski County, Arkansas' death investigation procedure. The respondents were asked if they follow this procedure. 43.8% (n=14) said they did, 43.8% (n=14) said they follow a different procedure, 2 indicated that they follow a similar procedure, and 2 stated that they do not conduct death investigations.

Respondents were then asked a series of questions regarding their ability to perform nursing home death investigations. The first question addressed each coroner's ability to conduct death investigations on *all* nursing home deaths. 64.5% (n=20) said they were able to, 29.0% (n=8) said they were not, and 2 respondents said they were unsure. The respondents were then asked what resources would be needed in order to conduct nursing home death investigations on all deaths. Four options were offered: more staff, training, funding, and medical knowledge.

Respondents were instructed to select all that applied. The response chosen most frequently was funding (n=22), followed by staff (n=17), training (n=14), and medical knowledge (n=9).



In addition to these options, respondents could specify other needs. One respondent indicated that the position needs to be full-time, and another respondent stated that a better salary needed to be provided.

### **Training**

54.8% (n=17) of the respondents indicated that they had received job-specific training and 45.2% (n=14) stated they had not. The respondents were asked to list the type of job-specific training they had received prior to becoming the county coroner that had prepared them for this position. The following table provides the range of responses given.

<b>Type of Training</b>	<b>Number</b>
Deputy coroner/on the job training	17
Workshops/seminars/conventions	7
Training to receive embalmer's license	6

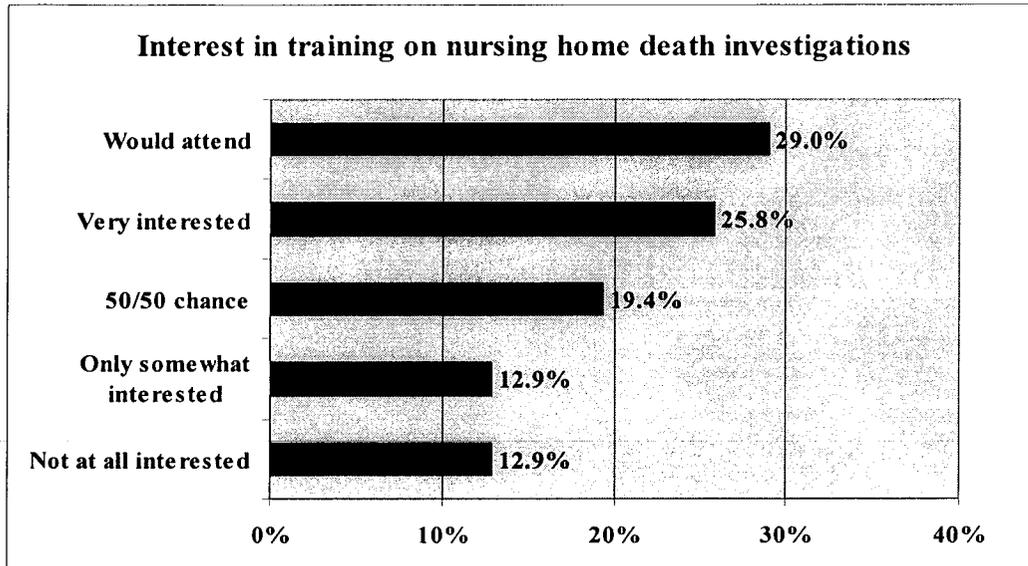
EMT	6
Death investigation courses	3
Funeral home director	3
Science major in college	2
Training through state medical office	2
Specific medical training (nursing or medical school)	2

58.1% (n=18) of the respondents stated that they receive additional training periodically while 41.9% (n=13) stated that they did not. A follow-up question regarding the frequency of this training was asked of those who do receive training. The frequency varied. The following table provides the responses to this question and the number of individuals indicating this frequency.

<b>Frequency of training</b>	<b>Number</b>
Monthly	1
Three to four times per year	1
Twice a year	5
Yearly	7
Every one to two years/when offered	3

The respondents were asked, on a scale of 1 to 5, with 1 being not at all interested and 5 being highly interested, how interested they would be in attending a training session on how to conduct nursing home investigations. 54.8% (n=17) stated that they would either be very interested or

highly interested in attending. 25.8% (n=8) stated that they were only somewhat or not at all interested in this type of training.



Respondents who indicated a lack of interest were asked to list the reasons why they felt this way. The following represent the various comments made.

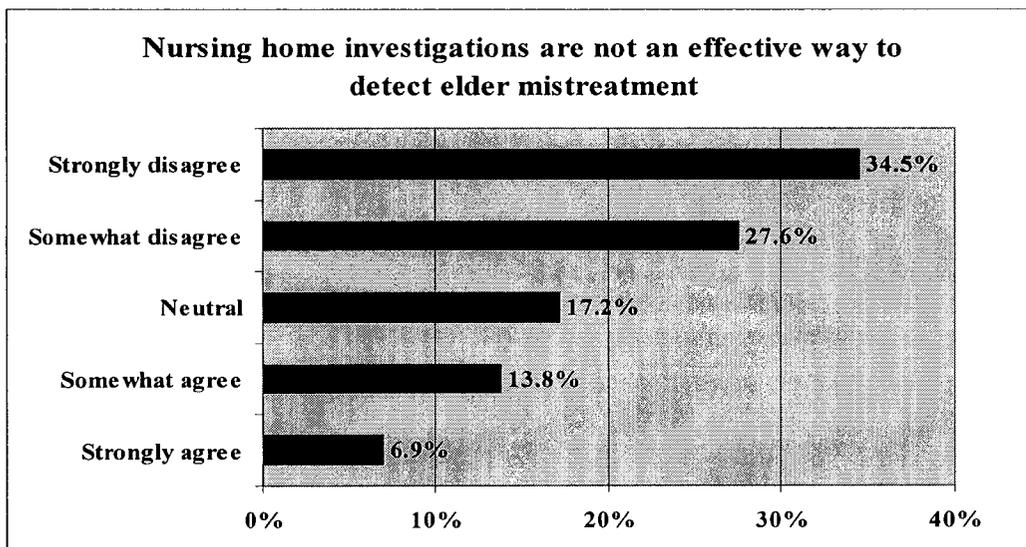
- Would attend only if voluntary
- Either no nursing homes in county or few
- Few cases of actual abuse occurring in nursing homes
- Lack of funds to attend seminars or training
- Already have the skills to conduct these types of investigations
- Impending retirement

- Do not feel that it is the responsibility of the county coroner to conduct these types of investigations – should be conducted by someone else with particular training
- See the residents as patients so has familiarity with their level and quality of care

Respondents were also asked to respond to the following question with regard to nursing home death investigations:

*“Conducting nursing home death investigations is not a useful way to detect elder mistreatment.”*

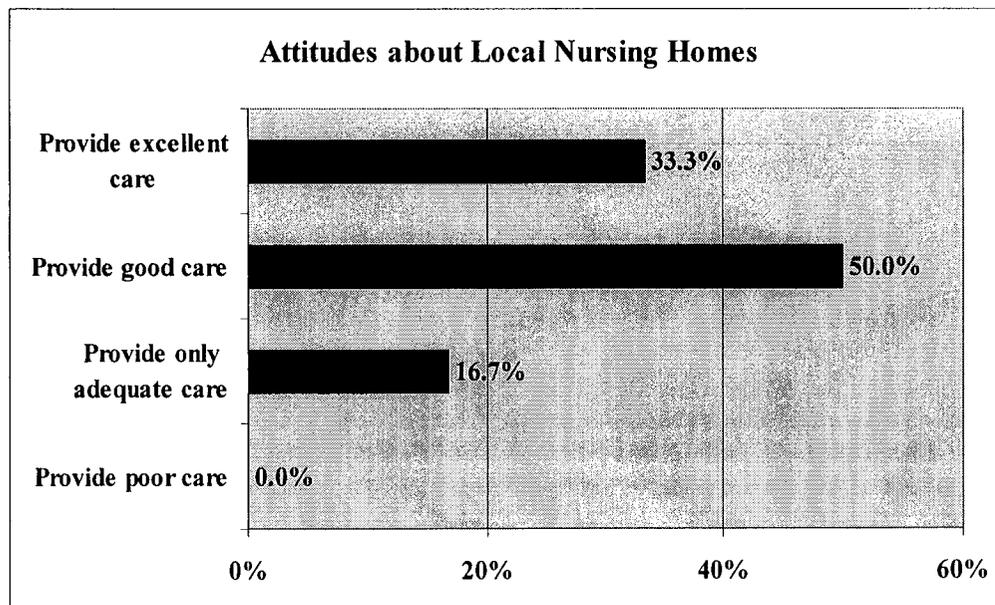
62.1% (n=18) either somewhat or strongly disagreed with this statement while one fifth (20.7%; n=5) either somewhat or strongly agreed.



## Local Nursing Homes and Quality of Care

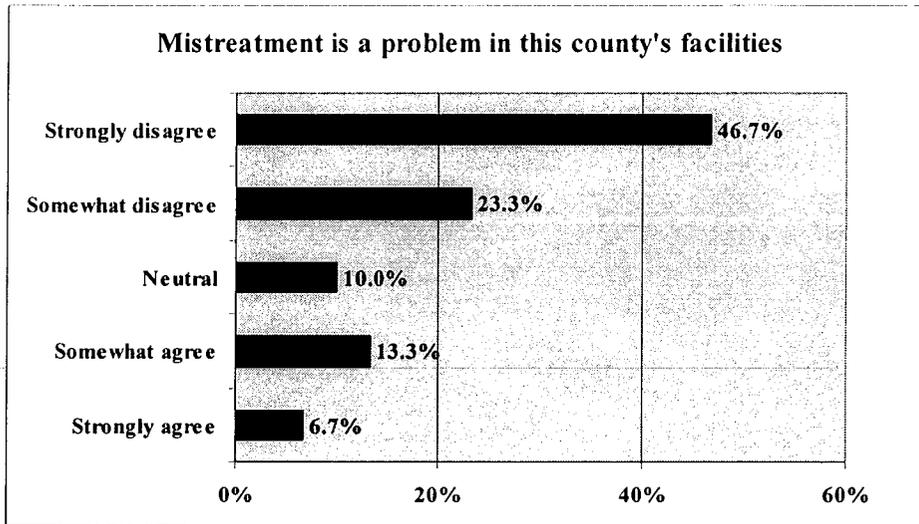
Most respondents represented counties with a small number of nursing homes. 84.4% (n=27) of the respondents stated that they had from 0 to 5 nursing homes in their county, while 12.5% (n=4) of respondents said there were from 6 to 10 nursing homes and 1 respondent stated that they had from 11 to 15 nursing homes.

Respondents were asked to choose, from five responses, a statement that best reflected their opinion about the quality of care offered in their county's nursing homes. The responses ranged from "provide excellent care" to "provide poor care." 50.0% (n=15) of the respondents indicated that nursing homes provide good care. 33.3% (n=10) indicated that they provide excellent care, and 16.7% (n=5) indicated that nursing homes provide only adequate care. No one indicated that nursing homes provide poor care.

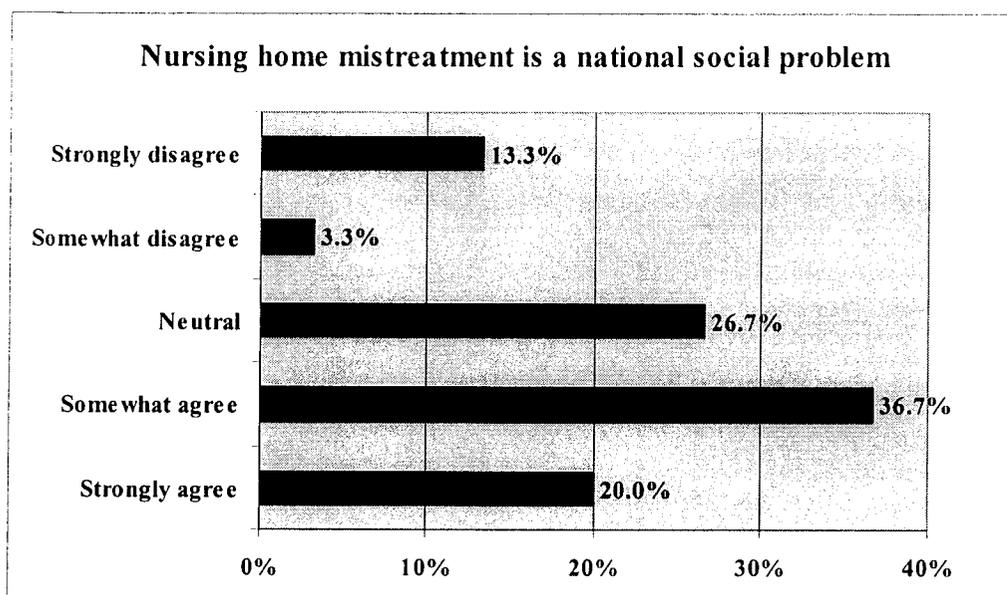


Based on the definition of elder mistreatment provided, respondents were asked to respond to questions regarding elder mistreatment in facilities. The first was: "In my opinion, nursing home

*mistreatment is a problem in this county's facilities.*” Overall, respondents did not agree with this statement. 70.0% (n=20) either somewhat or strongly disagreed with this statement. Only 6.7% (n=2) strongly agreed.



The second question read: *“In my opinion, nursing home mistreatment is a national social problem.”* Slightly more than half of the respondents (56.7%; n=17) either somewhat or strongly agreed with this statement while 17.2% (n=5) either somewhat or strongly disagreed.



### 4.3 Discussion

This law was passed in order to locate nursing homes providing substandard care. While this certainly is a positive intention, there are barriers to enforcing it. First, all the coroners who responded to this survey are elected officials. This law may have political implications in that the enforcement of it could very well upset the constituency of the county coroner. Secondly, there are time constraints. 71.0% of the respondents indicated that they are funded only part-time for this position and most have other occupations, which can inhibit the ability to respond to all nursing home deaths. Third, enforcement of this law does take manpower. 12.9% of the respondents had no additional personnel in their offices and 25.8% had from 1 to 2 additional personnel. Last, this law is an unfunded mandate and 68.8% of respondents did indicate that a lack of funding did make enforcement of this law difficult. However, respondents did indicate that they are being contacted by nursing homes after all deaths 87.5% of the time. Additionally,

some type of investigation is being conducted either on all or some of these decedents 77.4% of the time.

The respondents did indicate that there is a degree of responsiveness to the idea of participating in training that specifically addresses these types of investigations. A lack of interest was connected to a sense that the training would be unnecessary. For instance, some counties had few or no nursing homes, one respondent stated that s/he already possesses these skills, and another mentioned impending retirement. One respondent did state that s/he feels that it is not the job of the coroner to detect mistreatment; this must be determined by another professional.

Although somewhat limited by the 43% response rate, this survey found that efforts are being made to enforce this law and that there is an interest in obtaining particular training on conducting these types of investigations. However, barriers exist, such as a lack of staff and funding, which makes complete compliance with this law difficult for particular offices.

## **5. Autopsy Case Series**

### **5.1 Additional Background Information**

#### ***Role of Autopsy in Ascertaining Causes of Death***

Autopsies in the U.S. have been in decline since the early 1950s, when an absolute numerical requirement was removed from the standards for hospital accreditation. This decline has occurred in other countries including Great Britain, Canada, and Australia.<sup>38</sup> In spite of concerns by some physicians that autopsies place them at a disadvantage in wrongful death civil actions, careful studies of the results of litigation do not support this contention and suggest that the information is more often helpful to the defense.<sup>39,40</sup> Numerous studies have shown that the

rate of disagreement among clinical and autopsy diagnoses remains high.<sup>41-44</sup> If one considers both positive error (postulating a major finding that is not present at autopsy) or negative error (failing to diagnose a finding seen at autopsy), then the overall discordance approaches 30% in several studies of hospital deaths in academic medical centers. In a now classic study, Goldman *et al* reported in 1983 that these rates of discordance remained constant throughout three different medical eras involving ever-increasing non-invasive imaging techniques, although the types of unexpected findings changed over the thirty year period.<sup>45</sup> In recent years, the Accreditation Council for Graduate Medical Education has placed increased emphasis on obtaining autopsies in several specialties including Internal Medicine, Pediatrics, and Neurology. Since only a small percentage of the U.S. hospitals have residency programs, this does not affect the autopsy percentages in community hospitals. Thus, the majority of autopsies in the U.S. are now done by medical examiners, since they have jurisdiction over about 20% of all U.S. deaths.<sup>46</sup> This situation undermines the validity of death certificates as a basis for public health information.<sup>47-49</sup>

### ***Role of Autopsies in Certification of Nursing Home Deaths***

Since nursing home patients are often less communicative and are less likely to be evaluated with sophisticated imaging techniques, it is not surprising that the discordance between antemortem clinical and postmortem pathological diagnoses seen in hospitalized patients is also seen with nursing home residents.<sup>50-52</sup> These findings complicate the process of accurately relating the actual cause of death in a nursing home situation to the circumstances of death. Forensic pathologists are heavily trained in the external examination of the body as a clue to internal pathology. However, a study of the accuracy of the cause of death made by medical examiners from external examination showed a 29% error rate in natural deaths.<sup>53</sup> Thus, it is

likely that less skilled observers would be equally or more inaccurate. Cardiovascular causes of death are likely to be overestimated, and pulmonary embolism and cancer are underestimated, as they are in clinical practice.<sup>54-58</sup> These findings should be considered when evaluating not only natural deaths in a nursing home setting, but also those involving possible abuse or neglect.

### ***The Arkansas Coroner Statutes and other Factors Involved in the Autopsy Study***

Arkansas has a hybrid system of death investigation. A state Medical Examiner and his staff of forensic pathologists are a division of the Arkansas State Crime Laboratory located in Little Rock.<sup>59</sup> These pathologists perform autopsies on suspicious or otherwise unattended deaths referred from local police departments, county sheriffs, district prosecutors, and the Arkansas State Police. Unlike some states, there are no county medical examiners. Each of Arkansas' 75 counties has a county coroner operating under Arkansas Code Annotated 12-12-315 as amended. In 73 counties, this individual is elected. In two (Pulaski County and the adjacent Faulkner County) the coroner is appointed by the County Judge. Although there are no legislated standards for the level of education or qualifications for the office of coroner, a statewide Arkansas County Coroners Procedures Manual was published by the Association of Arkansas Counties in October 2006.<sup>60</sup>

As discussed earlier in this report, the law mandating reporting of all nursing home deaths to the respective county coroner became effective in 1999. There are no requirements that coroner personnel visit the scene of the reported death, nor was additional funding provided to accomplish such scene investigation. Likewise, funds have not been provided for autopsy of a portion of the nursing home deaths as a quality control measure, despite the above evidence supporting this procedure. Despite the 8-year decline in referrals for suspicion of nursing home mistreatment in Pulaski County, without an autopsy there are likely still significant inaccuracies

in the assessment of cause of death and other underlying medical conditions. Therefore, this portion of the study was undertaken to examine decedents who would normally have not been referred for suspicion of mistreatment.

## **5.2 Design and Methods**

The autopsies in this study were referred from the Pulaski County Coroner's Office to the UAMS College of Medicine's Department of Pathology. The responsible party for the decedent gave permission using the standard UAMS Autopsy Consent Form, and Deputy Coroners were provided with a written set of instructions to standardize the approach to the family. All consent forms, autopsy reports, and other data were maintained in a separate master file in a secure location provided by the on site co-investigator. All preliminary and final reports were provided to the Pulaski County Coroner. All follow-up communication was handled by the Pulaski County Coroner's Office. Cases with critical information of potential interest to families were communicated immediately by telephone to coroner personnel.

The UAMS autopsy suite is a modern, full-equipped facility with decontamination facilities and room for cold storage of both corpses and tissue, including freezers for the latter. It is also used as the Pulaski County Coroner's holding facility as there is no county morgue. The Department of Pathology maintains anatomic and clinical pathology services that are fully approved by the College of American Pathology, the Arkansas Department of Health and the Joint Commission on Accreditation of Health Care Organizations. All autopsies in this study were performed and reported according to standards established by the College of American Pathologists, including applicable standards for forensic autopsies.<sup>61-63</sup> In addition to these general standards, there were additional stipulations applied for this study, including brain examination and routine screening of blood for opiates, benzodiazepines, and barbiturates

(controlled substances used for pain relief, mood alteration and sedation). The analysis of the data was based on the standard form developed by the College of American Pathologists cited above. Autopsies were performed by pathology residents under the close supervision of a faculty member certified in Anatomic Pathology by the American Board of Pathology. All brain pathology analyses were performed by a board-certified neuropathologist with special expertise in the pathologic diagnosis of chronic neurodegenerative disorders, using specialized research techniques such as immunocytochemistry for Tau and beta-amyloid protein. Digital photography was employed when deemed necessary.

### **5.3 Results**

From October 2005 through June 2007, there were 1536 deaths of nursing home residents in Pulaski County. Consent was obtained for 20 autopsies from this sample. This does not include any deaths that might have been autopsied by the State Medical Examiner during that period. Autopsy consent was more difficult to obtain than anticipated, probably due to a lack of any prior relationship with the family, unlike the situation for hospital inpatients.

The salient features of these autopsies are listed below:

Summary of Autopsy Data

Case #	Date	Age	Gender	Race	Ante Mortem Diagnosis	Post Mortem Diagnosis	Major Diagnosis Confirmed	Major New Diagnosis	Comments	Manner of Death	Discrepancy Error
1	05-AU-61	10/3/2005	82	M	B	Acute brain infarct, staph sepsis, renal failure	yes	yes	Endocarditis and occult renal cell carcinoma undiagnosed	N	Type 1 + Type 2 +
2	05-AU-76	12/14/2005	63	M	B	Hypertension, multiple brain infarcts	yes	yes	Severe basilar artery stenosis undiagnosed	N	Type 1 + Type 2 -
3	06-AU-01	1/4/2006	78	M	W	Diabetes mellitus, vascular dementia, acute pneumonia	yes	yes	Vascular dementia not present, but Alzheimer's disease	N	Type 1 - Type 2 +
4	06-AU-07	1/17/2006	71	F	B	Dementia, aspiration pneumonia	yes	yes	Brain infarcts not diagnosed in life	N	Type 1 - Type 2 +
5	06-AU-33	3/20/2006	76	F	W	Hypertension with remote cerebro-vascular accident; sudden unexpected death	no	yes	Lymphoid malignancy unsuspected in life	N	Type 1 + Type 2 +
6	06-AU-47	5/10/2006	87	F	W	Dementia, diabetes mellitus, Hepatitis B osteoporosis	yes	yes	Lewy body disease	N	Type 1 - Type 2 +
7	06-AU-54	6/3/2006	84	F	B	Alzheimer's disease hypertension, remote CVA	yes	yes	Broncho-pneumonia, acute	N	Type 1 - Type 2 +
8	06-AU-57	6/9/2006	87	F	B	Transient ischemic attacks, history of recent fall	yes	no	Fatal subdural hematoma	A	Type 1 - Type 2 -
9	06-AU-74	8/8/2006	92	F	W	Diabetes, mellitus, hypertension, dementia	no	yes	Fatal necrotizing hemorrhagic pancreatitis, severe aortic atherosclerosis, cardiac amyloidosis, senile dementia with tangles	N	Type 1 - Type 2 +
10	06-AU-16	8/14/2006	62	F	W	Diabetes mellitus hypertension	yes	yes	Fatal rupture of coronary plaque with luminal thrombosis	N	Type 1 - Type 2 +

Summary of Autopsy Data, continued

Case #	Date	Age	Gender	Race	Ante Mortem Diagnosis	Post Mortem Diagnosis	Major Diagnosis Confirmed	Major New Diagnosis	Comments	Manner of Death	Discrepancy Error	
11	06-AU-83	9/7/2006	77	F	B	Pulmonary hypertension, right heart failure, history of lung cancer	Acute myocardial infarction, bullous emphysema, dilated right ventricle	yes	yes	Fatal myocardia infarction	N	Type 1 - Type 2 +
12	06-AU-86	9/25/2006	84	F	B	Dementia, hypertension respiratory failure	Massive acute infarction of small intestine, limbic lewy body disease	no	yes	Fatal small bowel infarction	N	Type 1 + Type 2 +
13	06-AU-94	11/20/2006	89	F	B	Dementia with seizure disorder, history of fall from wheelchair	Alzheimer's disease of hippocampus severe, right-sided intra-cerebral and intraventricular hemorrhage	yes	yes	Fatal intracranial hemorrhage secondary to fall	A	Type 1 - Type 2 -
14	07-AU-07	1/25/2007	44	M	B	Mental status change secondary to remote motor vehicle accident; acute aspiration pneumonia	Multiple remote cerebral infarcts due to trauma, acute aspiration pneumonia, pulmonary edema	yes	no	Confirm brain and lung pathology	A	Type 1 - Type 2 -
15	07-AU-08	1/28/2007	60	M	W	History of pharyngeal carcinoma on tube feeding	Acute aspiration pneumonia	yes	yes	No metastases identified	N	Type 1 - Type 2 +
16	07-AU-12	2/7/2007	89	F	B	Alzheimer's disease, history of colon and breast cancer	Alzheimer's disease with acute broncho-pneumonia, infected PEG tube site, abscess of liver capsule	yes	yes	probable Infection of PEG tube as contributing factor	N	Type 1 - Type 2 +
17	07-AU-28	4/23/2007	87	F	W	Alzheimer's disease congestive heart failure	Alzheimer's disease	yes	no		N	Type 1- Type 2 -
18	07-AU-31	5/8/2007	86	M	B	Alzheimer's disease, chronic renal failure, pneumonia	Alzheimer's disease, decubiti of right foot, sacrum (healed) Pituitary adenoma	yes	yes		N	Type 1 - Type 2 +
19	07-AU-40	6/23/2007	80	F	W	Falls 2/5/07 and 5/16/07 with C2 fracture and pneumonia	Bilateral broncho-pneumonia, purulent, sacral decubitus grade III-IV	yes	no		A	Type 1 - Type 2 -
20	07-AU-43	6/28/2007	79	F	W	Bilateral CVA's, coronary artery disease, congestive heart failure	same plus cortical atrophy of right kidney	yes	no		N	Type 1 - Type 2 -

Manner of death : N - Natural, A - Accidental  
 Type 1 discrepancy: Failure to confirm major antemortem diagnosis  
 Type 2 discrepancy: Presence of major post-mortem diagnosis not made ante-mortem

All cases accepted for the study are complete autopsies, defined as removal, gross examination and microscopic tissue studies of the contents of the chest and abdomen as well as the brain. Screening studies for opiates, barbiturates, and benzodiazepines were obtained on 19 of 20 cases; the protocols for these screening studies were not yet established for the first case. Only one case was positive for opiates (#19), and one was positive for benzodiazepines (#5). In both cases, the medications were prescribed to the decedents. Thirteen (65%) of the autopsy cases had a significant findings only made post-mortem (Type 2 discrepancy) while 4 (20%) had a major ante-mortem finding which could not be substantiated post-mortem (Type 1 discrepancy).

**SUMMATION OF CRITICAL INFORMATION  
DERIVED FROM PULASKI COUNTY CORONER AUTOPSIES**

	Number	Percent		Number	Percent
Type 1 diagnostic error antemortem diagnosis not confirmed	4	20%		Pneumonia, all types as contributing factors	8 40%
Type 2 diagnostic error (post mortem diagnosis not made antemortem)	13	65%		Diabetes mellitus as contributing factor	4 20%
Both Type 1 and Type 2 error	3	15%		Pathologic diagnosis of Alzheimer's disease	7 35%
Accidental manner of death due to falls	3	15%		Other pathologic diagnosis of dementia	5 25%
Other accidental manner of death	1	5%		Total pathologic diagnosis of dementia	12 60%
<b>Positive Drug Screens</b>				Decubitus ulcers	2 10%
Opiates	1	5%		Acute myocardial infarction	2 10%
Barbiturates	0	0%		Cerebro-vascular accident (acute)	3 15%
Benzodiazepines	1	5%		CVA (remote)	3 15%
				Cancer, total	5 26%
				Cancer, undiagnosed	2 10%

Dementia is common in nursing home residents as a whole and in our series as well. Alzheimer's disease is the most common form of dementia, but other forms of dementia may mimic Alzheimer's dementia or coexist with it.<sup>64,65</sup> In our series, undiagnosed Lewy body dementia (Case 6) and senile cortical dementia with neurofibrillary tangles (Case 9) were noted. Recent and remote cerebrovascular accidents (strokes), which may also be a cause of dementia, were seen in 5 (25%) of the autopsies. This relatively high prevalence reflects the state's position in the "stroke belt," a band of states in the south and lower Midwest with much higher rates than the national average.<sup>66</sup>

Other findings deserve additional discussion here. Five decedents with cancer (25%) were identified, not including one with a benign, but potentially serious, occult pituitary

adenoma (tumor). Two were not diagnosed in life. These included a renal cell carcinoma (Case 1) and a massive disseminated malignant lymphoma (Case 5). Three cases in our series (15%) were accidental deaths due to consequences of falls in a nursing home. This relatively high percentage is consistent with the literature on falls in this environment.<sup>67</sup> Only one case of serious (Stage III-IV) pressure ulcer was seen in a decedent (case 19), who was non-ambulatory after at least two falls. Another case (#18) had two less serious pressure ulcers of the right foot and a healed sacral ulcer. The finding of only two decedents with pressure ulcers in 20 autopsies is lower than one might expect from published prevalence studies, especially considering that 60% of the cases had some form of dementia.<sup>68-70</sup>

## **5.4 Discussion**

Comparing our sample's causes of death to county population mortality estimates, some differences are apparent. Our most prevalent causes of death were pneumonia, cancer, accident, stroke and myocardial infarction, in that order. Population estimates would have predicted cardiovascular disease, cancer, stroke, lower respiratory disease and accidents, in that order. Differences observed in our study may be a result of our small sample size, or it may reflect circumstances that led to these 20 decedents' family members consenting to the study.

Our series of autopsies was not primarily intended to detect abuse and neglect since such cases, if suspected, would be routed to the State Medical Examiner for autopsy rather than our study. However, it should be noted that 3 of 20 cases died as the result of falls within the nursing home and two cases (including one of the falls) had pressure ulcers. Mr. Malcolm suggests that more cases of possible mistreatment may have been evident 5-8 years ago, when coroner personnel were finding many more cases suspicious for mistreatment.

The previously well-documented discordance in major ante-mortem and post ante-mortem diagnosis was again substantiated, with approximately 20% of cases having a clinical diagnosis that could not be substantiated. Even more noteworthy were the 60% of cases with important new findings from autopsy. This suggests that the discordance in pre-and ante-mortem diagnoses is worse for nursing home residents than for the hospitalized patients in prior studies, a plausible hypothesis given the higher prevalence of imaging studies and laboratory testing in the hospital environment. A larger, multi-site study would be necessary to confirm such a hypothesis, but it would have particular public health reporting implications for counties such as Pulaski County, in which approximately 20% of all deaths occur in a nursing home or hospice environment.

Limitations of this autopsy series include its small sample size. An initial target size of 24 autopsies from Pulaski county and 12 from a neighboring county were not attained, mainly due to the much lower consent rate than expected. Given the difficulties with obtaining consent in the county where the autopsy was to be done, the investigators anticipate even more difficulty obtaining consent in a neighboring county, considering the additional barriers of an additional coroner's cooperation and the transport of the body. Another limitation was the sparse documentation of ante-mortem diagnoses, since this was based on an abstraction of the original chart. A detailed review of the original chart would yield a more comprehensive list of known diagnoses for each decedent. Still, this study provided a clearer understanding of the exact types, quantity, and nature of the information that should be gathered by coroner personnel at the nursing home site. Such information is necessary to guide any special studies necessary at autopsy as well as to exclude possibilities of abuse and neglect.

## 6. Overall Discussion

This multi-method study furthers our understanding of nursing home mistreatment investigations in several ways. First, we have further verified the factors associated with a higher level of mistreatment suspicion by investigators (namely, the presence of pressure sores, family dissatisfaction with care, and minority race), while also adding the additional factors of tube feeding and recent ostomy placement. The coroner survey adds to our understanding of the prevailing attitudes and knowledge base regarding nursing home mistreatment, and it outlines some of the barriers to generalizing such investigations to other locations. Several of these barriers are formidable, but perhaps the most formidable from this research team's standpoint is a lack of objective evidence that this law has improved care in Pulaski County.

The extensive linkage and analysis of MDS and nursing home deficiency data showed no trends in improvement in care quality, either over time or compared to other counties. While this was disappointing to the research team, this is still quite valuable information. We must ask ourselves why there is no appreciable improvement in care quality, despite the precipitous decline in referrals for suspicion of mistreatment over the past 7-8 years in Pulaski County. The previous study reported that the entire staff of the Pulaski County Coroner's Office was convinced that the county's nursing home care had significantly improved over time. Unfortunately, there was no research plan in place during the initial implementation and early years of the law's enforcement. We are therefore dependent on secondary data to test the hypothesis that care improved, and such secondary data analysis is inherently limited. In particular, the MDS data (which relies on self-report from the nursing staff) and deficiency data may not be accurate or sensitive enough to detect significant improvement in overall care quality. There is the distinct possibility that a home with poor care also has a poor commitment

to accurate self-reporting. Alternatively, there is also an indication that some Quality Indicators changed similarly across all counties, and the perceived improvement in quality in Pulaski County by the Coroner's Office may have been a reflection of a statewide improvement.

Because we were unable to demonstrate an effect on care quality, two aspects of this project's proposal were deferred. One of these aspects was a series of planned interviews with another county's coroner's office and with nursing home staff. The research team felt that the mailed survey gave us a solid understanding of other coroner's thoughts on the subject, and face-to-face interviews (during which we planned to discuss the resultant changes in nursing home care quality) were unlikely to yield significantly different information. Additionally, the lack of objective evidence of care improvement will continue to support a general lack of enthusiasm about these investigations from the nursing home staff's standpoint. This then leads to the other deferred aspect of this project, the development of an investigative model for nursing home death investigations. As mentioned in the above section, Arkansas recently published a procedure manual,<sup>60</sup> and discussions with the Pulaski County Coroner's Office previously noted that a nursing home investigation followed the general format of any over site investigations. Without evidence that specific areas of care quality are positively impacted by these investigations, it is unlikely that other coroners and medical examiners will be inclined to stray from the basic investigation guidelines.

The autopsy case series had several important findings. First, it highlighted the general importance of the autopsy in the discovery of previously unrecognized illness, and well as its importance in verifying preexisting diagnoses. This was previously known to be the case in other settings, but autopsy series based on nursing home decedents have been rare to date. As we continue to experience a general decline in autopsy rates, this study underscores the importance

of slowing and eventually reversing this decline. Regarding the autopsy's role in identifying previously unrecognized mistreatment, our small series demonstrated potential in this regard, particularly in regards to the fairly common phenomena of falls and pressure sores. While an on-site visit and external exam may reveal some areas of concern, the autopsy may often reveal the true extent and severity of the injuries. The brain examination also demonstrated significant discrepancies between antemortem and postmortem diagnoses for dementia. This underscores the importance of continued research into new diagnostic and treatment options for dementia, given the high prevalence of undiagnosed (or overlapping) etiologies of this condition.

The autopsy series certainly had its limitations, primarily related to its small sample size. The family consent rate for autopsies was a fraction of what we had predicted, despite a general level of comfort expressed by the Pulaski County staff. In addition to the low consent rate, it is also possible that the consenting family members were different from the non-consenting family members. Perhaps the consenting family members had differing levels of satisfaction and interest related to the quality of care received. The Pulaski County Coroner's Office staff expressed the opinion that the consent rate would have likely been higher in the first few years of the law's enforcement, when they felt that family members were more concerned about the possibly poorer level of care. Since this was not a consecutive series, the various rates reported in this study may not be broadly generalizable. Given the difficulty in obtaining consent in Pulaski County, the investigators felt the need to redesign our methodology before attempting to undertake a similar planned case series in a neighboring county, a county which would not have the same cadre of comfortable investigative staff. We still feel this will be an important series to pursue, and we are in the process of developing a follow-up study with this as the centerpiece.

