The Employed Surgeon

A Changing Professional Paradigm

Anthony G. Charles, MD, MPH; Shiara Ortiz-Pujols, MD; Thomas Ricketts, PhD; Erin Fraher, PhD; Simon Neuwahl, MSPH; Bruce Cairns, MD; George F. Sheldon, MD

Objective: To identify trends and characteristics of surgeon employment in the United States. Surgeons are increasingly choosing hospital or large group employment as their practice environment.

Design: American Medical Association Physician Masterfile data were analyzed for the years 2001 to 2009.

Setting: Surgeons identified within the American Medical Association Masterfile.

Participants: Surgeons were defined using definitions from the American Medical Association specialty data and the American Board of Medical Specialties certification data and included active, nonfederal, and nonresident physicians younger than 80 years of age.

Main Outcome Measures: Employment status and trends.

Results: The number of surgeons who reported having their own self-employed practice decreased from 48% to 33% between 2001 and 2009, and this decrease corresponded with an increase in the number of employed surgeons. Sixty-eight percent of surgeons in the United States now self-identify their practice environment as employed. Between 2006 and 2011, there was a 32% increase in the number of surgeon in a full-time hospital employment arrangement. Younger surgeons and female surgeons increasingly favor employment in large group practices. Employment trends were similar for both urban and rural practices.

Conclusions: General surgeons and surgical subspecialists are choosing hospital employment instead of independent practice. The trend is especially notable among younger surgeons and among female surgeons. The trend denotes a professional paradigm shift of major importance.

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Author Affiliations: Department of Surgery, University of North Carolina School of Medicine (Drs Charles, Ortiz-Pujols, Fraher, Cairns, and Sheldon), American College of Surgeon Health Policy Research Institute (Drs Charles, Ortiz-Pujols, Ricketts, Fraher, and Sheldon and Mr Neuwahl), and Sheps Center for Health Policy Research (Dr Charles, Ricketts, Fraher, and Sheldon and Mr Neuwahl), Chapel Hill, North Carolina.

Hospitals in the United States have begun responding to the implementation of health care reform by accelerating their hiring of physicians. And an increasing number of practicing US physicians are now employed by hospitals, integrated delivery systems, or large group practices.[1] Data from the American Hospital Association show that hospitals employed roughly 212 000 physicians in 2011, representing a 32% increase since 2000.[2]

See Invited Critique at end of article

Historically, physicians in the United States have owned and managed their medical practices. In the early 20th century, an employed physician was sometimes considered unprofessional and denied membership in professional organizations, including the American College of Surgeons.

The advent of managed care organizations in the late 1980s and early 1990s and the increasing complexity of the administrative side of practice have significantly altered professional activities. These forces[3] have contributed to physicians capitulating to the demands of the business of medicine.[4]

Direct employment of physicians by hospitals increased with the growth of managed care in the 1990s. This trend, however, plateaued with physicians' disillusionment with managed care. The current trend toward hospital employment differs from the growth of managed care because more physicians now seek income and lifestyle predictability within the current health care reform environment.[5]

Over the last 2 decades, surgeon employment arrangements have tended to-

ward large established group practices. By 2008, a slight majority of physicians in the United States (56%) were either full or part owners of their practices, whereas 44% were employed or independent contractors.[6] The current and evolving trend among surgeons is for continued growth of large practices that often contract as a group with a hospital or are directly employed by a hospital.

Hospitals frequently acquire physician practices to bolster a particular line of service.[7] Hospitals employ physicians to address the urgent and emergent patient needs to fulfill the mission of the health care system.[8] Employing physicians is often the mechanism for obtaining specialists needed to satisfy a state regulation, such as a minimum of number of specialists required for trauma center designation and verification or for special programs such as neonatal, cardiovascular, or stroke programs.[9]

Historically, general surgeons and surgical specialists in community-based practice have been relatively independent in their relationships with hospitals, and some have even owned small hospitals.[10] With this rapid shift in the practice paradigm, the employment of surgeons and other physicians is increasing. Given these trends, we sought to delineate the characteristics of surgeon employment and practice arrangements in the United States.

