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Access to Pharmacy Services in Rural Illinois

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During the past decade and a half, residents of rural communities have experienced problems accessing health care services, primarily due to hospital closings and a geographic maldistribution of physicians. Many Illinois counties remain wholly, or partially, designated as Health Professional Shortage Areas by the Illinois Department of Public Health.[2] While a substantial amount of research has focused on the effects of changes in the distribution of physicians and hospitals in rural areas, little has been dedicated to pharmacies (U.S. Congress, OTA 1990). However, changes taking place in the composition and distribution of pharmacy outlets have the potential to reduce access to valuable services for rural residents.

Recent studies report that pharmacists are the health care professionals most prevalent outside metropolitan areas, and that they provide a significant amount of health care and contact with rural residents (American Pharmaceutical Association 1996). Yet, independent retail pharmacies are in jeopardy in rural areas; their numbers are declining as mail order, large drug chains, and mass merchants capture a growing share of the total market (Epstein 1996). Managed care, the new thrust in financing and delivery of services, also limits the ability of small independent pharmacies to earn a normal profit by demanding deep discounts. As noted by MacPherson (1996), smaller, independent pharmacies lack the financial resources of larger chains; one consequence is that 1,000 small drugstores closed or were bought out by larger firms in 1994. In Ohio, approximately 300 independents have closed or been purchased by chains since 1992 (Epstein 1996).

As this trend continues, access to the full range of services offered by local pharmacists will continue to erode for rural residents, and many may lose another, perhaps the last, remaining health care professional in their community. This situation is especially troublesome in rural areas with large segments of elderly and low income people lacking mobility. It is also a problem because prescription medicines are cost effective in treatment of a range of medical problems and they continue to be the least costly form of therapy (Vagelos 1991). The role of community pharmacists has taken on increased significance under provisions of the federal Omnibus Budget Reconciliation Act of 1990. This act mandates an expanded role for these providers and suggests that community pharmacists assume more responsibility for preventing and resolving drug-related problems (Kimberlin, Berardo, Pendergast, and McKenzie 1993). Many rural pharmacists have already taken on this responsibility, and while the act increases recognition of this role, it does not ensure reimbursement for this additional service.

Research Objective

This research was undertaken to learn more about the current status of access to pharmacy services for residents of rural Illinois and how this access has changed over time. Of issue is how the geographic distribution of independent pharmacies and local pharmacists, as primary health care providers, is affected by financing forces related to the rural environment and those within health care. The thesis is that increased competition from other sources (such as discount centers and mail order drug outlets) and restrictive insurance (managed care contracts) have made it difficult for many rural pharmacies to remain viable.

Changes in the number of pharmacies by county, between 1970 and 1996, were documented and analyzed along with

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[2]Areas and population groups defined by the U.S. Department of Health and Human Services as having shortages of primary care physicians. Entire counties or partial areas within counties may be designated as Health Professional Shortage Areas.

survey data. Of special importance is whether rural residents are experiencing reduced quality of health care as the composition of pharmacies changes and the ability to access the services of a community pharmacist declines. Convenient access and increasing prices of pharmaceuticals may cause residents to forego this valuable form of care.

Research Methodology

Several sources of data were used for this study. Documentation of active, licensed Division I pharmacies was obtained through the Illinois Department of Professional Regulation (1996 list) and Golen (1970 list). Primary data from retail pharmacists are from a survey developed specifically for this study. Data on rural residents are from a group of survey questions developed for this study included in the Illinois Rural Life Panel, Fall 1996.[3] Supporting data on economic, demographic, and health provider variables are from published reference materials.

To gain information on the pattern for pharmacies and perceptions of pharmacists, a survey was developed with input from a rural pharmacist and from the Illinois Pharmacists Association (IPA). The survey was sent to all active licensed pharmacies in the 74 rural counties of Illinois and to a comparison sample of pharmacies in 7 nonrural, downstate counties. A cover letter from the current president of the IPA, which supported and encouraged the research, and a postage-paid return envelope were included.

The pharmacy survey contained the following sections: (1) background information, (2) questions about prescription sales, (3) identification of factors affecting rural pharmacies, (4) questions about plans for the pharmacy, and (5) a place for comments. A response rate of 35 percent was achieved by the requested due date for returns. A second mailing of the same questionnaire was sent to 216 pharmacies in rural counties in which returns had been less than 30 percent and to 49 pharmacies in nonrural counties. The follow-up boosted the response rate to 41 percent overall (46 percent from those in rural counties and 31 percent in nonrural counties).