Despite this study's lack of evidence for this law's impact on care quality, it remains possible that the law improved care in ways that were not captured in this study's databases. If similar death investigations were to be mandated in other geographic areas, we would encourage the concurrent implementation of a prospective research study, in order to more accurately document the effects of the law in its early stages. Limited as we are with a retrospective approach, we will continue to explore other possible measures of nursing home care quality in Pulaski County and other counties, as we strive to identify any interventions that may diminish the mistreatment of older adults in America.

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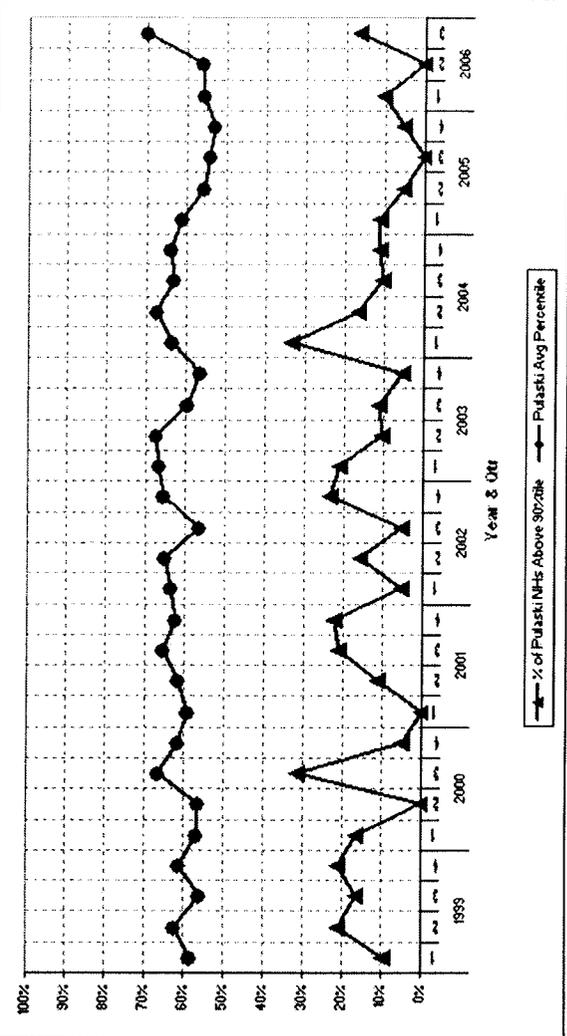
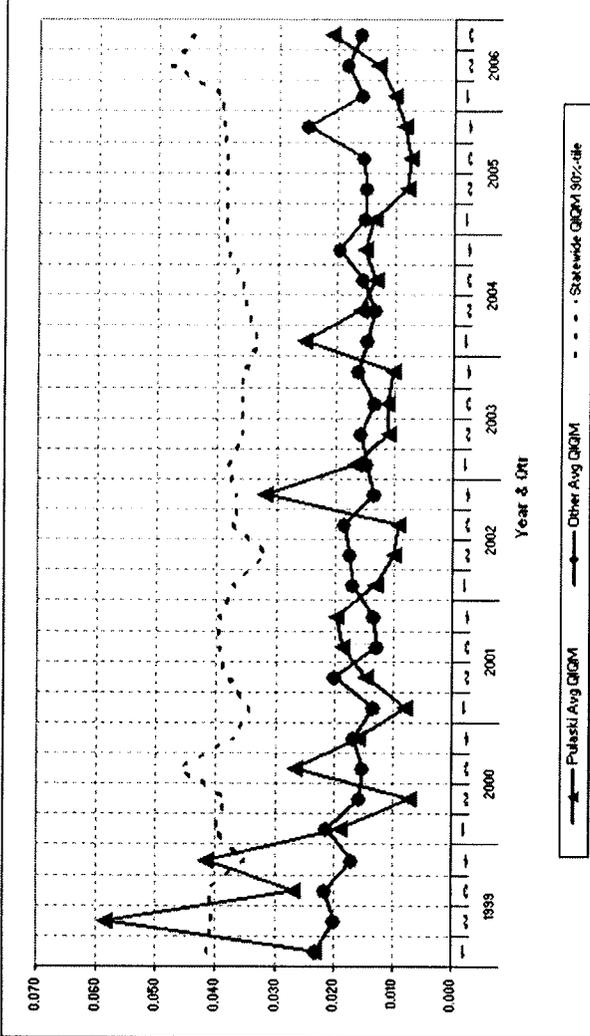
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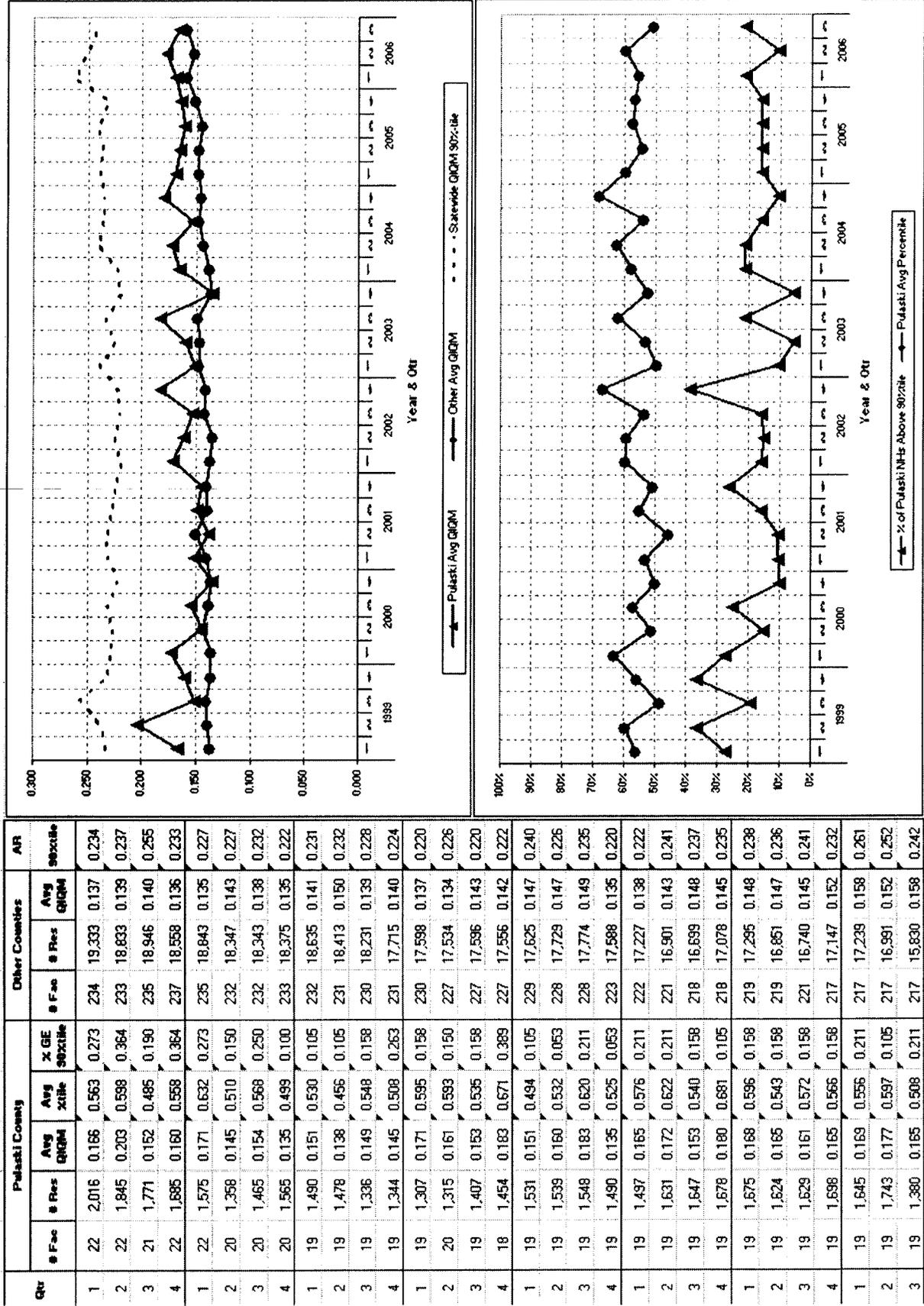
# Appendix A: MDS and Deficiency Analyses

## QIOM #1 Fractures

Qtr	Pulaski County				Other Counties			AR Statewide
	# Fac	# Res	Avg QIOM	% GE State	# Fac	# Res	Avg QIOM	
1	22	2,016	0.023	0.584	234	19,333	0.023	0.042
2	22	1,845	0.058	0.625	233	18,833	0.020	0.041
3	21	1,771	0.027	0.560	235	18,946	0.022	0.041
4	22	1,885	0.042	0.613	237	18,558	0.017	0.035
1	22	1,575	0.019	0.569	235	18,843	0.021	0.040
2	20	1,358	0.007	0.564	232	18,347	0.016	0.038
3	20	1,465	0.026	0.667	232	18,343	0.015	0.046
4	20	1,565	0.016	0.614	233	18,375	0.017	0.037
1	19	1,490	0.008	0.594	232	18,635	0.013	0.035
2	19	1,478	0.014	0.614	231	18,413	0.020	0.038
3	19	1,336	0.019	0.653	230	18,231	0.013	0.039
4	19	1,344	0.020	0.621	231	17,715	0.013	0.040
1	19	1,307	0.013	0.635	230	17,598	0.017	0.037
2	20	1,315	0.010	0.649	227	17,534	0.017	0.032
3	19	1,407	0.009	0.567	227	17,536	0.018	0.037
4	18	1,454	0.032	0.652	227	17,556	0.013	0.037
1	19	1,531	0.017	0.667	228	17,625	0.015	0.038
2	19	1,539	0.011	0.672	228	17,729	0.016	0.036
3	19	1,548	0.011	0.596	228	17,774	0.013	0.036
4	19	1,490	0.010	0.566	223	17,588	0.016	0.036
1	19	1,497	0.025	0.635	222	17,227	0.015	0.033
2	19	1,631	0.016	0.673	221	16,901	0.013	0.035
3	19	1,647	0.013	0.631	218	16,699	0.015	0.036
4	19	1,678	0.015	0.640	218	17,078	0.019	0.038
1	19	1,675	0.014	0.612	219	17,295	0.015	0.038
2	19	1,624	0.008	0.557	219	16,851	0.015	0.038
3	19	1,629	0.007	0.543	221	16,740	0.015	0.039
4	19	1,698	0.008	0.530	217	17,147	0.025	0.038
1	19	1,645	0.010	0.558	217	17,239	0.016	0.040
2	19	1,743	0.013	0.560	217	16,991	0.018	0.048
3	19	1,380	0.021	0.700	217	15,830	0.016	0.044

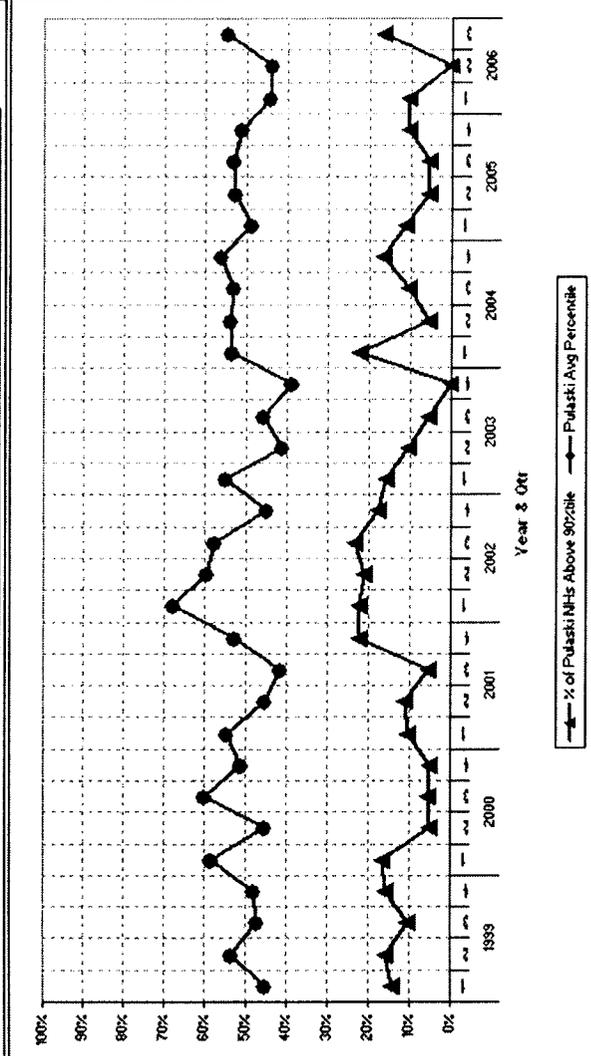
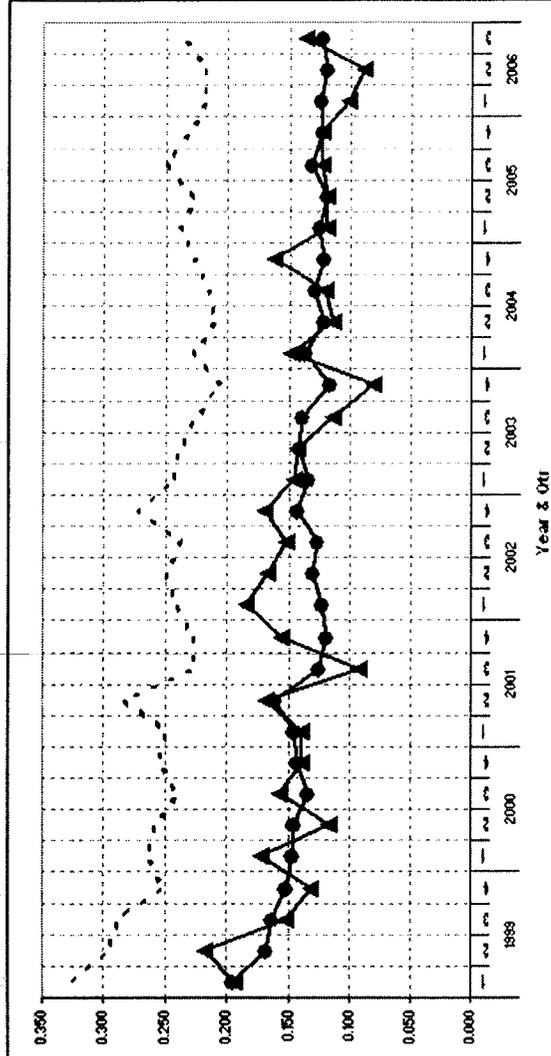


QIQM #2 Falls

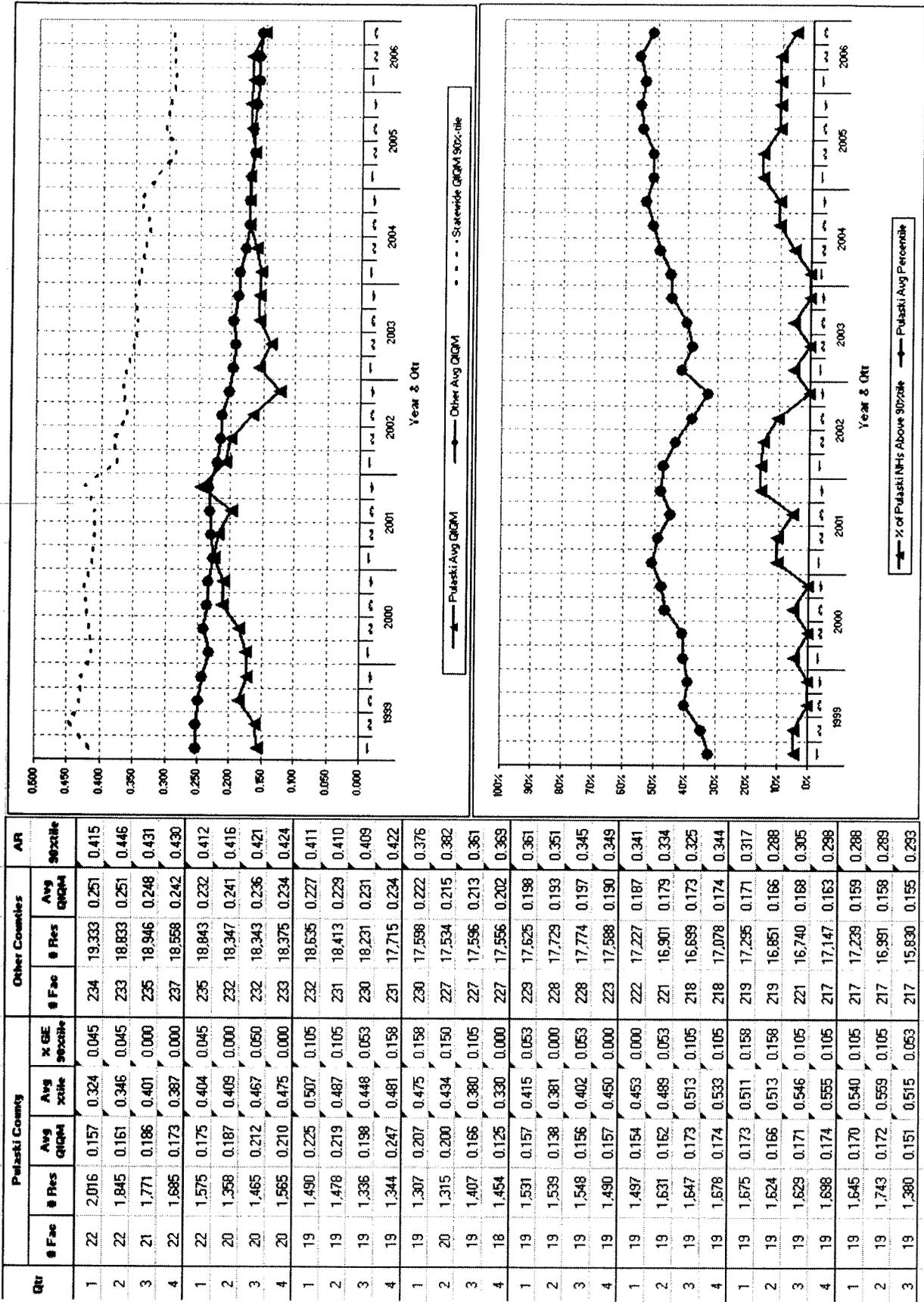


QIQM #3 More Depressed Or Anxious

Qtr	Pulaski County				Other Counties			AR Statewide
	# Fac	# Res	Avg QIQM	% GE xtile	# Fac	# Res	Avg QIQM	
1	22	2016	0.194	0.453	234	19,333	0.195	0.323
2	22	1,845	0.219	0.534	233	18,833	0.168	0.298
3	21	1,771	0.152	0.473	235	18,946	0.163	0.288
4	22	1,685	0.132	0.480	237	18,558	0.152	0.253
1	22	1,575	0.173	0.566	235	18,843	0.147	0.266
2	20	1,358	0.116	0.452	232	18,347	0.146	0.260
3	20	1,465	0.157	0.598	232	18,343	0.133	0.240
4	20	1,565	0.139	0.511	233	18,375	0.143	0.255
1	19	1,490	0.140	0.545	232	18,635	0.146	0.250
2	19	1,478	0.168	0.452	231	18,413	0.160	0.263
3	19	1,336	0.091	0.414	230	18,231	0.126	0.227
4	19	1,344	0.156	0.525	231	17,715	0.119	0.228
1	19	1,307	0.185	0.678	230	17,598	0.123	0.242
2	20	1,315	0.167	0.595	227	17,534	0.130	0.250
3	19	1,407	0.152	0.578	227	17,596	0.127	0.239
4	18	1,454	0.170	0.448	227	17,556	0.143	0.271
1	19	1,531	0.146	0.551	229	17,625	0.134	0.244
2	19	1,539	0.143	0.411	228	17,729	0.142	0.238
3	19	1,548	0.114	0.460	228	17,774	0.139	0.227
4	19	1,490	0.081	0.390	223	17,588	0.116	0.206
1	19	1,497	0.148	0.536	222	17,227	0.137	0.228
2	19	1,631	0.114	0.537	221	16,901	0.121	0.210
3	19	1,647	0.121	0.529	218	16,699	0.129	0.216
4	19	1,678	0.162	0.561	218	17,078	0.121	0.227
1	19	1,675	0.119	0.490	219	17,295	0.125	0.239
2	19	1,624	0.119	0.527	219	16,851	0.119	0.227
3	19	1,623	0.123	0.531	221	16,740	0.131	0.250
4	19	1,698	0.122	0.513	217	17,147	0.123	0.232
1	19	1,645	0.101	0.442	217	17,239	0.124	0.218
2	19	1,743	0.088	0.439	217	16,991	0.119	0.219
3	19	1,380	0.136	0.547	217	15,830	0.122	0.236



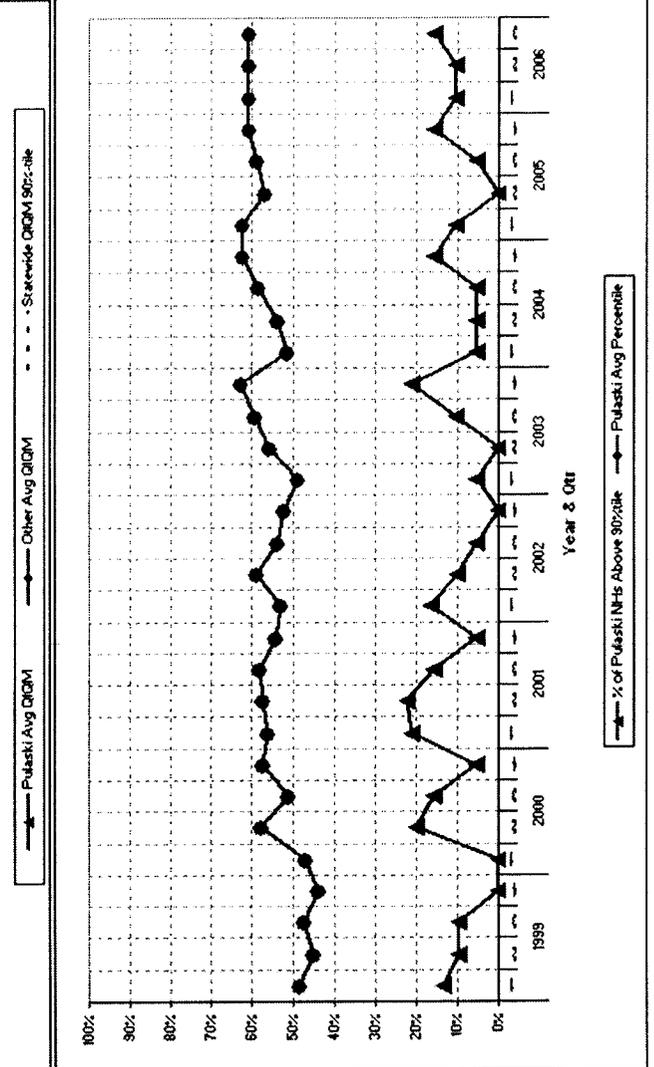
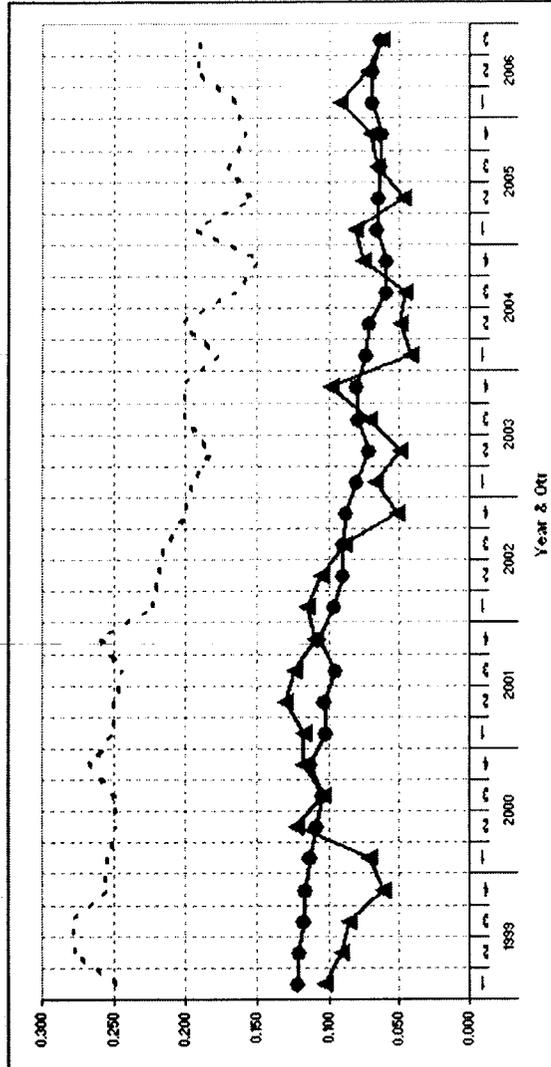
**QIGM #4 Behavioral Symptoms**



Qtr	Polaski County				Other Counties				AR 90%ile
	# Fac	# Res	Avg QIGM	% GE 90%ile	# Fac	# Res	Avg QIGM	% GE 90%ile	
1	22	2,016	0.157	0.324	234	19,333	0.251	0.415	0.415
2	22	1,845	0.161	0.346	233	18,833	0.251	0.446	0.446
3	21	1,771	0.186	0.401	235	18,946	0.248	0.431	0.431
4	22	1,685	0.173	0.387	237	18,568	0.242	0.430	0.430
1	22	1,575	0.175	0.404	235	18,843	0.232	0.412	0.412
2	20	1,358	0.187	0.409	232	18,347	0.241	0.416	0.416
3	20	1,465	0.212	0.467	232	18,343	0.236	0.421	0.421
4	20	1,565	0.210	0.475	233	18,375	0.234	0.424	0.424
1	19	1,490	0.225	0.507	232	18,635	0.227	0.411	0.411
2	19	1,478	0.219	0.487	231	18,413	0.229	0.410	0.410
3	19	1,336	0.198	0.448	230	18,231	0.231	0.409	0.409
4	19	1,344	0.247	0.481	231	17,715	0.234	0.422	0.422
1	19	1,307	0.207	0.475	230	17,588	0.222	0.376	0.376
2	20	1,315	0.200	0.434	227	17,534	0.215	0.382	0.382
3	19	1,407	0.166	0.380	227	17,596	0.213	0.361	0.361
4	18	1,454	0.125	0.330	227	17,556	0.202	0.369	0.369
1	19	1,531	0.157	0.415	229	17,625	0.198	0.361	0.361
2	19	1,539	0.138	0.381	228	17,729	0.193	0.351	0.351
3	19	1,548	0.156	0.402	228	17,774	0.197	0.345	0.345
4	19	1,430	0.157	0.450	223	17,588	0.190	0.349	0.349
1	19	1,497	0.154	0.453	222	17,227	0.187	0.341	0.341
2	19	1,631	0.162	0.489	221	16,901	0.179	0.334	0.334
3	19	1,647	0.173	0.513	218	16,699	0.173	0.325	0.325
4	19	1,678	0.174	0.533	218	17,078	0.174	0.344	0.344
1	19	1,675	0.173	0.511	219	17,295	0.171	0.317	0.317
2	19	1,624	0.166	0.513	219	16,851	0.166	0.288	0.288
3	19	1,629	0.171	0.546	221	16,740	0.168	0.305	0.305
4	19	1,698	0.174	0.555	217	17,147	0.163	0.298	0.298
1	19	1,645	0.170	0.540	217	17,239	0.159	0.288	0.288
2	19	1,743	0.172	0.559	217	16,991	0.158	0.289	0.289
3	19	1,380	0.151	0.515	217	15,830	0.155	0.293	0.293

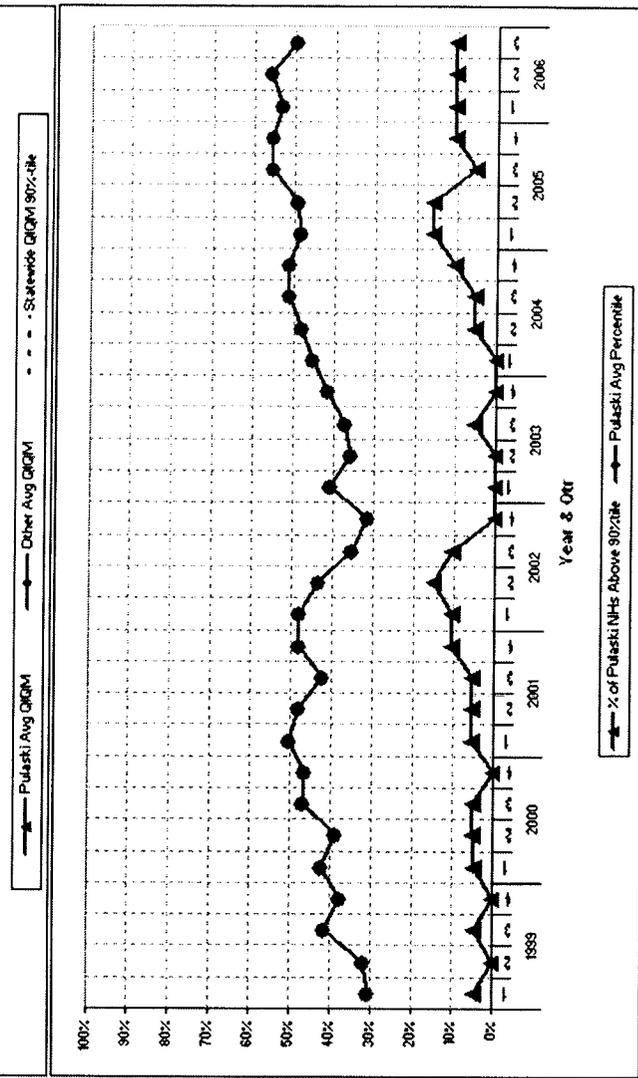
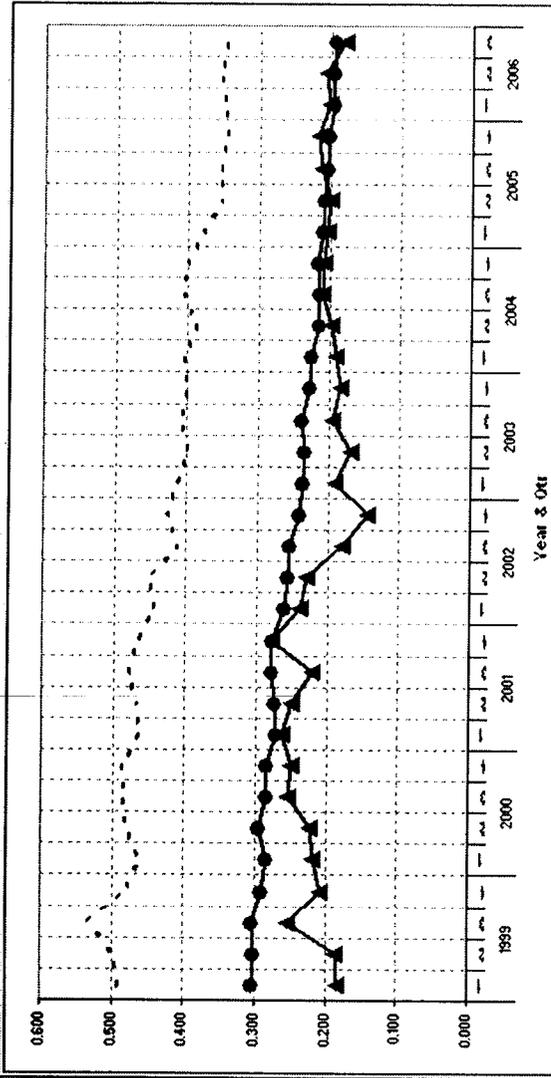
QIQM #4 Behavioral Symptoms (Low Risk)

Qtr	Pulaski County				Other Counties		AR 30xtile	
	# Fac	# Res	Avg QIQM	Avg 30xtile	# Fac	# Res		Avg QIQM
1	22	2,016	0.103	0.483	234	19,333	0.121	0.250
2	22	1,845	0.091	0.449	233	18,833	0.121	0.277
3	21	1,771	0.085	0.473	235	18,946	0.117	0.278
4	22	1,685	0.061	0.440	237	18,558	0.116	0.255
1	22	1,575	0.071	0.469	235	18,843	0.113	0.254
2	20	1,368	0.122	0.577	232	18,347	0.109	0.249
3	20	1,465	0.104	0.512	232	18,343	0.104	0.250
4	20	1,565	0.117	0.572	233	18,375	0.113	0.267
1	19	1,490	0.118	0.560	232	18,635	0.102	0.250
2	19	1,478	0.130	0.572	231	18,413	0.103	0.250
3	19	1,336	0.124	0.581	230	18,231	0.095	0.245
4	19	1,344	0.110	0.542	231	17,715	0.108	0.259
1	19	1,307	0.114	0.533	230	17,598	0.096	0.222
2	20	1,315	0.105	0.587	227	17,534	0.090	0.220
3	19	1,407	0.089	0.539	227	17,596	0.090	0.214
4	18	1,454	0.051	0.525	227	17,556	0.087	0.200
1	19	1,531	0.067	0.490	229	17,625	0.080	0.196
2	19	1,539	0.050	0.557	228	17,729	0.071	0.182
3	19	1,548	0.072	0.592	228	17,774	0.079	0.200
4	19	1,490	0.099	0.626	223	17,588	0.080	0.200
1	19	1,497	0.042	0.516	222	17,227	0.073	0.178
2	19	1,631	0.049	0.540	221	16,901	0.071	0.200
3	19	1,647	0.046	0.584	218	16,699	0.069	0.167
4	19	1,678	0.076	0.623	218	17,078	0.060	0.148
1	19	1,675	0.081	0.625	219	17,295	0.066	0.191
2	19	1,624	0.047	0.570	219	16,851	0.065	0.154
3	19	1,629	0.066	0.590	221	16,740	0.064	0.171
4	19	1,638	0.070	0.607	217	17,147	0.063	0.158
1	19	1,645	0.082	0.609	217	17,239	0.069	0.167
2	19	1,743	0.072	0.608	217	16,991	0.069	0.190
3	19	1,380	0.062	0.606	217	15,830	0.063	0.190



