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PHYSICIAN OFFICE LOCATIONS AND LAND USE PLANNING: ASHEVILLE, NORTH CAROLINA, 1948-1993

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Introduction

This paper studies changing patterns of physician office locations in Asheville, North Carolina. In 1948 a thriving medical district existed within the central business district (CBD) of Asheville. In 1991 just a handful of physicians were within the CBD; most were concentrated one and one-fourth miles south. We are here concerned with two questions in light of this development: 1) What temporal and spatial sequences can be identified in this shift in the medical district? and 2) What has been the role of land use planning on evolving patterns of physician offices and related medical land uses?

Background Literature

In the late nineteenth and early twentieth centuries physicians were dispersed within cities in home/office settings (Knox, Bohland, and Shumsky, 1983; Shumsky, Bohland, and Knox, 1986). By World War II, however, it was typical for physician offices to be within CBDs (Pyle, 1989; Mattingly, 1991). The CBD focus coincided with developments in transportation (i.e., railroads, streetcars, and trolleys) and urbanization. Further, improvements in medical technologies and specialization of medicine increased physicians' self-perception and subsequent desire for higher incomes (Knox, Bohland, and Shumsky, 1983). These changes favored more accessible office locations within CBDs. However, decentralizing forces brought the exodus of the middle-class (1950s), growth of industrial and office parks and regional shopping centers (1960s), and later business centers and regional malls (1970s) to the suburbs (Hartshorn and Alexander, 1988). These forces encouraged physicians to locate offices along transportation arteries (Pyle, 1989), in suburban communities, and in clusters outside the CBD during the 1980s (Mattingly, 1991).

Physicians have responded to recent decades of urban developments by relocating their offices away from the traditional central business district of Asheville

Other forces influencing physician office locations include draw of hospitals (Bashshur et al., 1970; Elesh and Schollaert, 1972; Gober and Gordon, 1980; Kaplan and Leinhardt, 1973; Mattingly, 1991; Rosenburg, 1984), and zoning regulations (Pyle, 1989). The association between physician offices and commercial areas was shown to be significant in Chicago (Elesh and Schollaert,

1972), Pittsburgh (Kaplan and Leinhardt, 1973), Manhattan (Guzick and Jahiel, 1976), and Portland (Knaap and Blohowiak, 1989).

Study Area and Methodology

Asheville (Buncombe County) is the transportation, economic, and health care center for fifteen mountain counties of western North Carolina. Asheville is a remote urban enclave, though extra-regional access is excellent owing to its juncture with Interstates 40 and 26 (Figure 1). The leading industries are manufacturing and tourism, although retail trade and health care services are increasing in significance (Asheville City Planning Department, 1987; Western North Carolina Guides and Printing, 1992).

