Trends in US Hospital Provision of Health Promotion Services, 1996–2014

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Abstract

Hospitals have long played important roles in the provision of health promotion services (HPS) in local communities, defined as activities that enable people to increase control over and improve their health, including programs such as disease prevention and wellness. Nearly 2 decades ago, researchers cross-sectionally documented the provision of HPS by hospitals, but little research has been done to update this work or document how HPS have changed over time. This study assessed changes in the provision of HPS among US hospitals between 1996 and 2014. Relationships were assessed using random effects Poisson regression models. The overall number of HPS reported by hospitals was relatively modest (approximately half of all possible services, on average). The number of services increased modestly over time, although the rate of increase became less positive over time. The findings highlight a number of opportunities to improve hospital provision of HPS.

Keywords: health promotion services, US acute care hospitals, longitudinal analysis

Background

POPULATION HEALTH MANAGEMENT – defined as a proactive approach to identifying at-risk and ill individuals and delivering services across the entire continuum of care for the purpose of cost-effectively improving physical and psychosocial well-being^{1,2} – has been an issue of long-standing importance in health care.³ It has received renewed emphasis in the past decade, however, because of the growing prevalence of chronic disease⁴ and a recognition that better tools are needed to cost-effectively provide high quality care for patients with chronic disease, perhaps best reflected in the Triple Aim that includes population health as one of its aims.⁵ The renewed emphasis on population health management also has resulted in a greater emphasis on the role of organizations in promoting population health. For example, the Chronic Care Model recognized the critical role of delivery systems in caring for patients with chronic disease.⁴ Likewise, the hope and promise of Accountable Care Organizations (ACOs) is that health care costs can be contained by providers combining their efforts to more effectively manage a population of assigned patients.^{6,7}

The study team submits that hospitals, in particular, can play an important role in managing population health. This is because hospitals remain one of the primary providers of

care in a community (inpatient, outpatient, and primary care), engage in a considerable number of community benefit activities, and are major employers in many communities.^{8,9} A key hospital strategy for managing population health is the provision of health promotion services.^{10,11} Health promotion services are activities that enable people to increase control over and improve their health, including programs such as disease prevention and wellness.^{12,13} Olden and Clement documented the health promotion activities among hospitals in 1997.¹⁴ Nearly 20 years have passed since they published their findings. Health promotion services are still an important component of hospitals' service strategy, even more so now with a policy and reimbursement environment that underscores the importance of engaging in activities that can improve population health (eg, ACOs, patient-centered medical home programs). Likewise, research has documented the positive consequences of health promotion services, such as reduced mortality and hospitalization rates among elderly patients.^{15,16}

Given the role and importance of health promotion services, for both hospitals and patients, an important question is whether health promotion services have changed over time. This question is taken up in this paper by examining the prevalence of health promotion services offered by hospitals over time. Study findings are important for understanding

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opportunities to improve the provision of health promotion services and support efforts to improve the health of the people served by hospitals.

Methods

Data source

This study utilizes data from the American Hospital Association's (AHA) Annual Survey and the Area Resource File (ARF). The AHA data set provides information about hospitals, including their health promotion services. The ARF data set provides information about the communities surrounding patients and hospitals, such as racial and ethnic composition, income, and education. Annual data sets were merged for the years of 1996 to 2014. The final analytic sample consisted of a panel of all general acute care hospitals in the United States.

Variables

The AHA Annual Survey asks respondents to indicate whether they offer a range of different services and each service was coded dichotomously (1 = offered service; 0 = did not offer service). Consistent with Olden and Clement,¹⁴ the present study distinguished between 4 types of health promotion activities. Hospital-based patient services was measured as the sum of 8 items: outreach, hospital-based outpatient care, mammography, education center, health information center, nutrition, support groups, and social services (range 0 to 8). Primary wellness was measured as the sum of 4 services: primary care, separate outpatient center, psychiatric education, and child wellness (range 0 to 4). Elderly services was measured as the sum of 2 services: retirement housing and Meals on Wheels. Screening services was measured as the sum of 3 services: health screenings, home health, and health fair.