Results

The first step in analyzing access to pharmacy services is to document the pattern of pharmacies between 1970 and 1996. During the 26 year period, the number of pharmacies in rural counties was reduced from 504 to 417, a 17 percent loss (**Table 1**). The loss was 15 percent in the seven nonrural counties (**Table 2**). Offsetting this decline in pharmacies are data showing that rural counties have experienced a gain of 277 (31 percent) in the number of pharmacists. For the comparison group of nonrural counties, the number of pharmacists increased by 157 (29 percent). Not evident from the data is the level of practice activity and the distribution of these additional pharmacists across work sites. Pharmacists based in a hospital do not represent open access to residents. The pharmacy outlet is the key to access of these services in that it is the practice location for pharmacists serving the general public. For communities that lose their only pharmacy outlet, this practice base is eliminated and so are the valuable health care services of a pharmacist. Nationwide, pharmacists are the most prevalent providers of health care services in rural regions, with 24 percent more of them in practice than primary care physicians (Epstein 1996)

A profile of the counties on other dimensions adds insight (**Table 3**). Included is information on changes in the number of pharmacists, as well as physicians, surgeons, and dentists—the major providers for whom pharmacies fill prescriptions. Residents in areas which have experienced a loss in these providers may be forced to travel to seek care, suggesting that prescriptions may also be filled elsewhere. The population and economic trends are relevant to the overall ability of a county to sustain a range of health care services, including prescribing medical personnel and pharmacists.

Among the rural counties, 16 experienced a decline in the number of physicians and surgeons and 52 gained, with the remainder having no change. The average loss in these providers per county was 44 percent, while the gain averaged 64 percent. Analysis of counties regarding gains or losses in pharmacies, population, and physicians and surgeons shows no distinct pattern.[4] Of the 44 counties which experienced a loss in pharmacies, 18 either gained in population and in physicians and surgeons or had no change. Six of the counties showing a decline in pharmacies

[3]Survey data from rural residents regarding their pharmaceutical purchase patterns will be the focus of a second *Rural Research Report* on this topic.

[4]There are limitations to using a county as the unit of measure in analysis of access to services; however, the availability of data by county makes it a popular choice.

Table 1. Rural County Pharmacies and Pharmacists

County	Pharmacies 1996	Pharmacies 1970	Pharmacies Change 1970-1996	Pharmacists 1995	Pharmacists 1973	Pharmacists Change 1973-1995	Pct. Pop. Change '70-'90
Adams	10	15	-5	50	44	+6	-4
Alexander	2	7	-5	5	6	-1	-14
Bond	2	3	-1	7	5	+2	+9
Brown	1	3	-2	5	4	+1	+8
Bureau	6	11	-5	24	19	+5	-6
Calhoun	2	1	+1	5	2	+3	-12
Carroll	4	5	-1	6	10	-4	-13
Cass	3	5	-2	5	7	-2	-6
Christian	10	12	-2	26	16	+10	-3
Clark	5	5	0	12	5	+7	0
Clay	3	5	-2	3	4	-1	-2
Coles	8	14	-6	27	20	+7	+9
Crawford	4	5	-1	15	6	+9	+1
Cumberland	2	1	+1	2	1	+1	+13
DeWitt	5	3	+2	6	4	+2	00
Douglas	5	4	+1	13	5	+8	+3
Edgar	4	5	-1	10	15	-5	-9
Edwards	2	3	-1	4	1	+3	+3
Effingham	7	5	+2	23	11	+12	+33
Fayette	4	4	0	9	7	+2	+1
Ford	3	8	-5	7	11	-4	-15
Franklin	12	11	+1	35	21	+14	+6
Fulton	10	13	-3	26	26	0	-9
Gallatin	2	1	+1	2	3	-1	-8
Greene	5	6	-1	12	12	0	-10
Hamilton	2	2	0	4	2	+2	-2
Hancock	5	5	0	8	7	+1	-9
Hardin	2	1	+1	1	3	-2	+5
Henderson	1	2	-1	3	3	0	-2
Iroquois	6	9	-3	14	16	-2	-6
Jackson	10	14	-4	32	25	+7	+12
Jasper	2	1	+1	2	1	+1	-1
Jefferson	9	10	-1	24	15	+9	+17
JoDavies	5	8	-3	11	10	+1	+2
Johnson	0	3	-3	5	4	+1	+58
Knox	12	20	-8	37	35	+2	-8
LaSalle	29	38	-9	81	69	+12	-2
Lawrence	3	4	-1	9	6	+3	-9
Lee	9	11	-2	17	16	+1	-6
Livingston	7	7	0	17	11	+6	-1
Logan	8	6	+2	21	13	+8	-8
Macoupin	13	17	-4	34	23	+11	+9
Marion	12	11	+1	34	18	+16	+7
Marshall	3	5	-2	5	5	0	-4
Mason	3	1	+2	12	10	+2	+4
Massac	3	4	-1	8	5	+3	+9
McDonough	7	8	-1	21	15	+6	-3
Mercer	4	2	+2	7	5	+2	+1
Montgomery	12	10	+2	23	17	+6	+2
Morgan	10	11	-1	23	30	-7	0
Moultrie	3	5	-2	16	6	+10	+6
Perry	8	12	-4	15	10	+5	+8
Piatt	1	5	-4	12	10	+2	+3
Pike	3	5	-2	8	5	+3	-11
Pope	2	1	+1	4	1	+3	+19
Pulaski	2	0	+2	3	2	+1	-15
Putnam	1	0	+1	2	3	-1	+15
Randolph	8	9	-1	23	11	+12	+10
Richland	5	6	-1	19	10	+9	00
Saline	11	11	0	31	19	+12	+4
Schuyler	2	3	-1	7	3	+4	-6
Scott	0	1	-1	3	1	+2	-7
Shelby	3	3	0	14	6	+8	00
Stark	2	1	+1	3	2	+1	-16
Stephenson	9	10	-1	34	25	+9	00
Union	3	7	-4	13	7	+6	+12
Vermillion	13	16	-3	53	55	-2	-10
Wabash	3	4	-1	7	6	+1	00
Warren	5	3	+2	9	13	-4	-12
Washington	4	3	+1	11	6	+5	+9
Wayne	3	3	0	7	4	+3	+1
White	5	5	0	12	11	+1	-8
Whiteside	10	13	-3	31	25	+6	-4
Williamson	13	13	0	56	38	+18	+21
Total	**417**	**504**	**-87**	**1,185**	**908**	**+277**	