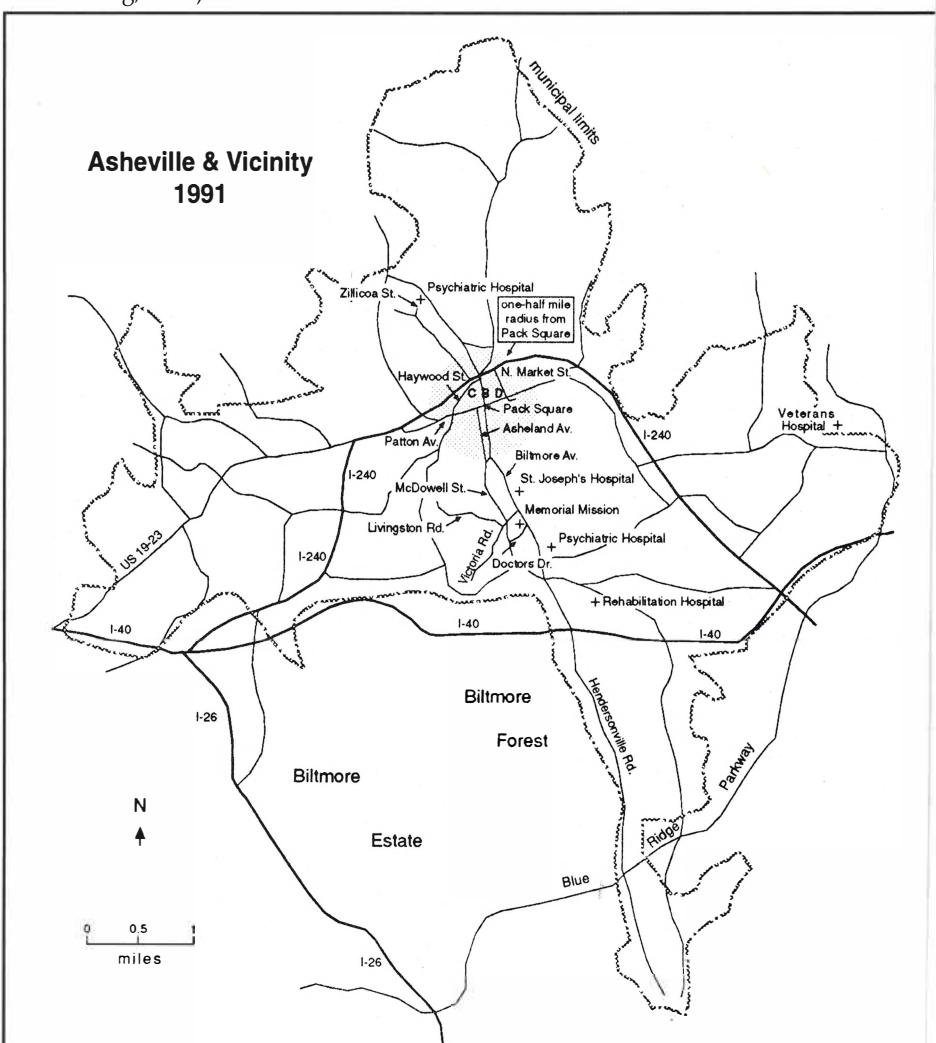

Figure 1. Street Network and Hospitals

Physician offices and hospitals were mapped for four select years that reflect four time periods: 1) 1948, reflecting the processes developing until 1948; 2) 1960, reflecting changes from 1948-1960; 3) 1975, reflecting changes from 1960-1975; and 4) 1991, reflecting changes from 1975-1991. The Asheville municipal limits at the four dates (1948, 1960, 1975, and 1991) define the study areas respectively, as well as parallel significant periods in the development of general hospitals from 1885 (Asheville Citizen-Times, 1990; Asheville Veterans Administration Medical Center, no date; Memorial Mission Hospital Centennial Research Committee, 1985), and land use controls from 1948. The 1948 data coincide with the enactment of Ordinance 322 "providing provisions for zoning of the City of Asheville" (City of Asheville, 1948), while the 1960 data correspond to the construction of facilities in the 1950s by St. Joseph's Hospital and Memorial Mission Hospital. By 1975 there had been a decade of expansion by Memorial Mission Hospital, the St. Joseph's Hospital and the Veterans Administration Medical Center. By 1991 we have experienced the expansion for both Memorial Mission and St. Joseph's Hospitals. The four time periods lag the expansion and construction of hospitals from one to six years and serve to provide physicians time to relocate to more advantageous situations.

Office addresses were compiled from city directories for 1948 and 1960 and from telephone directories for 1975 and 1991 under the listing "physicians and surgeons" (Miller's Asheville City Directory, 1948; Hill's Asheville City Directory, 1959; Yellow Pages, 1975; The Real Yellow Pages, 1991). They represent physicians in private practice, excluding MDs on full-time staff of hospitals or federal government medical facilities. It was felt that the 1975 and 1991 city directories, not included above, were inadequate due to incomplete and inaccurate physician listings. With the rise of group practices in the 70s, city directories often listed group practices without naming each physician in the group. For these reasons the "Yellow Pages" were more useful for developing data sets on physician office addresses over the last 25 to 30 years.

Asheville's zoning ordinances from 1948, 1977-1986, and zoning maps from 1948 and 1991 were used to determine the dominant zoning status of the five leading streets with physician offices during the four time periods (City of Asheville, 1948; 1977; 1991). These sources were supplemented with comprehensive plans and miscellaneous reports from the Asheville City Planning Department (U. S. Bureau of the Census, 1992; Metropolitan Planning Board of the City of Asheville and Buncombe County, 1966; Asheville City Planning Department, 1989). In addition, demographic, economic, and hospital utilization data were drawn from the Asheville Planning Department, the North Carolina Department of Human Resources, and the U.S. Bureau of the Census to provide an environmental context.

The reader is cautioned on the meaning of the word "district" in the remainder of this text. We normally refer to "central business district" (CBD) when we

mean a city's downtown commercial area, but in a few instances it is used to refer to a zoning district. Either, as in the former case, this refers to de facto land use or, as in the latter case, to a de jure designation. The spatial extent of the CBD as downtown and as zoning district are often the same, but it is important to distinguish the difference between the two definitions. Finally, the term "medical district" is based on common usage and refers to a concentration of medical facilities, while the term "medical institutional district" refers to a zoning district with legally defined boundaries and regulations.