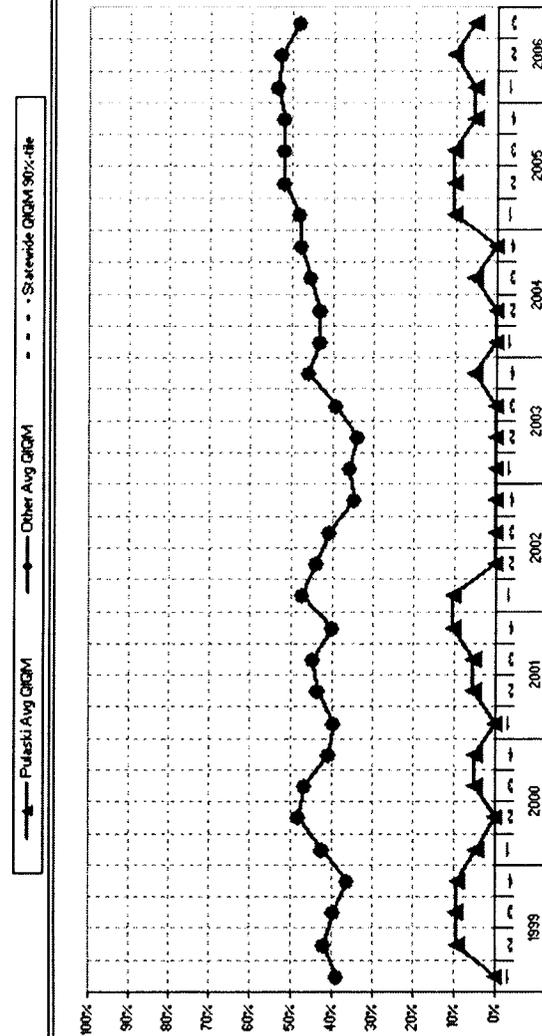
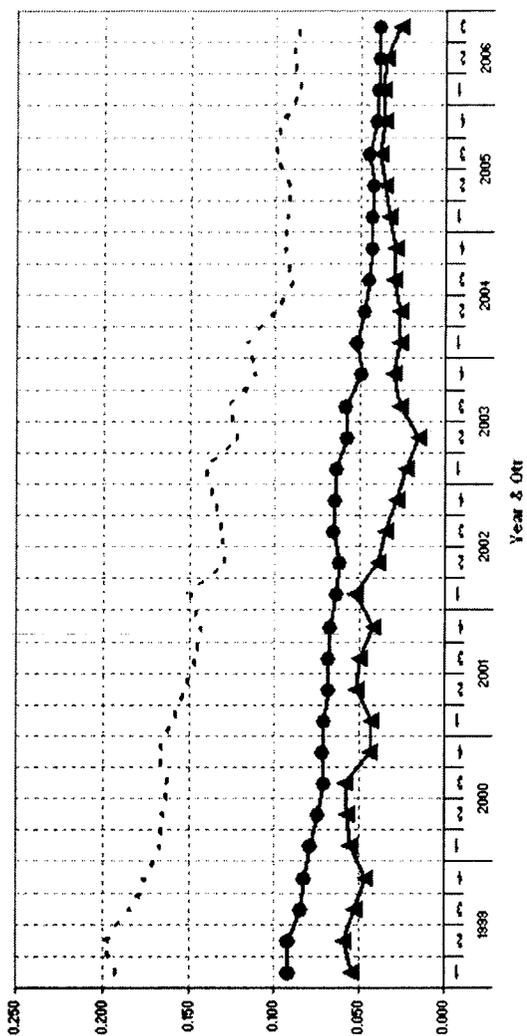
QIGM #4 Behavioral Symptoms (High Risk)

Qtr	Palaski County				Other Counties			AR Statewide
	# Fac	# Res	Avg QIGM	% GE Statewide	# Fac	# Res	Avg QIGM	
1	22	2,016	0.185	0.308	234	19,333	0.305	0.491
2	22	1,845	0.186	0.321	233	18,833	0.302	0.500
3	21	1,771	0.255	0.417	235	18,946	0.305	0.530
4	22	1,685	0.209	0.377	237	18,558	0.292	0.484
1	22	1,575	0.220	0.425	235	18,843	0.284	0.462
2	20	1,368	0.223	0.389	232	18,347	0.295	0.482
3	20	1,465	0.253	0.468	232	18,343	0.284	0.484
4	20	1,565	0.249	0.467	233	18,375	0.285	0.487
1	19	1,490	0.263	0.503	232	18,635	0.272	0.464
2	19	1,478	0.250	0.481	231	18,413	0.274	0.467
3	19	1,336	0.222	0.421	230	18,231	0.278	0.480
4	19	1,344	0.279	0.480	231	17,715	0.277	0.468
1	19	1,307	0.239	0.482	230	17,598	0.260	0.444
2	20	1,315	0.230	0.436	227	17,534	0.256	0.453
3	19	1,407	0.180	0.352	227	17,596	0.295	0.411
4	18	1,454	0.145	0.317	227	17,556	0.241	0.427
1	19	1,531	0.190	0.408	229	17,625	0.238	0.413
2	19	1,539	0.168	0.356	228	17,729	0.235	0.398
3	19	1,548	0.195	0.375	228	17,774	0.239	0.406
4	19	1,490	0.184	0.415	223	17,588	0.228	0.400
1	19	1,497	0.191	0.455	222	17,227	0.226	0.403
2	19	1,631	0.197	0.482	221	16,901	0.215	0.387
3	19	1,647	0.210	0.511	218	16,699	0.214	0.406
4	19	1,678	0.207	0.510	218	17,078	0.217	0.400
1	19	1,675	0.204	0.485	219	17,295	0.210	0.378
2	19	1,624	0.200	0.494	219	16,851	0.207	0.354
3	19	1,629	0.213	0.553	221	16,740	0.204	0.355
4	19	1,698	0.217	0.553	217	17,147	0.202	0.343
1	19	1,645	0.201	0.529	217	17,239	0.195	0.346
2	19	1,743	0.207	0.556	217	16,951	0.196	0.365
3	19	1,380	0.179	0.497	217	15,830	0.192	0.347



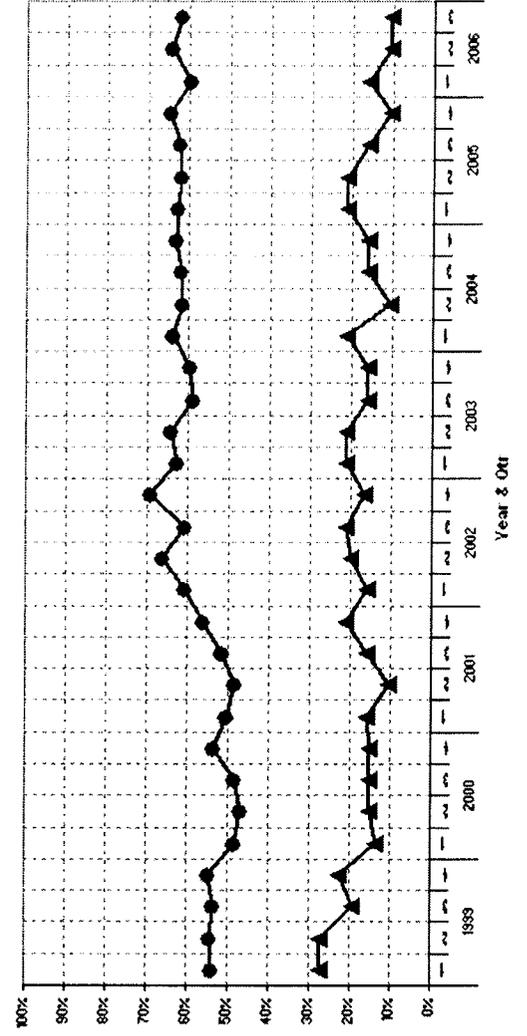
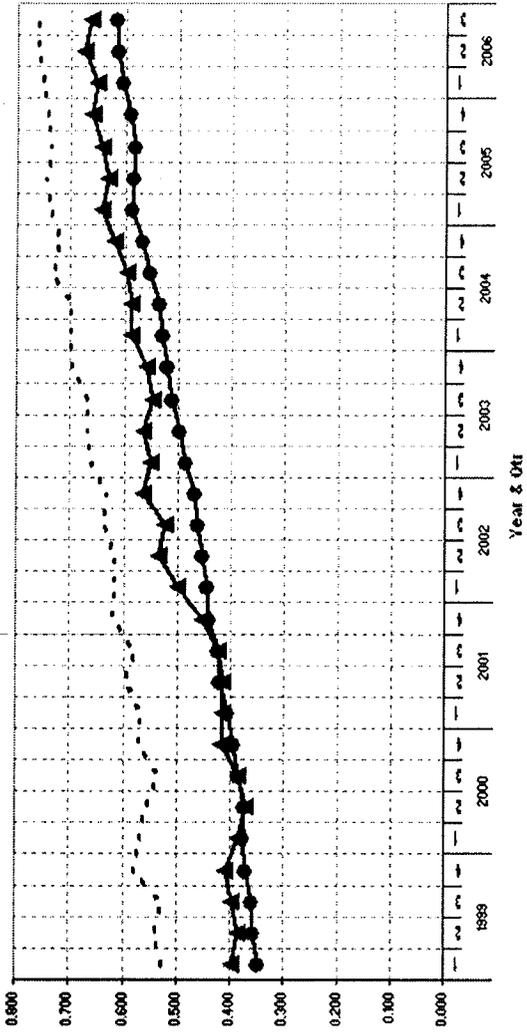
QIQM #5 Prevalence Of Symptoms Of Depression Without Antidepressant Therapy

Qtr	Pulaski County				Other Counties				AR 90%tile
	# Fac	# Res	Avg QIQM	% GE 90%tile	# Fac	# Res	Avg QIQM	Avg QIQM	
1	22	2,016	0.055	0.389	0.000	234	19,333	0.092	0.193
2	22	1,845	0.060	0.418	0.091	233	18,833	0.092	0.200
3	21	1,771	0.053	0.395	0.095	235	19,946	0.095	0.183
4	22	1,685	0.046	0.360	0.091	237	18,558	0.083	0.176
1	22	1,575	0.055	0.422	0.045	235	18,843	0.079	0.167
2	20	1,358	0.057	0.481	0.000	232	18,347	0.074	0.166
3	20	1,465	0.058	0.465	0.050	232	18,343	0.071	0.162
4	20	1,565	0.044	0.408	0.050	233	18,375	0.072	0.188
1	19	1,490	0.043	0.395	0.000	232	18,635	0.071	0.161
2	19	1,478	0.052	0.434	0.053	231	18,413	0.068	0.153
3	19	1,336	0.050	0.447	0.053	230	18,231	0.068	0.147
4	19	1,344	0.042	0.398	0.105	231	17,715	0.067	0.143
1	19	1,307	0.053	0.475	0.105	230	17,598	0.063	0.150
2	20	1,315	0.039	0.438	0.000	227	17,534	0.062	0.129
3	19	1,407	0.035	0.406	0.000	227	17,596	0.065	0.131
4	18	1,454	0.028	0.345	0.000	227	17,556	0.065	0.136
1	19	1,531	0.023	0.357	0.000	229	17,625	0.064	0.140
2	19	1,539	0.016	0.339	0.000	228	17,729	0.058	0.122
3	19	1,548	0.027	0.394	0.000	228	17,774	0.058	0.128
4	19	1,490	0.030	0.457	0.053	223	17,588	0.049	0.111
1	19	1,497	0.026	0.431	0.000	222	17,227	0.052	0.117
2	19	1,631	0.026	0.432	0.000	221	16,901	0.047	0.100
3	19	1,647	0.030	0.453	0.053	218	16,699	0.045	0.090
4	19	1,678	0.029	0.478	0.000	218	17,078	0.043	0.095
1	19	1,675	0.033	0.482	0.105	219	17,295	0.043	0.093
2	19	1,624	0.036	0.517	0.105	219	16,851	0.042	0.092
3	19	1,629	0.038	0.519	0.105	221	16,740	0.045	0.100
4	19	1,698	0.036	0.520	0.053	217	17,147	0.040	0.097
1	19	1,645	0.037	0.533	0.053	217	17,239	0.039	0.085
2	19	1,743	0.035	0.526	0.105	217	16,991	0.038	0.090
3	19	1,380	0.027	0.482	0.053	217	15,830	0.038	0.087



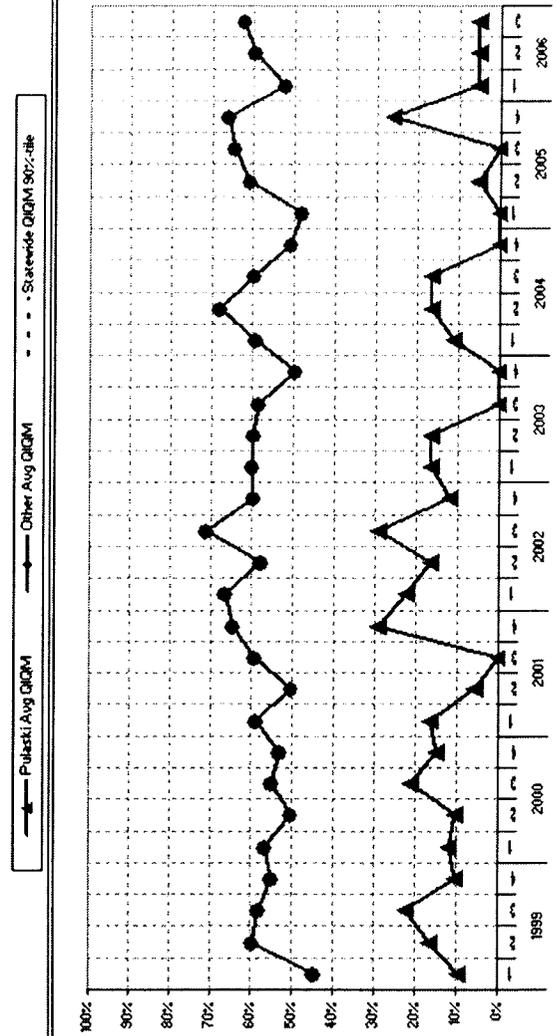
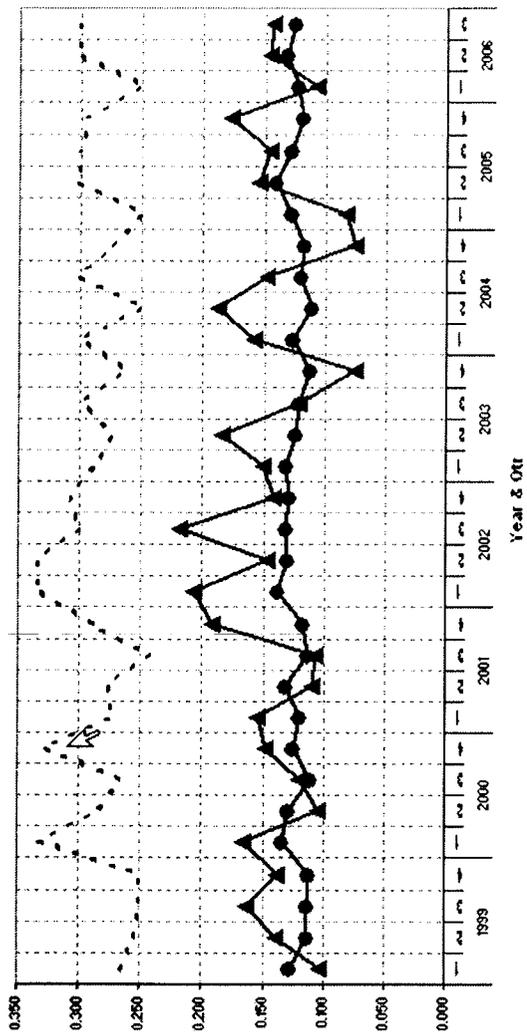
QIGM #6 Use Of 9 Or More Medications

Qtr	Pulaski County				Other Counties				AR
	# Fac	# Res	Avg QIGM	% BE seizure	# Fac	# Res	Avg QIGM	% BE seizure	
1	22	2,016	0.396	0.539	234	19,333	0.346	0.525	
2	22	1,845	0.366	0.542	233	18,833	0.357	0.542	
3	21	1,771	0.396	0.533	235	18,946	0.358	0.525	
4	22	1,685	0.409	0.546	237	18,558	0.371	0.580	
1	22	1,575	0.366	0.485	235	18,843	0.376	0.568	
2	20	1,358	0.372	0.469	232	18,347	0.374	0.557	
3	20	1,465	0.385	0.486	232	18,343	0.384	0.535	
4	20	1,565	0.417	0.536	233	18,375	0.394	0.569	
1	19	1,490	0.414	0.504	232	18,635	0.406	0.567	
2	19	1,478	0.413	0.486	231	18,413	0.421	0.597	
3	19	1,336	0.422	0.515	230	18,231	0.422	0.579	
4	19	1,344	0.453	0.562	231	17,715	0.439	0.619	
1	19	1,307	0.500	0.607	230	17,598	0.444	0.617	
2	20	1,315	0.535	0.661	227	17,534	0.452	0.615	
3	19	1,407	0.523	0.609	227	17,596	0.461	0.636	
4	18	1,454	0.563	0.691	227	17,556	0.468	0.631	
1	19	1,531	0.549	0.628	229	17,625	0.485	0.659	
2	19	1,539	0.563	0.642	228	17,729	0.498	0.667	
3	19	1,548	0.546	0.587	228	17,774	0.511	0.664	
4	19	1,490	0.557	0.595	223	17,588	0.518	0.694	
1	19	1,497	0.588	0.639	222	17,227	0.529	0.697	
2	19	1,631	0.586	0.615	221	16,901	0.533	0.699	
3	19	1,647	0.596	0.621	218	16,639	0.552	0.733	
4	19	1,678	0.620	0.632	218	17,078	0.566	0.719	
1	19	1,675	0.642	0.628	219	17,295	0.586	0.736	
2	19	1,624	0.631	0.617	219	16,851	0.585	0.744	
3	19	1,629	0.642	0.622	221	16,740	0.580	0.737	
4	19	1,698	0.660	0.645	217	17,147	0.590	0.742	
1	19	1,645	0.650	0.597	217	17,239	0.603	0.751	
2	19	1,743	0.674	0.643	217	16,991	0.612	0.759	
3	19	1,380	0.664	0.620	217	15,830	0.616	0.759	



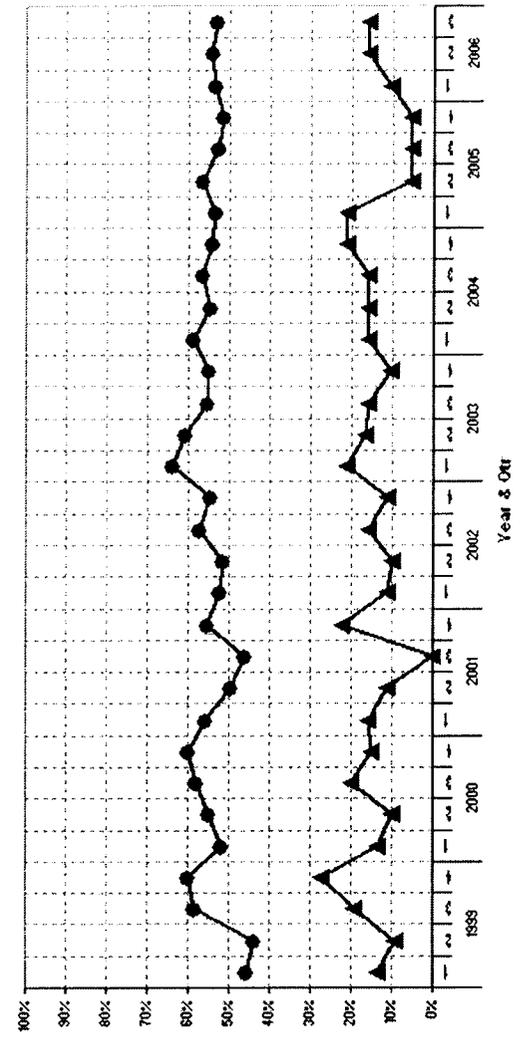
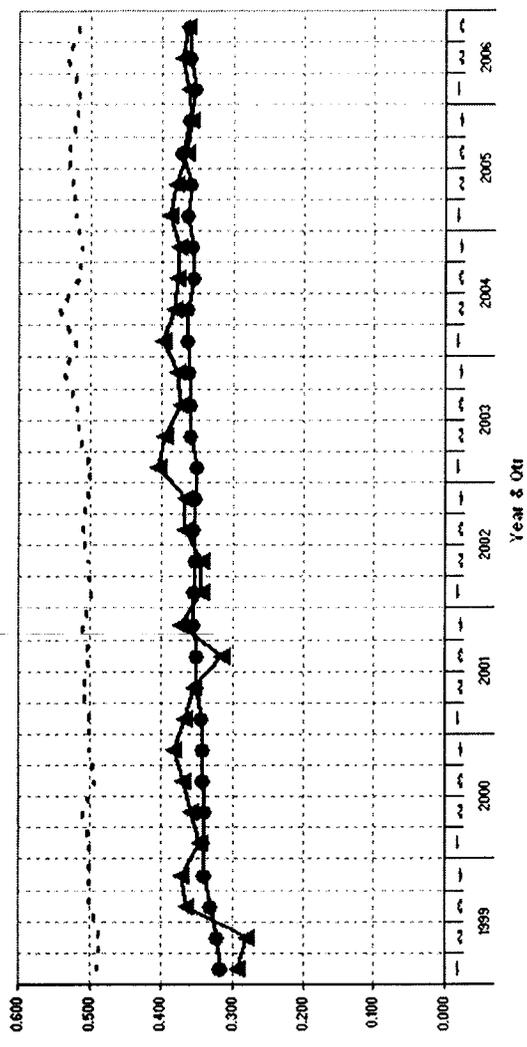
QIQM #7 Cognitive Impairment

Qtr	Pulaski County				Other Counties			AR State
	# Fac	# Res	Avg QIQM	X GE State	# Fac	# Res	Avg QIQM	
1	22	2,016	0.104	0.448	234	19,333	0.128	0.267
2	22	1,945	0.140	0.595	233	18,833	0.113	0.256
3	21	1,771	0.163	0.581	235	18,946	0.113	0.250
4	22	1,685	0.138	0.552	237	18,558	0.112	0.250
1	22	1,575	0.166	0.565	235	18,843	0.135	0.330
2	20	1,358	0.104	0.505	232	18,347	0.129	0.286
3	20	1,465	0.120	0.549	232	18,343	0.111	0.267
4	20	1,565	0.148	0.530	233	18,375	0.125	0.328
1	19	1,490	0.154	0.590	232	18,635	0.120	0.273
2	19	1,478	0.110	0.505	231	18,413	0.132	0.277
3	19	1,336	0.108	0.593	230	18,231	0.114	0.244
4	19	1,344	0.192	0.647	231	17,715	0.118	0.290
1	19	1,307	0.207	0.666	230	17,598	0.138	0.333
2	20	1,315	0.147	0.579	227	17,534	0.130	0.333
3	19	1,407	0.219	0.710	227	17,596	0.132	0.300
4	18	1,454	0.141	0.596	227	17,556	0.129	0.308
1	19	1,531	0.150	0.599	229	17,625	0.131	0.289
2	19	1,539	0.183	0.595	228	17,729	0.124	0.274
3	19	1,548	0.121	0.586	228	17,774	0.122	0.298
4	19	1,490	0.076	0.495	223	17,588	0.112	0.264
1	19	1,497	0.158	0.591	222	17,227	0.127	0.298
2	19	1,631	0.188	0.682	221	16,901	0.111	0.250
3	19	1,647	0.149	0.595	218	16,899	0.121	0.300
4	19	1,678	0.075	0.508	218	17,078	0.117	0.274
1	19	1,675	0.083	0.481	219	17,295	0.128	0.250
2	19	1,624	0.155	0.609	219	16,861	0.140	0.301
3	19	1,629	0.146	0.647	221	16,740	0.127	0.300
4	19	1,698	0.178	0.662	217	17,147	0.119	0.294
1	19	1,645	0.108	0.524	217	17,239	0.123	0.250
2	19	1,743	0.146	0.597	217	16,991	0.132	0.300
3	19	1,380	0.143	0.623	217	15,830	0.126	0.300



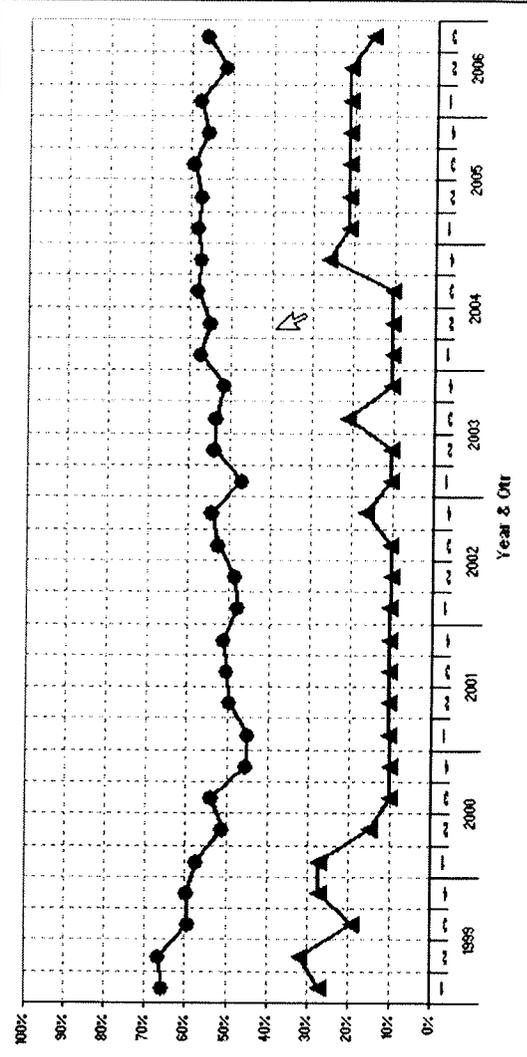
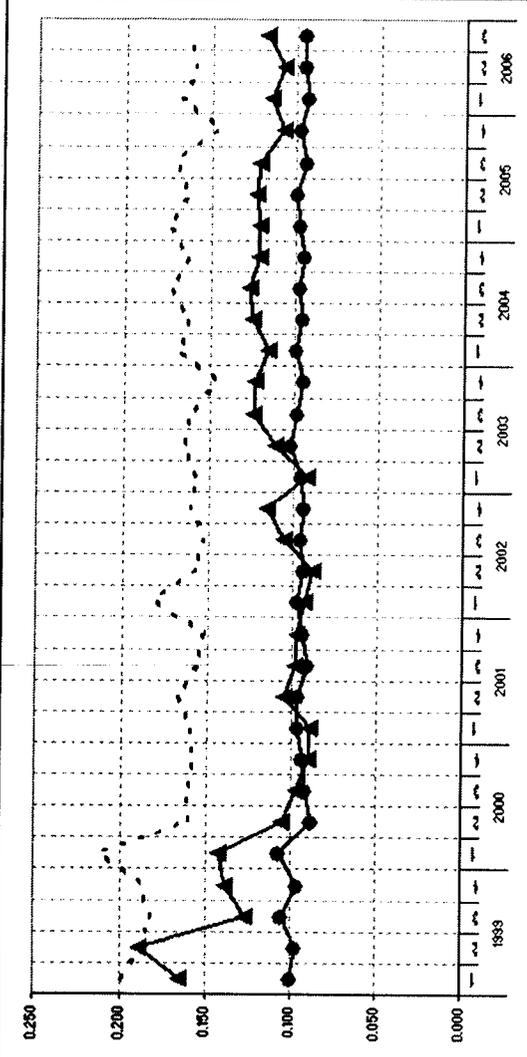
### GIQM #8 Lost Control Of Bowel Or Bladder (Low Risk)

Qtr	Pulaski County				Other Counties			AR 90%tile
	# Fac	# Res	Avg GIQM	% GE 90%tile	# Fac	# Res	Avg GIQM	
1	22	2,016	0.294	0.459	234	19,333	0.318	0.469
2	22	1,845	0.280	0.440	233	18,833	0.321	0.484
3	21	1,771	0.365	0.586	235	18,946	0.330	0.498
4	22	1,685	0.373	0.600	237	18,558	0.339	0.500
1	22	1,575	0.346	0.518	235	18,843	0.341	0.500
2	20	1,358	0.358	0.550	232	18,347	0.339	0.511
3	20	1,465	0.369	0.582	232	18,343	0.342	0.493
4	20	1,565	0.383	0.601	233	18,375	0.342	0.500
1	19	1,490	0.368	0.557	232	18,635	0.345	0.500
2	19	1,478	0.356	0.497	231	18,413	0.351	0.509
3	19	1,336	0.315	0.460	230	18,231	0.350	0.500
4	19	1,344	0.374	0.556	231	17,715	0.355	0.511
1	19	1,307	0.343	0.524	230	17,598	0.356	0.496
2	20	1,315	0.345	0.515	227	17,534	0.362	0.502
3	19	1,407	0.369	0.575	227	17,596	0.355	0.510
4	18	1,454	0.367	0.545	227	17,556	0.352	0.503
1	19	1,531	0.405	0.637	229	17,625	0.351	0.500
2	19	1,539	0.396	0.608	228	17,729	0.360	0.514
3	19	1,548	0.374	0.555	228	17,774	0.359	0.517
4	19	1,490	0.378	0.550	223	17,588	0.362	0.536
1	19	1,497	0.398	0.588	222	17,227	0.363	0.520
2	19	1,631	0.382	0.544	221	16,901	0.363	0.543
3	19	1,647	0.380	0.566	218	16,689	0.355	0.514
4	19	1,678	0.377	0.543	218	17,078	0.357	0.509
1	19	1,675	0.390	0.534	219	17,295	0.364	0.519
2	19	1,624	0.381	0.585	219	16,851	0.360	0.524
3	19	1,629	0.367	0.526	221	16,740	0.371	0.532
4	19	1,698	0.359	0.516	217	17,147	0.362	0.518
1	19	1,645	0.363	0.534	217	17,238	0.353	0.515
2	19	1,743	0.373	0.543	217	16,991	0.360	0.531
3	19	1,380	0.363	0.523	217	15,830	0.362	0.515



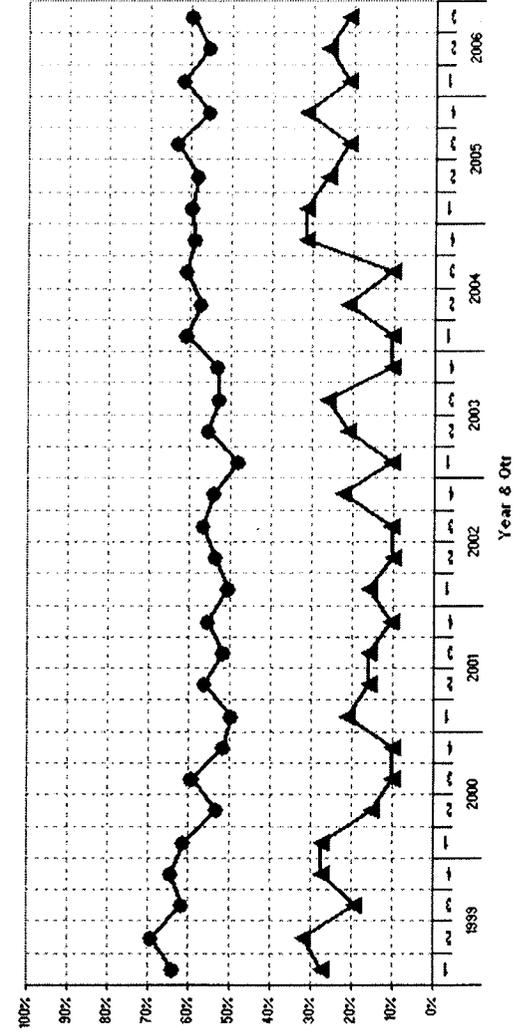
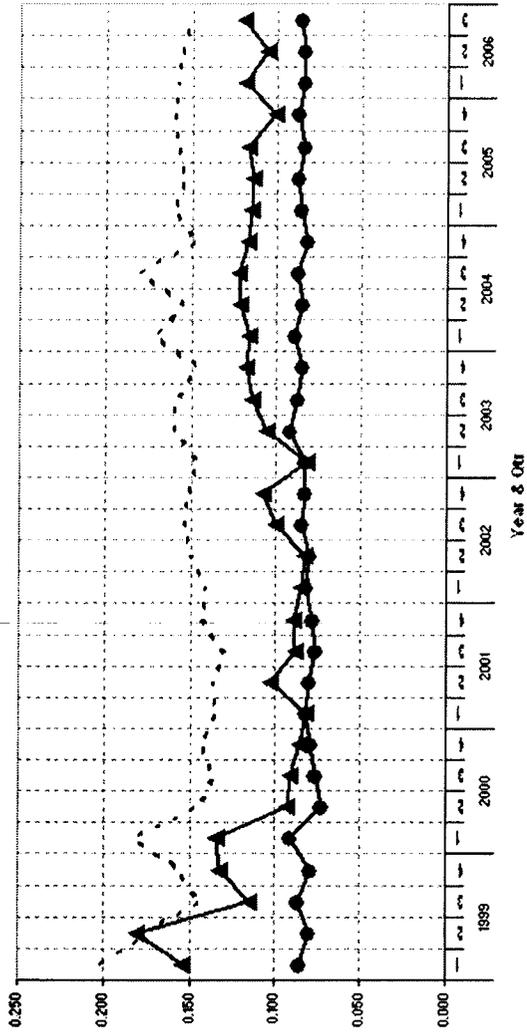
QIGM #9 Catheter Inserted In Bladder

Qtr	Pulaski County				Other Counties			AR Statewide
	# Res	Avg QIGM	Avg % GE	% GE	# Res	Avg QIGM	Avg % GE	
1	2,016	0.166	0.657	0.273	234	0.101	0.200	
2	1,845	0.189	0.665	0.318	233	0.098	0.189	
3	1,771	0.127	0.592	0.190	235	0.106	0.181	
4	1,886	0.139	0.595	0.273	237	0.097	0.188	
1	1,575	0.142	0.574	0.273	235	0.108	0.211	
2	1,358	0.105	0.512	0.150	232	0.088	0.160	
3	1,465	0.097	0.539	0.100	232	0.092	0.160	
4	1,565	0.090	0.456	0.100	233	0.094	0.158	
1	1,490	0.089	0.450	0.105	232	0.097	0.159	
2	1,478	0.105	0.497	0.105	231	0.097	0.167	
3	1,336	0.099	0.503	0.105	230	0.091	0.156	
4	1,344	0.097	0.512	0.105	231	0.094	0.153	
1	1,307	0.093	0.476	0.105	230	0.098	0.180	
2	1,315	0.089	0.495	0.100	227	0.094	0.158	
3	1,407	0.105	0.527	0.105	227	0.096	0.152	
4	1,454	0.116	0.541	0.167	227	0.094	0.159	
1	1,531	0.092	0.470	0.105	229	0.096	0.157	
2	1,539	0.112	0.540	0.105	228	0.102	0.164	
3	1,548	0.124	0.535	0.211	228	0.099	0.160	
4	1,490	0.123	0.513	0.105	223	0.094	0.147	
1	1,497	0.116	0.572	0.105	222	0.100	0.167	
2	1,631	0.125	0.549	0.105	221	0.095	0.163	
3	1,647	0.127	0.591	0.105	218	0.097	0.172	
4	1,678	0.122	0.573	0.263	218	0.095	0.163	
1	1,675	0.122	0.582	0.211	219	0.097	0.174	
2	1,624	0.123	0.573	0.211	219	0.099	0.162	
3	1,629	0.121	0.593	0.211	221	0.094	0.170	
4	1,698	0.108	0.558	0.211	217	0.098	0.146	
1	1,645	0.115	0.576	0.211	217	0.093	0.166	
2	1,743	0.108	0.514	0.211	217	0.095	0.159	
3	1,380	0.118	0.560	0.158	217	0.095	0.162	