METHODS

American Medical Association (AMA) Physician Masterfile data were analyzed for the years 2001, 2003, 2004, 2005, 2006, and 2009. The Masterfile data contain basic information on practice arrangements.

Surgeons were categorized as either (1) self-employed, if they have full or part ownership interest in their practice (solo practitioner or 2-surgeon practice), or (2) surgeon employee, which includes employees of a large group practice who do not have an ownership interest in their practice or who work for a physician-owned practice. They include physicians with a self-reported employment status in medical schools and universities, state and local government, staff model health maintenance organizations, temporary hospital settings (locum tenens), and other patient care settings (eg, ambulatory care sites). Surgeons reporting an employment status of "other," "nonpatient care," or "unclassified" were excluded from both self-employed and physician employee categories.

Surgeons were defined using a composite definition that used data from both the AMA Masterfile's self-designated specialty categories and the American Board of Medical Specialties certifications. The American Board of Medical Specialties database contains information on more than 800 000 surgeons drawn from the 12 surgical specialty boards. Physicians were defined as surgeons if they had an AMA primary specialty in surgery or an AMA secondary specialty in surgery and a current surgical American Board of Medical Specialties certification. **Table 1** show the specialties included as general surgery.

Active surgeons were included in our study if they were younger than 80 years of age and had a practice location in a US county. Our study also included surgeons working in administration, in direct patient care, in medical research, and as medical teachers because these surgeons are considered active in the profession. Surgeons were excluded from the analysis if they reported being in residency training, retired, semiretired, or presently employed by the US government or in other nonpatient care activities, or if they reported an "unclassified" or inactive status.

Table 1. Specialties Included as General Surgery

Specialty Category	Included Specialties
General surgery	General surgery, abdominal surgery, hand surgery, oral and maxillofacial surgery, pediatric surgery, trauma surgery, transplant surgery, cardiovascular surgery, vascular surgery, surgical critical care, surgical oncology

In this analysis, a rural or urban classification was determined by the use of the US Office of Management and Budget core-based statistical area definitions. A surgeon was considered to be located in a "rural" area if the surgeon's practice address was in a micropolitan or non–core-based statistical area. Within the AMA Masterfile, data on Major Professional Activity (which designates physicians with direct hospital employment) were available for 2006 and 2011.

There are some limitations to our analysis, and these are inherent to any retrospective secondary data analysis. Approximately 30% of the surgeons within the AMA Masterfile data set provided insufficient information to be categorized and were excluded from this analysis. Our categorization process includes assumptions regarding employment status, especially for surgeons in large group practice because their ownership stake in that practice could not be delineated by the available data. We categorized this subset as employed in our analysis. The AMA Masterfile was selected for this trend analysis because it is the most inclusive database available for both allopathic and osteopathic physicians.

RESULTS

From 2001 to 2009, the percentage of general surgeons in solo and 2-physician practices in the United States decreased by 25.1% and 36.0%, respectively. Meanwhile, the percentage of general surgeons in large group practices increased by 67.4% during this period. The results were similar for all surgeons combined, with a somewhat larger increase in the number of surgeons in group practices and smaller decreases in solo and 2-physician practices (**Table 2**).

After aggregating general surgeons into employed and self-employed categories, we found that significant changes in employment status for general surgeons and for all surgeons over the study period became apparent. In 2001, 47.5% of all surgeons and 50.2% of general surgeons were self-employed. By 2009, self-employment for all surgeons and for general surgeons had decreased by 15.4% and 16.3%, respectively. During this period, there was a corresponding increase in the number surgeon employees. Based on these data from the AMA, 67.9% of all surgeons (**Figure 1**) and 66.1% of general surgeons (**Figure 2**) can be described as employed as of 2009.