Physician Office Locations: Asheville, North Carolina

In 1948 physicians were almost exclusively within a one-half mile radius of Pack Square, the historic focal point of Asheville's CBD (Figure 2). Of 124 physicians, 61% were concentrated in four buildings within the CBD. In 1960 there were 123 physicians, but the number within the CBD declined dramatically (Figure 3). Only 46% of physicians were within a one-half mile radius of Pack Square, while a

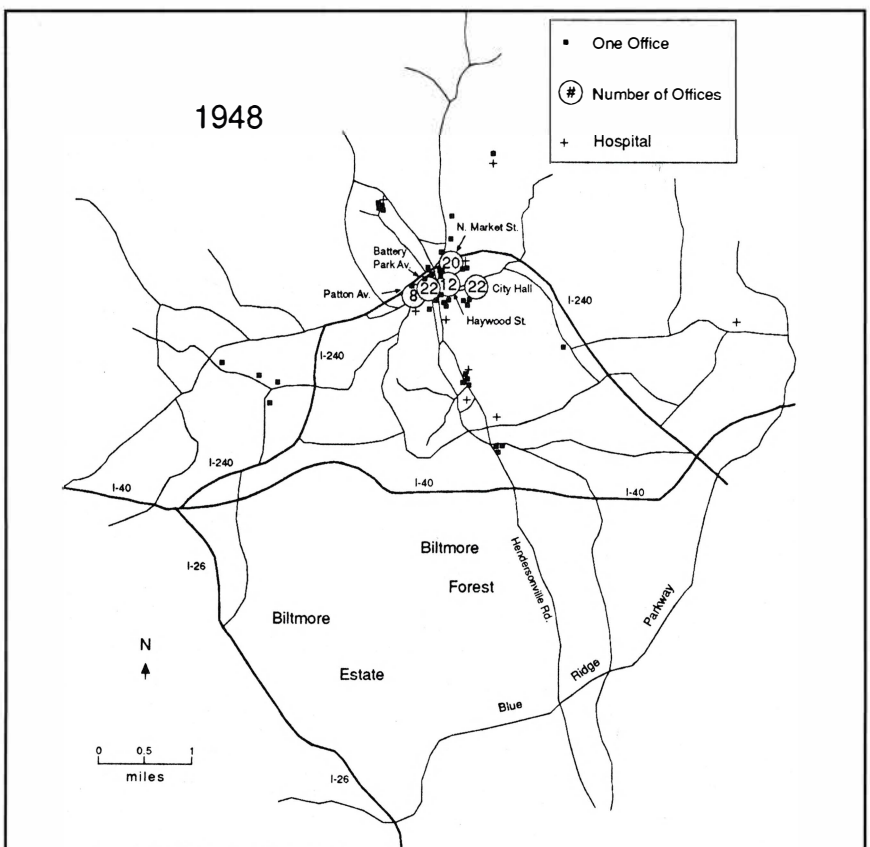

Figure 2. Physician Office Locations, 1948
Source: Asheville City Directory, 1948
Note: For the purpose of comparisons a current base map provides the background for each of the four time periods