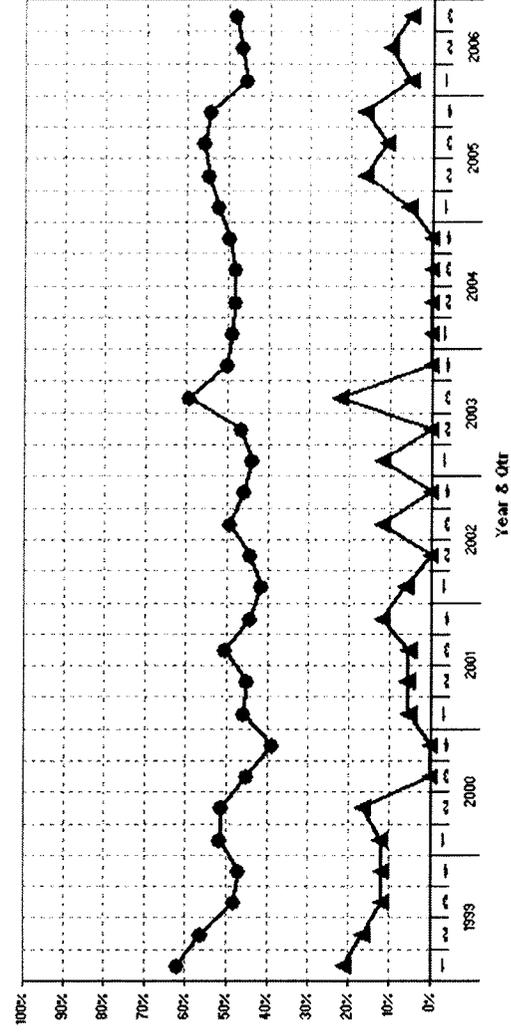
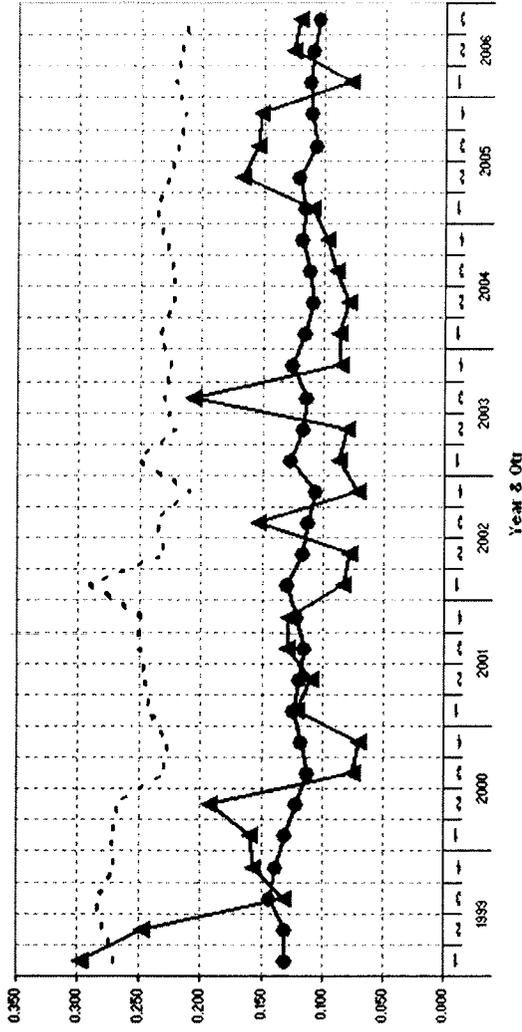
QIOM #9 Catheter Inserted in Bladder (Low Risk)

Qtr	Pulaski County				Other Counties			AR 90%tile
	# Fac	# Res	Avg QIOM	Avg %GE statewide	# Fac	# Res	Avg QIOM	
1	22	2,016	0.154	0.640	234	19,333	0.086	0.200
2	22	1,845	0.181	0.693	233	18,833	0.080	0.175
3	21	1,771	0.115	0.616	235	18,946	0.086	0.144
4	22	1,685	0.132	0.642	237	18,558	0.079	0.157
1	22	1,575	0.135	0.613	235	18,843	0.092	0.182
2	20	1,368	0.093	0.531	232	18,347	0.073	0.145
3	20	1,465	0.091	0.591	232	18,343	0.076	0.136
4	20	1,565	0.086	0.514	233	18,375	0.080	0.143
1	19	1,490	0.082	0.495	232	18,635	0.082	0.135
2	19	1,478	0.103	0.561	231	18,413	0.081	0.136
3	19	1,336	0.088	0.515	230	18,231	0.077	0.130
4	19	1,344	0.089	0.552	231	17,715	0.078	0.143
1	19	1,307	0.065	0.503	230	17,598	0.082	0.141
2	20	1,315	0.083	0.533	227	17,534	0.081	0.149
3	19	1,407	0.101	0.566	227	17,596	0.085	0.153
4	18	1,454	0.108	0.537	227	17,556	0.083	0.153
1	19	1,531	0.082	0.482	229	17,625	0.083	0.146
2	19	1,539	0.106	0.552	228	17,729	0.092	0.160
3	19	1,548	0.114	0.528	228	17,774	0.088	0.160
4	19	1,490	0.118	0.531	223	17,588	0.085	0.148
1	19	1,497	0.116	0.608	222	17,227	0.089	0.171
2	19	1,631	0.121	0.574	221	16,901	0.085	0.156
3	19	1,647	0.122	0.608	218	16,699	0.088	0.179
4	19	1,678	0.117	0.589	218	17,078	0.082	0.148
1	19	1,675	0.115	0.597	219	17,295	0.086	0.161
2	19	1,624	0.114	0.582	219	16,851	0.088	0.154
3	19	1,629	0.117	0.629	221	16,740	0.084	0.158
4	19	1,688	0.101	0.556	217	17,147	0.088	0.160
1	19	1,645	0.118	0.615	217	17,239	0.084	0.158
2	19	1,743	0.106	0.554	217	16,991	0.084	0.156
3	19	1,380	0.119	0.596	217	15,830	0.086	0.152



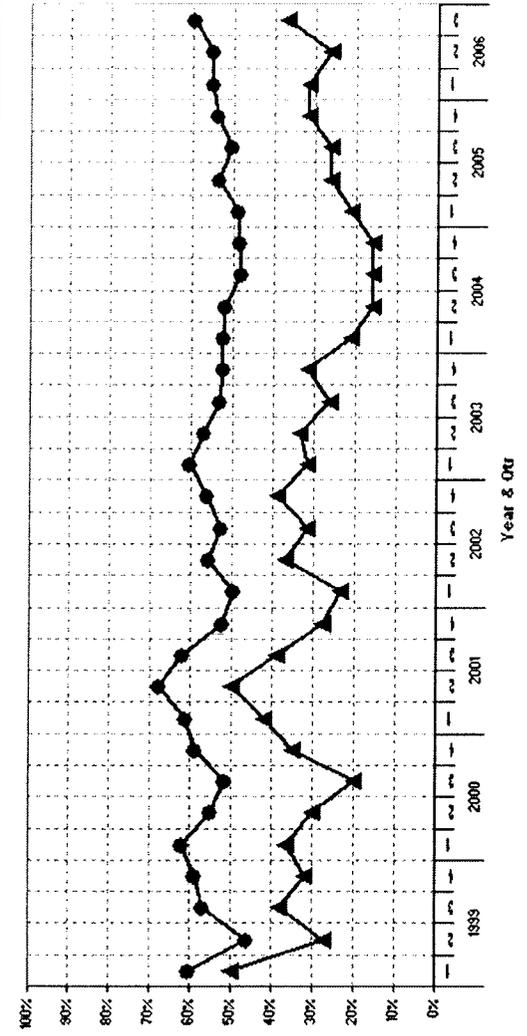
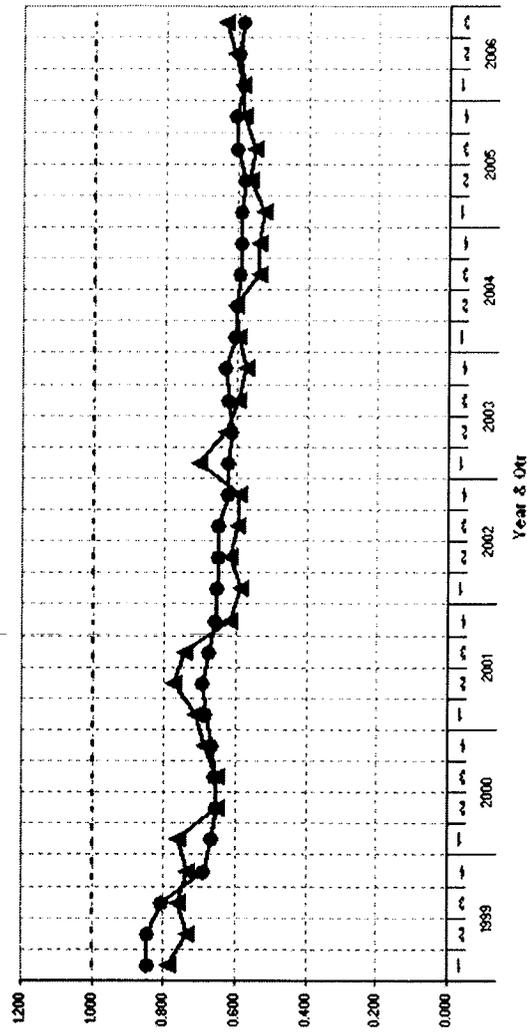
QIQM #9 Catheter Inserted in Bladder (High Risk)

Qtr	Polaski County				Other Counties				AR
	# Fac	# Res	Avg QIQM	% GE Suscible	# Fac	# Res	Avg QIQM	% GE Suscible	
1	22	2,016	0.298	0.618	0.211	234	19,333	0.130	0.271
2	22	1,845	0.248	0.561	0.167	233	18,833	0.130	0.278
3	21	1,771	0.131	0.481	0.118	236	18,946	0.143	0.286
4	22	1,685	0.157	0.470	0.118	237	18,558	0.138	0.271
1	22	1,575	0.159	0.514	0.125	235	18,843	0.130	0.272
2	20	1,358	0.192	0.511	0.167	232	18,347	0.121	0.268
3	20	1,465	0.075	0.451	0.000	232	18,343	0.113	0.232
4	20	1,565	0.070	0.390	0.000	233	18,375	0.118	0.227
1	19	1,490	0.121	0.459	0.056	232	18,635	0.123	0.243
2	19	1,478	0.110	0.449	0.059	231	18,413	0.119	0.245
3	19	1,336	0.129	0.503	0.053	230	18,231	0.115	0.250
4	19	1,344	0.128	0.440	0.118	231	17,715	0.122	0.250
1	19	1,307	0.083	0.417	0.063	230	17,588	0.129	0.288
2	20	1,315	0.078	0.442	0.000	227	17,534	0.116	0.230
3	19	1,407	0.153	0.493	0.118	227	17,596	0.113	0.238
4	18	1,454	0.071	0.457	0.000	227	17,556	0.106	0.211
1	19	1,531	0.087	0.439	0.118	229	17,625	0.126	0.250
2	19	1,539	0.081	0.467	0.000	228	17,729	0.116	0.222
3	19	1,548	0.207	0.593	0.222	228	17,774	0.113	0.231
4	19	1,490	0.086	0.499	0.000	223	17,588	0.126	0.225
1	19	1,497	0.087	0.487	0.000	222	17,227	0.115	0.235
2	19	1,631	0.079	0.483	0.000	221	16,901	0.108	0.222
3	19	1,647	0.068	0.481	0.000	218	16,699	0.111	0.222
4	19	1,678	0.097	0.496	0.000	218	17,078	0.117	0.230
1	19	1,675	0.110	0.522	0.059	219	17,295	0.115	0.239
2	19	1,624	0.168	0.547	0.167	219	16,651	0.121	0.227
3	19	1,629	0.154	0.556	0.111	221	16,740	0.106	0.220
4	19	1,698	0.153	0.541	0.167	217	17,147	0.110	0.214
1	19	1,645	0.077	0.455	0.056	217	17,239	0.111	0.222
2	19	1,743	0.125	0.467	0.105	217	16,991	0.109	0.217
3	19	1,380	0.121	0.482	0.056	217	15,830	0.104	0.211

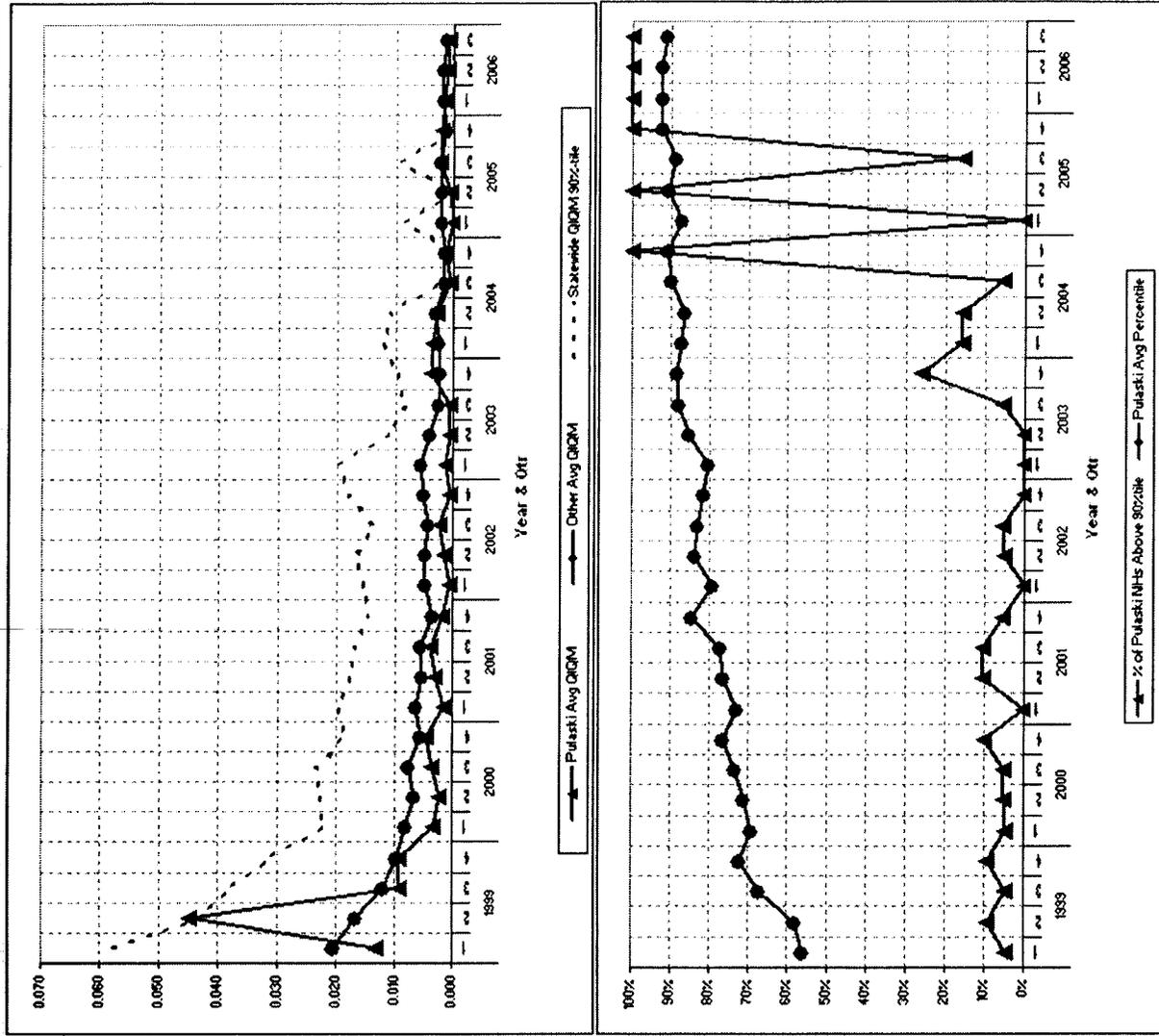


# QIQM #10 Bladder Or Bowel Incontinence Without Toileting Plan

Qtr	Pulaski County			Other Counties			AR %GE 90%tile
	# Fac	# Res	Avg QIQM	# Fac	# Res	Avg QIQM	
1	22	2,016	0.790	234	19,333	0.647	1,000
2	22	1,845	0.734	233	18,833	0.646	1,000
3	21	1,771	0.762	235	18,946	0.604	1,000
4	22	1,685	0.734	237	18,558	0.630	1,000
1	22	1,575	0.761	235	18,843	0.665	1,000
2	20	1,368	0.653	232	18,347	0.652	1,000
3	20	1,465	0.651	232	18,343	0.656	1,000
4	20	1,565	0.687	233	18,375	0.664	1,000
1	19	1,490	0.715	232	18,635	0.685	1,000
2	19	1,478	0.774	231	18,413	0.693	1,000
3	19	1,336	0.743	230	18,231	0.674	1,000
4	19	1,344	0.615	231	17,715	0.656	1,000
1	19	1,307	0.589	230	17,598	0.654	1,000
2	20	1,315	0.617	227	17,534	0.650	1,000
3	19	1,407	0.595	227	17,596	0.649	1,000
4	18	1,454	0.589	227	17,556	0.624	1,000
1	19	1,531	0.704	229	17,625	0.624	1,000
2	19	1,539	0.630	228	17,729	0.615	1,000
3	19	1,548	0.598	228	17,774	0.620	1,000
4	19	1,490	0.575	223	17,588	0.631	1,000
1	19	1,497	0.594	222	17,227	0.604	1,000
2	19	1,631	0.605	221	16,901	0.602	1,000
3	19	1,647	0.539	218	16,639	0.590	1,000
4	19	1,678	0.536	218	17,078	0.586	1,000
1	19	1,675	0.525	219	17,295	0.588	1,000
2	19	1,624	0.585	219	16,851	0.576	1,000
3	19	1,629	0.553	221	16,740	0.598	1,000
4	19	1,698	0.582	217	17,147	0.605	1,000
1	19	1,645	0.596	217	17,239	0.581	1,000
2	19	1,743	0.611	217	16,991	0.594	1,000
3	19	1,380	0.635	217	15,830	0.583	1,000



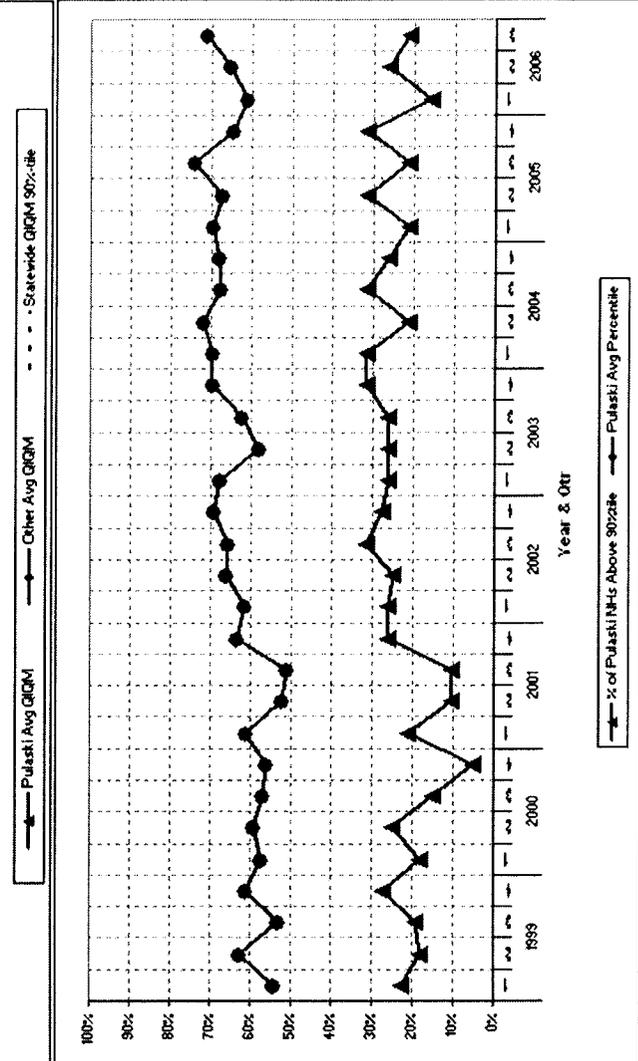
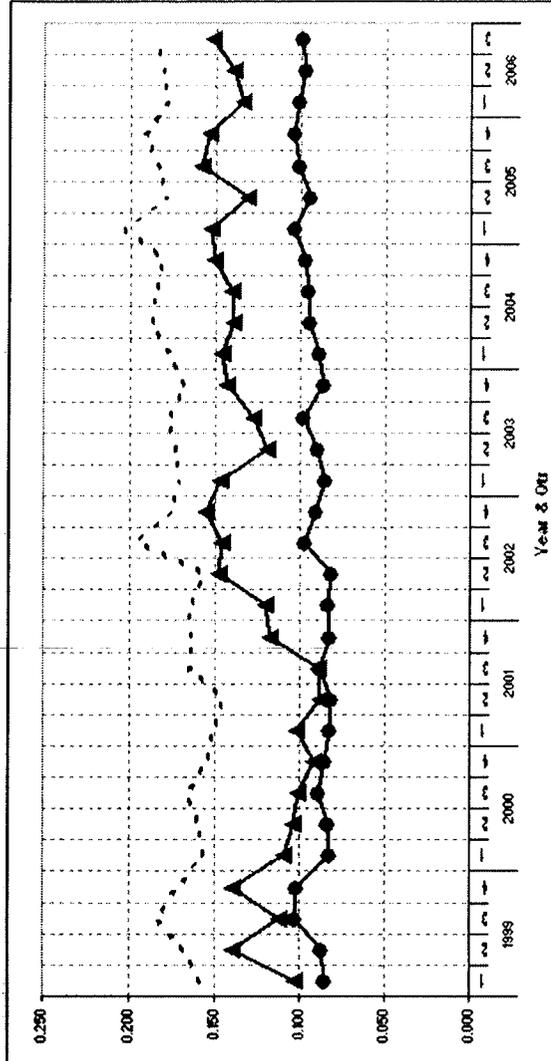
QIQM #11 Fecal Impaction



Qtr	Pulaski County			Other Counties			AR 90%ile
	# Fac	Avg QIQM	% GE 90%ile	# Fac	Avg QIQM	% GE 90%ile	
1	22	2,016	0.013	0.561	0.045	0.045	0.058
2	22	1,845	0.045	0.579	0.091	0.043	0.043
3	21	1,771	0.009	0.672	0.048	0.038	0.038
4	22	1,685	0.009	0.723	0.091	0.031	0.031
1	22	1,575	0.003	0.693	0.045	0.022	0.022
2	20	1,358	0.002	0.712	0.050	0.023	0.023
3	20	1,465	0.004	0.736	0.050	0.023	0.023
4	20	1,565	0.005	0.766	0.100	0.018	0.018
1	19	1,490	0.002	0.730	0.000	0.020	0.020
2	19	1,478	0.003	0.764	0.105	0.018	0.018
3	19	1,336	0.004	0.773	0.105	0.017	0.017
4	19	1,344	0.002	0.845	0.053	0.015	0.015
1	19	1,307	0.000	0.792	0.000	0.015	0.015
2	20	1,315	0.001	0.840	0.050	0.017	0.017
3	19	1,407	0.002	0.832	0.063	0.014	0.014
4	18	1,454	0.001	0.814	0.000	0.018	0.018
1	19	1,531	0.001	0.804	0.000	0.019	0.019
2	19	1,539	0.001	0.852	0.000	0.012	0.012
3	19	1,548	0.001	0.881	0.063	0.008	0.008
4	19	1,490	0.004	0.885	0.263	0.010	0.010
1	19	1,497	0.004	0.875	0.158	0.012	0.012
2	19	1,631	0.003	0.867	0.158	0.011	0.011
3	19	1,647	0.001	0.901	0.063	0.002	0.002
4	19	1,678	0.001	0.909	1.000	0.000	0.000
1	19	1,675	0.000	0.874	0.000	0.008	0.008
2	19	1,624	0.000	0.908	1.000	0.000	0.000
3	19	1,629	0.002	0.869	0.158	0.009	0.009
4	19	1,698	0.002	0.924	1.000	0.000	0.000
1	19	1,645	0.002	0.924	1.000	0.000	0.000
2	19	1,743	0.001	0.923	1.000	0.000	0.000
3	19	1,380	0.001	0.910	1.000	0.000	0.000

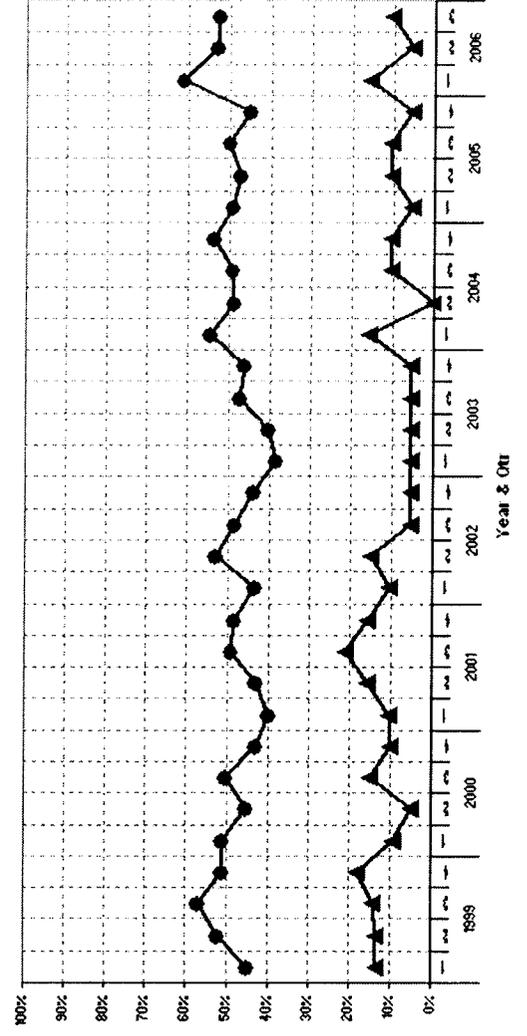
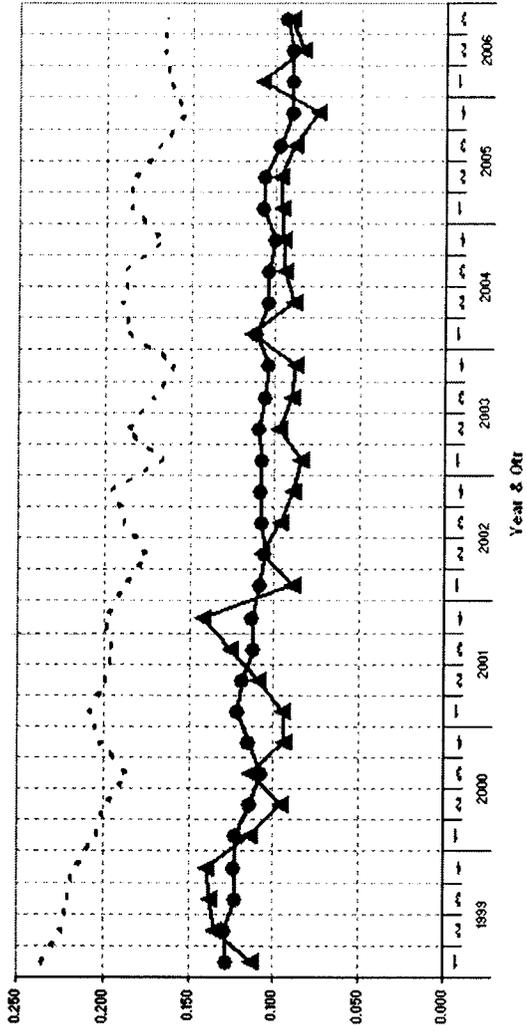
QIOM #12 Urinary Tract Infection

Qtr	Pulaski County			Other Counties		AR 90%tile
	# Fac	Avg QIOM	Avg 90%tile	# Fac	Avg QIOM	
1	22	2,016	0.103	0.544	0.227	0.158
2	22	1,845	0.139	0.626	0.182	0.167
3	21	1,771	0.112	0.532	0.190	0.184
4	22	1,685	0.139	0.610	0.273	0.173
1	22	1,575	0.110	0.572	0.162	0.156
2	20	1,368	0.104	0.592	0.250	0.159
3	20	1,465	0.101	0.588	0.150	0.167
4	20	1,565	0.092	0.560	0.050	0.154
1	19	1,490	0.102	0.612	0.211	0.152
2	19	1,478	0.089	0.521	0.105	0.146
3	19	1,336	0.090	0.510	0.105	0.164
4	19	1,344	0.118	0.635	0.263	0.163
1	19	1,307	0.121	0.617	0.263	0.164
2	20	1,315	0.148	0.661	0.250	0.156
3	19	1,407	0.146	0.656	0.316	0.194
4	18	1,454	0.155	0.694	0.278	0.176
1	19	1,531	0.147	0.679	0.263	0.171
2	19	1,539	0.119	0.580	0.263	0.173
3	19	1,548	0.128	0.622	0.263	0.177
4	19	1,490	0.143	0.696	0.316	0.168
1	19	1,497	0.146	0.695	0.316	0.176
2	19	1,631	0.139	0.718	0.211	0.187
3	19	1,647	0.141	0.678	0.316	0.184
4	19	1,678	0.150	0.683	0.263	0.181
1	19	1,675	0.152	0.695	0.211	0.202
2	19	1,624	0.131	0.673	0.316	0.179
3	19	1,629	0.158	0.741	0.211	0.183
4	19	1,698	0.153	0.645	0.316	0.192
1	19	1,645	0.134	0.612	0.158	0.178
2	19	1,743	0.140	0.662	0.263	0.180
3	19	1,380	0.152	0.712	0.211	0.185

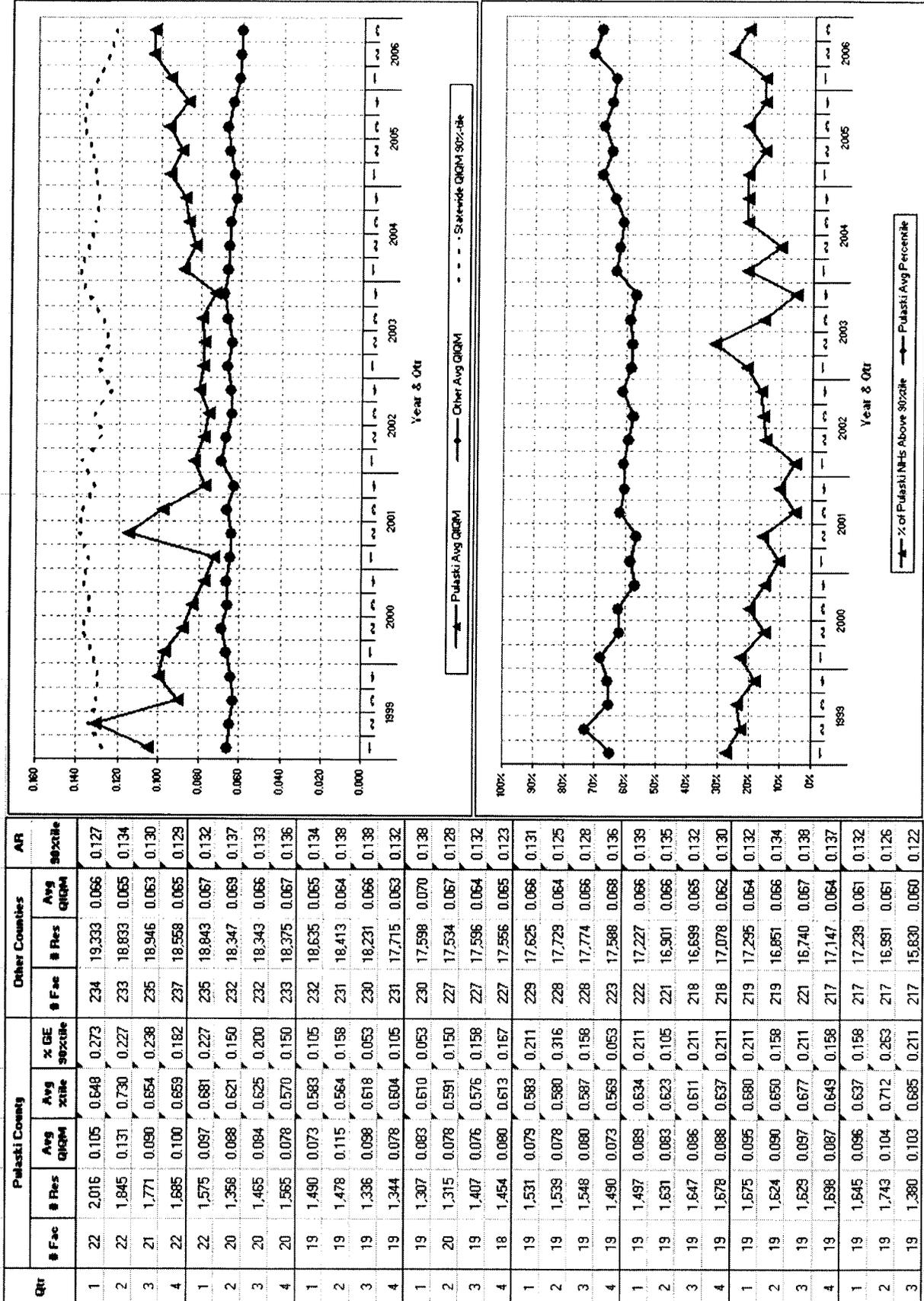


QIQM #13 Lose Too Much Weight

Qtr	Pulaski County				Other Counties				ARI 90:zile
	# Fac	Avg QIQM	Avg scale	% GE sexzile	# Fac	Avg QIQM	# Res	Avg QIQM	
1	22	2,016	0.113	0.448	0.136	234	19,333	0.128	0.237
2	22	1,845	0.136	0.524	0.136	233	18,833	0.129	0.225
3	21	1,771	0.138	0.568	0.143	235	18,946	0.122	0.220
4	22	1,685	0.140	0.513	0.182	237	18,558	0.124	0.217
1	22	1,575	0.114	0.510	0.091	235	18,843	0.123	0.204
2	20	1,368	0.096	0.452	0.050	232	18,347	0.114	0.200
3	20	1,465	0.114	0.504	0.150	232	18,343	0.107	0.196
4	20	1,565	0.094	0.430	0.100	233	18,375	0.115	0.201
1	19	1,490	0.095	0.400	0.105	232	18,635	0.122	0.208
2	19	1,478	0.110	0.430	0.158	231	18,413	0.119	0.200
3	19	1,336	0.126	0.491	0.211	230	18,231	0.113	0.196
4	19	1,344	0.142	0.483	0.158	231	17,715	0.113	0.200
1	19	1,307	0.089	0.436	0.105	230	17,598	0.109	0.189
2	20	1,315	0.108	0.529	0.150	227	17,534	0.106	0.175
3	19	1,407	0.097	0.485	0.053	227	17,596	0.107	0.188
4	18	1,454	0.089	0.437	0.056	227	17,556	0.109	0.195
1	19	1,531	0.085	0.385	0.053	229	17,625	0.107	0.167
2	19	1,539	0.097	0.403	0.053	228	17,729	0.109	0.187
3	19	1,548	0.091	0.473	0.053	228	17,774	0.106	0.171
4	19	1,490	0.089	0.463	0.053	223	17,588	0.104	0.159
1	19	1,497	0.114	0.546	0.158	222	17,227	0.111	0.184
2	19	1,631	0.090	0.488	0.000	221	16,901	0.104	0.190
3	19	1,647	0.095	0.492	0.105	218	16,699	0.104	0.186
4	19	1,678	0.096	0.539	0.105	218	17,078	0.100	0.167
1	19	1,675	0.096	0.493	0.053	219	17,295	0.108	0.185
2	19	1,624	0.097	0.471	0.105	219	16,851	0.107	0.185
3	19	1,629	0.089	0.500	0.105	221	16,740	0.097	0.167
4	19	1,698	0.076	0.452	0.053	217	17,147	0.090	0.154
1	19	1,645	0.108	0.611	0.158	217	17,239	0.090	0.163
2	19	1,743	0.085	0.531	0.053	217	16,991	0.091	0.166
3	19	1,380	0.092	0.527	0.105	217	15,830	0.094	0.165