We also examined the relationship of this employment trend in rural and urban contexts. In 2001, just 43.3% of all surgeons in rural areas were employed, while 53.8% of surgeons in urban areas were employed ($P < .001$). By 2009, the percentage of employed surgeons in urban areas had increased to 69.1% (**Figure 3**), and employed surgeons became the dominant employ-

Table 2. Ungrouped Employment Categories for All Surgeons and General Surgeons

AMA Employment Status	Surgeons, No.						Change From 2001 to 2009, %
	2001	2003	2004	2005	2006	2009	
Solo practice (self-employed)							
General surgeons	8351	7748	7233	7043	6858	6255	–25.1
All surgeons	39 456	37 497	35 711	35 271	34 642	32 993	–16.4
Two-physician practice (self-employed)							
General surgeons	1861	1683	1456	1403	1381	1191	–36.0
All surgeons	11 446	10 370	9074	8949	8673	7436	–35.0
Other patient care (employee)							
General surgeons	179	166	167	152	154	110	–38.5
All surgeons	851	770	706	668	653	507	–40.4
Locum tenens (employee)							
General surgeons	11	30	39	48	62	59	436.4
All surgeons	36	82	131	160	202	203	463.9
Group practice (employee)							
General surgeons	6423	7563	8538	8456	9677	10 750	67.4
All surgeons	40 823	48 625	55 220	54 940	62 821	70 707	73.2
HMO (employee)							
General surgeons	94	74	67	75	92	101	7.4
All surgeons	634	480	456	493	556	513	–19.1
Medical school (employee)							
General surgeons	1037	975	879	883	900	825	–20.4
All surgeons	5604	5294	4492	4472	4453	3966	–29.2
Nongovernment hospital (employee)							
General surgeons	1634	1608	1597	1518	1522	1398	–14.4
All surgeons	5659	5597	5538	5165	5249	4808	–15.0
City/county/state hospital (employee)							
General surgeons	648	638	597	580	753	1190	83.6
All surgeons	2346	2313	2134	2098	2730	4531	93.1
City/county/state other (employee)							
General surgeons	87	71	65	66	64	89	2.3
All surgeons	399	366	358	355	366	417	4.5
Other nonpatient care[a]							
General surgeons	140	146	133	130	116	104	–25.7
All surgeons	487	520	502	504	451	437	–10.3
No classification[a]							
General surgeons	9428	9267	9109	9032	8267	7444	–21.0
All surgeons	38 744	38 596	36 346	36 628	30 085	25 771	–33.5

Abbreviations: AMA, American Medical Association; HMO, health maintenance organization.
[a] Neither self-employed nor employee.

ment status in rural areas also, at 58.8% (**Figure 4**). This trend was similar for general surgeons.

In 2009, the mean age of general surgeons and of all surgeons was 50.9 and 50.7 years, respectively. Self-employed general surgeons were, on average, 7.0 years older than employed general surgeons. For all surgeons, the difference was slightly smaller, with self-employed surgeons being 6.4 years older, on average. Trends were similar in both rural and urban settings.

This employment trend is mostly due to younger surgeons choosing employment in large group practices and hospitals. In 2009, 86.1% of general surgeons graduating from medical school after 2000 were employed surgeons. Meanwhile, just 65.4% of general surgeons graduating from medical school before 2000 were considered employed surgeons, a difference of 20.7% ($P < .001$). Trends were similar for all surgeons.

The increased representation of women in the employed surgical workforce is also reflected in the data. In 2001, 61.3% of female surgeons were in an employed practice arrangement. By 2009, female surgeons in employed practice had increased to 75.5%. Male employed surgeons experienced a similar increase, with 51.5% in employed practice in 2001 and 66.3% in 2009 (**Figure 5**). These trends were comparable between all surgeon specialties and general surgeons.

Within the Major Professional Activity category, the number of surgeons in full-time hospital employment increased from 9586 in 2006 to 12 626 in 2011. Although this denotes a 32% increase in the number of surgeons in a direct hospital employment arrangement, it only represents a 1.2% increase in the percentage of surgeons over the 5-year period (**Table 3**).