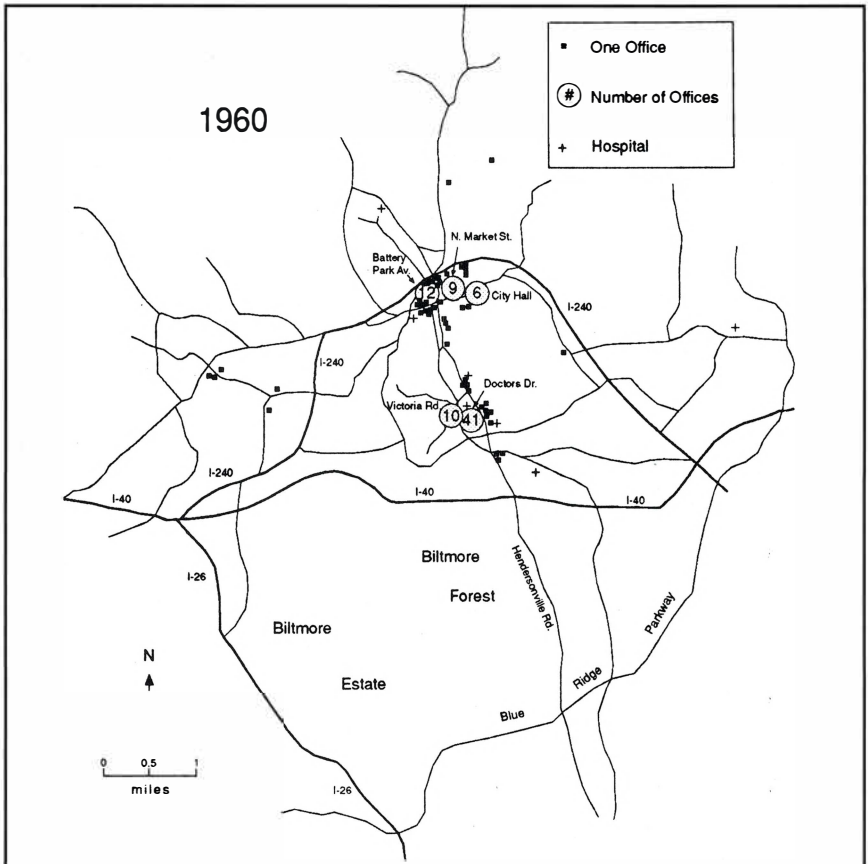

Figure 3. Physician Office Locations, 1960
Source: Asheville City Directory, 1960

competing medical district with 52% of the town's physicians emerged one and one-quarter miles south of the CBD in the vicinity of St. Joseph's and Memorial Mission Hospitals.

In 1975 there were 191 physicians, but only a remnant 12% of their offices was within the CBD. Meanwhile, 79% of Asheville's physicians were located in the contemporary medical district (Figure 4). By 1991, there were 369 physicians, but only 3 in the CBD (Figure 5). The 11% within a one-half mile radius of Pack Square represented a northern expansion from the contemporary medical district where 79% of the physician offices were located. So, four stages are identified in the spatial changes in physician office locations and medical districts in Asheville, North Carolina, from concentration in the CBD in 1948 to concentration in the contemporary medical district in 1991.

The sequential shifts of physician office locations and medical districts within Asheville during the twentieth century are in line with similar studies of

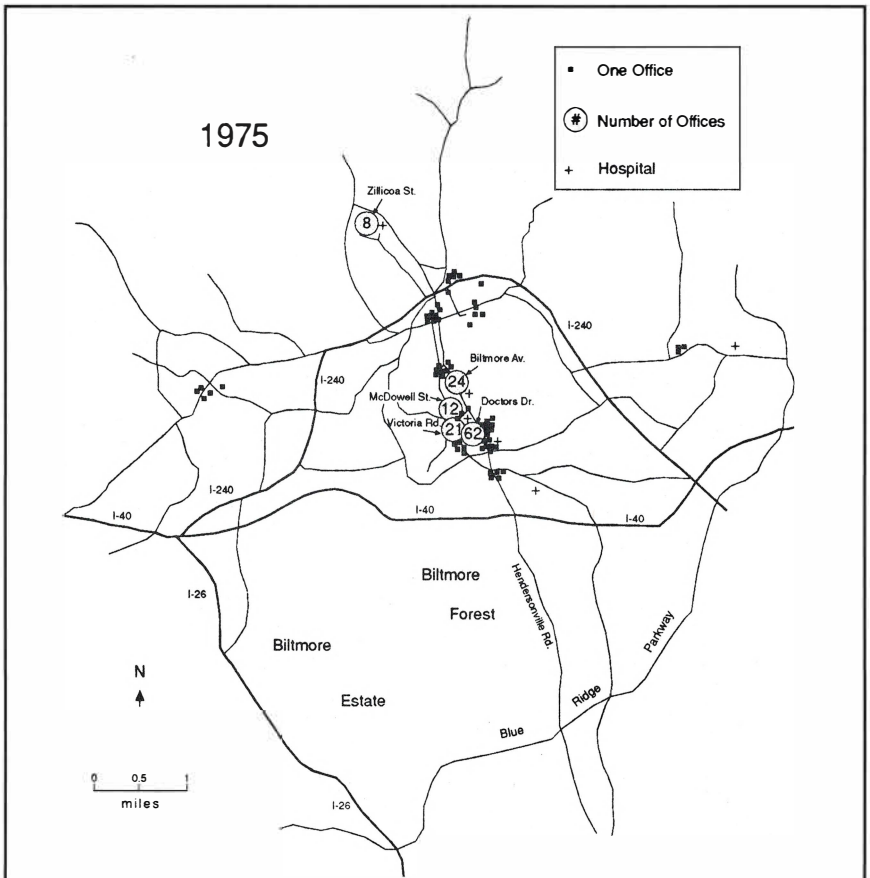

Figure 4. Physician Office Locations, 1975
Source: Southern Bell Telephone Directory, 1975

Bloomington (Indiana), Normal (Mattingly, 1991), and Charlotte (Pyle, 1989). During the first five decades of the 1900s physician offices were clustered within the CBD of each of these three cities. However, the decline of office clusters within CBDs began in the 40s for Charlotte and in the 60s and 70s for Bloomington-Normal and Asheville. Subsequently, physicians began to concentrate near hospitals outside the CBD in the 50s for Charlotte, and since the 60s for Bloomington-Normal and Asheville. In the case of Charlotte, the 70s and 80s brought a southward extension out of the medical district along a thoroughfare referred to as "Doctors' Alley." Charlotte is also experiencing a possible trend in the emergence of medical offices and facilities along major highways radiating outward from the urban core and at peripheral suburban locations.