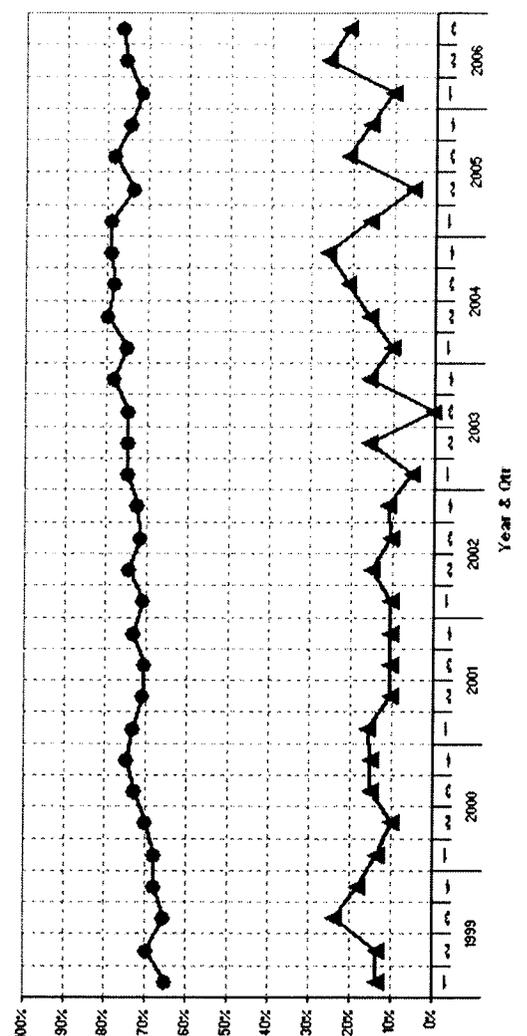
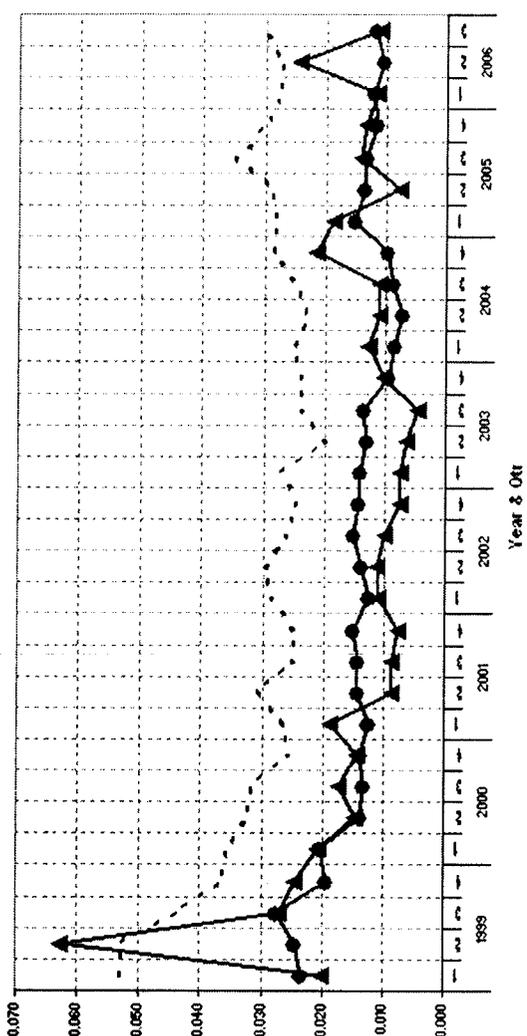


### QIQM #14 Tube Feeding



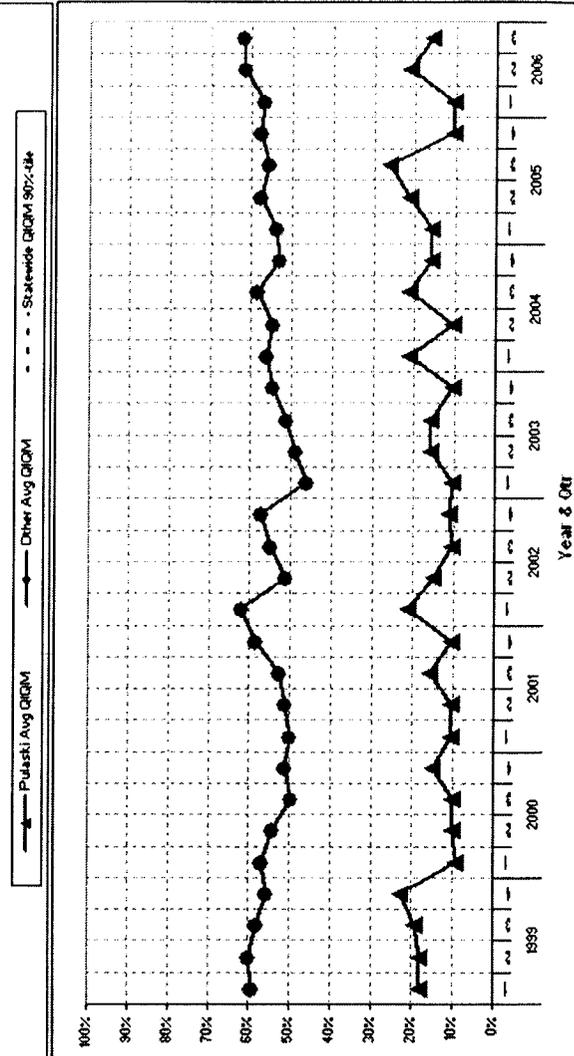
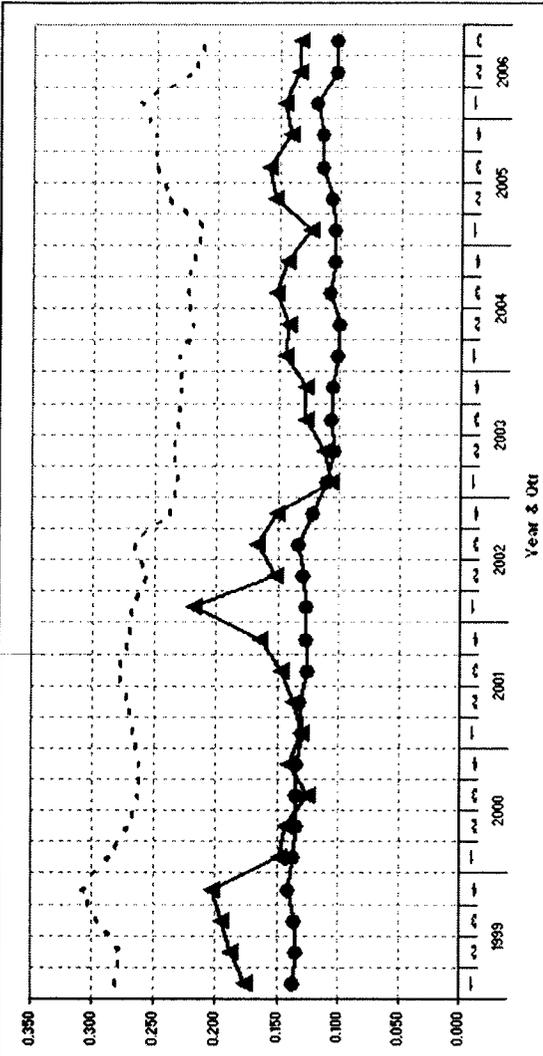
QIOM #15 Dehydration

Qtr	Pulaski County				Other Counties			AR 90%tile
	# Fac	# Res	Avg QIOM	Avg 90%tile	# Fac	# Res	Avg QIOM	
1	22	2,016	0.020	0.650	234	19,333	0.024	0.053
2	22	1,845	0.063	0.637	233	18,833	0.024	0.053
3	21	1,771	0.027	0.652	235	18,946	0.028	0.044
4	22	1,685	0.025	0.678	237	18,558	0.019	0.037
1	22	1,575	0.021	0.676	235	18,843	0.020	0.036
2	20	1,358	0.015	0.701	232	18,347	0.014	0.032
3	20	1,465	0.017	0.728	232	18,343	0.013	0.032
4	20	1,565	0.014	0.744	233	18,375	0.014	0.026
1	19	1,490	0.019	0.731	232	18,635	0.012	0.026
2	19	1,478	0.009	0.709	231	18,413	0.014	0.031
3	19	1,336	0.009	0.705	230	18,231	0.014	0.025
4	19	1,344	0.008	0.730	231	17,715	0.015	0.025
1	19	1,307	0.011	0.707	230	17,598	0.012	0.029
2	20	1,315	0.011	0.742	227	17,534	0.014	0.030
3	19	1,407	0.010	0.717	227	17,596	0.015	0.026
4	18	1,454	0.007	0.723	227	17,556	0.014	0.026
1	19	1,531	0.007	0.744	229	17,625	0.014	0.027
2	19	1,539	0.006	0.746	228	17,729	0.013	0.020
3	19	1,548	0.005	0.746	228	17,774	0.014	0.024
4	19	1,490	0.010	0.781	223	17,588	0.009	0.024
1	19	1,497	0.013	0.750	222	17,227	0.008	0.025
2	19	1,631	0.011	0.794	221	16,901	0.007	0.023
3	19	1,647	0.011	0.781	218	16,699	0.009	0.025
4	19	1,678	0.021	0.789	218	17,078	0.010	0.029
1	19	1,675	0.019	0.787	219	17,295	0.015	0.028
2	19	1,624	0.008	0.733	219	16,861	0.014	0.029
3	19	1,629	0.014	0.781	221	16,740	0.013	0.035
4	19	1,698	0.013	0.742	217	17,147	0.011	0.030
1	19	1,645	0.012	0.714	217	17,239	0.012	0.027
2	19	1,743	0.024	0.753	217	16,991	0.010	0.027
3	19	1,380	0.011	0.760	217	15,830	0.012	0.030

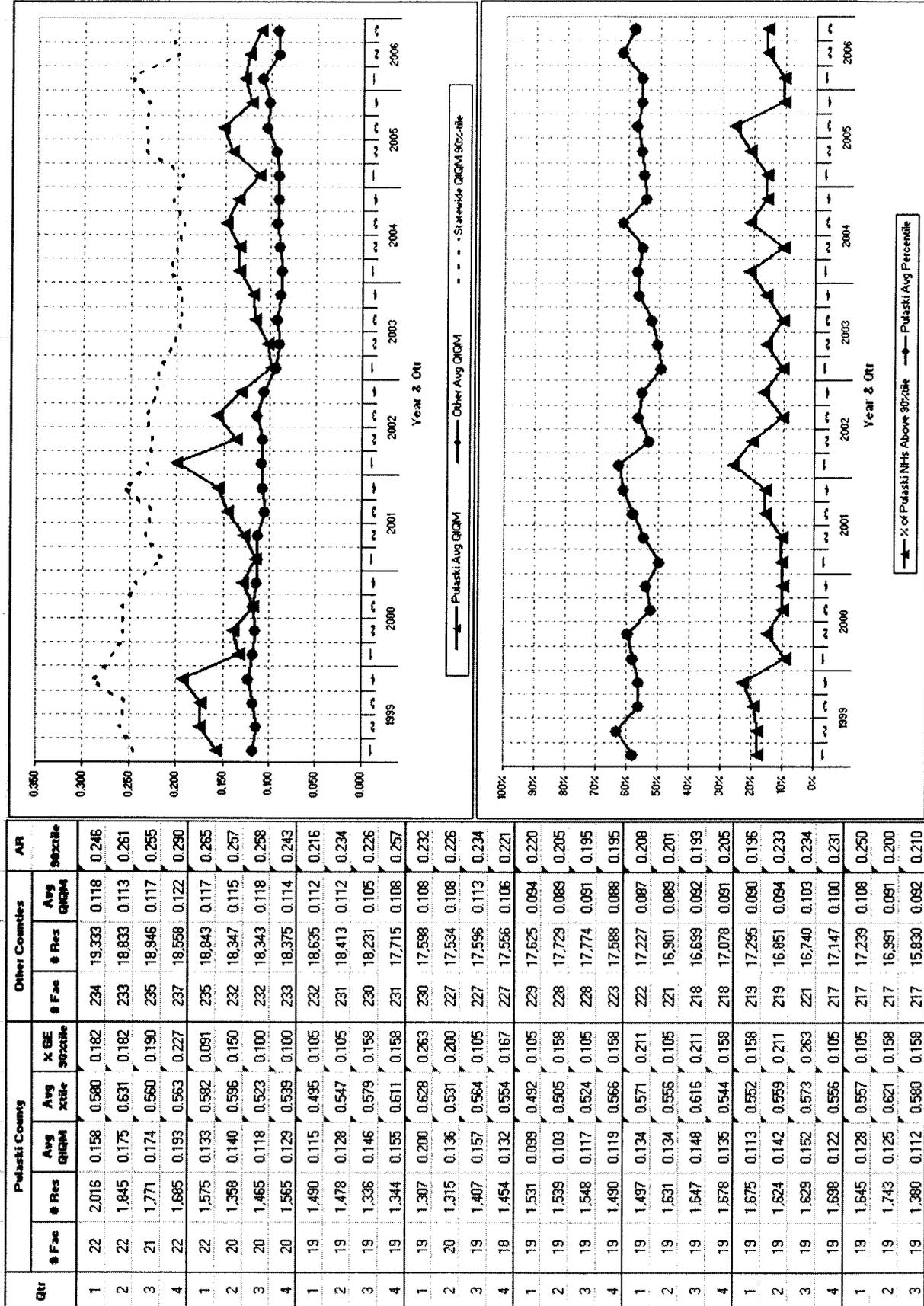


QIQM #16 Pain

Qtr	Pulaski County				Other Counties			AR 302ndile	
	# Fac	# Res	Avg QIQM	Avg 302ndile	% GE 302ndile	# Fac	# Res		Avg QIQM
1	22	2,016	0.176	0.593	0.182	234	19,333	0.137	0.282
2	22	1,845	0.187	0.601	0.182	233	18,833	0.134	0.277
3	21	1,771	0.195	0.582	0.190	235	18,946	0.135	0.295
4	22	1,695	0.204	0.568	0.227	237	18,558	0.140	0.309
1	22	1,575	0.148	0.563	0.091	235	18,843	0.137	0.288
2	20	1,358	0.143	0.541	0.100	232	18,347	0.134	0.271
3	20	1,485	0.125	0.495	0.100	232	18,343	0.134	0.264
4	20	1,585	0.141	0.512	0.150	233	18,375	0.134	0.261
1	19	1,490	0.130	0.499	0.105	232	18,635	0.129	0.267
2	19	1,478	0.137	0.513	0.105	231	18,413	0.132	0.271
3	19	1,336	0.147	0.526	0.158	230	18,231	0.125	0.280
4	19	1,344	0.165	0.586	0.105	231	17,715	0.126	0.270
1	19	1,307	0.218	0.619	0.211	230	17,598	0.127	0.268
2	20	1,315	0.152	0.512	0.150	227	17,534	0.129	0.266
3	19	1,407	0.167	0.550	0.105	227	17,556	0.133	0.267
4	18	1,454	0.151	0.574	0.111	227	17,556	0.121	0.239
1	19	1,531	0.106	0.461	0.105	229	17,625	0.109	0.232
2	19	1,539	0.113	0.489	0.158	228	17,729	0.104	0.235
3	19	1,548	0.128	0.512	0.158	228	17,774	0.107	0.231
4	19	1,490	0.128	0.546	0.105	223	17,588	0.105	0.229
1	19	1,497	0.145	0.562	0.211	222	17,227	0.100	0.230
2	19	1,631	0.142	0.547	0.105	221	16,901	0.100	0.219
3	19	1,647	0.152	0.584	0.211	218	16,699	0.107	0.224
4	19	1,678	0.143	0.531	0.158	218	17,078	0.104	0.221
1	19	1,675	0.124	0.540	0.158	219	17,295	0.103	0.212
2	19	1,624	0.153	0.575	0.211	219	16,851	0.106	0.238
3	19	1,629	0.159	0.556	0.263	221	16,740	0.114	0.250
4	19	1,698	0.140	0.576	0.105	217	17,147	0.113	0.250
1	19	1,645	0.146	0.570	0.105	217	17,239	0.119	0.261
2	19	1,743	0.135	0.614	0.211	217	16,991	0.102	0.219
3	19	1,380	0.133	0.619	0.158	217	15,830	0.102	0.211

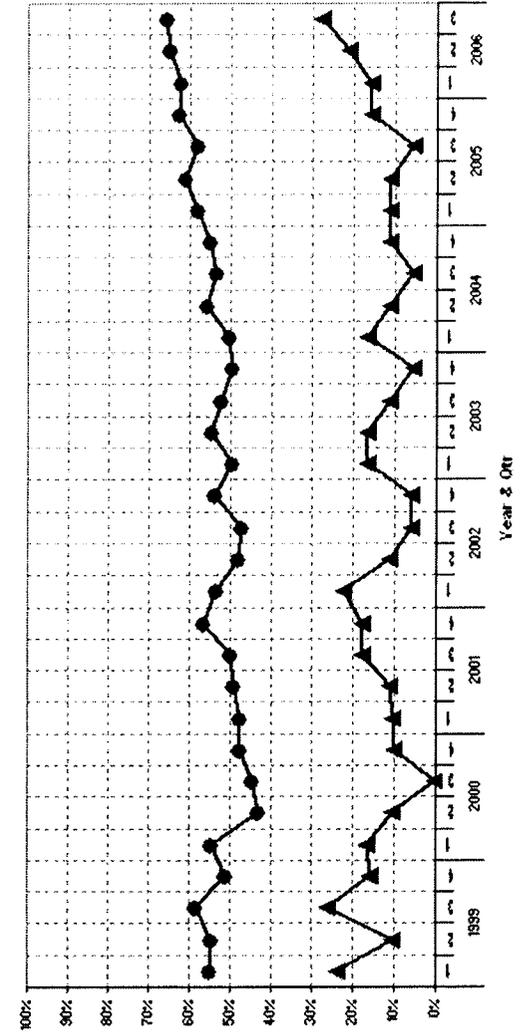
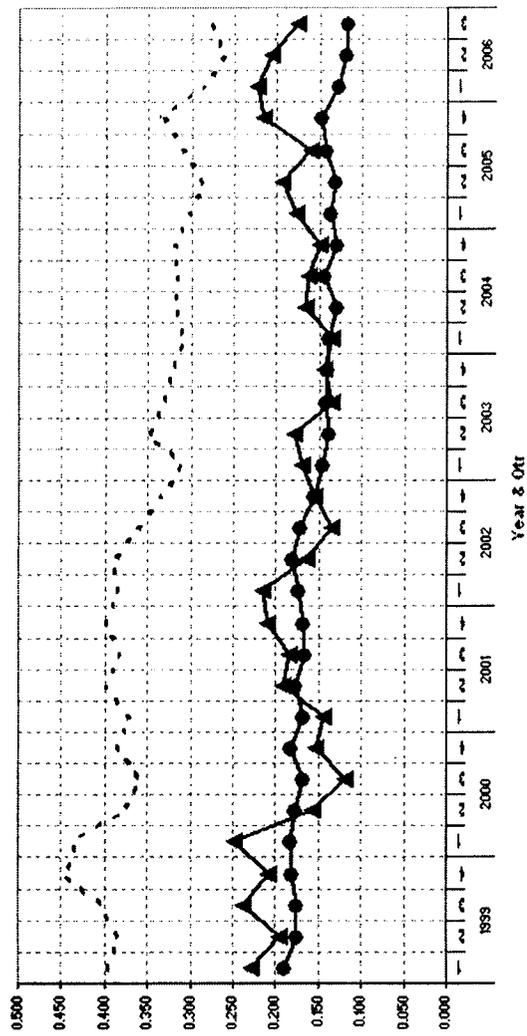


QIQM #16 Pain (Low Risk)



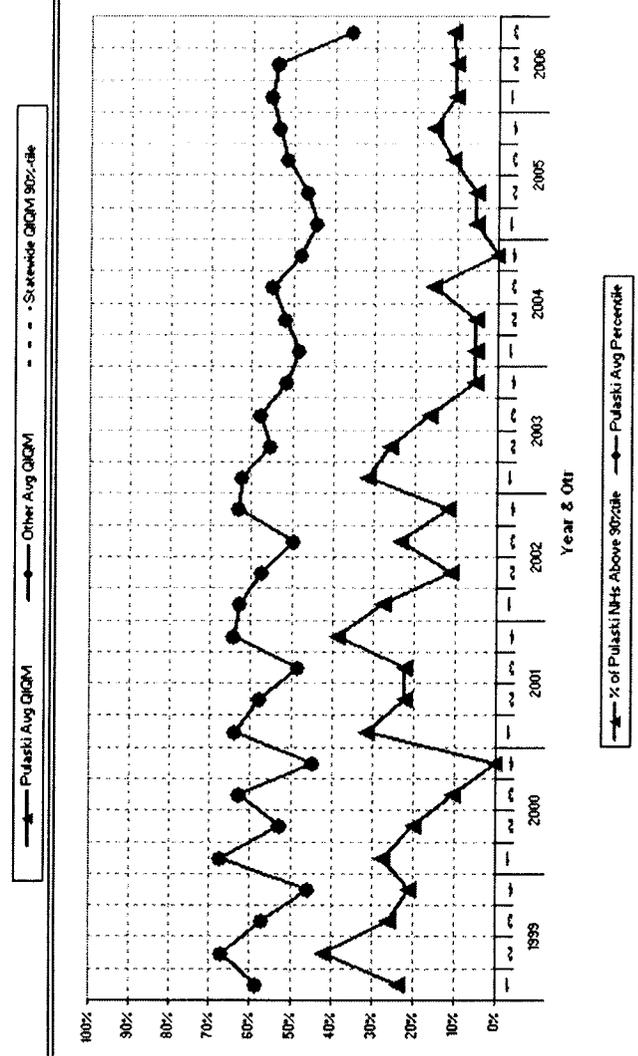
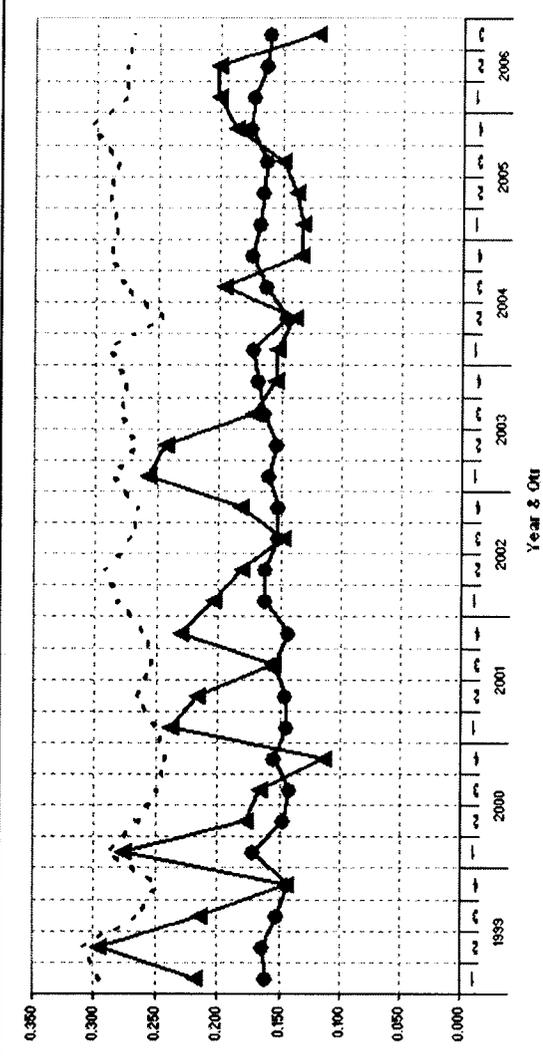
QIQM #16 Pain (High Risk)

Qtr	Pulaski County				Other Counties			AR 90%tile	
	# Fac	# Res	Avg QIQM	Avg %tile	% GE 90%tile	# Fac	# Res		Avg QIQM
1	22	2,016	0.228	0.548	0.238	234	19,333	0.189	0.397
2	22	1,845	0.196	0.547	0.105	233	18,833	0.174	0.385
3	21	1,771	0.237	0.583	0.263	235	18,946	0.175	0.405
4	22	1,685	0.208	0.512	0.158	237	18,558	0.181	0.444
1	22	1,575	0.248	0.547	0.167	235	18,843	0.183	0.433
2	20	1,358	0.157	0.430	0.105	232	18,347	0.176	0.380
3	20	1,465	0.119	0.447	0.000	232	18,343	0.168	0.357
4	20	1,565	0.154	0.475	0.100	233	18,375	0.182	0.366
1	19	1,490	0.143	0.477	0.105	232	18,635	0.168	0.372
2	19	1,478	0.192	0.494	0.111	231	18,413	0.177	0.400
3	19	1,336	0.185	0.498	0.176	230	18,231	0.166	0.382
4	19	1,344	0.209	0.565	0.176	231	17,715	0.168	0.400
1	19	1,307	0.215	0.533	0.222	230	17,598	0.173	0.385
2	20	1,315	0.165	0.483	0.111	227	17,534	0.180	0.391
3	19	1,407	0.135	0.474	0.059	227	17,596	0.172	0.364
4	18	1,454	0.155	0.538	0.059	227	17,556	0.155	0.333
1	19	1,531	0.170	0.495	0.167	229	17,625	0.146	0.313
2	19	1,539	0.178	0.547	0.167	228	17,729	0.139	0.348
3	19	1,548	0.135	0.524	0.111	228	17,774	0.141	0.333
4	19	1,490	0.145	0.495	0.056	223	17,588	0.140	0.323
1	19	1,497	0.136	0.504	0.167	222	17,227	0.139	0.308
2	19	1,631	0.165	0.560	0.111	221	16,901	0.130	0.320
3	19	1,647	0.163	0.533	0.066	218	16,699	0.144	0.316
4	19	1,678	0.150	0.550	0.111	218	17,078	0.130	0.320
1	19	1,675	0.178	0.580	0.111	219	17,295	0.137	0.302
2	19	1,624	0.193	0.610	0.111	219	16,861	0.131	0.286
3	19	1,629	0.160	0.581	0.056	221	16,740	0.141	0.309
4	19	1,698	0.215	0.628	0.158	217	17,147	0.147	0.333
1	19	1,645	0.223	0.622	0.158	217	17,239	0.127	0.286
2	19	1,743	0.206	0.650	0.211	217	16,991	0.119	0.261
3	19	1,360	0.176	0.658	0.278	217	15,830	0.116	0.277



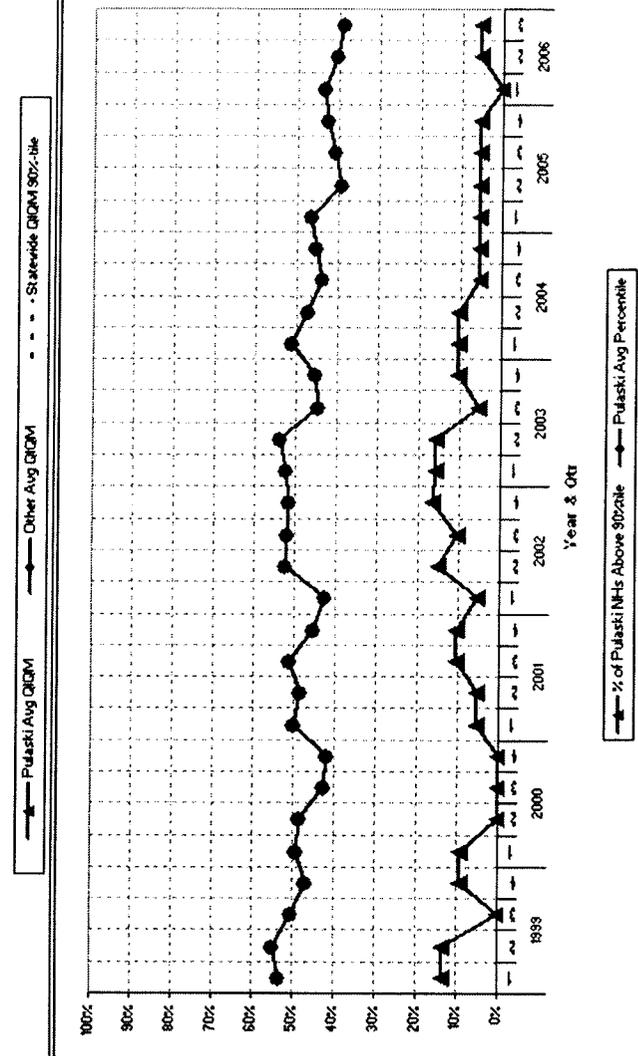
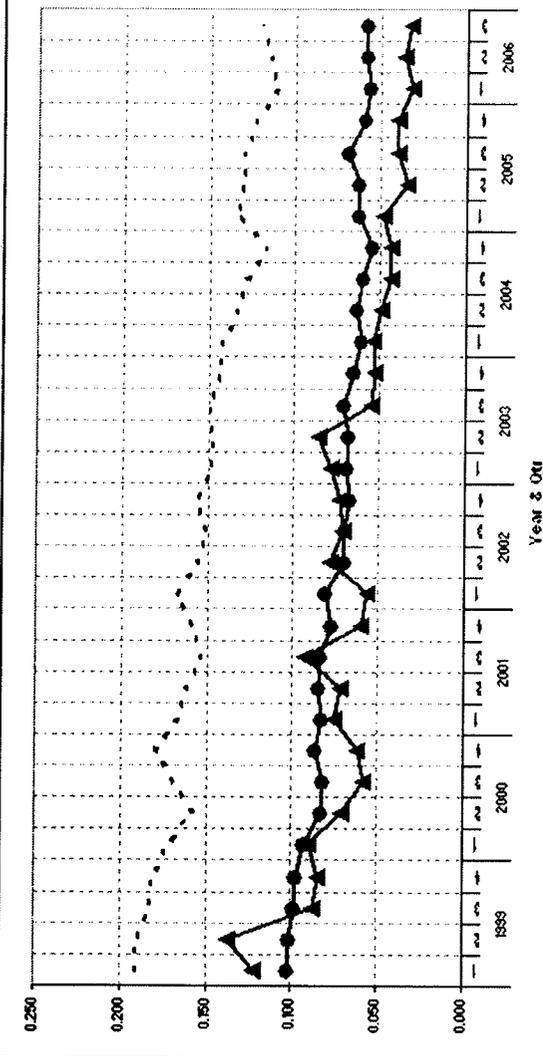
QIQM #17 Need Help With Daily Activities

Qtr	Pulaski County			Other Counties			AR 90%tile
	# Fac	# Res	Avg QIQM	# Fac	# Res	Avg QIQM	
1	22	2,016	0.219	234	19,333	0.161	0.295
2	22	1,845	0.296	233	18,833	0.164	0.307
3	21	1,771	0.215	235	18,946	0.152	0.266
4	22	1,685	0.145	237	18,558	0.143	0.250
1	22	1,575	0.278	235	18,843	0.171	0.289
2	20	1,358	0.178	232	18,347	0.147	0.267
3	20	1,465	0.167	232	18,343	0.141	0.250
4	20	1,565	0.114	233	18,375	0.155	0.243
1	19	1,490	0.239	232	18,635	0.145	0.250
2	19	1,478	0.217	231	18,413	0.146	0.267
3	19	1,336	0.156	230	18,231	0.154	0.254
4	19	1,344	0.232	231	17,715	0.143	0.259
1	19	1,307	0.205	230	17,598	0.163	0.282
2	20	1,315	0.182	227	17,534	0.162	0.292
3	19	1,407	0.148	227	17,596	0.152	0.271
4	18	1,454	0.183	227	17,556	0.152	0.266
1	19	1,531	0.259	229	17,625	0.159	0.288
2	19	1,539	0.244	228	17,729	0.153	0.269
3	19	1,548	0.172	228	17,774	0.163	0.281
4	19	1,490	0.154	223	17,588	0.168	0.276
1	19	1,497	0.153	222	17,227	0.173	0.290
2	19	1,631	0.139	221	16,901	0.145	0.248
3	19	1,647	0.156	218	16,699	0.163	0.277
4	19	1,678	0.134	218	17,078	0.174	0.290
1	19	1,675	0.133	219	17,295	0.167	0.283
2	19	1,624	0.138	219	16,851	0.165	0.292
3	19	1,629	0.149	221	16,740	0.163	0.282
4	19	1,698	0.188	217	17,147	0.174	0.304
1	19	1,645	0.202	217	17,239	0.173	0.278
2	19	1,743	0.202	217	16,991	0.163	0.276
3	19	1,380	0.121	217	15,830	0.160	0.271



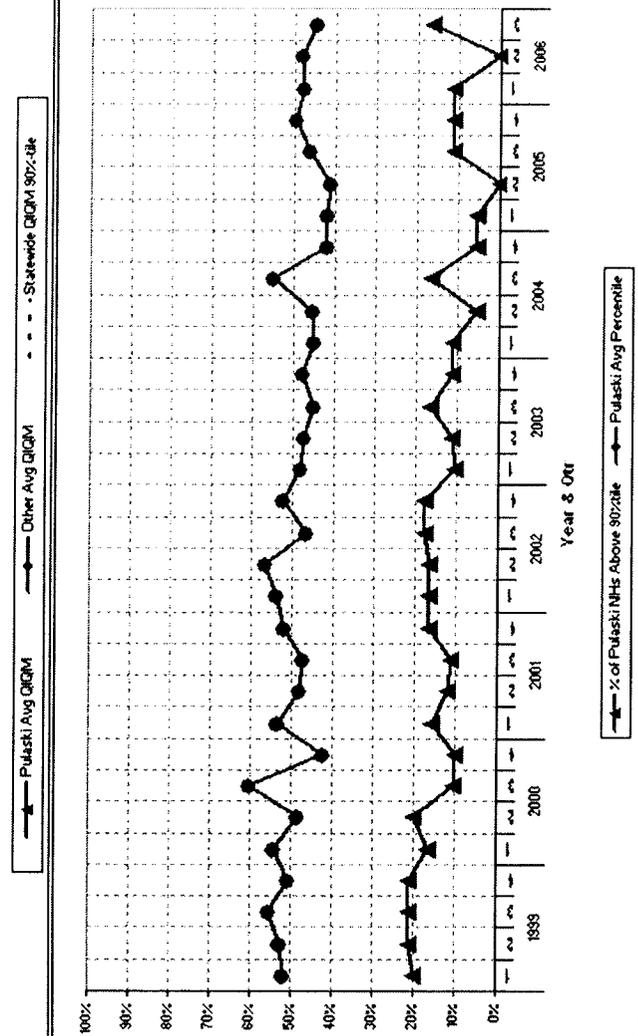
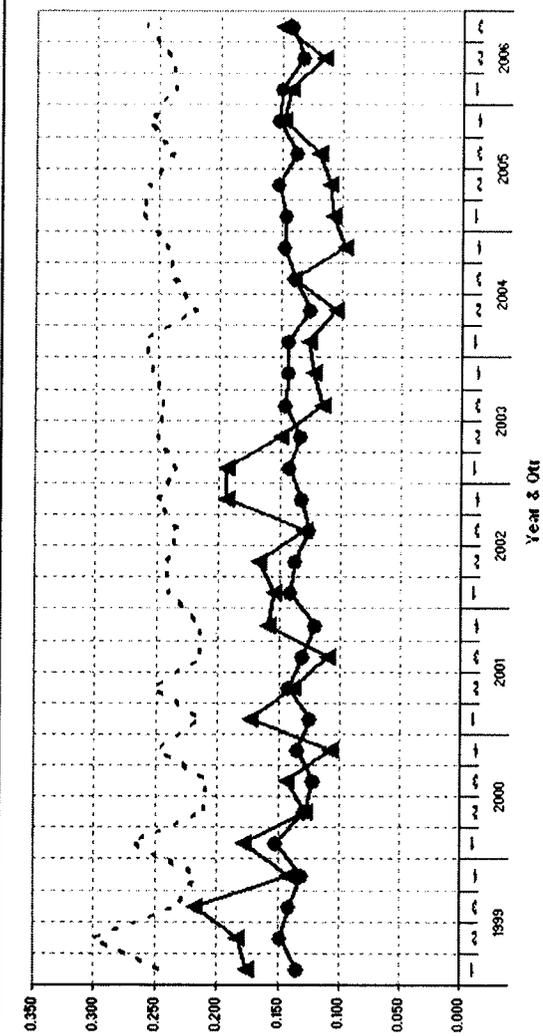
QIQM #18 in Bed Or Chair