Because the principal objective was to examine trends in health promotion services, the primary variable of interest was time. Given the number of years included in the study, the study team constructed a continuous variable to reflect time (ie, 1 = 1996, 2 = 1997, ..., 18 = 2014). The team also included quadratic and cubic formulations of this time variable to assess potential nonlinear trends.

The analysis controlled for 7 hospital organizational characteristics that previous research has found associated with the provision of health promotion services.¹⁷ Ownership was measured with 3 dummy variables (not-for-profit, for-profit (referent), government not-for-profit). System affiliation was measured with a dummy variable (1 = system affiliation, 0 = independent hospital). Teaching status was measured with a dummy variable (1 = either having residency training approval by the Accreditation Council for Graduate Medical Education, medical school affiliation reported to the American Medical Association, being a member of the Council of Teaching Hospitals of the Association of American Medical Colleges, or residency approved by American Osteopathic Association; 0 = not a teaching hospital). Hospital size was measured as total facility beds set up and staffed at the end of reporting period. Given the range of values between hospitals, this variable was subsequently converted to 50-bed units (ie, number of beds divided by 50) to provide a more practically meaningful interpretation. Network membership was measured

with a dummy variable (1 = hospital participates in a network, 0 = hospital does not participate in a network). Health maintenance organization (HMO) contract and preferred provider organization (PPO) contract were measured as dummy variables reflecting whether the hospital was engaged in an HMO contract and a PPO contract, respectively (1 = yes; 0 = no).

The analysis also controlled for 4 county-level characteristics that reflected the physical, socioeconomic, and health delivery system characteristics of the surrounding community. Average county-level socioeconomic status (SES) was measured as a composite measure of SES constructed by standardizing 4 contextual community variables – percentage of county residents below the federal poverty level, percentage of county residents with less than a high school education, percentage of county residents who were unemployed, and percentage of county residents who were uninsured – and summing across these variables. Higher values of this variable indicated lower SES of county residents, on average. The racial and ethnic composition of the community was measured with 1 continuous variable, percent minority, which was calculated as the number of minority residents in a county divided by the total number of county residents, multiplied by 100. Likewise, age distribution was included as the percentage of residents older than age 65. Finally, hospital competition was measured using the Herfindahl-Hirschman Index (the sum of the square of hospital market shares in a hospital service area, as defined by the Dartmouth Atlas), based on the number of beds set up and staffed for use.

Analytic strategy

The unit of analysis was the hospital. Univariate statistics were used to describe the number of health promotion services for select time periods. Multivariate relationships between the number of health promotion services and time, controlling for hospital and community characteristics, were assessed using panel Poisson models with robust standard errors to account for repeated observations of hospitals over time.¹ For the multivariate results, incident rate ratios (IRRs) are reported for all model covariates. Marginal effects also were calculated for each year and these values were plotted (Figure 1) to better illustrate changes over time.

Results

Sample characteristics

At baseline, hospitals in the sample offered 7.88 total health promotion services, on average (Table 1). Most of these were hospital-based patient services, followed by screening services, primary wellness services, and elderly services (Table 1). Changes over time were modest. In 2014, hospitals in the sample offered a 15.9% increase in total services over baseline. This change was closely mirrored by changes in the average number of hospital-based patient services, which increased 16.0% in 2014. Primary wellness services experienced the greatest relative increase over time, increasing 49.6% in 2014. The number of elderly services remained relatively constant over time, on average. Additional hospital and community characteristics are shown in Table 1.

FIG. 1. Predictive probabilities over time, 1996–2014.

