Each year in the United States, between 1 and 2 million elderly adults experience abuse, including physical, psychological, financial/material abuse, as well as violation of personal rights and neglect. Indeed, 9% of older adults report verbal mistreatment, 3.5% financial mistreatment, and 0.2% physical mistreatment by a family member. African Americans may be at higher risk for financial mistreatment and Latinos at lower risk for verbal abuse. Elder abuse has been acknowledged as a significant component of family violence in the United States, but most cases of elder abuse are not reported to any adult protective service agency. Since abused patients are often assessed by their primary care physicians, opportunity exists for the detection of elder abuse in a clinic setting. Yet despite the almost universal mandate for physicians to report elder abuse, physicians account for only 2% of all reporting agents. When surveyed, physicians express a lack of understanding of reporting mechanisms as the most significant obstacle. In addition, physicians may also be unable to recognize key risk factors for abuse. As a result, some surveys suggest that more than half of physicians have never identified a case of elder abuse, and more than 60% of clinicians do not ask their elderly patients about abuse. Although screening for elder abuse has been recommended, and screening tools have been developed to assess elder abuse, these tools have not been universally reliable or effective in terms of improving elder abuse outcome.

The Accreditation Council for Graduate Medical Education (ACGME) does not clearly delineate the nature and degree of exposure to elder abuse expected during residency training in specialties such as family medicine or internal medicine. Current residency training educational efforts have included formal lectures and Web-based resources as well as clinical exposure to elder abuse issues.

---

From the Department of Psychiatry (Dr Wagenaar), College of Osteopathic Medicine (Ms Rosenbaum), and Center for Statistical Training and Consulting (Drs Herman and Page), Michigan State University.
Is physician education the answer to heighten awareness and help with elder abuse reporting? If so, are there specific physician groups in need of educational, screening, or triage assistance in dealing with elder abuse patients? In this study, a cluster group analysis methodology was chosen to identify groups of Michigan primary care residency programs that had similar degrees of intensity of elder abuse training in the residency curriculum. The intensity of elder abuse education was defined in terms of hours of didactic and clinical training and the number of topics included related to elder abuse definition and identification, reporting mechanisms, and community supports.

Methods
The survey instrument and research methods for this project were approved by the Michigan State University Institutional Review Board.

Survey Development
To assist with development of the survey tool, a focus group was developed to offer content expertise and assess survey items. Members represented medicine, law, social work, education, and statistics. The focus group members reviewed both the elder abuse literature and the education standards established for primary care specialties by the ACGME. Based on this review, the focus group developed survey questions about the programs to be surveyed and on elder abuse detection, barriers to education, and community resources related to elder abuse.

The final 17-item survey instrument included a definition of elder abuse, followed by questions about the residency programs to be surveyed, including number of residents, resident gender, program specialty, and program location. Questions on the curriculum included approach to learning (didactic/clinical/computer), curriculum content, lecture feasibility and attendance requirements, content role in the overall residency curriculum, and awareness of elder abuse resources in the community. Additional questions on the need and type of residency materials program directors would desire was included. Clinical contact was the final component of survey questions and included items on the frequency and severity of elder abuse in the clinic population, elder abuse screening activities, and directors’ experience working with adult protective services.

Subjects and Survey Procedures
The 43 survey subjects were the directors (or their designees) of primary care residency programs in the state of Michigan. We define primary care residencies as including family medicine, internal medicine, emergency medicine, preventive medicine, and transitional-year programs. Mailing addresses and contact information for the directors were identified using ACMGE rosters. Programs were contacted to confirm mailing information. Two mailing waves of the survey were completed between August and December 2006, and nonrespondents received phone and mail prompts.

Data Analysis
We used cluster analysis to identify homogenous subgroups of residency programs where the within-group variation was minimized and the between-group variation was maximized. The clustering variables included program type, requirement to attend elder abuse lectures, presence of a curriculum, and importance of elder abuse in training. Clusters were formed using a hierarchical agglomerative approach in which each case was treated as a unique cluster; then the two cases that were most similar based on the clustering variables were combined to form a new cluster; a third case was next compared to the first cluster and if it was more similar to the members of the first cluster than to any other case, it was joined to the first cluster. But, if it was more similar to another case those two cases form a second cluster. This process was repeated until all cases were added to a cluster, and all the clusters had been combined to form one final cluster.

Ward’s Method with squared Euclidean distances was used to determine the similarity of programs using two training intensity and three content coverage variables. In Ward’s Method, variation is minimized within clusters, and the between-cluster variation is maximized. Variables were transformed to z scores before the analysis.

A four-cluster solution was selected after examining the means of the cluster variables for solutions of three to six clusters. Mean values on the five-cluster variables were used as the centers for a four-cluster k-means clustering procedures with iterations. This produced the final cluster assignments.