Qtr	Pulaski County				Other Counties			AR Percentile
	# Fac	# Res	Avg QIQM	% GE above	# Fac	# Res	Avg QIQM	
1	22	2,016	0.122	0.533	234	19,333	0.102	0.191
2	22	1,845	0.136	0.551	233	18,833	0.102	0.191
3	21	1,771	0.088	0.504	235	18,946	0.098	0.182
4	22	1,685	0.085	0.469	237	18,558	0.098	0.181
1	22	1,575	0.091	0.493	235	18,843	0.093	0.172
2	20	1,368	0.071	0.494	232	19,347	0.083	0.158
3	20	1,465	0.059	0.426	232	18,343	0.083	0.169
4	20	1,565	0.062	0.419	233	18,375	0.087	0.181
1	19	1,490	0.076	0.498	232	18,635	0.083	0.167
2	19	1,478	0.072	0.484	231	18,413	0.085	0.163
3	19	1,336	0.093	0.512	230	18,231	0.084	0.153
4	19	1,344	0.060	0.454	231	17,715	0.078	0.159
1	19	1,307	0.057	0.426	230	17,598	0.081	0.168
2	20	1,315	0.078	0.524	227	17,534	0.071	0.156
3	19	1,407	0.071	0.520	227	17,596	0.071	0.151
4	18	1,454	0.073	0.514	227	17,556	0.067	0.157
1	19	1,531	0.079	0.522	229	17,625	0.070	0.147
2	19	1,539	0.086	0.537	228	17,729	0.069	0.147
3	19	1,548	0.055	0.445	228	17,774	0.071	0.150
4	19	1,490	0.053	0.454	223	17,588	0.066	0.143
1	19	1,497	0.054	0.513	222	17,227	0.061	0.142
2	19	1,631	0.049	0.473	221	16,901	0.064	0.133
3	19	1,647	0.044	0.437	218	16,699	0.060	0.128
4	19	1,678	0.044	0.453	218	17,078	0.055	0.117
1	19	1,675	0.049	0.467	219	17,295	0.063	0.134
2	19	1,624	0.035	0.394	219	16,891	0.063	0.131
3	19	1,629	0.040	0.408	221	16,740	0.069	0.129
4	19	1,698	0.040	0.428	217	17,147	0.059	0.123
1	19	1,645	0.032	0.434	217	17,239	0.056	0.111
2	19	1,743	0.036	0.405	217	16,991	0.058	0.115
3	19	1,380	0.033	0.388	217	15,830	0.058	0.119



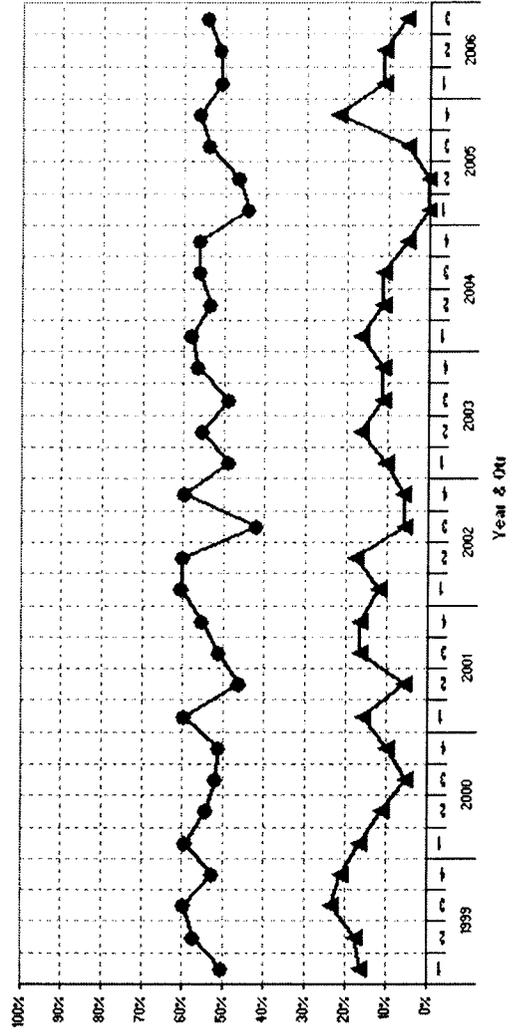
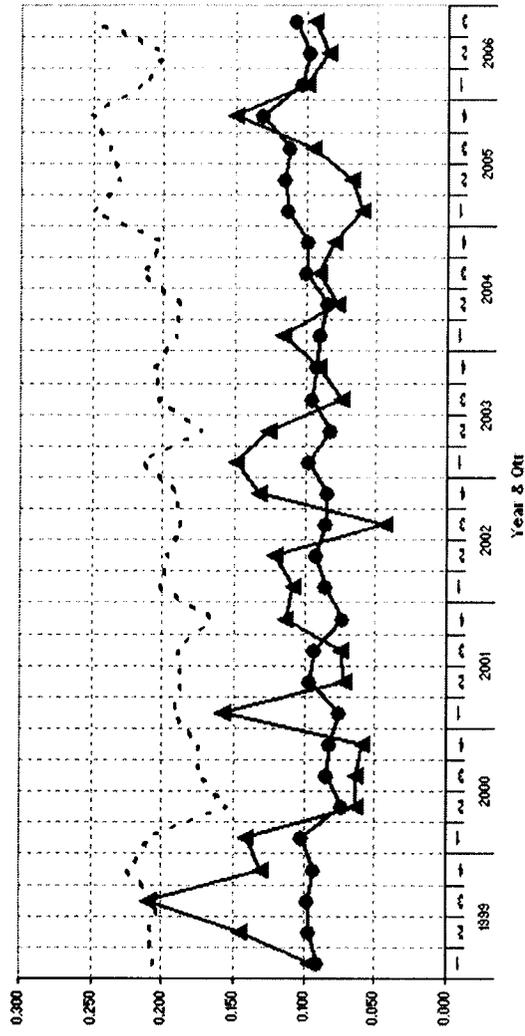
**QIGM #19 Ability To Move In Room Worse**

Qtr	Putaski County				Other Counties			AR 90ztile
	# Fac	# Res	Avg QIGM	Avg 90ztile	# Fac	# Res	Avg QIGM	
1	22	2,016	0.176	0.520	234	19,333	0.134	0.249
2	22	1,945	0.183	0.527	233	18,833	0.148	0.298
3	21	1,771	0.218	0.554	235	18,946	0.140	0.233
4	22	1,885	0.142	0.509	237	18,558	0.130	0.219
1	22	1,575	0.179	0.543	235	18,843	0.153	0.268
2	20	1,368	0.128	0.483	232	18,347	0.128	0.211
3	20	1,465	0.143	0.605	232	18,343	0.121	0.209
4	20	1,565	0.107	0.423	233	18,375	0.134	0.247
1	19	1,490	0.174	0.536	232	18,635	0.123	0.216
2	19	1,478	0.137	0.491	231	18,413	0.142	0.250
3	19	1,336	0.110	0.471	230	18,231	0.130	0.214
4	19	1,344	0.160	0.521	231	17,715	0.120	0.214
1	19	1,307	0.154	0.539	230	17,598	0.141	0.240
2	20	1,315	0.167	0.564	227	17,534	0.137	0.243
3	19	1,407	0.129	0.467	227	17,596	0.126	0.234
4	18	1,454	0.194	0.524	227	17,556	0.131	0.250
1	19	1,531	0.194	0.482	229	17,625	0.142	0.234
2	19	1,539	0.150	0.472	228	17,729	0.133	0.250
3	19	1,548	0.115	0.451	228	17,774	0.146	0.245
4	19	1,490	0.123	0.479	223	17,588	0.143	0.253
1	19	1,497	0.127	0.450	222	17,227	0.143	0.260
2	19	1,631	0.105	0.453	221	16,901	0.125	0.220
3	19	1,647	0.139	0.549	218	16,699	0.138	0.238
4	19	1,678	0.098	0.419	218	17,078	0.147	0.241
1	19	1,675	0.107	0.418	219	17,295	0.145	0.263
2	19	1,624	0.109	0.412	219	16,851	0.152	0.258
3	19	1,629	0.119	0.462	221	16,740	0.137	0.238
4	19	1,698	0.148	0.496	217	17,147	0.152	0.259
1	19	1,645	0.141	0.476	217	17,239	0.149	0.236
2	19	1,743	0.115	0.482	217	16,991	0.131	0.239
3	19	1,380	0.150	0.447	217	15,830	0.140	0.261

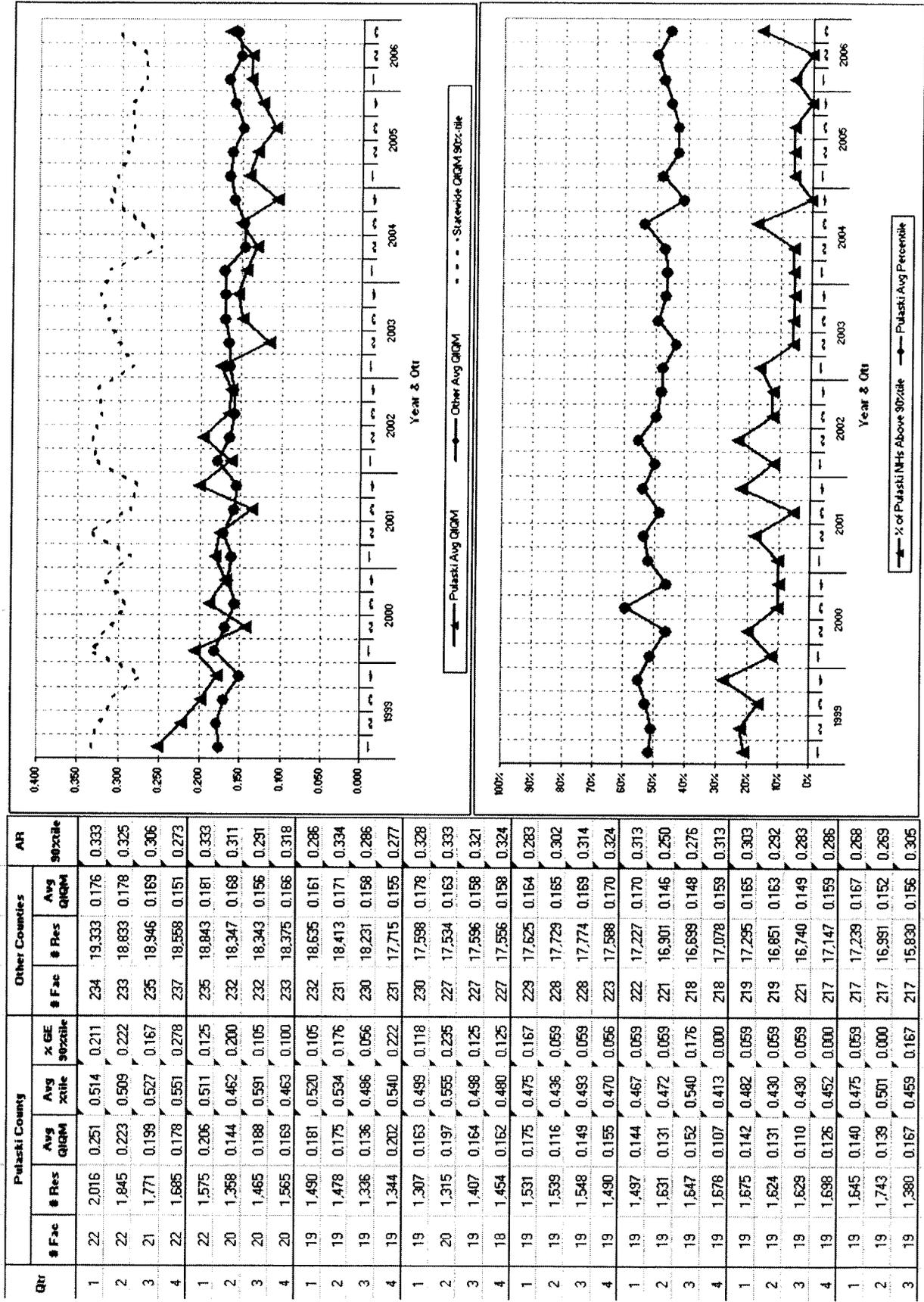


QIQM #19 Ability To Move In Room Worse (Low Risk)

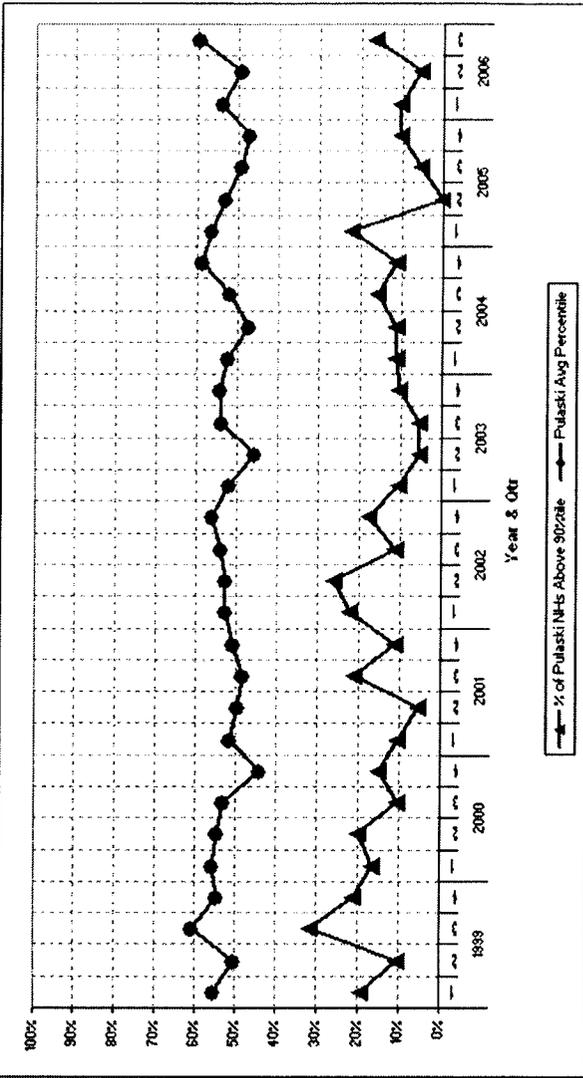
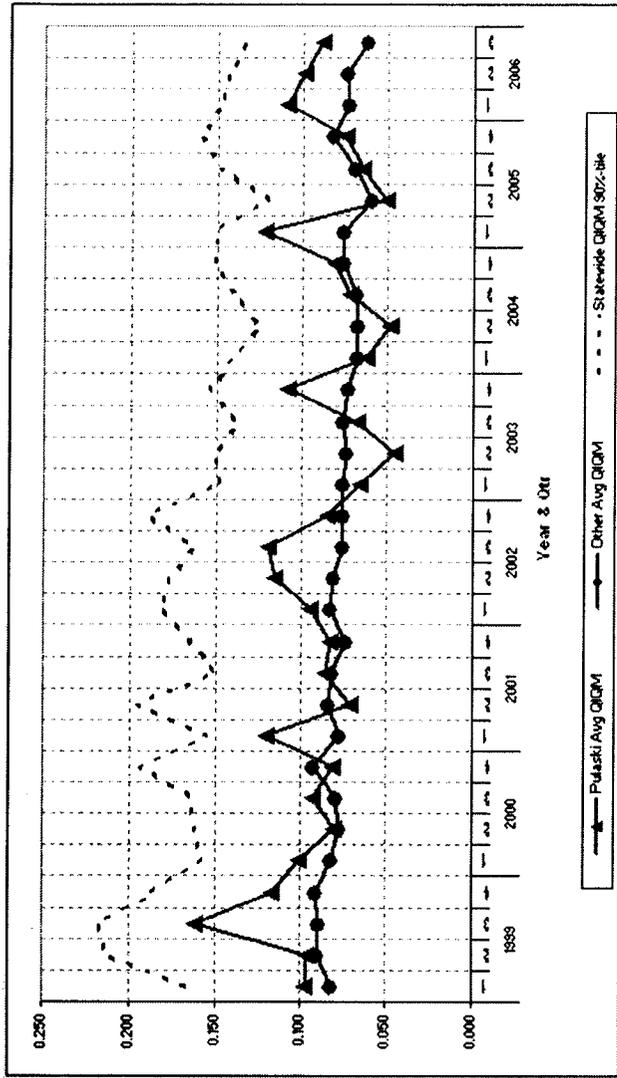
Qtr	Pulaski County				Other Counties			AR	
	# Fac	# Res	Avg QIQM	Avg %tile	% GE 90%tile	# Fac	# Res		Avg QIQM
1	22	2,016	0.096	0.505	0.167	234	19,333	0.091	0.206
2	22	1,845	0.146	0.571	0.176	233	18,833	0.096	0.211
3	21	1,771	0.210	0.596	0.235	235	18,946	0.098	0.202
4	22	1,695	0.130	0.527	0.211	237	18,558	0.093	0.224
1	22	1,575	0.142	0.593	0.167	235	18,843	0.101	0.210
2	20	1,368	0.063	0.541	0.111	232	18,347	0.073	0.154
3	20	1,465	0.064	0.519	0.056	232	18,343	0.085	0.174
4	20	1,565	0.059	0.511	0.100	233	18,375	0.082	0.174
1	19	1,490	0.158	0.594	0.158	232	18,635	0.075	0.192
2	19	1,478	0.073	0.463	0.059	231	18,413	0.096	0.188
3	19	1,336	0.074	0.510	0.167	230	18,231	0.093	0.188
4	19	1,344	0.114	0.552	0.167	231	17,715	0.073	0.167
1	19	1,307	0.108	0.602	0.118	230	17,598	0.085	0.200
2	20	1,315	0.121	0.600	0.176	227	17,534	0.092	0.197
3	19	1,407	0.044	0.419	0.069	227	17,596	0.086	0.188
4	18	1,454	0.132	0.598	0.063	227	17,556	0.085	0.190
1	19	1,531	0.149	0.490	0.105	229	17,625	0.098	0.213
2	19	1,539	0.126	0.555	0.167	228	17,728	0.082	0.175
3	19	1,548	0.074	0.488	0.111	228	17,774	0.095	0.201
4	19	1,490	0.091	0.585	0.111	223	17,588	0.092	0.207
1	19	1,497	0.116	0.581	0.167	222	17,227	0.090	0.190
2	19	1,631	0.078	0.534	0.111	221	16,901	0.084	0.190
3	19	1,647	0.091	0.563	0.111	218	16,699	0.089	0.214
4	19	1,678	0.080	0.562	0.056	218	17,078	0.098	0.202
1	19	1,675	0.060	0.442	0.000	219	17,295	0.113	0.250
2	19	1,624	0.068	0.464	0.000	219	16,861	0.114	0.230
3	19	1,629	0.095	0.540	0.056	221	16,740	0.112	0.238
4	19	1,698	0.150	0.561	0.222	217	17,147	0.130	0.250
1	19	1,645	0.098	0.505	0.111	217	17,239	0.103	0.214
2	19	1,743	0.064	0.511	0.111	217	16,991	0.098	0.200
3	19	1,380	0.094	0.540	0.059	217	15,830	0.108	0.250



QIQM #19 Ability To Move In Room Worse (High Risk)



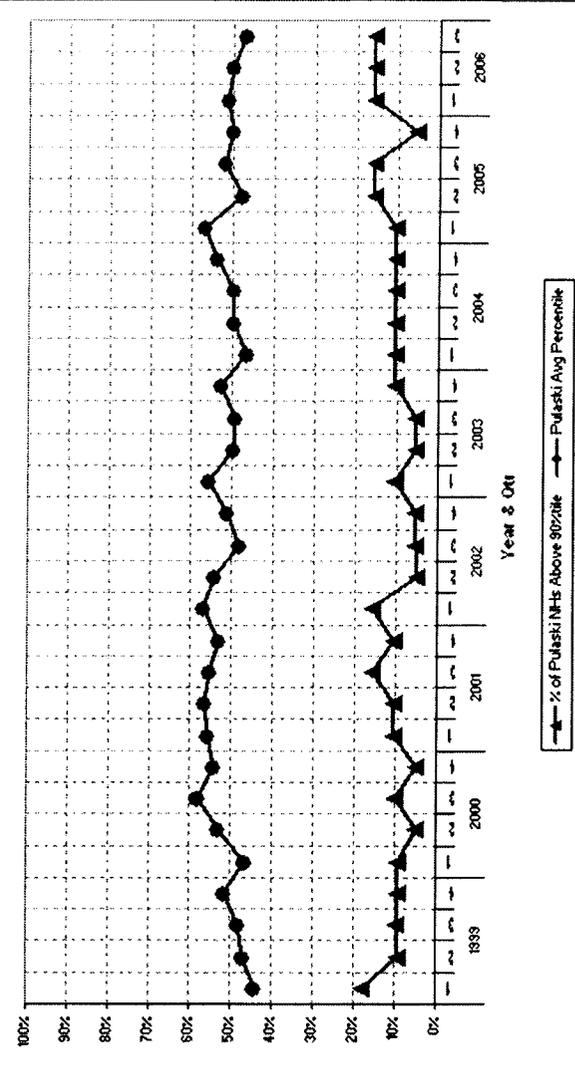
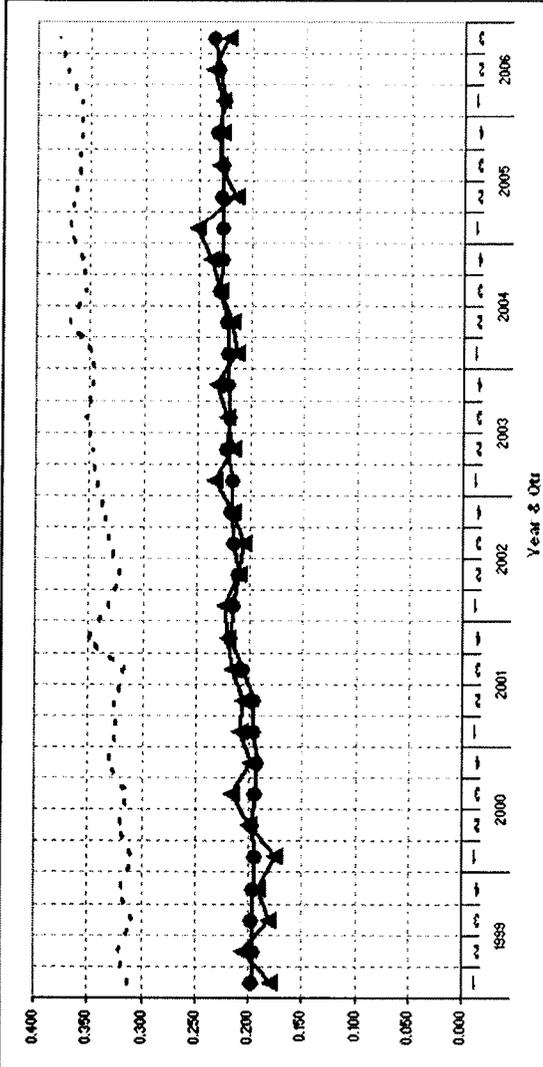
QIQM #20 Decline in Rom



Qtr	Pulaski County				Other Counties				AR
	# Fac	# Res	Avg QIQM	% BE 90thile	# Fac	# Res	Avg QIQM	% BE 90thile	
1	22	2,016	0.097	0.552	0.190	234	19,333	0.082	0.167
2	22	1,845	0.097	0.505	0.105	233	18,833	0.091	0.213
3	21	1,771	0.161	0.606	0.316	235	18,946	0.090	0.217
4	22	1,685	0.116	0.547	0.211	237	18,558	0.091	0.185
1	22	1,575	0.101	0.558	0.167	235	18,843	0.083	0.158
2	20	1,368	0.080	0.546	0.200	232	18,347	0.077	0.162
3	20	1,465	0.093	0.530	0.105	232	18,343	0.079	0.165
4	20	1,585	0.081	0.442	0.150	233	18,375	0.093	0.193
1	19	1,490	0.120	0.514	0.105	232	18,635	0.077	0.155
2	19	1,478	0.071	0.495	0.056	231	18,413	0.084	0.195
3	19	1,336	0.085	0.485	0.211	230	18,231	0.082	0.150
4	19	1,344	0.083	0.508	0.111	231	17,715	0.074	0.164
1	19	1,307	0.095	0.526	0.222	230	17,598	0.083	0.182
2	20	1,315	0.116	0.528	0.263	227	17,534	0.081	0.177
3	19	1,407	0.119	0.539	0.111	227	17,596	0.075	0.164
4	18	1,454	0.095	0.563	0.176	227	17,556	0.076	0.189
1	19	1,531	0.066	0.519	0.105	229	17,625	0.075	0.148
2	19	1,539	0.045	0.469	0.053	228	17,729	0.074	0.151
3	19	1,546	0.067	0.538	0.056	228	17,774	0.076	0.137
4	19	1,490	0.109	0.542	0.105	223	17,588	0.073	0.154
1	19	1,497	0.062	0.523	0.111	222	17,227	0.067	0.139
2	19	1,631	0.048	0.472	0.111	221	16,901	0.068	0.126
3	19	1,647	0.072	0.518	0.158	218	16,699	0.069	0.140
4	19	1,678	0.082	0.589	0.111	218	17,078	0.075	0.150
1	19	1,675	0.122	0.564	0.222	219	17,295	0.075	0.149
2	19	1,624	0.051	0.531	0.000	219	16,851	0.059	0.122
3	19	1,629	0.065	0.491	0.056	221	16,740	0.069	0.147
4	19	1,698	0.075	0.473	0.105	217	17,147	0.083	0.161
1	19	1,645	0.109	0.540	0.105	217	17,239	0.073	0.148
2	19	1,743	0.100	0.493	0.053	217	16,991	0.074	0.143
3	19	1,390	0.088	0.595	0.167	217	15,800	0.062	0.134

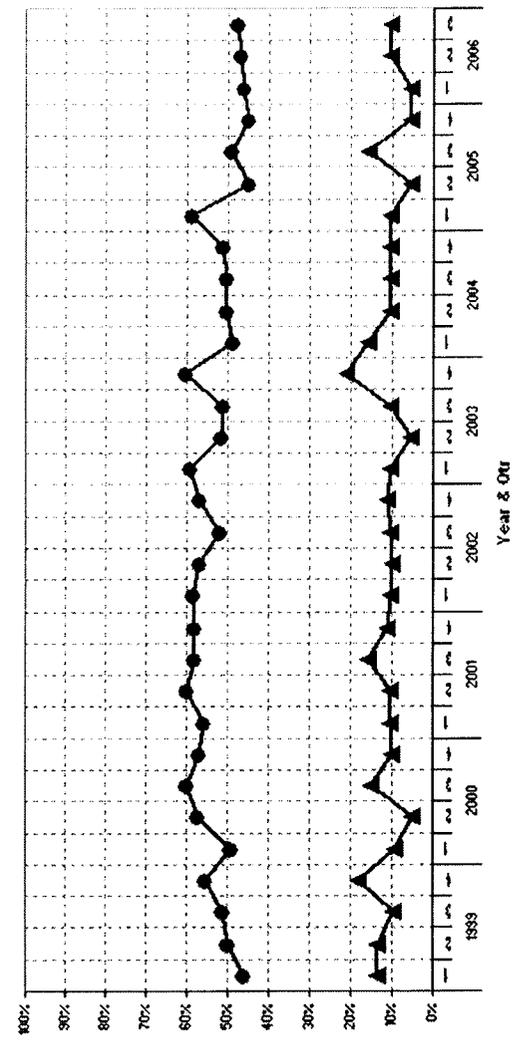
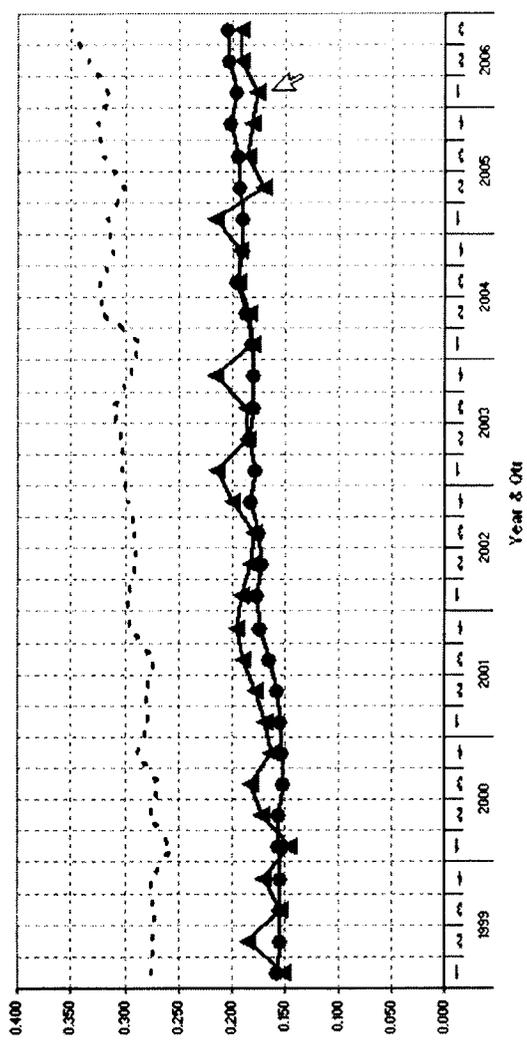
QIOM #21 Antipsychotic Used In Absence Of Condition

Qtr	Pulaski County				Other Counties			AR
	# Fac	# Res	Avg QIOM	% GE sozzile	# Fac	# Res	Avg QIOM	
1	22	2,016	0.180	0.441	234	19,333	0.197	0.312
2	22	1,845	0.206	0.463	233	18,833	0.195	0.323
3	21	1,771	0.181	0.482	235	18,946	0.197	0.308
4	22	1,695	0.191	0.515	237	18,558	0.195	0.321
1	22	1,575	0.175	0.464	235	18,843	0.194	0.308
2	20	1,358	0.200	0.532	232	18,347	0.198	0.322
3	20	1,465	0.216	0.580	232	18,343	0.194	0.313
4	20	1,565	0.199	0.543	233	18,375	0.193	0.333
1	19	1,490	0.209	0.557	232	18,635	0.195	0.324
2	19	1,478	0.206	0.567	231	18,413	0.196	0.326
3	19	1,336	0.216	0.563	230	18,231	0.205	0.318
4	19	1,344	0.220	0.532	231	17,715	0.217	0.351
1	19	1,307	0.223	0.570	230	17,598	0.214	0.333
2	20	1,315	0.211	0.544	227	17,534	0.210	0.321
3	19	1,407	0.206	0.481	227	17,596	0.214	0.329
4	18	1,454	0.216	0.510	227	17,556	0.217	0.336
1	19	1,531	0.234	0.558	229	17,625	0.216	0.343
2	19	1,539	0.217	0.496	228	17,729	0.222	0.346
3	19	1,548	0.222	0.493	228	17,774	0.219	0.354
4	19	1,490	0.233	0.527	223	17,588	0.220	0.346
1	19	1,497	0.213	0.464	222	17,227	0.221	0.345
2	19	1,631	0.218	0.497	221	16,901	0.222	0.370
3	19	1,647	0.229	0.497	218	16,639	0.230	0.353
4	19	1,678	0.239	0.540	218	17,078	0.226	0.356
1	19	1,675	0.251	0.568	219	17,295	0.227	0.370
2	19	1,624	0.214	0.475	219	16,851	0.228	0.364
3	19	1,629	0.231	0.518	221	16,740	0.226	0.360
4	19	1,698	0.228	0.499	217	17,147	0.231	0.358
1	19	1,645	0.227	0.512	217	17,239	0.224	0.358
2	19	1,743	0.237	0.501	217	16,991	0.230	0.372
3	19	1,380	0.222	0.469	217	15,830	0.234	0.380

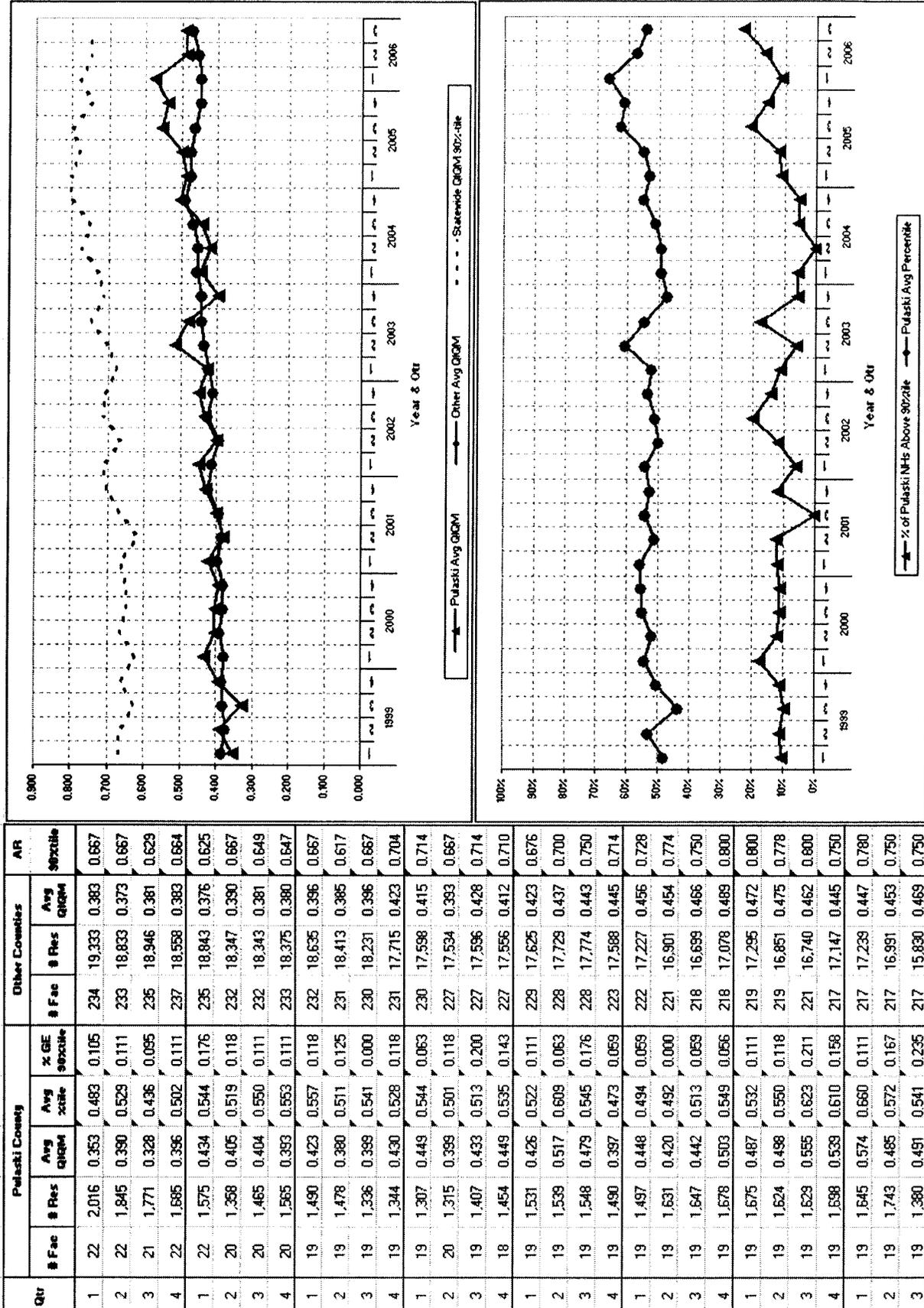


QIQM #21 Antipsychotic Used In Absence Of Condition (Low Risk)