Demographics, Economics, and Utilization

During the last five decades Asheville's population increased 20% from 51,310 in 1940 to 61,607 in 1990 (U.S. Bureau of the Census, 1953, 1992), and Buncombe

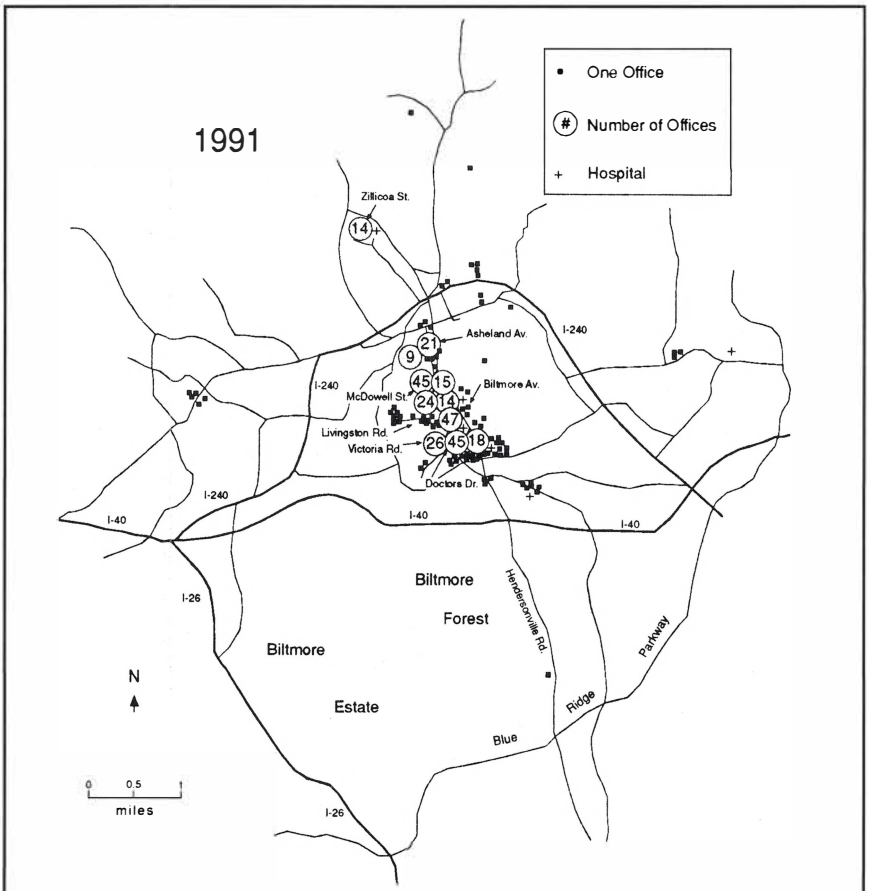

Figure 5. Physician Office Locations, 1991
Source: Southern Bell Asheville Telephone Directory, 1991

County's population increased 61% from 108,755 in 1940 to 174,821 in 1990. In contrast to Asheville and Buncombe County, the Southwest North Carolina Mountain Area Health Education Center (MAHEC) region (Figure 6) has shown a much higher rate of population change, 104% or over 250,000 persons from 1950 to 1990 (U.S. Bureau of the Census, 1953, 1973, 1992).

Patient origins maps illustrate the increasing dependence on Asheville as a focus of health care services within the MAHEC region (Figure 6). MAHEC's mission is to improve the quality, geographic distribution, and retention of health professionals in a fifteen county region of western North Carolina. Arrows represent 10% or more of a county's inpatients admitted for acute care to a hospital(s) in another county. In 1969, a focus began to emerge with three adjacent counties showing flow arrows to Buncombe County. Just five years later, in 1974, this focus became dominant with flow arrows originating from ten counties. This pattern strengthened in 1989 with patient flow arrows originating from twelve counties.