COMMENT

An important change in health care delivery in the United States over the past 2 decades is the evolution of large group practices and their relationship with hospitals. More recently, hospitals have begun responding to the implementation of health care reform by accelerating their hir-

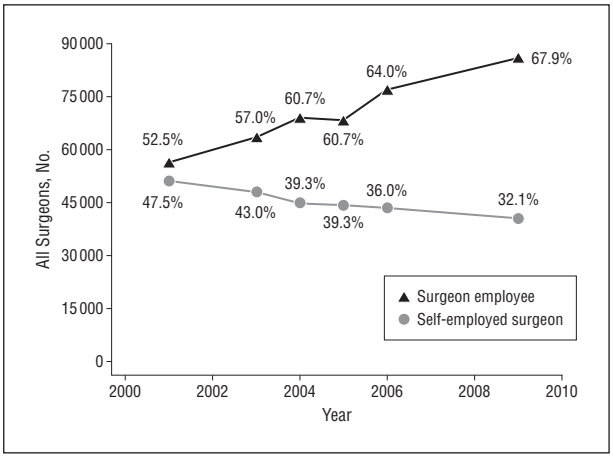

Figure 1. Trends in employment for all surgeons from 2001 to 2009. Data were obtained from the American Medical Association Physician Masterfile and the American Board of Medical Specialties certifications.

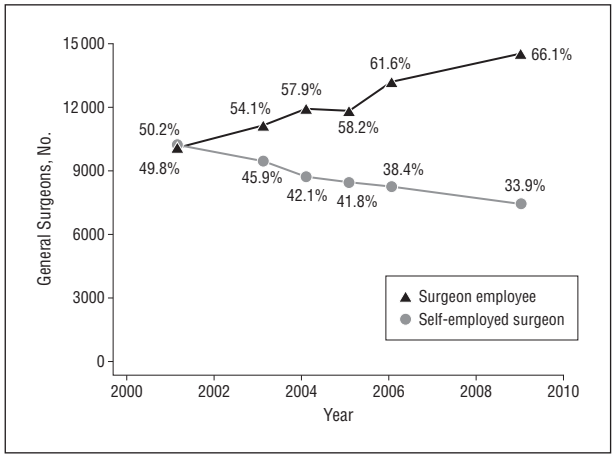

Figure 2. Trends in employment for general surgeons from 2001 to 2009. Data were obtained from the American Medical Association Physician Masterfile and the American Board of Medical Specialties certifications.

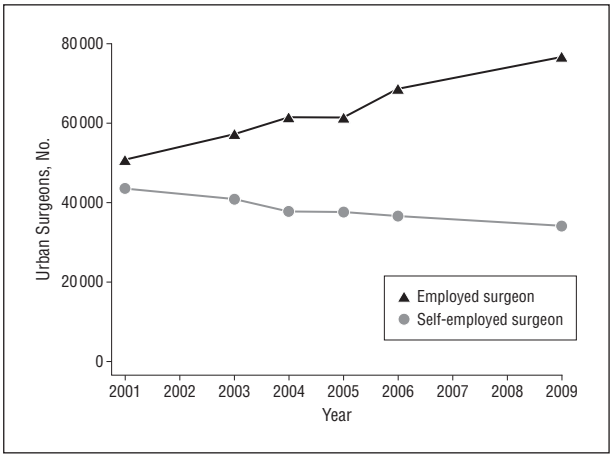

Figure 3. Trends in employment for urban surgeons of all specialties from 2001 to 2009. Data were obtained from the American Medical Association Physician Masterfile and the American Board of Medical Specialties certifications.

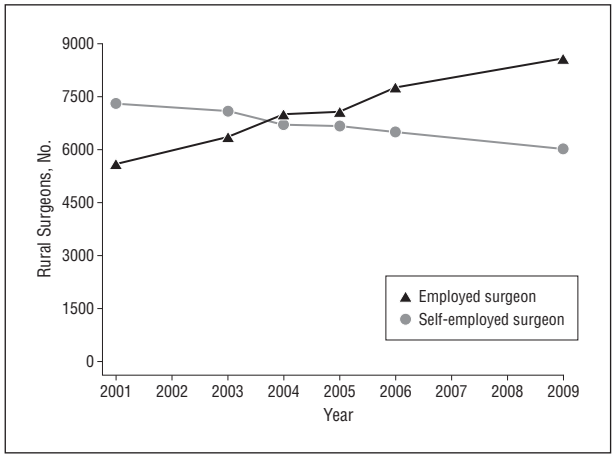

Figure 4. Trends in employment for rural surgeons of all specialties from 2001 to 2009. Data were obtained from the American Medical Association Physician Masterfile and the American Board of Medical Specialties certifications.

ing of physicians. More than half of practicing US physicians are either employed by hospitals or part of integrated delivery systems (in which a contractual arrangement exist between large physician group practices and hospital systems),[11] and surgeons entering practice are increasingly joining this trend.