Qtr	Pulaski County				Other Counties			AR 90%ile	
	# Fac	# Res	Avg QIQM	Avg %ile	% GE %ile	# Fac	# Res		Avg QIQM
1	22	2,016	0.151	0.462	0.136	234	19,333	0.157	0.274
2	22	1,845	0.185	0.500	0.136	233	18,833	0.155	0.273
3	21	1,771	0.154	0.513	0.095	235	18,946	0.154	0.272
4	22	1,685	0.170	0.554	0.182	237	18,558	0.155	0.276
1	22	1,575	0.147	0.491	0.091	235	18,843	0.156	0.256
2	20	1,358	0.172	0.574	0.050	232	18,347	0.156	0.278
3	20	1,465	0.182	0.600	0.150	232	18,343	0.153	0.267
4	20	1,565	0.163	0.568	0.100	233	18,375	0.153	0.289
1	19	1,490	0.169	0.558	0.105	232	18,635	0.154	0.277
2	19	1,478	0.179	0.601	0.105	231	18,413	0.158	0.280
3	19	1,336	0.190	0.581	0.158	230	18,231	0.165	0.271
4	19	1,344	0.196	0.580	0.111	231	17,715	0.174	0.295
1	19	1,307	0.192	0.584	0.105	230	17,598	0.177	0.298
2	20	1,315	0.182	0.568	0.100	227	17,534	0.173	0.289
3	19	1,407	0.179	0.520	0.105	227	17,596	0.176	0.290
4	18	1,454	0.200	0.570	0.111	227	17,556	0.183	0.296
1	19	1,531	0.215	0.590	0.105	229	17,625	0.179	0.302
2	19	1,539	0.185	0.517	0.053	228	17,729	0.183	0.302
3	19	1,548	0.187	0.510	0.105	228	17,774	0.180	0.312
4	19	1,490	0.216	0.602	0.211	223	17,588	0.179	0.296
1	19	1,497	0.181	0.489	0.158	222	17,227	0.181	0.286
2	19	1,631	0.184	0.505	0.105	221	16,901	0.187	0.320
3	19	1,647	0.194	0.503	0.105	218	16,699	0.196	0.322
4	19	1,678	0.192	0.511	0.105	218	17,078	0.190	0.311
1	19	1,675	0.216	0.590	0.105	219	17,295	0.189	0.317
2	19	1,624	0.170	0.449	0.053	219	16,851	0.193	0.301
3	19	1,629	0.185	0.492	0.158	221	16,740	0.194	0.319
4	19	1,698	0.182	0.451	0.053	217	17,147	0.202	0.326
1	19	1,645	0.177	0.463	0.053	217	17,239	0.196	0.316
2	19	1,743	0.192	0.469	0.105	217	16,991	0.202	0.333
3	19	1,380	0.191	0.479	0.105	217	15,830	0.204	0.349

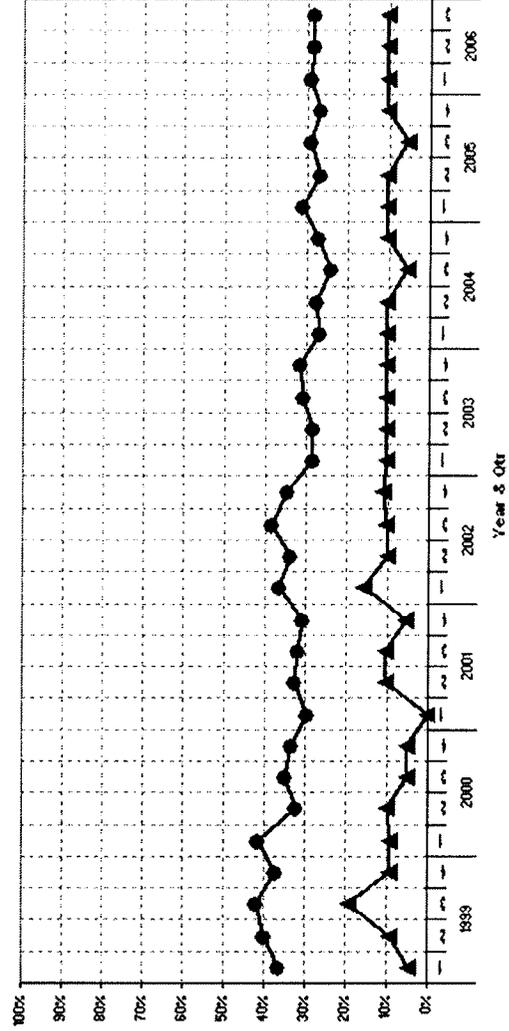
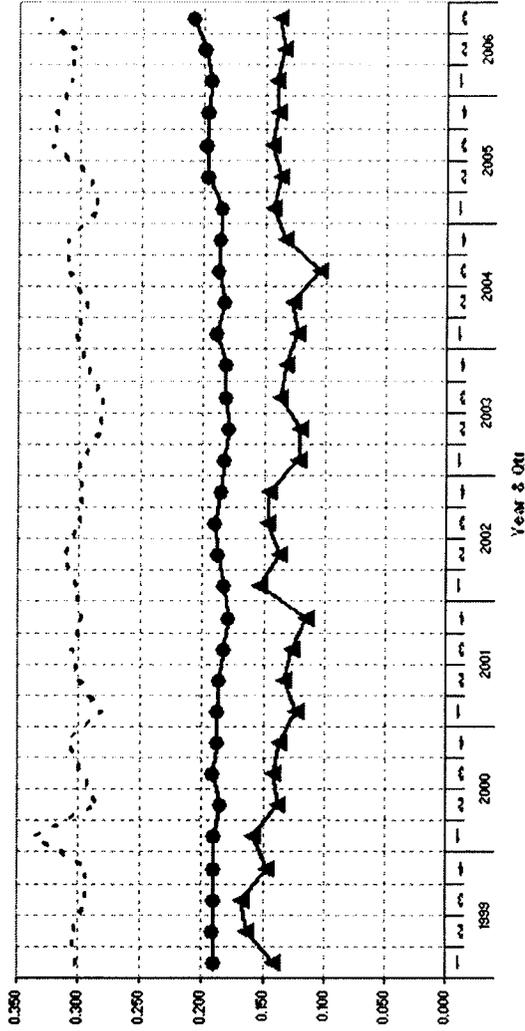


QIOM #21 Antipsychotic Used In Absence Of Condition (High Risk)



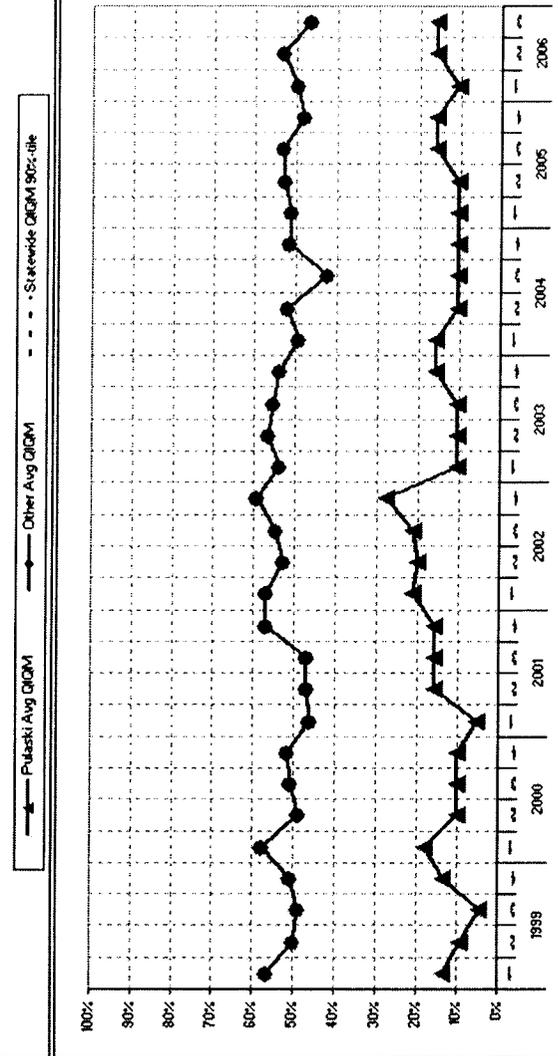
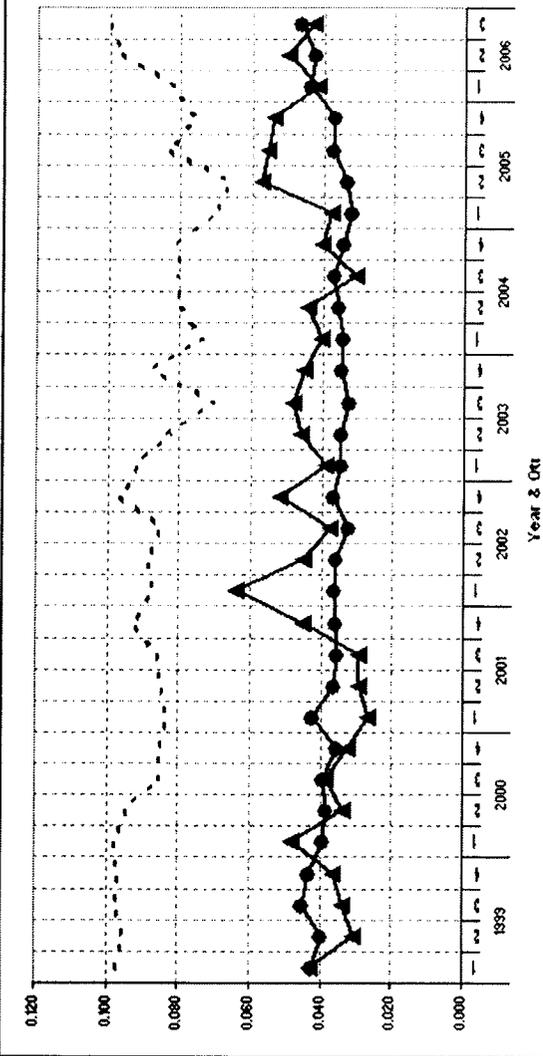
QIQM #22 Antianxiety

Qtr	Pulaski County				Other Counties			AR 90thile
	# Fac	# Res	Avg QIQM	% GE 90thile	# Fac	# Res	Avg QIQM	
1	22	2,016	0.142	0.367	234	19,333	0.190	0.302
2	22	1,845	0.164	0.400	233	18,833	0.192	0.306
3	21	1,771	0.168	0.421	235	18,946	0.191	0.294
4	22	1,685	0.147	0.372	237	18,558	0.190	0.294
1	22	1,575	0.158	0.417	235	18,843	0.191	0.333
2	20	1,358	0.138	0.323	232	18,347	0.185	0.285
3	20	1,465	0.142	0.351	232	18,343	0.192	0.296
4	20	1,565	0.137	0.335	233	18,375	0.188	0.308
1	19	1,490	0.123	0.298	232	18,635	0.188	0.283
2	19	1,478	0.133	0.327	231	18,413	0.187	0.300
3	19	1,336	0.126	0.319	230	18,231	0.182	0.305
4	19	1,344	0.115	0.307	231	17,715	0.178	0.297
1	19	1,307	0.153	0.365	230	17,598	0.183	0.301
2	20	1,315	0.137	0.338	227	17,534	0.188	0.313
3	19	1,407	0.147	0.384	227	17,586	0.190	0.300
4	18	1,454	0.146	0.347	227	17,556	0.185	0.298
1	19	1,531	0.121	0.285	229	17,625	0.183	0.299
2	19	1,539	0.120	0.284	228	17,729	0.179	0.284
3	19	1,548	0.137	0.306	228	17,774	0.181	0.281
4	19	1,490	0.132	0.315	223	17,588	0.181	0.293
1	19	1,497	0.123	0.271	222	17,227	0.189	0.302
2	19	1,631	0.126	0.278	221	16,901	0.182	0.283
3	19	1,647	0.105	0.241	218	16,699	0.188	0.309
4	19	1,678	0.132	0.273	218	17,078	0.187	0.309
1	19	1,675	0.143	0.310	219	17,295	0.185	0.285
2	19	1,624	0.137	0.271	219	16,851	0.196	0.293
3	19	1,629	0.144	0.294	221	16,740	0.198	0.320
4	19	1,688	0.139	0.270	217	17,147	0.197	0.320
1	19	1,645	0.141	0.294	217	17,238	0.195	0.307
2	19	1,743	0.134	0.283	217	16,991	0.199	0.304
3	19	1,380	0.138	0.285	217	15,830	0.208	0.325



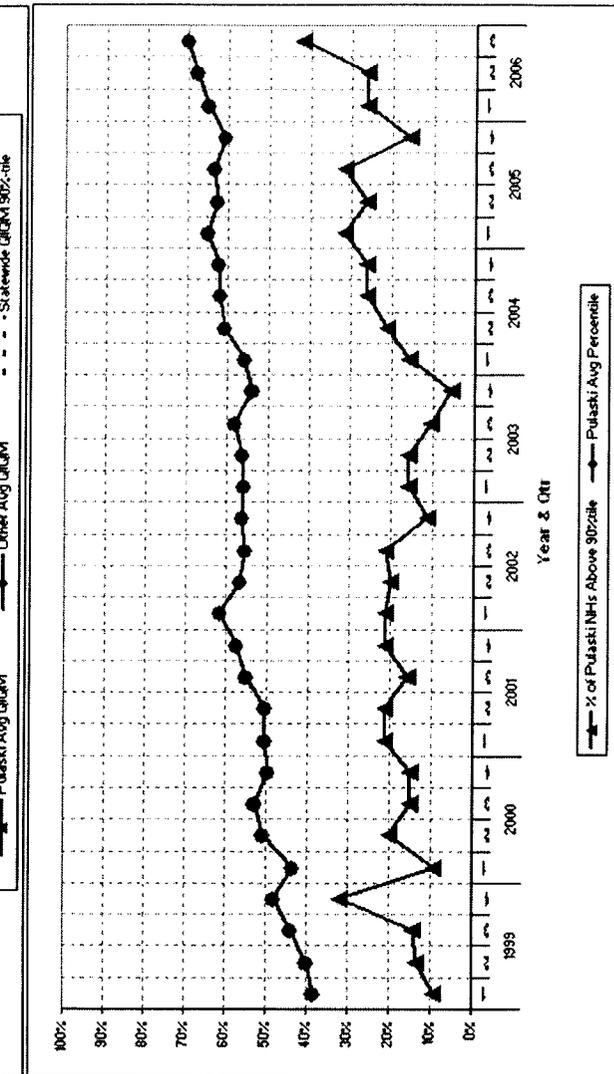
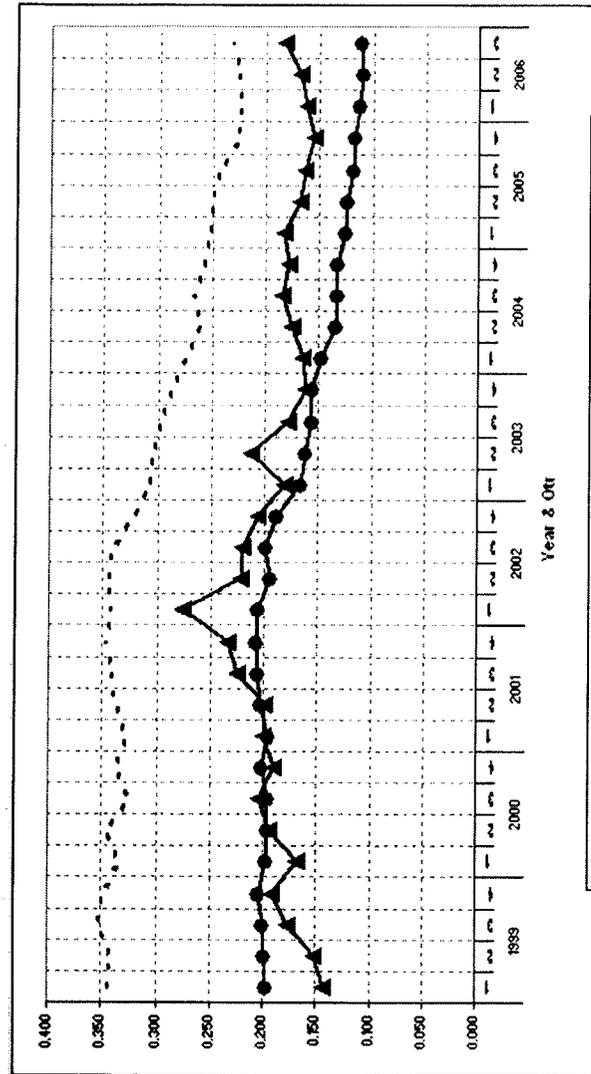
QIQM #23 Hypnotic Use > Twice In Week

Qtr	Pulaski County				Other Counties			AR 90thile
	# Fac	# Res	Avg QIQM	Avg 90thile	# Fac	# Res	Avg QIQM	
1	22	2,016	0.043	0.566	234	19,333	0.043	0.098
2	22	1,845	0.031	0.501	233	18,833	0.040	0.096
3	21	1,771	0.034	0.490	235	18,946	0.045	0.098
4	22	1,695	0.036	0.507	237	18,558	0.043	0.097
1	22	1,575	0.048	0.578	235	18,843	0.039	0.098
2	20	1,368	0.034	0.490	232	18,347	0.039	0.094
3	20	1,465	0.039	0.508	232	18,343	0.040	0.085
4	20	1,585	0.033	0.516	233	18,375	0.035	0.086
1	19	1,490	0.027	0.460	232	18,635	0.042	0.083
2	19	1,478	0.029	0.468	231	18,413	0.036	0.085
3	19	1,336	0.030	0.470	230	18,231	0.035	0.086
4	19	1,344	0.045	0.571	231	17,715	0.036	0.093
1	19	1,307	0.064	0.570	230	17,598	0.037	0.087
2	20	1,315	0.045	0.528	227	17,534	0.036	0.089
3	19	1,407	0.038	0.546	227	17,596	0.032	0.086
4	18	1,454	0.052	0.594	227	17,556	0.037	0.096
1	19	1,531	0.039	0.538	229	17,625	0.034	0.092
2	19	1,539	0.046	0.566	228	17,729	0.035	0.083
3	19	1,548	0.048	0.553	228	17,774	0.032	0.071
4	19	1,490	0.045	0.540	223	17,588	0.035	0.087
1	19	1,497	0.040	0.493	222	17,227	0.034	0.074
2	19	1,631	0.044	0.521	221	16,901	0.036	0.080
3	19	1,647	0.030	0.421	218	16,699	0.037	0.081
4	19	1,678	0.040	0.516	218	17,078	0.034	0.080
1	19	1,675	0.038	0.511	219	17,295	0.032	0.071
2	19	1,624	0.057	0.527	219	16,851	0.033	0.066
3	19	1,629	0.056	0.532	221	16,740	0.037	0.084
4	19	1,698	0.054	0.482	217	17,147	0.037	0.076
1	19	1,645	0.041	0.497	217	17,239	0.044	0.083
2	19	1,743	0.050	0.529	217	16,991	0.042	0.096
3	19	1,380	0.043	0.465	217	15,830	0.046	0.100



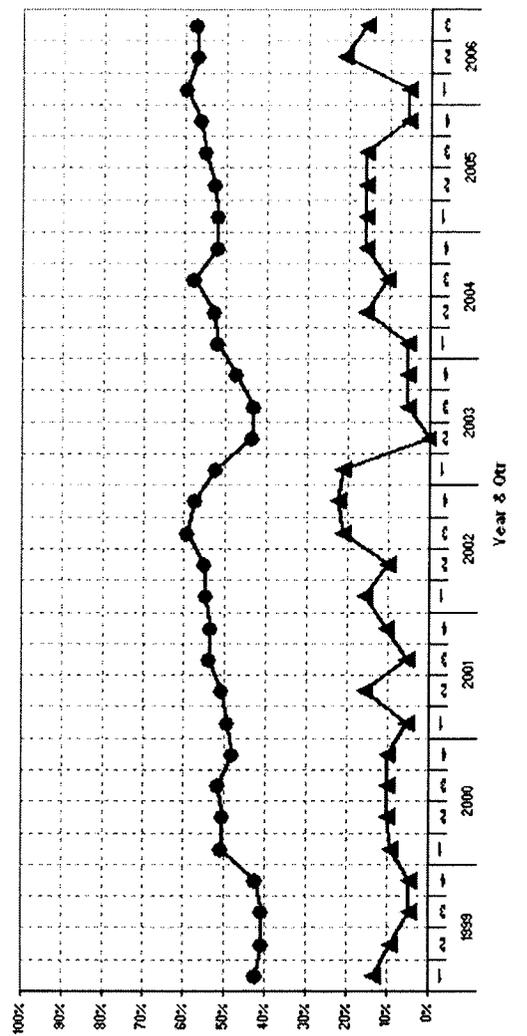
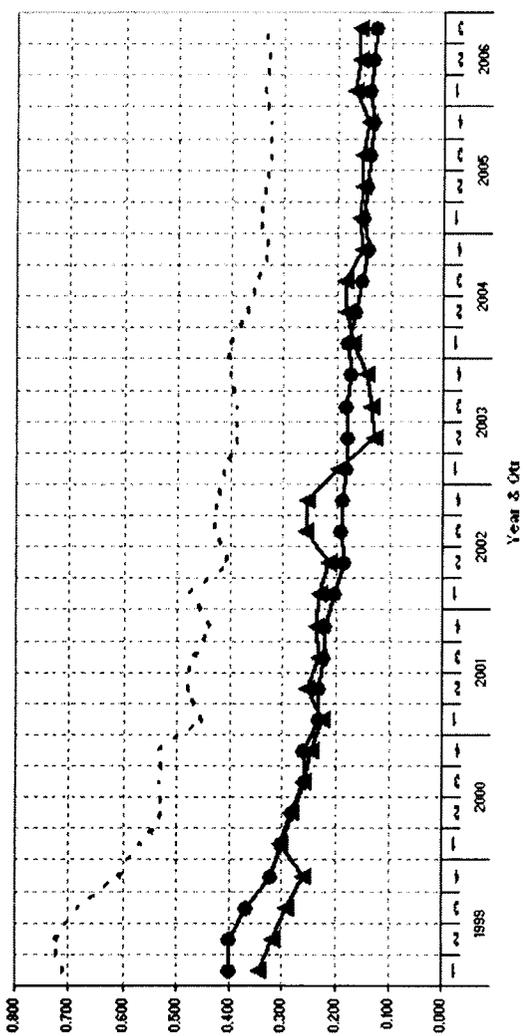
**QIQM #24 Physically Restrained**

Qtr	Pulaski County				Other Counties			AR 90zile
	# Fac	# Res	Avg QIQM	% GE 90zile	# Fac	# Res	Avg QIQM	
1	22	2,016	0.143	0.384	234	19,333	0.197	0.343
2	22	1,845	0.152	0.401	233	18,833	0.198	0.340
3	21	1,771	0.177	0.438	235	18,946	0.200	0.353
4	22	1,685	0.191	0.479	237	18,558	0.204	0.349
1	22	1,575	0.167	0.436	235	18,843	0.198	0.333
2	20	1,358	0.194	0.507	232	18,347	0.195	0.347
3	20	1,465	0.204	0.528	232	18,343	0.196	0.324
4	20	1,565	0.190	0.498	233	18,375	0.201	0.338
1	19	1,490	0.200	0.505	232	18,635	0.196	0.327
2	19	1,478	0.199	0.506	231	18,413	0.202	0.337
3	19	1,336	0.225	0.550	230	18,231	0.205	0.340
4	19	1,344	0.234	0.573	231	17,715	0.208	0.346
1	19	1,307	0.277	0.614	230	17,598	0.206	0.342
2	20	1,315	0.222	0.566	227	17,534	0.195	0.342
3	19	1,407	0.221	0.556	227	17,556	0.199	0.341
4	18	1,454	0.205	0.563	227	17,556	0.188	0.322
1	19	1,531	0.181	0.558	229	17,625	0.166	0.308
2	19	1,539	0.213	0.562	228	17,729	0.162	0.306
3	19	1,548	0.179	0.581	228	17,774	0.156	0.298
4	19	1,490	0.163	0.537	223	17,588	0.156	0.286
1	19	1,497	0.165	0.558	222	17,227	0.147	0.275
2	19	1,631	0.175	0.607	221	16,901	0.135	0.261
3	19	1,647	0.184	0.620	218	16,699	0.132	0.266
4	19	1,678	0.179	0.622	218	17,078	0.133	0.259
1	19	1,675	0.182	0.651	219	17,295	0.126	0.253
2	19	1,624	0.168	0.626	219	16,861	0.124	0.250
3	19	1,629	0.164	0.634	221	16,740	0.118	0.244
4	19	1,698	0.155	0.607	217	17,147	0.116	0.225
1	19	1,645	0.161	0.649	217	17,238	0.113	0.224
2	19	1,743	0.168	0.678	217	16,991	0.110	0.225
3	19	1,380	0.183	0.689	217	15,830	0.111	0.231

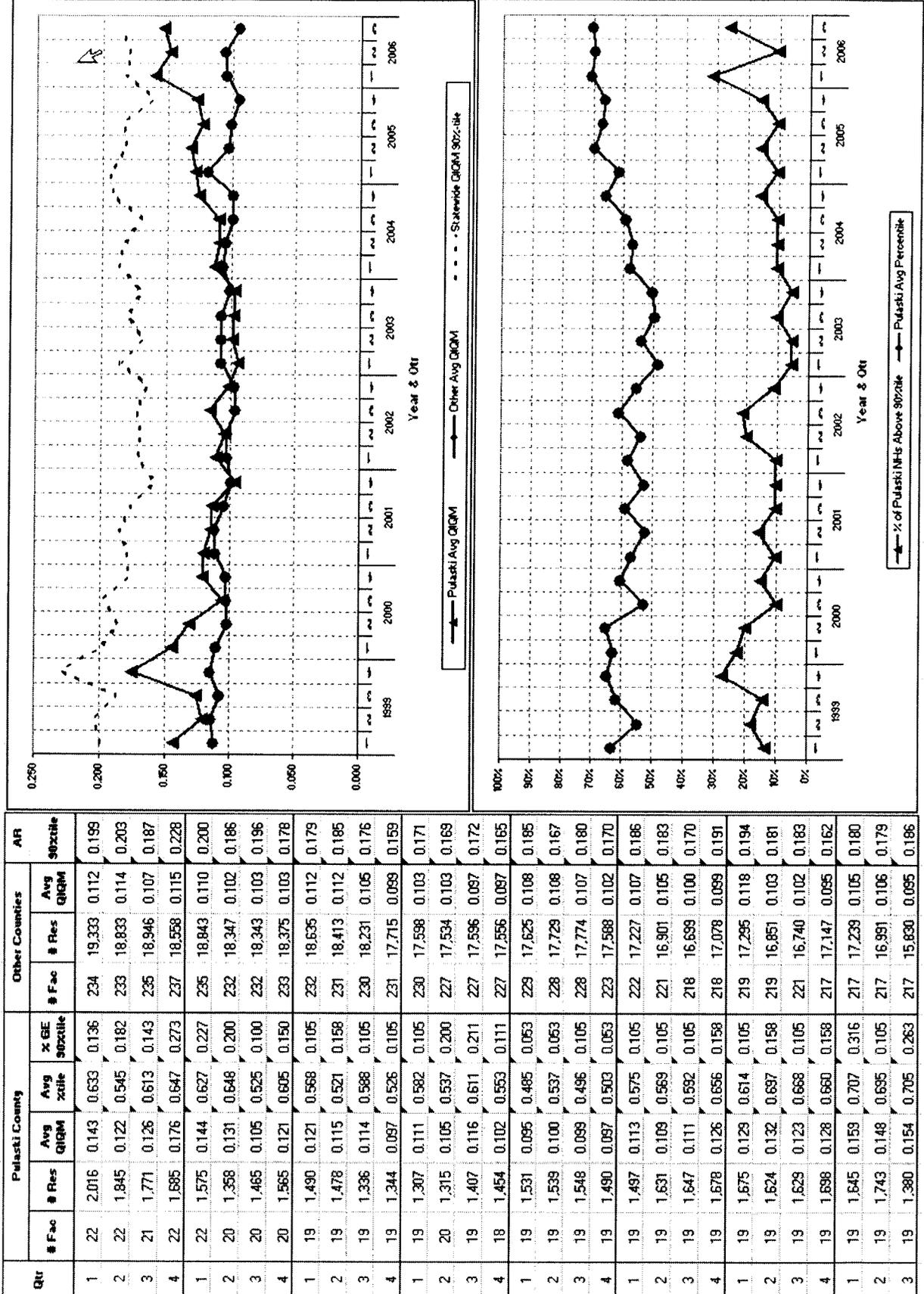


QIQM #25 Little Or No Activity

Qtr	Pulaski County				Other Counties				AR 90%ile
	# Fac	# Res	Avg QIQM	Avg %ile	% GE 90%ile	# Fac	# Res	Avg QIQM	
1	22	2,016	0.344	0.424	0.136	234	19,333	0.399	0.709
2	22	1,945	0.317	0.408	0.091	233	18,833	0.401	0.730
3	21	1,771	0.292	0.409	0.048	235	18,946	0.369	0.678
4	22	1,885	0.280	0.423	0.045	237	18,558	0.322	0.613
1	22	1,575	0.304	0.506	0.091	235	18,843	0.302	0.566
2	20	1,358	0.283	0.504	0.100	232	18,347	0.279	0.528
3	20	1,465	0.260	0.517	0.100	232	18,343	0.257	0.532
4	20	1,565	0.244	0.482	0.100	233	18,375	0.260	0.530
1	19	1,490	0.224	0.491	0.053	232	18,635	0.232	0.452
2	19	1,478	0.254	0.509	0.158	231	18,413	0.230	0.482
3	19	1,336	0.230	0.540	0.053	230	18,231	0.223	0.473
4	19	1,344	0.235	0.533	0.105	231	17,715	0.218	0.438
1	19	1,307	0.231	0.545	0.158	230	17,598	0.201	0.472
2	20	1,315	0.214	0.551	0.100	227	17,534	0.184	0.402
3	19	1,407	0.258	0.594	0.211	227	17,596	0.191	0.430
4	18	1,454	0.255	0.571	0.222	227	17,556	0.188	0.426
1	19	1,531	0.196	0.522	0.211	229	17,625	0.181	0.411
2	19	1,539	0.129	0.433	0.000	228	17,729	0.178	0.388
3	19	1,548	0.135	0.431	0.053	228	17,774	0.181	0.389
4	19	1,490	0.142	0.472	0.053	223	17,588	0.173	0.400
1	19	1,497	0.168	0.521	0.053	222	17,227	0.177	0.404
2	19	1,631	0.180	0.527	0.158	221	16,901	0.163	0.372
3	19	1,647	0.184	0.576	0.105	218	16,699	0.151	0.354
4	19	1,678	0.151	0.519	0.158	218	17,078	0.140	0.328
1	19	1,675	0.157	0.519	0.158	219	17,295	0.148	0.347
2	19	1,624	0.152	0.525	0.158	219	16,851	0.144	0.335
3	19	1,629	0.153	0.550	0.158	221	16,740	0.137	0.323
4	19	1,698	0.141	0.562	0.053	217	17,147	0.132	0.325
1	19	1,645	0.166	0.596	0.053	217	17,239	0.136	0.339
2	19	1,743	0.157	0.571	0.211	217	16,991	0.132	0.327
3	19	1,380	0.157	0.572	0.158	217	15,630	0.126	0.335

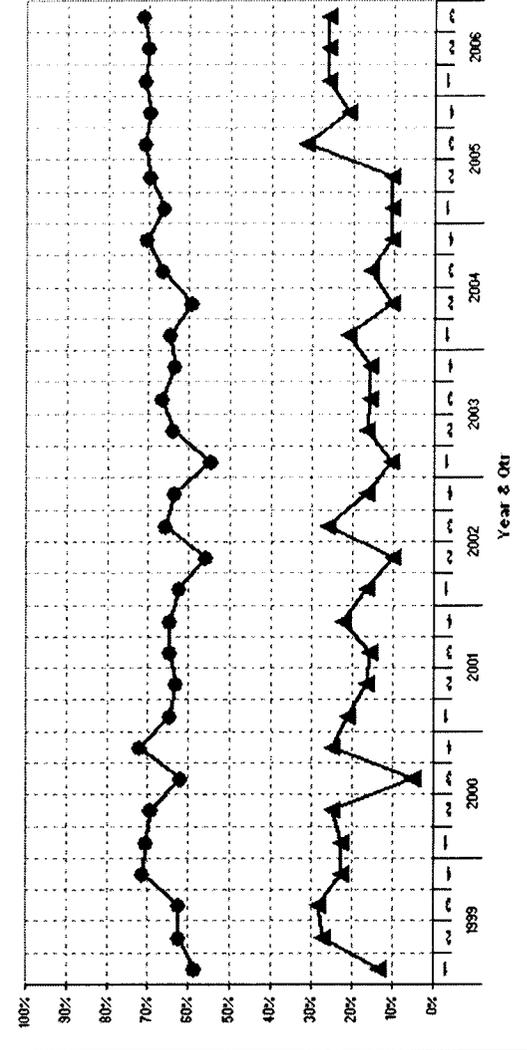
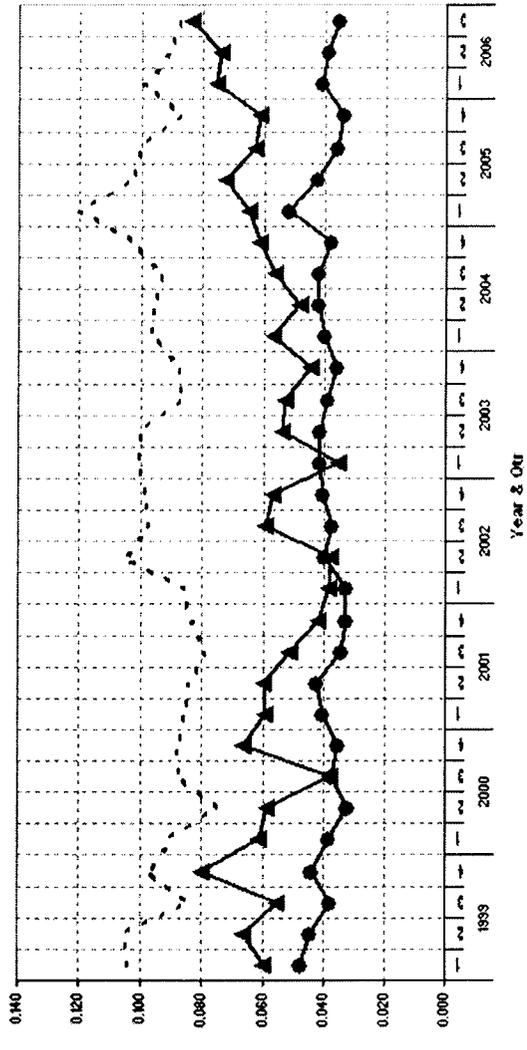