TABLE 1. HOSPITAL AND COMMUNITY CHARACTERISTICS AT BASELINE (1996) AND FINAL YEAR (2014)

	1996 (N = 4075)	2014 (N = 4414)
Any health promotion service (M/SD)	7.881/4.707	9.134/58.4
Hospital-based patient service (M/SD)	4.648/2.751	5.391/3.073
Primary wellness (M/SD)	0.987/1.222	1.477/1.478
Elderly services (M/SD)	0.280/0.509	0.279/0.541
Screening services (M/SD)	1.967/1.127	1.988/1.170
Hospital Bed Size (M/SD)	167.155/167.360	164.591/194.162
Teaching		
Yes (N/%)	3169/77.77%	1588/35.98%
No (N/%)	906/22.23%	2826/64.02%
System Membership		
Yes (N/%)	1837/45.08%	2692/60.99%
No (N/%)	2238/54.92%	1722/39.01%
Ownership		
Govt, not-for-profit (N/%)	1220/29.94%	1003/22.72%
For Profit (N/%)	443/10.87%	740/16.76%
Not For Profit (N/%)	2412/59.19%	2671/60.51%
Network		
Yes (N/%)	1119/27.46%	1529/34.64%
No (N/%)	2956/72.54%	2885/65.36%
HMO Contract		
Yes (N/%)	2377/58.33%	2426/54.96%
No (N/%)	1698/41.67%	1988/45.04%
PPO Contract		
Yes (N/%)	2831/69.47%	2739/62.05%
No (N/%)	1244/30.53%	1675/37.95%
Percent older than age 65 (M/SD)	14.296/4.184	15.817/4.112
HHI (M/SD)	0.790/0.314	0.765/0.320
Population Density		
Rural (N/%)	387/12.32%	348/7.89%
Suburban (N/%)	1667/53.06%	1499/33.98%
Urban (N/%)	1088/34.63%	2564/58.13%
Percent Minority (M/SD)	19.075/16.852	21.586/16.909
SES Composition (M/SD)	−0.612/2.219	−0.372/2.649

HHI, Herfindahl-Hirschman Index; HMO, health maintenance organization; M, mean; PPO, preferred provider organization; SD, standard deviation; SES, socioeconomic status.

A comparison of the service frequency counts between the baseline (1996) and final (2014) years of the study indicate that the distribution of total services became more “bifurcated” over time (Table 2). Specifically, 18.53% of the hospitals were providing no health promotion services and 16.54% of the hospitals were providing 15 or more services in 2014, compared to 13.67% and 6.44%, respectively, in 1996. A similar pattern was observed for hospital-based services. In general, the distribution of primary wellness services shifted upward over time (Table 2). There was no appreciable shift in the distributions for elderly services and screening services between 1996 and 2014.

TABLE 2. FREQUENCY COUNTS OF HEALTH PROMOTION SERVICES AT BASELINE (1996) AND FINAL YEAR (2014)

	1996 (N=4075)	2014 (N=4414)
Any health promotion service (N/%)		
0	557/13.67%	818/18.53%
1	53/1.30%	35/0.79%
2	99/2.43%	41/0.93%
3	153/3.75%	51/1.16%
4	160/3.93%	69/1.56%
5	206/5.06%	104/2.36%
6	248/6.09%	145/3.29%
7	287/7.04%	151/3.42%
8	320/7.85%	203/4.60%
9	315/7.73%	266/6.03%
10	312/7.66%	279/6.32%
11	313/7.68%	351/7.95%
12	286/7.02%	357/8.09%
13	264/6.48%	404/9.15%
14	240/5.89%	410/9.29%
15	160/3.93%	403/9.13%
16	76/1.87%	222/5.03%
17	26/0.64%	105/2.38%
Hospital-based patient service (N/%)		
0	610/14.97%	834/18.89%
1	134/3.29%	64/1.45%
2	261/6.40%	100/2.27%
3	352/8.64%	141/3.19%
4	371/9.10%	212/4.80%
5	475/11.66%	281/6.37%
6	502/12.32%	387/8.77%
7	603/14.80%	625/14.16%
8	767/18.82%	1,770/40.10%
Primary wellness (N/%)		
0	2,013/49.40%	1,682/38.11%
1	929/22.80%	851/19.28%
2	540/13.25%	655/14.84%
3	360/8.83%	545/12.35%
4	233/5.72%	681/15.43%
Elderly services (N/%)		
0	3,053/74.92%	3,385/76.69%
1	904/22.18%	828/18.76%
2	118/2.90%	201/4.55%
Screening services (N/%)		
0	747/18.33%	940/21.30%
1	507/12.44%	229/5.19%
2	954/23.41%	1,191/26.98%
3	1,867/45.82%	2,054/46.53%