An analysis of physician practice patterns from 1983 to 1986 by Marder et al[12] reported that 13.0% of general surgeons and 14.5% of surgical subspecialists were employed, while 48% and 53% were solo practitioners, respectively. Marder et al[12] used the AMA's Socioeconomic Monitoring System survey to analyze employed physicians. However, their definition of employment was unclear in the report.

In 1996, Kletke et al[13] also used the AMA's Socioeconomic Monitoring System survey to analyze employment trends. They found that 28.1% of general surgeons in 1994 were employed, which is still much lower than the 49.8% that we found in 2001 and the 66.1% that we found later in 2009. Unlike our analysis, Kletke et al[13] were able to separate group practice employees from self-employed group practice physicians by using data on the physician's ownership interest. Although this is the ideal method of defining employment, the AMA's Socioeconomic Monitoring System survey has not been available since 1999. The AMA's Patient Care Physician survey briefly replaced the Socioeconomic Monitoring System survey but was also discontinued, with the last year of data being 2000. Because data on physician ownership interest are no longer available from the AMA, our estimates have to assume that all group practice surgeons are "employees," likely leading to an overestimate. Nonetheless, many surgeons in the growing group practice category are undoubtedly employees, as they were in the report by Kletke et al.[13] Despite its flaws, this is the best data available to track physician employment trends. Noting these limitations, we still feel that there are signs that a significant paradigm shift has occurred since the reports by Marder et al[12] and Kletke et al.[13] Currently, there are fewer solo and small group practices, fewer physician-owned practices, and fewer independent practitioners in all specialties than in the period analyzed by Lieberhaber and Grossman[14] and Casalino et al.[15]

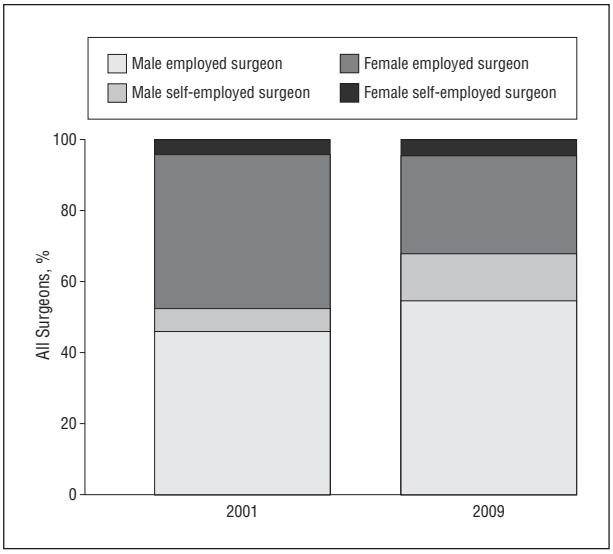

Figure 5. Relationship between sex and employment status for all surgeons. Data were obtained from the American Medical Association Physician Masterfile and the American Board of Medical Specialties certifications.

Hospitals have reacted to health care reform by consolidating service lines, by hiring physicians, and by changing purchasing practices. Accountable Care Organizations have, perhaps, stimulated this trend. Although the potential of hospital-employed physicians to improve quality and efficiency through better clinical integration across care settings has received some attention, from the hospital perspective, physician employment typically is one of the strategies to gain market share by increasing admissions, diagnostic testing, and outpatient services.[16] The largest US physician-recruiting firm, Merritt Hawkins, has reported that the share of its doctor searches that were for employed positions with hospitals hit 51% for the 12 months ending in March, 2010, up from 45% in 2009 and 19% in 2005.[17]

The complex corporate environment coupled with the stress of high malpractice rates, the struggle for reimbursement, administrative duties, and the general risks and burden of solo or small group private practices are factors driving this trend.[18] Younger physicians noticing the change in the health care environment are more likely than older physicians to favor larger-group or institutional practice and to choose salaried employment, reflecting a generational change.[19] Furthermore, the type of job opportunities available, albeit, an employed practice, may be driving this trend in the choice practice environment.