CIQM #26 Pressure Ulcers



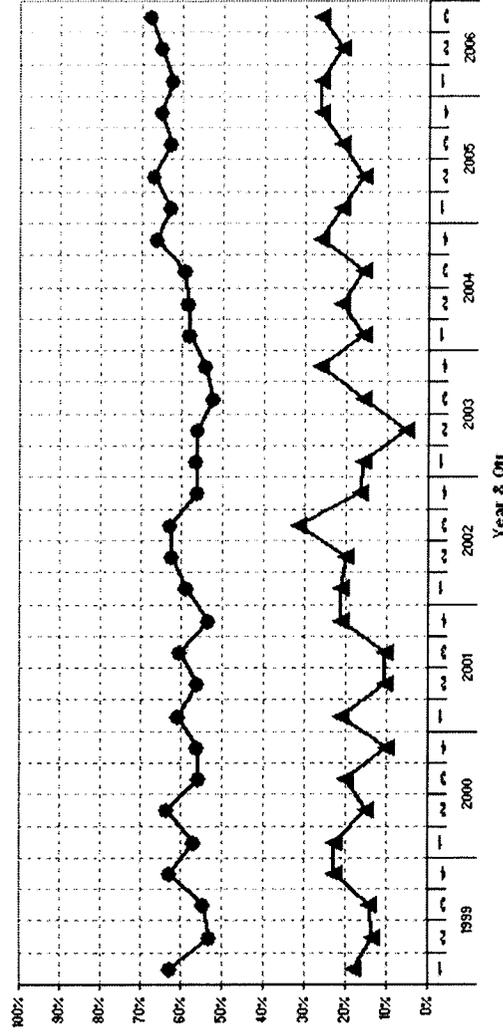
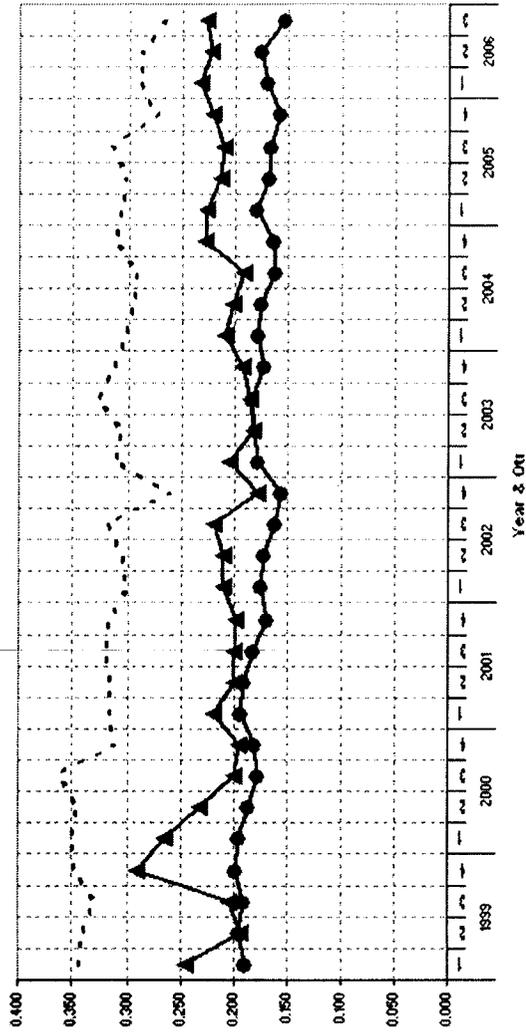
QIOM #26 Pressure Ulcers (Low Risk)

Qtr	Putaski County				Other Counties			AR Statewide
	# Fac	# Res	Avg QIOM	X GE Statewide	# Fac	# Res	Avg QIOM	
1	22	2,016	0.060	0.593	234	19,333	0.047	0.104
2	22	1,845	0.067	0.623	233	18,833	0.044	0.105
3	21	1,771	0.055	0.624	235	18,946	0.038	0.085
4	22	1,685	0.080	0.710	237	18,558	0.044	0.098
1	22	1,575	0.061	0.702	235	18,843	0.038	0.090
2	20	1,368	0.059	0.692	232	18,347	0.032	0.075
3	20	1,465	0.038	0.619	232	18,343	0.037	0.087
4	20	1,565	0.066	0.719	233	18,375	0.035	0.088
1	19	1,490	0.059	0.647	232	18,635	0.040	0.086
2	19	1,478	0.060	0.632	231	18,413	0.042	0.084
3	19	1,336	0.051	0.646	230	18,231	0.034	0.079
4	19	1,344	0.042	0.646	231	17,715	0.033	0.083
1	19	1,307	0.038	0.622	230	17,598	0.033	0.086
2	20	1,315	0.038	0.596	227	17,534	0.040	0.105
3	19	1,407	0.059	0.659	227	17,596	0.037	0.098
4	18	1,454	0.057	0.636	227	17,556	0.041	0.098
1	19	1,531	0.036	0.545	229	17,625	0.041	0.101
2	19	1,539	0.053	0.637	228	17,729	0.042	0.100
3	19	1,548	0.053	0.686	228	17,774	0.039	0.087
4	19	1,490	0.045	0.633	223	17,568	0.036	0.087
1	19	1,497	0.057	0.648	222	17,227	0.040	0.097
2	19	1,631	0.048	0.593	221	16,901	0.042	0.096
3	19	1,647	0.056	0.685	218	16,689	0.042	0.093
4	19	1,678	0.061	0.704	218	17,078	0.038	0.103
1	19	1,675	0.065	0.660	219	17,295	0.052	0.120
2	19	1,624	0.072	0.696	219	16,851	0.043	0.103
3	19	1,629	0.063	0.709	221	16,740	0.036	0.100
4	19	1,638	0.061	0.696	217	17,147	0.034	0.088
1	19	1,645	0.076	0.710	217	17,239	0.041	0.099
2	19	1,743	0.074	0.701	217	16,991	0.039	0.091
3	19	1,380	0.084	0.710	217	15,830	0.035	0.088



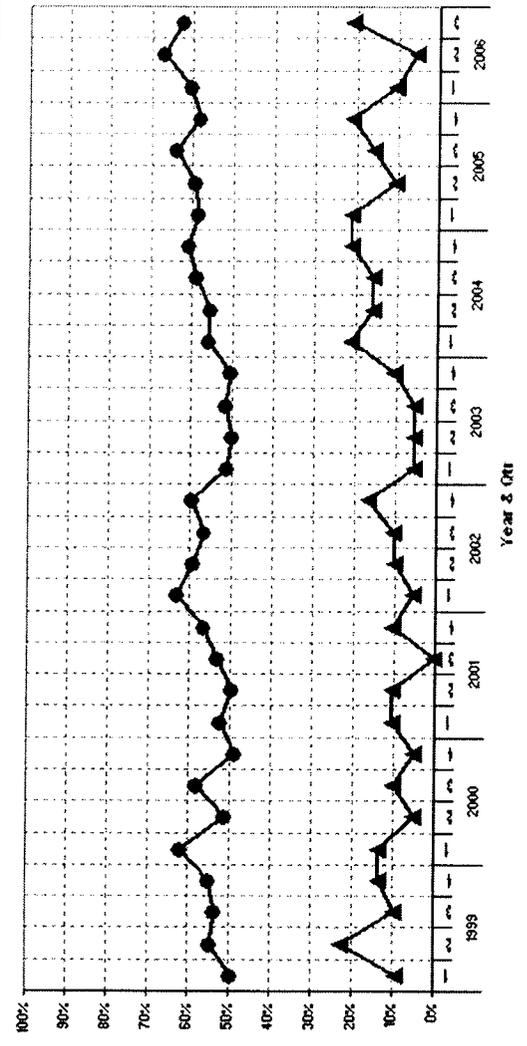
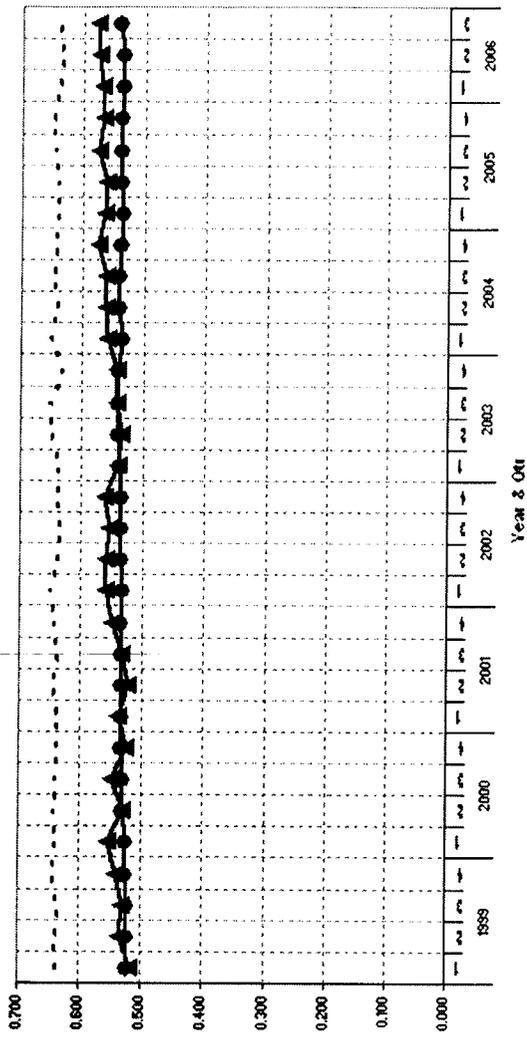
QIQM #26 Pressure Ulcers (High Risk)

Qtr	Pulaski County				Other Counties				AR
	# Fac	# Res	Avg QIQM	Avg x SE score	# Fac	# Res	Avg QIQM	Avg x SE score	
1	22	2,016	0.245	0.628	234	19,333	0.190	0.343	
2	22	1,845	0.194	0.531	233	18,833	0.195	0.342	
3	21	1,771	0.204	0.546	235	18,946	0.191	0.330	
4	22	1,685	0.291	0.628	237	18,558	0.198	0.347	
1	22	1,575	0.265	0.570	235	18,843	0.196	0.351	
2	20	1,358	0.232	0.633	232	18,347	0.187	0.345	
3	20	1,465	0.200	0.557	232	18,343	0.178	0.363	
4	20	1,585	0.195	0.560	233	18,375	0.181	0.312	
1	19	1,490	0.219	0.608	232	18,635	0.194	0.315	
2	19	1,478	0.200	0.561	231	18,413	0.192	0.316	
3	19	1,336	0.199	0.604	230	18,231	0.183	0.320	
4	19	1,344	0.198	0.536	231	17,715	0.170	0.317	
1	19	1,307	0.210	0.590	230	17,598	0.176	0.301	
2	20	1,315	0.211	0.623	227	17,534	0.172	0.306	
3	19	1,407	0.220	0.628	227	17,596	0.163	0.318	
4	18	1,454	0.179	0.562	227	17,556	0.157	0.262	
1	19	1,531	0.205	0.565	229	17,625	0.178	0.311	
2	19	1,539	0.183	0.563	228	17,729	0.180	0.305	
3	19	1,548	0.185	0.522	228	17,774	0.184	0.329	
4	19	1,490	0.193	0.544	223	17,588	0.172	0.313	
1	19	1,497	0.209	0.580	222	17,227	0.179	0.303	
2	19	1,631	0.201	0.586	221	16,901	0.175	0.295	
3	19	1,647	0.191	0.591	218	16,699	0.163	0.292	
4	19	1,678	0.228	0.662	218	17,078	0.164	0.313	
1	19	1,675	0.226	0.627	219	17,295	0.179	0.306	
2	19	1,624	0.214	0.668	219	16,861	0.168	0.302	
3	19	1,629	0.211	0.626	221	16,740	0.166	0.314	
4	19	1,698	0.221	0.650	217	17,147	0.158	0.274	
1	19	1,645	0.233	0.622	217	17,239	0.169	0.289	
2	19	1,743	0.222	0.649	217	16,991	0.175	0.287	
3	19	1,380	0.226	0.675	217	15,830	0.153	0.266	



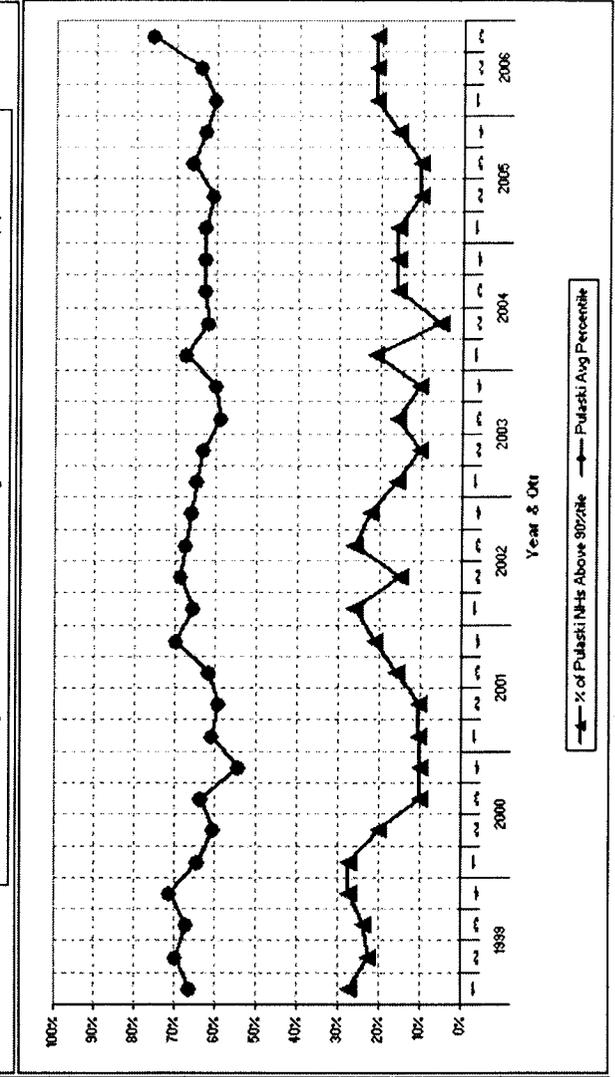
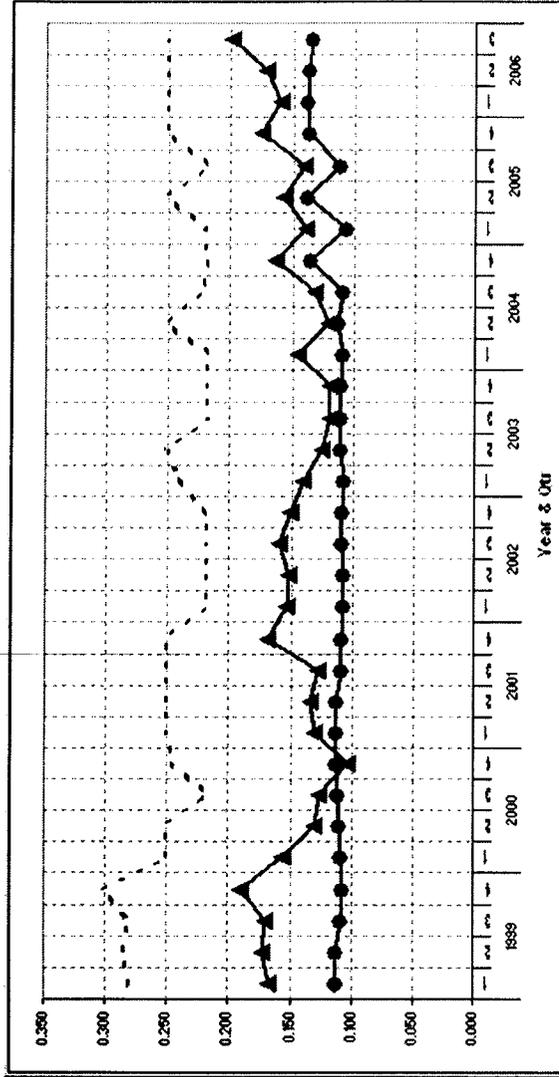
QIQM #27 Average QIQM Percentile

Qtr	Pulaski County				Other Counties			AR 90th Percentile	
	# Fac	# Res	Avg QIQM	% GE xctile	# Fac	# Res	Avg QIQM		
1	22	2,016	0.519	0.495	0.091	234	19,333	0.524	0.637
2	22	1,845	0.537	0.544	0.227	233	18,833	0.524	0.639
3	21	1,771	0.532	0.535	0.095	235	18,946	0.524	0.633
4	22	1,695	0.541	0.551	0.136	237	18,558	0.527	0.643
1	22	1,575	0.555	0.618	0.136	236	18,843	0.526	0.638
2	20	1,358	0.532	0.513	0.050	232	18,347	0.532	0.641
3	20	1,465	0.549	0.582	0.100	232	18,343	0.530	0.639
4	20	1,565	0.526	0.489	0.050	233	18,375	0.534	0.637
1	19	1,490	0.540	0.522	0.105	232	18,635	0.533	0.636
2	19	1,478	0.522	0.495	0.105	231	18,413	0.533	0.643
3	19	1,336	0.535	0.530	0.000	230	18,231	0.534	0.636
4	19	1,344	0.550	0.564	0.105	231	17,715	0.538	0.643
1	19	1,307	0.558	0.632	0.053	230	17,598	0.535	0.649
2	20	1,315	0.559	0.594	0.100	227	17,534	0.537	0.636
3	19	1,407	0.554	0.565	0.105	227	17,596	0.536	0.634
4	18	1,454	0.561	0.596	0.167	227	17,556	0.536	0.637
1	19	1,531	0.542	0.511	0.053	229	17,625	0.538	0.636
2	19	1,539	0.536	0.498	0.053	228	17,729	0.542	0.650
3	19	1,548	0.543	0.516	0.053	228	17,774	0.541	0.652
4	19	1,490	0.543	0.506	0.105	223	17,888	0.541	0.631
1	19	1,497	0.558	0.557	0.211	222	17,227	0.538	0.651
2	19	1,631	0.562	0.552	0.158	221	16,901	0.541	0.638
3	19	1,647	0.562	0.588	0.158	218	16,699	0.542	0.646
4	19	1,678	0.574	0.610	0.211	218	17,078	0.539	0.642
1	19	1,675	0.566	0.584	0.211	219	17,295	0.536	0.638
2	19	1,624	0.561	0.594	0.105	219	16,851	0.539	0.640
3	19	1,629	0.576	0.638	0.158	221	16,740	0.539	0.644
4	19	1,698	0.568	0.581	0.211	217	17,147	0.540	0.649
1	19	1,645	0.569	0.602	0.105	217	17,238	0.537	0.638
2	19	1,743	0.575	0.668	0.053	217	16,991	0.536	0.635
3	19	1,380	0.577	0.624	0.211	217	15,830	0.543	0.639



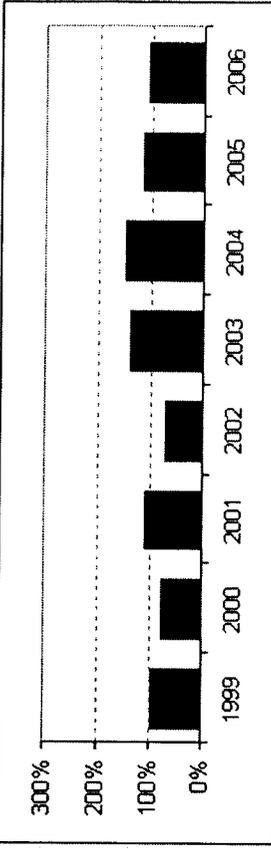
QIOM #28 Percent of QIOMs At or Above Arkansas 90%-tile

Qtr	Pulaski County				Other Counties			AR 90%tile
	# Fac	# Res	Avg QIOM	Avg %tile	# Fac	# Res	Avg QIOM	
1	22	2,016	0.167	0.662	234	19,333	0.112	0.281
2	22	1,845	0.172	0.685	233	18,833	0.113	0.287
3	21	1,771	0.169	0.670	235	18,946	0.108	0.281
4	22	1,695	0.190	0.712	237	18,558	0.107	0.302
1	22	1,575	0.156	0.641	235	18,843	0.108	0.250
2	20	1,368	0.131	0.606	232	18,347	0.109	0.250
3	20	1,465	0.126	0.633	232	18,343	0.111	0.219
4	20	1,565	0.104	0.544	233	18,375	0.113	0.244
1	19	1,490	0.131	0.607	232	18,636	0.113	0.250
2	19	1,478	0.134	0.592	231	18,413	0.112	0.250
3	19	1,336	0.127	0.614	230	18,231	0.109	0.250
4	19	1,344	0.168	0.636	231	17,715	0.109	0.250
1	19	1,307	0.154	0.654	230	17,598	0.107	0.219
2	20	1,315	0.152	0.686	227	17,534	0.107	0.219
3	19	1,407	0.160	0.672	227	17,596	0.109	0.219
4	18	1,454	0.150	0.657	227	17,556	0.109	0.219
1	19	1,531	0.140	0.645	229	17,625	0.108	0.242
2	19	1,539	0.125	0.633	228	17,729	0.109	0.250
3	19	1,548	0.119	0.590	228	17,774	0.110	0.219
4	19	1,490	0.118	0.600	223	17,588	0.109	0.219
1	19	1,497	0.146	0.673	222	17,227	0.109	0.219
2	19	1,631	0.121	0.619	221	16,901	0.112	0.250
3	19	1,647	0.132	0.627	218	16,699	0.108	0.224
4	19	1,678	0.164	0.627	218	17,078	0.136	0.219
1	19	1,675	0.140	0.628	219	17,295	0.106	0.221
2	19	1,624	0.157	0.609	219	16,851	0.138	0.250
3	19	1,629	0.141	0.656	221	16,740	0.111	0.219
4	19	1,698	0.175	0.625	217	17,147	0.137	0.250
1	19	1,645	0.160	0.602	217	17,239	0.138	0.250
2	19	1,743	0.171	0.640	217	16,991	0.137	0.250
3	19	1,360	0.200	0.757	217	15,830	0.135	0.250



# Arkansas Nursing Home Survey Deficiencies

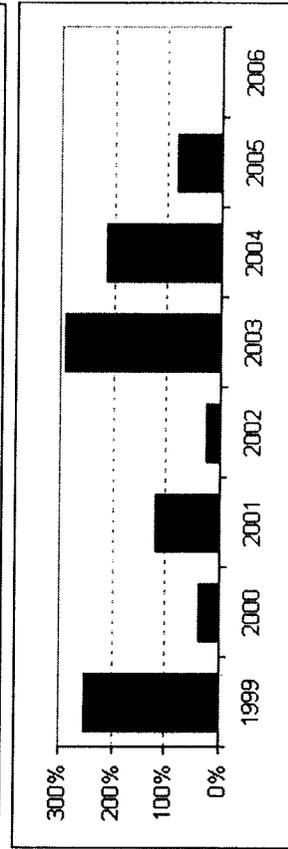
	Year	Facility Count		Deficiency Average		HDI Pulaski
		State	Pulaski	State	Pulaski	
Health Deficiency Count	1999	281	25	7.1	6.9	97%
	2000	274	26	6.9	5.4	78%
	2001	265	19	7.3	8.1	111%
	2002	260	24	6.7	4.8	73%
	2003	259	22	7.6	10.6	140%
	2004	248	22	8.4	12.3	147%
	2005	236	19	9.6	11.1	115%
2006	234	18	10.9	11.7	107%	



Severe Deficiency Count	1999	281	25	0.5	1.1	205%
	2000	274	26	0.6	0.3	51%
	2001	265	19	0.9	1.0	115%
	2002	260	24	0.6	0.4	69%
	2003	259	22	1.1	2.0	184%
	2004	248	22	1.0	1.7	172%
	2005	236	19	1.0	0.8	84%
2006	234	18	0.7	0.5	76%	



Substandard Care Deficiency Count	1999	281	25	0.2	0.4	252%
	2000	274	26	0.2	0.1	39%
	2001	265	19	0.3	0.3	120%
	2002	260	24	0.2	0.0	25%
	2003	259	22	0.3	0.8	290%
	2004	248	22	0.2	0.4	216%
	2005	236	19	0.2	0.2	83%
2006	234	18	0.1	0.0	0%	



# Appendix B: Autopsy Materials



## AUTOPSY STATUS

### Side A

If autopsy permission is refused, complete **Side A** (this side) of this form. If autopsy permission is granted, complete **Side B** (other side) of this form.

Autopsy permission refused

Release the remains of \_\_\_\_\_  
(Name of Deceased)

to:

\_\_\_\_\_  
(Name of Undertaking establishment) (City) (State)

Do not write below this line — for Pathology Department use only

### BODY RECEIPT

I certify that the remains of the above-name patient was, after proper identification, received by me for the purpose of burial.

Please PRINT NAME(S) & PAGER NUMBER(S)  
of those wishing to receive information  
and/or to be called regarding this autopsy:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Funeral Home

\_\_\_\_\_  
Address

\_\_\_\_\_  
Date and Time

**AUTOPSY STATUS**

**Side B**

Telephone Consent:  Yes  No

(See Department of Pathology Procedures Manual located at all nursing stations for appropriate procedure for obtaining telephonic consent.)

**WARNING:** This form does not authorize the use of organs, tissues, or parts for transplantation. (I) (We) authorize the physicians at the University of Arkansas for Medical Sciences, Little Rock, Arkansas, and/or their designees, to perform a complete autopsy on the remains of:

\_\_\_\_\_ and (I) (we) authorize the removal  
(Name) (Initial)  
and retention or use for diagnostic, therapeutic, or educational purposes of such organs, tissues and parts as the physicians at the University of Arkansas for Medical Center deem proper. No organ, tissue or parts will be removed other than those included in the performance of a complete autopsy. This authorization is granted subject to the following restrictions:

RESTRICTIONS (If no restrictions, write NONE)

(I) (We) wish the remains released to:

\_\_\_\_\_  
(Name of Undertaking establishment) (City) (State)

(I) (We) represent that (I am) (we are) the \_\_\_\_\_ of the deceased, and by law  
entitled to control of disposition of the remains. Relationship

Signed: \_\_\_\_\_ Signed: \_\_\_\_\_  
(Print name if telephonic consent) Date (Print name if telephonic consent) Date

To be answered by the person obtaining consent:

Yes  No Is there any person in a category prior to the category of the person signing the consent.

Yes  No Do you have actual knowledge that any member of the authorizing category or of a prior category opposes the autopsy?

Signed \_\_\_\_\_  
(Person obtaining consent)

**WITNESSES (two required)**

\_\_\_\_\_  
(Signature) (Signature)



**PROBLEM ORIENTED  
AUTOPSY REQUEST SHEET**

***Remove this page prior to obtaining family signature***

If you have *specific* questions concerning your patient that you would like to have answered by the autopsy, please so indicate by listing them in the spaces below. Example: the patient developed a transient pericardial friction rub three days ago that then disappeared. Is there any morphologic evidence to support a diagnosis of pericarditis?

Brief Clinical Summary: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Clinical Diagnosis: \_\_\_\_\_

\_\_\_\_\_

Specific Questions that you would like answered: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

REMOVE THIS PAGE PRIOR TO OBTAINING FAMILY SIGNATURE AND SUBMIT TO THE PATHOLOGY DEPARTMENT ALONG WITH THE AUTOPSY STATUS FORM, IF AN AUTOPSY IS TO BE PERFORMED.

**IMPORTANT NOTICE: AN AUTOPSY WILL NOT BE PERFORMED WITHOUT RECEIPT OF THIS PAGE.**

## INSTRUCTIONS FOR OBTAINING AUTOPSY AUTHORIZATION



This front sheet of the autopsy status form is for informational purposes only and should be discarded prior to presenting the autopsy status form to the family for signature.

### RESTRICTIONS

Only the following restrictions may be written in the blank space on Side B of the Autopsy Status Form.

- A. LIMITED TO THE CENTRAL NERVOUS SYSTEM (HEAD ONLY).
- B. LIMITED TO THE THORAX (NO HEAD, NO ABDOMEN).
- C. LIMITED TO THE ABDOMEN (NO HEAD, NO THORAX).
- D. LIMITED TO THE THORAX AND ABDOMEN (NO HEAD).

Any other restrictions must be discussed with the pathologist before this authorization is signed or the autopsy will *not* be performed.

### PROBLEM ORIENTED AUTOPSY REQUEST SHEET:

The Problem Oriented Autopsy Request Sheet must be completed by the requesting physician and submitted to the Pathology Department along with the Autopsy Status Form.

### DISCARD PRIOR TO FAMILY SIGNATURE

### LEGAL PRIORITIES OF NEXT-OF-KIN:

The following list of relatives should be referred to in order of priority stated for consent. This list presumes mental competency and adulthood of each person. Legality in the State of Arkansas is 18 years. With the exception of categories A and C below, if all persons in a priority category are minors, then proceed to the next category for authorization. If the person sought for authorization is *legally declared* mentally incompetent and there are no other adults in that category, then proceed to the next category for authorization.

### PRIORITY CATEGORY:

- A. Spouse
- B. Son or daughter (preferably the one who assumes custody of the body for burial)
- C. Either parent or a guardian (both parents or guardians is desirable where possible)
- D. A brother or sister (preferably the one who assumes custody of the body for burial)
- E. Grandparent, grandchildren, uncle or aunt (preferably the one who assumes custody of the body for burial)
- F. Great grandparent, great uncle or great aunt (preferably the one who assumes custody of the body for burial)
- G. Any other next-of-kin, i.e., cousins, etc. (preferably the one who assumes custody of the body for burial)
- H. A friend or person charged by law with the responsibility for burial

Complication may arise in any given instance that may require contacting the resident or staff performing the autopsy. There are, however, some circumstances which arise frequently enough to address. These circumstances are discussed below:

1. Autopsy consent form a minor spouse will be acceptable if he or she is capable of understanding the nature of autopsy.
2. Autopsy consent will be accepted from a minor married mother or father for his/her child. (Both parents' consent is preferable.)
3. An unmarried minor mother may also authorize an autopsy for her child but it is necessary that the consent of the unmarried minor's parents be secured in addition to the mother's consent. Consent from one parent is acceptable but consent of both is preferable.
4. If the surviving spouse is not living with the deceased at the time of death in the normal relations of marriage, or if it can be documented that the surviving spouse waives right, consent should be obtained from the next person on the priority list. (This person should be whoever assumes custody of the body for burial.)
5. A couple who is legally divorced has relinquished all rights of kinship to each other.
6. "Common law" marriages are not recognized in the State of Arkansas.
7. If the parents of a child are divorced or separated, consent should be obtained from the parent who has custody of the child.
8. If any member of a kinship class of persons, such as children of the deceased, objects to an autopsy, the objection will invalidate the consent of another member of the class. For example, if the daughter of the deceased consents to an autopsy but the deceased's son objects, the autopsy should not be performed.

**Instructions to be given to Family by  
Coroner or Deputy Coroner  
Obtaining Permission**

This autopsy is part of a study funded by the United States Department of Justice. The purpose is to compare the accuracy of diagnosis on death certificates among nursing home facilities with or without an autopsy. This information will be used to improve the system of death records maintained by the State of Arkansas.

Under Arkansas law, the next of kin must give permission for an autopsy to be performed. An exception exists for those cases requested by law enforcement from the State Medical Examiner. Your deceased family member is not considered suspicious death. Therefore, the legal next of kin must give permission for an autopsy.

Autopsies are not externally disfiguring. The pathologists remove and examine the internal organs of the deceased. Samples are taken for examination with a microscope. Sometimes other tests for chemicals or infections are performed. It will be necessary for the pathologists to retain the brain and certain other internal organs for study at a later time.

A complete autopsy includes an external examination of the body as well as examination of the chest, abdominal organs and the brain. For this study, only complete autopsies will be performed.

If you give permission for an autopsy, you will receive a copy of the report, which should be ready in around six weeks. The person who signs the permission form should make sure that their correct address is listed on the form. The report will go to the coroner, who will send it to the signer of the form. No personal information will be released to external parties in the course of the study. However, the coroner has the obligation to notify local law enforcement if autopsy findings were to indicate the possibility of foul play. This is very unlikely to occur as cases of this kind are automatically sent to the State Medical Examiner for examination.

Thank you for your participation.

## Special Procedures for Autopsies Related to This Project

Coroner personnel will notify UAMS Morgue Attendant that a Department of Justice Grant Autopsy permit has been obtained.

### Department of Pathology Faculty in charge:

**Aubrey J. Hough, M.D.**                      Office (501) 686-5369  
Home (501) 868-7145  
Cell (501) 960-8389  
Pager (501) 688-6460

### Instructions:

1. Notify Dr. Hough of case.
2. Carefully review autopsy permission forms. Coroner personnel will be using UAMS form. Only complete autopsy permission will qualify for this study. These cases will all be natural deaths as screened by the coroners.
3. Prior to starting autopsy; (a) review clinical history as provided by coroner; make note of medications;  
(b) obtain photographs of front and back of body;  
(c) obtain photographs of any other significant surface lesions, e.g., decubiti, bruises, etc.
4. Perform autopsy after consulting with attending on call. If any unanticipated gross findings appear, notify Coroner immediately so they can view.
5. Coroner will have obtained blood samples for potential toxicology studies; the autopsy assistant will take to Mr. Albert Johnson in the Clinical Laboratory and have chain of evidence form signed. Dr. Hough will make the decision what toxicology studies will be obtained based on clinical history.
6. As per agreements between Dr. Lamps and Dr. Hough, all cases should be performed by the Rokitansky en bloc method. Dr. Hough will assist if necessary.
7. Remove brain according to Dr. Mrak's Alzheimer protocol.
8. Call Dr. Hough if needed to see case as well as attending pathologist. Hold body until this review occurs.
9. Send copy of PAD as well as eventual FAD to coroner (Mrs. Evelyn Armstrong will mail) and to Dr. Hough for study and for billing of grant. (Dr. Hough will notify Ms. Gminski in the pathology business office.)
10. Review slides with attending and select any pertinent ones for review by Dr. Hough.
11. Have signature block for Dr. Hough as well as attending pathologist on the final report. Dr. Hough will be contact in the unlikely event testimony is required.

## AUTOPSY QUALITY ASSURANCE REPORT

**Patient name:** \_\_\_\_\_

**Autopsy Number:** \_\_\_\_\_

**Autopsy Date:** \_\_\_\_\_

**Hospital Number:** \_\_\_\_\_

**Clinical Service:** \_\_\_\_\_

**Pathologist:** \_\_\_\_\_

**Major Disease(s):** \_\_\_\_\_

**Cause of Death:** \_\_\_\_\_

**Did This Autopsy:**

1. Uncover a major disagreement in diagnosis? **YES**      **NO**  
 If YES, check the following applicable categories:

- Discrepant primary diagnosis with adverse impact on survival
- Discrepant primary diagnosis with equivocal impact on survival
- Discrepant secondary disease not directly related to cause of death, but was either symptomatic and should have been treated or could have affected prognosis
- Discrepant non-diagnosable (occult) secondary disease

2. Establish an unexpected or additional diagnosis? **YES**      **NO**  
 If YES, was this a

- Neoplasm?
- Myocardial infarction?
- Infection?
- Other? Specify \_\_\_\_\_

3. Provide clarification of differential diagnosis? **YES**      **NO**

4. Confirm or verify the major diagnosis? **YES**      **NO**

5. Provide information for treatment effects? **YES**      **NO**

6. Provide information on diagnostic procedures? **YES**      **NO**

7. Provide confirmation \_ or disagreement\_ re: cyto- **YES**      **NO**  
 pathology \_ surgical pathology \_ or hematopathology\_