Total health promotion services

On average, controlling for hospital and community characteristics, hospitals significantly increased the overall number of health promotion services offered over the study period (IRR = 1.027, 95% CI = 1.020, 1.035); however, the rate of increase became significantly smaller over the study period (Table 3). For example, at baseline, the marginal effect was 0.180 ($P < 0.001$), indicating that a 1-year increase in time was associated with 0.180 more health promotion services, on average (Table 4). In contrast, by 2004, the study midpoint, the marginal effect was 0.084 ($P < .001$), less than half of what it was at baseline. The declining rate of increase had leveled off by the end of the study period.

Hospital-based patient services

On average, controlling for hospital and community characteristics, hospitals significantly increased the number of hospital-based services they offered over the study period (Table 3). Similar to the total number of health promotion services, the rate of this increase became smaller over time, although not significantly so (Table 3). At baseline, the marginal effect was 0.103 ($P < .001$), indicating that hospitals increased the number of hospital-based services by 0.103 services, on average, between 1996 and 1997 (Table 4). By 2011, the relationship between time and the number of hospital-based patient services was no longer significant ($P = 0.071$) and by 2013 hospitals were decreasing the number of hospital-based patient services, although not significantly so ($P = 0.41$).

Primary care wellness services

Controlling for hospital and community characteristics, hospitals increased the number of primary care wellness services they offered over the study period (Table 3). The rate of the increase, however, varied at different periods, with the rate of increase significantly slowing between baseline and 2007, but then began significantly increasing again (Table 3). Specifically, the marginal effect was 0.052 ($P < .001$) in 1996, declining to nearly one third of the baseline rate in 2007, and increasing again to nearly the baseline rate in 2014 (Table 4).

Elderly services

Elderly services followed a temporal pattern similar to primary wellness services. Controlling for hospital and community characteristics, hospitals significantly increased the number of elderly services they offered over the study period, on average (Table 3). The rate of the increase, however, varied at different periods, with the rate of increase significantly slowing between baseline and 2010, but then began significantly increasing again in 2011 (Table 3). Notably in the case of elderly services, however, hospitals actually decreased the number of elderly services during the middle years of the study period. For example, at baseline, the marginal effect was 0.012 ($P < .05$), indicating that hospitals increased the number of elderly services by 0.012, on average, between 1996 and 1997. By 2002, the marginal effect was -0.004 ($P < .001$), indicating that hospitals decreased the number of elderly services by 0.004, on average, between 2002 and 2003. The rate of change was positive once again by 2011 and nearly back to the baseline level by 2014 (Table 4).