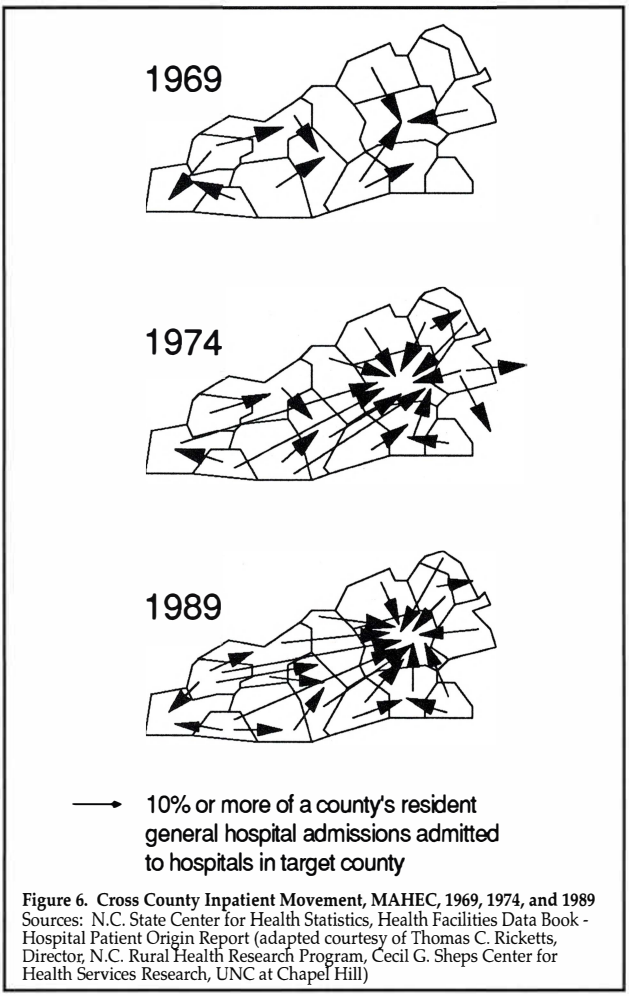

Figure 6. Cross County Inpatient Movement, MAHEC, 1969, 1974, and 1989
Sources: N.C. State Center for Health Statistics, Health Facilities Data Book - Hospital Patient Origin Report (adapted courtesy of Thomas C. Ricketts, Director, N.C. Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, UNC at Chapel Hill)

The increase of inpatients from peripheral counties to a core focused on Buncombe County supports the growth in physician offices and the rise of the contemporary medical district in Asheville in the 1970s and 1980s.

The increasing number and percent of persons aged ≥65 in the MAHEC region correspond with dramatic growth in physician offices from 1975 to 1991 in Asheville. Further, employment projections for Buncombe County indicate an increase of 15.5% or 15,316 employees from 1990 to 2010. Given an aging population regionally and a growing workforce locally, physicians will continue to be drawn toward Asheville's contemporary medical district, especially along its burgeoning fringes. Future growth of the contemporary medical district will surely displace residential districts and revitalize older commercial sections (Asheville City Planning Department, 1987).

Land Use Controls

Asheville's first zoning (1945) ordinance was designed to maintain the racial status quo "within any one block or between street intersections" (City of Asheville, 1945). Fortunately, in 1948 a more equitable zoning ordinance became effective "to promote the health, safety, morals and general welfare of the inhabitants of the City of Asheville, North Carolina" (City of Asheville, 1948). The purpose being to lessen congestion in the streets; to secure safety from fire, panic and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of the land; to avoid undue concentration of population; to facilitate the adequate provisions of transportation, water, sewage, schools, parks and other public requirements; to conserve the value of buildings and encourage the most appropriate use of the land throughout the area of jurisdiction. (City of Asheville, 1986).

For 1948 the zoning ordinance had provisions for six zoning districts, including three residential districts, a neighborhood trading area, a business district, and an industrial district (City of Asheville, 1948). Around 1960 areas adjacent to Biltmore Avenue and McDowell Street in the vicinity of St. Joseph's and Memorial Mission Hospitals were rezoned from residential to business. Current zoning ordinances (City of Asheville, 1991) includes five residential, five commercial, one office and institutional, and two industrial districts (Table 1). Individual doctors are permitted to maintain a home office "provided that no merchandise or commodity is sold ..."