Sources: Illinois Department of Professional Regulation 1996; Golen 1970; *1995 Illinois Statistical Abstract* 1995; and *State of Illinois Statistical Abstract 1973* 1974.

also lost population, physicians and surgeons; another 17 lost population; while 3 lost physicians and surgeons, but not population. All the nonrural counties experienced a gain in physicians and surgeons at an average rate of 87 percent. Both groups of counties lost hospitals during this time. The rural counties had a more negative showing in the growth in unemployment; however, the average increase in retail sales among rural counties was greater than the comparison counties.

Background information from the pharmacy survey shows that rural pharmacies routinely fill prescriptions for 27 medical providers, on average, while those in nonrural counties have over twice the provider base, with an average of 63 per outlet (**Table 4**). However, they do so with about

Table 2. Nonrural County Pharmacies and Pharmacists

County	Pharmacies 1996	Pharmacies 1970	Pharmacies Change 1970-1996	Pharmacists 1995	Pharmacists 1973	Pharmacists Change 1973-1995	Pct. Pop. Change '70-'90
Champaign	31	28	+3	120	93	+27	+3
Clinton	7	4	+3	21	18	+3	+23
Henry	12	10	+2	22	21	+1	-3
Macon	23	25	-2	84	65	+19	-7
Peoria	45	56	-11	162	127	+35	-6
Rock Island	25	48	-23	90	92	-2	-10
Sangamon	46	52	-6	195	121	+74	+14
Total	**189**	**223**	**-34**	**694**	**537**	**+157**	

Sources: Illinois Department of Professional Regulation 1996; Golen 1970; *1995 Illinois Statistical Abstract* 1995; and *State of Illinois Statistical Abstract 1973* 1974.

Table 3. County Profiles: Changes Over Time

	Rural Counties 1973-1995	Nonrural Counties* 1973-1995
Providers		
Pharmacists, 1973-1995		
Number counties losing	13	1
Number counties gaining	57	6
Average percent loss	30	2
Average percent gain	74	28
Physicians and Surgeons, 1973-1995		
Number counties losing	16	0
Number counties gaining	52	7
Average percent loss	44	0
Average percent gain	64	87
Dentists, 1973, 1995		
Number counties losing	29	2
Number counties gaining	28	5
Average percent loss	32	-20
Average percent gain	69	19
Hospitals		
Total all counties, 1972	106	28
Total all counties, 1995	79	17
Population		
Average percent change, 1970-1990	.0016	.0061
Economics		
Average unemployment rate, 1970	4.54	3.99
Average unemployment rate, 1993	8.86	6.98
Average increase in retail sales, 1972, 1992	52.16	44.99

* 7 nonrural counties included in the pharmacy survey

Sources: Slater and Hall 1995; *1992 Census of Retail Trade* 1995; and *County and City Data Book 1972* 1997.

the same number of full-time pharmacists; each store averages just under two. This finding has more than one possible interpretation. One may be that pharmacists in rural outlets spend more time per prescription explaining proper use and outcomes of the medication. Rural patients have a history of seeking information from their pharmacists and the smaller outlets and longer years of operation are more conducive to additional time required of pharmacists in providing this consultation service. Pharmacies in rural areas have been in operation an average of 11 more years than their nonrural counterparts.