The trend, however, is not limited to recent graduates. Merritt Hawkins & Associates, in analyzing the viewpoints of physicians between the ages of 50 and 65 years (36% of the physicians in the United States), found that more than 49% of physicians are planning to make a change in their practices. The reasons for change most often cited were frustration over "reimbursement issues," "malpractice worries," "long hours," and "the pressure of running a business."[20] A substantial medical school debt also affects a physician's choice of practice arrangements. A graduating physician has an average educational debt of $140 000; therefore, in addition to the length of surgical training, he or she is unlikely to assume the financial risk of running a small practice.[21]

Table 3. Reported Major Professional Activities for All Physicians and Surgeons in 2006 and 2011

Major Professional Activity	No. (%)	
	2006	2011
Physician	612 313 (100)	679 334 (100)
Full-time hospital physician employee	62 683 (10.2)	83 287 (12.3)
Surgeon	150 881 (100)	169 127 (100)
Full-time hospital surgeon employee	9586 (6.4)	12 626 (7.5)

Over the past 10 years, the number of surgeons entering large group practices increased by more than 50%. During this same period, the number of surgeons employed by health maintenance organizations or by the US government or in other nonpatient care activities increased by 35%, which is coincident with a decrease in the number of surgeons in small group or solo practices.[22] Rural surgical practice reveals similar but slightly different trends. More rural surgeons practice in solo practices compared with their urban counterparts. An increasing number of rural surgeons (50%) have entered hospital employment over the past decade.[23] A recent survey by the Medical Group Management Association shows a nearly 75% increase in the number of active physicians employed by hospitals since 2000, and recent hospital announcements suggest that this trend is accelerating. A September 2010 survey revealed that 74% of hospital leaders planned to increase physician employment within the next 12 to 36 months.[24]

Generational differences, as well as an increasing representation of women in the surgical workforce, contribute to a shift in the practice environment of choice. Female general surgeons now comprise more than approximately 20% of the active surgical workforce, and that proportion will increase.[25] Women comprise 32.4% of the diplomats of the American Board of Surgery as of 2011 (Thomas Biester, MS, Director of Psychometrics and Data Analysis, American Board of Surgery, written communication, April 2012).

From the perspective of the hospital systems, the constraints of the present health care business and regulatory environment have often frustrated efforts to find innovative staffing solutions to overcome operational and financial challenges. By transitioning to a direct employment model, hospitals can begin to address immediate operational needs. Hospitals are faced with the challenges of trying to staff on-call physicians, especially in emergency departments and rural clinics. Studies have shown that nearly three-quarters of all emergency departments report inadequate on-call specialist coverage.[26] Direct employment also gives hospitals the freedom to impose additional requirements on the physician, such as requiring employed physicians to refer to the hospital's service lines instead of to other entities. This insulates the hospital's market share and guarantees use of the facility by physicians.[7] Hospital consolidation continues to be an important factor in physi-

cian employment by hospitals. In markets with a high concentration of hospitals, physicians face pressure to align closely with one hospital system or another.[6]

There are myriad market forces that are driving heightened physician, large group practice and hospital alignment activity today. The evolving trend in health reform, stimulated heavily by the uncertainties of the Affordable Care Act, is for consolidation of large provider groups often led by health care systems. Based on these uncertainties, both hospitals and physicians, in an attempt to reposition and align their interests, are bracing for the downstream effects of the health care reform legislations. This has necessitated physicians and hospitals to reexamine historical affiliations and align more closely to meet financial and professional expectations.

Medicine has always been a profession with a characteristic of rapid and evolving change. Medicine in the 21st century is witnessing change in the scientific, social, and organizational dimensions. Because flexibility is always superior to predictability, it is essential for surgeons to learn how these changes will affect their future professional identity. Preserving professionalism and a commitment to patients must remain the preserve of the surgeon in a changing environment. The only predictable certainty is change.

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Correspondence: Anthony G. Charles, MD, MPH, Department of Surgery, University of North Carolina School of Medicine, 4008 Burnett, Womack Bldg, CB 7228, Chapel Hill, NC 27599 (anthchar@med.unc.edu).
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