District		Permitted Uses	Conditional Uses
R-1	single-family residential	N	N
R-2	low density residential	N	N
R-3	medium density residential	N	P
R-4	high density residential	P	N
R-5	residential	N	N
OI	office & institutional	P,L,H	N
CR	commercial regional	P	N
CS	commercial service	P, L, H	N
CG	commercial general	P	N
CH	commercial highway	P	N
CBD	central business district	P,L	N
LI	light industrial	P,L,H	N
HI	heavy industrial	P,L,H	N

P = Physician Office
H = Hospital
L = Laboratory
N = No Medical Land Uses

Table 1. Permitted and Conditional Medical Land Uses by Zoning District
Source: Asheville Zoning Ordinance, 1977 (with amendments through 1986)

(City of Asheville, 1986); however, doctors have long since given up this convention (Shumsky, Bohland, and Knox, 1986). In the R-3 medium density residential district, medical offices are a conditional use (i.e., conditional uses require approval from the Board of Adjustments and/or City Council). Medical offices in the R-4 high density residential district are a permitted use. The five commercial and two industrial districts permit medical offices, while the commercial service (CS), office and institutional (OI), and two industrial districts (LI and HI) permit medical offices, laboratories, and hospitals.

Table 2 shows the number and percent of physician offices along with dominant zoning of the five leading streets for each period. In 1948 almost 100 percent of

Year	Location	Physicians*	Percent	Zoning District**
1948†	Battery Park Ave.	22	17.7	Business District
	City Hall	22	17.7	Business District
	North Market St.	20	16.1	Business District
	Haywood St.	12	9.7	Business District
	Patton Ave.	8	6.5	Business District
	Other	40	32.3	Business District
Total		124	100	
1960†	Doctors Dr.	41	33.3	Business District
	Biltmore Ave.	14	11.4	Business District
	Battery Park Ave.	12	9.8	Business District
	Victoria Rd.	10	8.1	Business District
	North Market St.	9	7.3	Business District
	Other	37	30.1	Business District
Total		123	100	
1975††	Doctors Dr.	62	32.4	Office & Institutional
	Biltmore Ave.	42	22.0	Office & Institutional
	McDowell St.	24	12.6	Office & Institutional
	Victoria Rd.	22	11.5	Office & Institutional
	Zillicoa St.	8	4.2	Office & Institutional
	Other	33	17.3	Office & Institutional
Total		191	100	
1991††	Biltmore Ave.	93	25.2	Office & Institutional
	McDowell St.	77	20.9	Office & Institutional
	Doctors Dr.	45	12.2	Office & Institutional
	Victoria Rd.	27	7.3	Office & Institutional
	Asheland Ave.	21	5.7	Commercial Service
	Other	106	28.7	Office & Institutional
Total		369	100	

Table 2. Asheville's Five Leading Streets With Physician Offices
Sources: †Asheville City Directories, 1948 and 1960; ††Southern Bell, Asheville Telephone Directories, 1975 and 1991; Asheville-Buncombe Zoning Ordinance, 1948; Asheville Metropolitan Areas: Commercial Areas Study, 1966; Asheville Zoning Ordinance, 1977 (with amendmends through 1986; Asheville Zoning Map, 1991
Notes: *Physicians and Surgeons-MDs; ** For each street the dominant zoning classification influencing the greatest number of physicians is shown in the zoning district column

physicians were within a business district (BD) zoning classification. Observe the shift in classification from business district (BD) to office and institutional (OI) from 1948 to 1991! In 1991 four of the five streets with offices - Biltmore Avenue, McDowell Street, Doctors Drive, and Victoria Road - were within an OI district. Asheland Avenue, with 5.7 percent of physician offices was within a commercial service (CS) district. The contemporary medical district conforms to the office and institutional (OI) zoning district between Biltmore Avenue and McDowell Street. The OI and CS districts, along with the less restrictive light (LI) and heavy industrial (HI) districts, permit the full range of medical facilities, including offices, clinics, and hospitals (City of Asheville, 1986).

Discussion

What has been the role of land use planning on evolving patterns of physician offices and related medical land uses? Obviously, health care delivery systems are dependent on the health status, demographics, and distribution of populations plus a supporting infrastructure including transportation, water and sanitary sewer, and numerous factors other than land use controls. However, land use controls protect existing and emerging patterns of medical uses from incompatible land uses. Thus, the past, present, and potential future roles of land use planning in Asheville form the basis for the following discussion.

In Asheville, there was a concentration of physician offices within and even a general hospital (Memorial Mission Hospital from 1885 to 1954) near the CBD prior to the adoption of the 1948 zoning ordinance. The municipal officials of 1948, recognizing pre-existing conditions and historical inertia, assigned the historic medical district a business district (BD) zoning classification. In the 1960s areas zoned as BD were divided into office and institutional, commercial, and industrial districts; variant forms of these extended from the CBD along much of the Biltmore/McDowell corridor. The division of areas zoned as BD into more specialized non-residential districts had minimal influence since none were particularly restrictive to medical offices and facilities. Here the major restriction excluded hospitals in areas zoned commercial regional (CR), commercial general (CG), and central business district (CD). This discouraged the siting of hospitals in the more congested areas of the city.