Independently owned pharmacies are likely to devote more time to the consulting aspect of their role, even though there is no direct reimbursement for this service. Current ownership among pharmacies in rural counties is primarily independent at a single location (58.3 percent), while another 14.4 percent are independent with more than one location (**Figure 1**). Independents make up a lower share of stores in nonrural counties, while the prevalence for more than one location is greater. Affiliation with a chain accounts for 18.2 percent of rural outlets, while this type of ownership is just over one quarter of those in the nonrural counties.

For rural pharmacies, 25.7 percent responded that ownership status had changed in the previous decade; this was true for 33.3 percent of the nonrural responders. For those who provided a brief description of the ownership change (35 in rural counties and 7 in nonrural counties), the main direction was from independent to corporate ownership, franchise, or merger (11 rural and 4 nonrural), and transfer of ownership among independent owners or within family (11 rural and 1 nonrural). A change in corporate ownership took place in 4 rural pharmacies and 2 nonrural stores. The significance of the shift in ownership from independent to corporate affiliation has both health and economic outcomes. The pharmacist-owner has a vested interest in maintaining long-term relationships with local providers and patients; therefore, additional consulting on drug therapy is an ongoing investment in the store's capital. More of the profit realized from that investment will remain in the community and, through a multiplier effect, generate additional revenue for the local economy.

For all providers of medical care and health services, the source of payment is a significant factor in sustaining revenues greater than costs. Managed care plans and government reimbursement exert stricter controls over payment for services. **Figure 2** indicates the distribution of prescription revenues by payment source, and how this has changed in the past decade. For both groups the most significant shift has been the reduction in private pay revenues and the increase in those from managed care (now one-third for nonrural pharmacies and just under one-fourth for rural outlets). Medicaid increased slightly as a source of payment for rural pharmacies, but remained stable for the comparison group. The trend in reimbursement source is especially important for rural pharmacies working on a smaller profit margin. Increased demands of Medicaid have presented problems for the state and for health care providers. As noted by the Illinois Hospital Association[5]

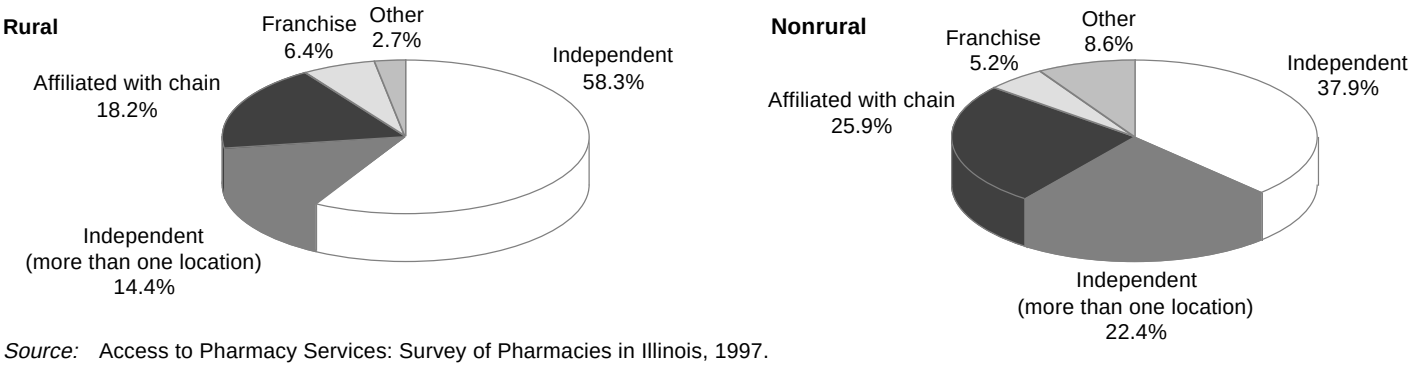
Table 4. Pharmacy Background

	Rural Counties	Nonrural Counties
Number responding pharmacies	196	58
Average number of medical providers served routinely	26.8 (41.62)	63.4 (92.92)
Average FTE pharmacists	1.6 (.64)	1.7 (.92)
Average years in operation	30.8 (31.22)	19.9 (17.45)
Average distance to nearest pharmacy	4.3 (10.74)	3.7 (9.98)
(Standard deviations)		

Source: Access to Pharmacy Services: Survey of Pharmacies in Illinois, 1997.