TABLE 3. PANEL POISSON MODEL RESULTS

	All health promotion services IRR (95% CI)	Hospital-based patient service IRR (95% CI)	Primary wellness IRR (95% CI)	Elderly services IRR (95% CI)	Screening services IRR (95% CI)
Time	1.027 (1.020, 1.035)***	1.026 (1.019, 1.033)***	1.073 (1.057, 1.091)***	1.082 (1.055, 1.110)***	1.007 (0.998, 1.015)
Time ²	0.998 (0.998, 0.999)**	0.999 (0.999, 1.001)	0.995 (0.993, 0.997)***	0.990 (0.987, 0.993)***	0.999 (0.998, 1.001)
Time ³	1.000 (0.999, 1.001)	0.999 (0.999, 1.001)	1.000 (1.000, 1.001)***	1.000 (1.000, 1.001)***	0.999 (0.999, 1.001)
Hospital Bed Size (50 beds)	1.019 (1.016, 1.022)***	1.016 (1.013, 1.019)***	1.029 (1.025, 1.035)***	1.025 (1.015, 1.035)***	1.013 (1.010, 1.016)***
Teaching hospital	1.039 (1.022, 1.055)***	1.028 (1.012, 1.044)***	1.095 (1.059, 1.132)***	1.036 (0.969, 1.107)	1.020 (1.010, 1.016)***
System member	1.022 (1.007, 1.038)**	1.006 (0.99, 1.022)	1.071 (1.036, 1.106)***	1.034 (0.978, 1.094)	1.032 (1.016, 1.048)***
Ownership					
Govt Not-for-Profit	Referent	Referent	Referent	Referent	Referent
For-Profit	0.859 (0.830, 0.890)***	0.922 (0.890, 0.955)***	0.714 (0.658, 0.775)***	0.586 (0.496, 0.692)***	0.834 (0.803, 0.865)***
Not-for-Profit	1.118 (1.091, 1.146)***	1.110 (1.083, 1.138)***	1.220 (1.152, 1.291)***	1.171 (1.069, 1.283)***	1.079 (1.053, 1.106)***
Network (1 = Yes; 0 = No)	1.213 (1.120, 1.231)***	1.202 (1.185, 1.219)***	1.256 (1.221, 1.293)***	1.259 (1.196, 1.324)***	1.206 (1.188, 1.224)***
HMO Contract (1 = Yes; 0 = No)	1.234 (1.209, 1.260)***	1.236 (1.210, 1.261)***	1.339 (1.283, 1.399)***	1.165 (1.095, 1.238)***	1.191 (1.167, 1.214)***
PPO Contract (1 = Yes; 0 = No)	1.538 (1.500, 1.576)***	1.535 (1.497, 1.574)***	1.463 (1.400, 1.529)***	1.482 (1.385, 1.586)***	1.587 (1.547, 1.629)***
Percent older than age 65	0.999 (0.999, 0.999)***	0.999 (0.999, 0.999)*	0.999 (0.998, 1.001)	1.000 (0.998, 1.001)	0.999 (0.998, 0.999)***
HHI	0.991 (0.963, 1.021)	1.012 (0.984, 1.042)	0.808 (0.775, 0.864)***	1.051 (0.919, 1.201)	1.068 (1.035, 1.102)***
Percent Minority	0.998 (0.998, 0.999)***	0.998 (0.997, 0.999)***	1.000 (0.999, 1.001)	0.993 (0.990, 0.997)***	0.997 (0.997, 0.998)***
SES Composition	0.984 (0.980, 0.988)***	0.985 (0.981, 0.989)***	0.971 (0.963, 0.979)***	0.912 (0.898, 0.927)***	0.998 (0.994, 1.002)
Population Density					
Rural	Referent	Referent	Referent	Referent	Referent
Suburban	1.174 (1.133, 1.217)***	1.208 (1.164, 1.253)***	1.524 (1.380, 1.684)***	0.765 (0.677, 0.863)***	1.055 (1.016, 1.095)***
Urban	1.130 (1.093, 1.168)***	1.167 (1.128, 1.207)***	1.252 (1.136, 1.380)***	0.795 (0.711, 0.888)***	1.078 (1.042, 1.115)***

* $P < .05$; ** $P < .01$; *** $P < .001$.

CI, confidence interval; HHI, Herfindahl-Hirschman Index; HMO, health maintenance organization; IRR, incident rate ratio; PPO, preferred provider organization; SES, socioeconomic status.