Results
Demographics
Our survey response rate was 62.8% (27/43). Response rates by specialty, calculated as the number of surveys sent out by specialty divided by the number of surveys received by specialty, were as follows: family medicine 11/18 or 61%; internal medicine 10/17 or 58.8%; emergency medicine 6/8 or 75%. Mean program size was 25 (SD = +20.7) residents. Generally, for both family medicine and internal medicine, a larger number of smaller than larger programs responded, but the difference in average size of program for respondents and nonrespondents was not statistically significant (t value=0.87, P<.392, df=22). The majority of programs were community based (65%, n=26), followed by mixed university/community programs (20%, n=8), and then by university-based programs (15%, n=6).
Cluster Descriptions

Figure 1 depicts the spatial relationship of the clusters based on training intensity (sum of \( z \) scores for the two training intensity variables) and content coverage (sum of \( z \) scores for the three content coverage variables), with clusters described by scores on each of the educational intensity variables. Scores were considered very low if the mean \( z \) score was \( \leq -1 \), which means the score was one standard deviation below the mean of that variable, low if the mean \( z \) score was between -0.75 and -0.99, medium low if the mean \( z \) score was between -0.26 and -0.75, average if the mean \( z \) score was between -0.26 and +0.75, medium high if the mean \( z \) score was between +0.26 and +0.75, high if the mean \( z \)-score was between +0.75 and +1.0, and very high if the mean \( z \) score was \( > 1.0 \).

Low-intensity programs had the lowest scores on all cluster variables and had the least intense training. Medium-low programs were relatively low in covering elder abuse topics and were average in the intensity of their didactic and clinical programs. Medium-high intensity programs did well on elder abuse factors and reporting topics and were average on community resource topics. They lacked intensity in clinical training and were average in terms of didactic training. Finally, high-intensity programs had the highest scores on most number of topics taught and the most intense elder abuse clinical training experiences.

The high-intensity group primarily represented family medicine while the low-intensity group primarily represented internal medicine (Fisher's Exact Test=18.42, \( P < .01 \)). Emergency medicine and transitional and preventive medicine programs placed solely in the middle two clusters (medium-low and medium-high intensity) and were not present in either of the high- or low-intensity cluster extremes. Family medicine was
Figure 2
Role of Elder Abuse Training

![Bar chart showing the percentage of respondents in different clusters based on the role of elder abuse training.

- Low intensity: Minor role 88.9%, Major role 11.1%
- Medium low intensity: Minor role 83.3%, Major role 16.7%
- Medium high intensity: Minor role 64.3%, Major role 35.7%
- High intensity: Minor role 33.3%, Major role 66.7%

Cluster Group

Figure 3
Screening for Elder Abuse

![Bar chart showing the percentage of respondents requiring elder abuse screening.

- Low intensity: No 88.8%, Yes 11.1%
- Medium low intensity: No 66.6%, Yes 33.3%
- Medium high intensity: No 57.1%, Yes 42.9%
- High intensity: No 13.0%, Yes 75.0%

Cluster Group

Discussion

Results of this survey suggest that it is possible to identify specialties that are providing comprehensive elder abuse education as well as those that may need to provide additional training. Family medicine programs tend to use an approach that includes formal lectures and didactics as well as broad clinical exposure to el-
nder abuse patients. Internal medicine programs in this survey demonstrated a lack of elder abuse education; additional resources targeted toward internal medicine residency programs may be warranted. Developing lectures and educational materials that seamlessly transition into internal medicine grand rounds or case conference format should be considered to address the lack of formal didactics. Examples of effective programs are available.

Elderly patients who experience abuse are more likely to have worsened functional status and progressive dependency and poorly rated self-health and increased social isolation, leading to a multitude of medical issues. As abused older patients often present in primary care offices, it is of concern that many primary care programs lack education in elder abuse presentation or care. Reconsidering a requirement for specific clinical experiences and didactic topics should be considered for all primary care residency programs by the ACGME to bolster exposure to the problem of elder abuse. Requiring attendance for both faculty and residents at elder abuse lectures may emphasize this topic to young clinicians. In addition, educational opportunities should be culturally sensitive to the needs of older adults from diverse cultural backgrounds and life experiences.

This survey also highlights the need to develop effective, reliable, and expedient screening tools for elder abuse. In this survey, family medicine programs reported using elder abuse screening tools more than did internal medicine, but there is no elder abuse screening tool that has been shown to be valid and reliable in all primary care settings. Such a tool is needed.

Limitations
Our study has limitations that may influence the interpretation of our results. First, the survey results are based on self-reported data, and recall bias may have influenced our results. Second, our response rate is modest and may not fully capture curricula in all primary care residency programs; response bias may be present in that only programs with an interest in elder abuse responded. Third, since the survey is limited to Michigan residency programs, results may not be generalized across the nation. Fourth, although we believe that program directors completed the survey, if this task was delegated to another faculty member it may not accurately reflect program curriculum. Finally, how residency programs teach and what residents learn about elder abuse may or may not be fully applicable to real-world clinical practice.
Conclusions

As the American population ages, elder abuse may become an increasingly important clinical program. Based on the results of our study, more targeted education about elder abuse is needed in primary care residency programs.

Acknowledgments: Funding for this survey project was provided in full by a grant from the Blue Cross Blue Shield Foundation of Michigan. The authors wish to acknowledge the help of focus group members for this project, including Drs Frank Komara, Jed Magen, Laurie Post, and Dorrie Rosenblatt, for their help and consultation in instrument development.

The content of this study was presented April 30, 2007, at Lansing Community 2nd Annual Research Day, Lansing, Mich (development of cluster groups) and in March 2008 at the Annual Meeting of the American Association of Geriatric Psychiatrists (descriptive data only).

Corresponding Author: Address correspondence to Dr Wagenaar, Michigan State University, Department of Psychiatry, A 231 E Fee Hall, E. Lansing, MI 48824. 517-432-2994. Fax: 616-676-2781. wagenaar@msu.edu.

REFERENCES