[5]The Illinois Hospital Association has since become the Illinois Hospital & HealthSystems Association.

Figure 1. Ownership Status



Source: Access to Pharmacy Services: Survey of Pharmacies in Illinois, 1997.

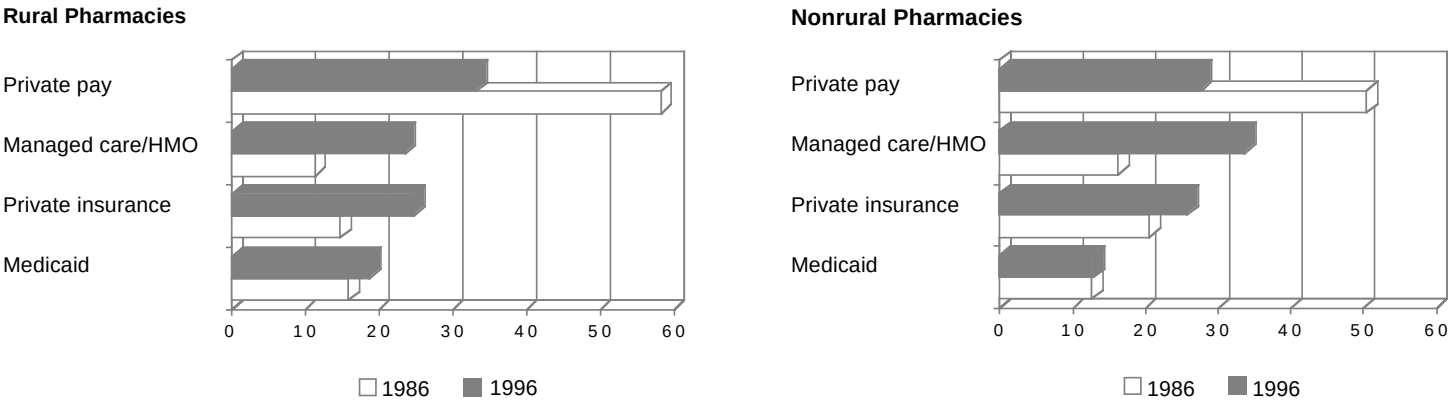
(1994), for years the state dealt with rising Medicaid costs by reducing and slowing payments to providers. Managed care plans, which use their leverage to demand discounts from providers, also make lower payments than private insurance plans.

There is substantial competition for the large and growing market in pharmaceutical sales. Nationwide, mail order outlets and larger chain stores represent growing competition for independents (Epstein 1996). In 1995, retail pharmacy sales reached $67.1 billion; mail order outlets gained the largest percentage rise in prescription sales, with a 14.1 percent jump to $8.1 billion. Drug chains experienced an increase of 11.2 percent (Maline 1996). Illinois survey respondents reported their main competitors for prescription sales. For both groups, local chain pharmacies were noted as the main competitor, with mail order as the second. Mail order competition was noted more frequently among the rural pharmacies (**Table 5**). Pharmacy outlets in clinics and hospitals represent little competition for the rural pharmacies, but assume more importance for those in nonrural counties.

The shift among payment sources for prescription sales, along with increased competition for market share, appear to be affecting each pharmacy's ability to earn a normal profit. The survey results indicate that 11.4 percent of rural pharmacies experienced an increase in net profit from prescription sales over the last decade, while 81.5 percent had declining profits, and the remaining 7.1 percent had steady profits. For the nonrural pharmacies, these figures were somewhat improved, with 32.1 percent indicating a profit increase, 66.1 percent a decrease, and 1.8 percent remaining the same. The most significant reason for a decline in profit, noted by 76.6 percent of rural respondents and 63.8 percent of the remainder, was restrictions on reimbursements from third party payers. Cost increases in products was second, noted by 44.1 percent of rural responders and 31.0 percent of those in nonrural counties. The combination of paying higher costs to manufacturers for prescription products, while receiving lower payments for sales of these, results in lower profits.

The main methods for retaining and expanding market share, noted by over 60 percent of all respondents, were inclusion of comprehensive information with all prescriptions and direct delivery of prescriptions. Use of mass media was indicated by 54.3 percent of rural pharmacies and 43.1 percent of the nonrural. Just over 20 percent of nonrural outlets provide information to shut-ins, while 15.4 percent of rural outlets do.

Figure 2. Distribution of Prescription Revenues



Source: Access to Pharmacy Services: Survey of Pharmacies in Illinois, 1997.