TABLE 4. MARGINAL EFFECTS

	<i>All health promotion services</i>	<i>Hospital-based patient services</i>	<i>Primary wellness services</i>	<i>Elderly services</i>	<i>Screening services</i>
1996	0.180***	0.103***	0.052***	0.016***	0.012*
1997	0.167***	0.100***	0.047***	0.012***	0.012*
1998	0.154***	0.097***	0.042***	0.008***	0.011**
1999	0.142***	0.093***	0.036***	0.004***	0.010***
2000	0.129***	0.088***	0.031***	0.001	0.010***
2001	0.117***	0.083***	0.027***	-0.002	0.009***
2002	0.105***	0.078***	0.023***	-0.004***	0.008***
2003	0.094***	0.072***	0.019***	-0.005***	0.007***
2004	0.084***	0.066***	0.016***	-0.006***	0.007***
2005	0.075***	0.059***	0.015***	-0.006***	0.006**
2006	0.066***	0.052***	0.014***	-0.006***	0.005*
2007	0.058***	0.044***	0.014***	-0.006***	0.004*
2008	0.052***	0.036***	0.015***	-0.004***	0.003*
2009	0.046***	0.028***	0.017***	-0.003***	0.002
2010	0.042***	0.019***	0.020***	-0.001	0.002
2011	0.038***	0.010	0.025***	0.002	0.001
2012	0.036**	0.001	0.030***	0.004**	-0.001
2013	0.035*	-0.009	0.038***	0.008***	-0.001
2014	0.035	-0.018	0.047***	0.013***	-0.002

* $P < .05$; ** $P < .01$; *** $P < .001$.

Screening services

Even though the instantaneous relationship between time and number of screening services was significant for many years, on average, hospitals did not significantly change the number of screening services offered over time (Table 3).

Control variables

There were a number of statistically significant relationships between the different types of health promotion services and the control variables included in the analysis. In the interest of brevity, the study team focuses on those control variables that were statistically significant across all types of health promotion services. Interested readers are referred to Table 3 for more details. Compared to government not-for-profit hospitals, for-profit hospitals have a rate of health promotion services 0.859 times lower ($P < .001$). This relationship holds true for each type of health promotion service offered (Table 3). Compared to government not-for-profit hospitals, for-profit hospitals had lower rates for hospital-based patient services, primary wellness services, elderly services, and screening services ($P < .01$, $P < .001$, $P < .01$, and $P < .05$, respectively). Hospitals that were part of a network had a rate of health promotion services 1.2 times greater than hospitals that were not part of a network ($P < .001$; Table 3). Breaking down health promotion services into its subcomponents, hospitals that were part of a network had rates of hospital-based patient services, primary wellness services, elderly services, and screening services between 1.2 and 1.3 times greater than hospitals that were not part of a network (Table 3). Compared to hospitals that did not participate in an HMO contract, hospitals that participated in an HMO contract had a rate of health promotion services 1.2 times greater ($P < .001$), and between 1.1 and 1.4 times greater for hospital-based patient services, primary wellness services, elderly services, and screening services (Table 3). Likewise, hospitals that participated in a PPO contract, relative to hospitals that did not participate in a PPO contract, had rates of health promotion services 1.5

times greater, overall ($P < .001$) and for each of the sub-components (Table 3).

Discussion

The purpose of this study was to examine temporal trends in hospital health promotion capacity. This analysis found that, controlling for hospital and community characteristics, on average hospitals increased their health promotion services offerings over the past 2 decades. However, these changes were relatively modest. This, combined with the fact that hospitals are only offering approximately half of all possible health promotion activities, raises the important question of why hospitals are not offering more services. One possibility is that health promotion services increasingly are offered by other organizations (eg, community health centers, health plans, social service agencies). Additional research should explore this possibility by looking more broadly at the community-level provision of health promotion services and the provision of services by different organizations. Another possibility is that some services are too expensive to provide or have an uncertain return on investment, something that future research could consider by examining how the provision of health promotion services correlates with financial performance.