Barbour-Cooper & Associates, a planning consulting firm, recommended a compete reevaluation of the zoning classification along the Biltmore/McDowell corridor in 1966 (Metropolitan Planing Board of the City of Asheville and Buncombe County, 1966). The majority of parcels adjacent to Biltmore Avenue and McDowell Street in the early sixties was zoned for business, and with a shift in the concentration of physicians from the CBD after 1960, south to Biltmore Avenue and McDowell Street (contemporary medical district), the business district zoning designation became inadequate. Here the argument went that light industrial uses

(LI), permitted within a business district, were incompatible with existing office and institutional land uses in the emerging contemporary medical district. Thus, at some time between 1966, when Barbour-Cooper & Associates recommended zoning changes, and 1975 (Table 2), the zoning classification of the contemporary medical district became office and institutional. This restricted light manufacturing activities from competing for space with an expanding medical center.

This concern for safeguarding adequate space for health resources was reemphasized more than twenty years later in the 2010 Asheville City Plan (Asheville City Planning Department, 1987). Under the section on health services the following objectives, indicating a strong commitment among citizens, planners, and municipal officials to protect its medical district from incompatible land uses, pertained to land use planning:

- Consider zoning changes to provide adequate land for health related development.
- Ensure that adequate transportation arteries exist to major health-care providers and transportation services are available to high risk population groups (Asheville City Planning Department, 1987, p. 73).

The Asheville City Planning Department, in response to the objectives set forth in the 2010 Asheville City Plan, submitted a draft zoning ordinance to the Asheville City Council for review in November 1993 (Personal Interview, December 24, 1992; Personal Correspondence, October 12, 1993). There are several unique aspects of the draft ordinance that would set Asheville apart from other cities in North Carolina, the Southeast, and perhaps the United States. If approved, the revised ordinance would have a considerable influence on the kind of land uses permitted within the contemporary medical district.

First, the draft ordinance calls for the separation of the current office & institutional (OI) district into two districts, an office district and an educational / campus institutional district (E / C&I). The purpose of the E / C&I district is "to reserve for the development of major educational facilities and health care facilities located in a campus-like setting..." (Personal Correspondence, October 12, 1993). Medium intensity offices uses and service uses that complement the E / C&I district would be permitted. The current (OI) district is too inclusive and does not adequately separate the less intensive uses of the campus-like institutions from the more intensive office uses.

Creating a 'medical institutional district' meets the goal of the 2010 Asheville City Plan of providing adequate land for health related services

A second aspect of the draft ordinance is the creation of a medical institutional district. To the author's knowledge, no other city in North Carolina has a zoning district specifically addressing medical land uses (City of Charlotte, 1985; City of Greensboro, 1993; City of Raleigh, 1993). The stated pur-

pose of the medical institutional district is to provide an area for the development of major medical facilities, health-related development, office development, public services and their necessary support services. The district will help achieve the goal stated in the 2010 Asheville City Plan of providing adequate land for health-related developments.

The draft ordinance is an improvement over the current zoning ordinance in its organization, preciseness, clarity, and forwardness. For each zoning district the purpose, permitted uses, restricted uses, development standards, and other requirements are specifically noted. For example, in the medical institutional district the development standards include: maximum building size (none), minimum size lot (20,000 square feet), minimum lot width (100 feet), minimum side yards (front = 15 feet, sides = 10 feet), maximum impervious surface (80%), maximum height (none), landscaping and buffering (required), parking and loading facilities (required), sidewalks (required), and access (restrictions).

Other North Carolina cities would do well to follow the Asheville example of using land use planning in providing manageable health care

In sum, the draft ordinance separates the previous office and institution district into an office district and an educational/campus institutional district, it creates a medical institutional district, and it refines development standards. Once approved, this version of the zoning ordinance will encourage compatible land uses to group together. The improved development standards should reduce conflict along the edges of different zoning districts while increasing internal homogeneity within districts (i.e., both the educational/campus and the medical institutional districts contain additional access and building height restrictions for parcels within 200 feet of residential districts). The draft ordinance reserves areas for health care uses in recognition of Asheville's status as a regional medical center and to ensure the continued economic health of the city as well. As of December 1994, the draft ordinance continues to be reviewed by the Asheville City Council (Nicholson, 1994).

Conclusions

This paper has examined shifting patterns of physician office locations together with the evolution of land use planning in Asheville. In recent decades, citizens, planners, and elected officials of Asheville have sought to protect existing and emerging patterns of health-related development through land use controls such as zoning ordinances and comprehensive plans. Other cities serving as regional medical centers might follow Asheville's example and consider land use planning to manage areas that specialize in health care services.

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