Table 5. Main Competitors for Prescription Sales

	Rural		Nonrural	
	Most Important	Least Important	Most Important	Least Important
Local chain pharmacies	47.5	13.7	61.4	13.6
Mail order	43.9	.6	28.9	8.9
Local independent pharmacies	19.4	20.1	2.8	16.7
Chain pharmacies in nearest town	16.6	8.6	15.4	7.7
Pharmacies in nearest urban area	4.5	38.3	3.0	36.4
Independent pharmacies in nearest town	2.7	20.8	13.5	24.3
Clinic outlets (hospitals, etc.)	2.2	31.6	10.3	17.9

Source: Access to Pharmacy Services: Survey of Pharmacies in Illinois, 1997.

With increased competition for prescription sales, viability for an independent pharmacy also depends on how much of the store's gross sales come from prescriptions. For both rural and nonrural respondents, over 74 percent indicated that prescriptions represent more than 65 percent of gross sales. Medical devices are currently sold by 63.9 percent of the rural pharmacies, with 31.3 percent indicating these sales are increasing as a percent of their total. Somewhat fewer, 48.2 percent, of the nonrural outlets offer these products and 23.1 percent indicate they are a growing percentage of sales.

Pharmacists were asked their opinion about consumer concerns related to prescription services. For each selection, they indicated whether it was of "great," "modest," or "no" concern. Both groups agreed that prescription price is of greatest concern, followed in importance by convenience and receiving prescription-related information (**Table 6**). The higher product costs paid by pharmacists and passed on in higher prescription prices are most troublesome to private pay customers who make up about 30 percent of prescription revenues.

For several reasons, rural health care has been differentiated from other health care, and the differences have been well-defined. Residents of rural areas are unique due to extensive barriers which limit their ability to obtain health care (U.S. Congress, OTA 1990). Difficulties in attracting health care providers, along with the economic and business climate in rural counties, are frequently cited by policymakers and analysts as problems for rural areas. The survey asked respondents to note, from a list of factors, all which may differentiate pharmacies located in rural Illinois from those in urban areas. Results indicated some differences in perceptions between the two groups (**Figure 3**). A greater percent of rural respondents indicated that demographic differences, economic constraints, and managed care are differentiating factors. Difficulty in attracting providers (pharmacists, primary care medical providers, and specialists) was noted by more of the nonrural respondents than those in rural counties.

Table 6. Opinion Regarding Consumers Greatest Concerns

	Rural		Nonrural	
	Most Important	Least Important	Most Important	Least Important
Prices of prescriptions	75.5	2.7	70.7	1.7
Convenience (location, delivery, hours)	60.6	7.4	67.2	5.2
Receiving prescription information	26.1	8.0	22.4	10.3
Information on generic equivalent	22.9	23.4	17.2	20.7
Service during emergencies	19.7	26.1	12.1	31.0
Pharmacy keeping prescription history records	12.8	26.1	5.2	44.8
Receiving general health care information	10.1	23.9	8.6	19.0
Other	6.4		17.2	

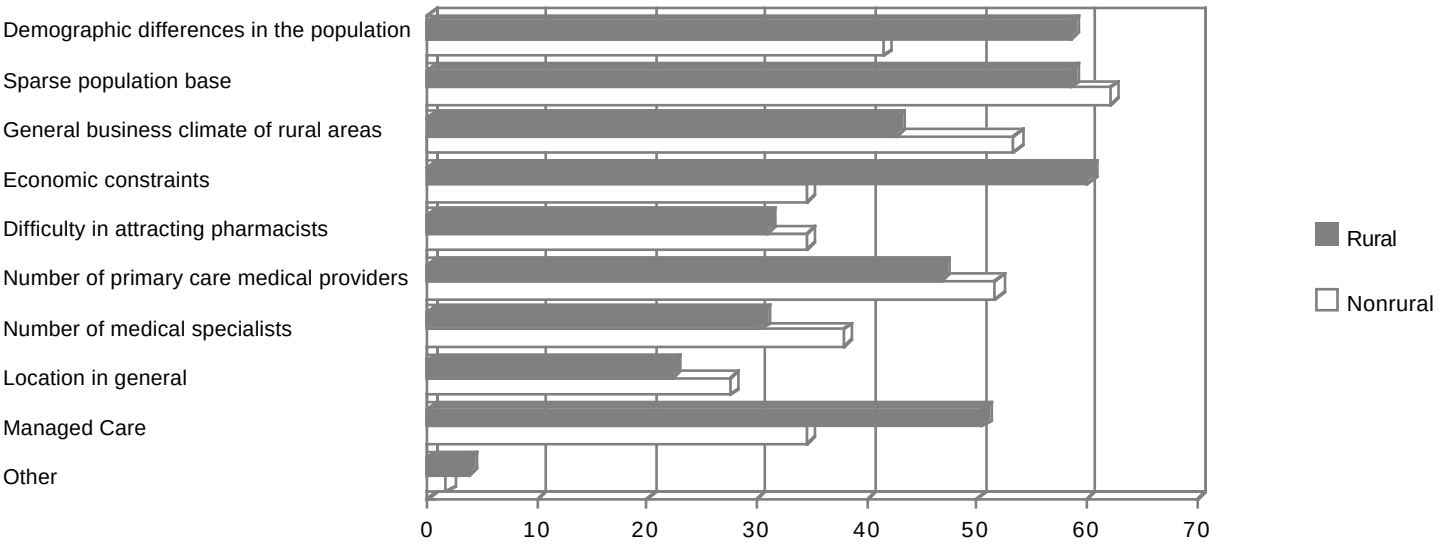
Source: Access to Pharmacy Services: Survey of Pharmacies in Illinois, 1997.

The growth in managed care has significantly altered the provision of health care and forced many adjustments on the part of providers (Straub 1996). These adjustments may appear more difficult for independent rural pharmacists. Several cost-containing techniques that directly affect pharmacies are incorporated into managed care arrangements. For example, use of a formulary (a list of drugs which are approved for insurance reimbursement), prevalent among HMOs, limits choice. Over half use a closed formulary which may deny coverage for newer or more expensive drugs regardless of their effectiveness (Pharmaceutical Research and Manufacturers of America 1997). Survey respondents were asked why managed care was considered a factor for rural pharmacies. The most frequently noted reasons for both groups were that it reduces net profit from prescription sales and reduces flexibility in pricing. Following in importance were that managed care contracts are increasing in number, that it establishes closed networks, and that it reduces flexibility in choice of services provided.

To gain a glimpse of the future, the survey asked about plans for changes in the pharmacy size and other plans for change in the next five years. Only 18 percent of rural pharmacies and 21 percent of those in the nonrural counties had plans to change in size; of these, 55 percent of rural respondents plan to expand and 18 percent plan to add branches. These figures were 75 percent and 50 percent, respectively, for the nonrural respondents. Over 18 percent of rural pharmacies and 14 percent of nonrural ones knew of plans for their store to change ownership status in the next five years.

Survey respondents took advantage of the opportunity to provide open-ended input on how and why access to pharmacy services is changing in rural Illinois. Among the respondents in rural counties, 64 provided comments. The most prevalent theme, expressed frequently in length by 42 pharmacists, was that the major threats to the survival of independent stores are third party payment demands,

Figure 3. Factors Affecting Rural Pharmacies



Source: Access to Pharmacy Services: Survey of Pharmacies in Illinois, 1997.

managed care contracts, and larger chains and mail order outlets that are given preferential treatment by insurance. This trend is reducing the number and viability of local stores, as well as eroding the freedom of pharmacists to practice.

A related message from the trend in third party payment demands was the implication for consumers. Respondents noted that consumers had to travel farther, received less personal care, and in general obtained lower quality services in pharmaceutical purchases, but had very little choice. One respondent, however, indicated many of his customers were "coming back" after realizing that they received better service locally. They had experienced higher costs in time and travel and the "illusion" of lower prices from chains. This pharmacist indicated his volume of sales has increased, but profit margin has decreased—a concern expressed by others. One respondent focused on the high prices charged by drug manufacturers. Other concerns expressed were difficulty in attracting physicians to rural areas, as well as attracting young pharmacists; and relief from working long hours.

By contrast, only 11 survey respondents from nonrural counties offered comments; however, the theme of these mirrored those of the rural pharmacists: Chains, mail order, and third party payer demands are threatening independents; and consumers are receiving fewer services and lower quality of care. One respondent summarized the views as, "our business level has increased, profits decreased, work load increased . . .amount paid per prescription by third party dwindling to almost nothing . . . customers surprised when stores close because owners can do better working for a chain, have more time off, get benefits and leave the headaches behind . . . government and insurance companies run health care and pharmacy . . . we are not independent because someone else controls 70 percent of our business."

Conclusions

Access to health care services for residents of rural Illinois remains difficult to measure with accuracy. Both providers and consumers are mobile, and changes in delivery methods and financing alter the meaning of ratios such as the number of providers per county population. The previous severe maldistribution of primary care providers appears to be easing. At the same time, the population drain from rural areas which prevailed in the 1980s is being reversed somewhat (Walzer and Crump 1996-1997). However, the trend for pharmacies in rural Illinois is opposite to that for primary care providers and the population. Although rural counties have gained in the number of licensed pharmacists, only a modest percentage of responding pharmacies indicated plans to expand the size of their operation.

The exact meaning of the reduction in the number of pharmacies is important. If this is offset by other avenues to obtain the services of pharmacists, the problem may be primarily one of quality, personalized service, and convenience. The value of having a prescription filled "then and there" relative to the total value of pharmacy services varies among rural residents. It is difficult to quantify whether

the full range of therapeutic potential and drug effectiveness is diminished in the absence of personal prescription service. In a broader, community context, there may be negative implications for the local network of rural health care providers who also rely on access to pharmacists for collaboration in management of patient care.

The revenues generated by a local pharmacy outlet are also important to a community's economic viability. Given the increased pressure to expand managed care arrangements, the results of this research offer a prediction about future access to pharmacy services in rural Illinois. The finding that over 80 percent of these pharmacies experienced declining profits in the past decade is an important indicator. Also significant is the gain in managed care among sources of reimbursement and the perception among rural pharmacy respondents that it is both a major cause of declining profits and of reduced quality for rural consumers of prescription drugs. The large number of respondents who took time to express their concern about the ability of rural, independent pharmacies to continue as a major entity in the community provider services network was a revealing outcome of this research.

Policymakers and others concerned with retaining access to health care in rural Illinois should consider methods to offset the trend of declining local pharmacies. Satellite clinics or mobile units would provide some replacement for loss of a full retail pharmacy. Health professions education programs should encourage collaboration among pharmacists and a range of primary care providers on management of disease and preventive care, as well as develop rural-based clinical training sites. Careful research into risk factors associated with prescriptions received without consultation, especially for the elderly, and the impact of managed care restrictions on choice should be undertaken. The view that the "local pharmacist will always be there" should not guide decisions.

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Rural areas face particular challenges related to accessing health care services. The question of how to provide high quality, affordable, sustainable health care to the 57 million Americans living in rural areas has become paramount. Secretary Alex M. Azar II created a Rural Health Task Force at HHS, with key leaders and stakeholders from across the Department, to identify the needs of rural communities, how to meet those needs, and what HHS policy changes can address those needs.Â As part of the Rural Health Task Force, HRSA is soliciting public input on how best to conceptualize and measure access to health care in rural communities. Access to pharmaceutical services in rural areas has been affected by a national shortage of pharmacists. Telepharmacy, a subspecialty of telemedicine, has involved the utilization of telecommunications to deliver pharmaceutical services to consumers located at a distance. The number of telepharmacy programs in the United States and worldwide has been progressively increasing.Â This paper compares consumer and provider perceptions regarding access to pharmacy services in rural Illinois, given a decrease in the number of pharmacies. Consumer data are from the Illinois Rural Life Panel in which more than 1,800 respondents answered questions about availability and use of pharmacy services and about insurance coverage and cost. Access to healthcare services is critical to good health, yet rural residents face a variety of access barriers. A 1993 National Academies report, Access to Healthcare in America, defined access as the timely use of personal health services to achieve the best possible health outcomes. A 2014 RUPRI Health Panel report on rural healthcare access summarizes additional definitions of access with examples of measures that can be used to determine access.Â Maintaining pharmacy services in rural towns can also be a challenge, particularly when the only pharmacist in town nears retirement. When a community's only pharmacy closes, it creates a void and residents must adapt to find new ways to meet their medication needs. The program helps sustain independent pharmacies and prevent pharmacy deserts in rural Illinois. â€œIt was something we needed so badly. It is more critical even at this stage with everything going on with the pandemic.â€Â â€œEvery single person in Illinois should have access to their medicine, to a pharmacist, to someone they trust to fulfill their medical needs,â€ said Illinois State Comptroller Susana A. Mendoza, who prioritizes payments from the Critical Access Pharmacy program. And as the rural population ages and sees increased poverty, access to a local pharmacy is more important than ever, she added. â€œYou have older people who canâ€™t just go to a pharmacy nearby, but what if youâ€™re a person with a disability or you lack transportation? Mail Order Pharmacy A pharmacy which uses common carriers to deliver the medications to patient or their caregivers. Mail order pharmacies counsel patients and caregivers (sometimes independent of the dispensing process) through telephone or email contact and provide other professional services associated with pharmaceutical care appropriate to the setting. Mail order pharmacies are licensed as a Mail Order Pharmacy in the state where they are located and may also be licensed or registered as nonresident pharmacies in other states. Non-Pharmacy Dispensing Site A site other than a pharmacy that