It is also notable that this descriptive analysis suggests that, over time and across US hospitals, there has been greater divergence in overall health promotion service capacity, with more hospitals offering either all or few-to-none of the health promotion services. Such divergence may portend problems if declines in capacity are concentrated among hospitals that are the primary (or only) source for such services in certain communities. These findings showing hospitals in rural areas offering fewer services, on average, than their suburban and urban counterparts suggests this may be the case. Regardless, these findings collectively highlight an opportunity to enhance the provision of services that may improve population health.

When considering the different types of health promotion services, the largest change in relative terms was for primary wellness services, which grew by nearly 50% over the 2 decades included in the study. Of course, with fewer numbers of services in this category, small increases correspond to large percentage increases. Nevertheless, this trend may reflect a shift in how hospitals relate to physicians (ie, increased ownership of physician practices by hospitals).¹⁸⁻²⁰ That is, hospitals may have increased their capacity to provide these types of services simply by acquiring physician practices. Alternatively, the trend may reflect growing interest in innovative programs such as the patient-centered medical home that emphasize services to proactively manage the health of populations. Such distinctions are important to the extent that they reflect different attitudes toward, and thus strategies for, offering health promotion services (ie, passive vs. active strategy) that may influence their sustainability in a hospital's service portfolio. Nevertheless, such explanations are only speculative at this point and additional research is needed to determine the causes of this trend.

Despite increases in overall hospital capacity in providing health promotion services, this study also revealed significant nonlinear patterns of growth, which was largely because of primary wellness and elderly services that exhibited similar

patterns. In general, these services exhibited a pattern where there was a slowing in the rate of health promotion service growth after baseline, followed again by an increased rate of growth. More specifically, this analysis suggests that the late 1990s and early 2000s were periods when hospital decision makers were less convinced of the need or value of providing health promotion services. This slowing growth rate could reflect the managed care backlash that was occurring during this period and less payer pressure on providers to engage in population health practices to support risk contracting.²¹ By the mid-to-late 2000s, however, hospitals seemed to pick up the pace and were increasing their provision of these services once again, at least for primary wellness and elderly services. One potential explanation for this shift is health reform, which was being debated and moved through Congress by the late 2000s. This may have signaled to providers the importance of (certain types of) health promotion services that were likely to be included in the final health reform bill. Likewise, the items emphasized by health reform may have stimulated hospitals to revisit their health promotion strategies in specific areas. In contrast, hospital-based services and screening services exhibited a steadily slowing rate of growth and even decreases in the number of services by the latter years of the study. More research is needed to understand whether this trend will continue and why hospitals may be decreasing services in these 2 areas. For example, are these services unprofitable? Do hospitals no longer view these services as the most effective way to promote patient health?

Consistent with previous research, the present analysis found that hospitals that were members of multihospital systems and networks were associated with greater health promotion service capacity.^{10,14,22} As suggested by these researchers, formal relationships with other entities such as other hospitals in a system or network may provide a conduit for accessing these services. Despite mixed evidence in previous studies,^{22,23} the current analysis presents a relatively clear picture with respect to ownership, geographic location, and managed care contracting. Specifically, relative to public hospitals, private not-for-profit hospitals offered more health promotion services and private for-profit hospitals offered fewer health promotion services, on average, for all types of services. As argued by other researchers, it may be that private not-for-profit hospitals see health promotion services as a part of their mission and/or as a means of meeting community benefit obligations.^{10,23,24} In comparison, public hospitals may not have the means and for-profit hospitals may not see the business case or feel the same pressure to offer these services. Regardless, the findings in general point to a need for research that can identify the motivation behind offering these services.

Hospitals with HMO and PPO contracts were consistently associated with greater health promotion service capacity. One explanation for this pattern is that contracts with managed care organizations may create pressure on hospitals to adopt these services, especially given that many of these types of contracts, especially HMO contracts, emphasize the proactive management of populations of patients. Finally, relative to rural hospitals, suburban and urban hospitals offered more health promotion services,^{14,22,25} with the sole exception being elderly services. To the extent that health promotion services are associated with desired health outcomes, this finding may be problematic given that members

of rural communities already experience challenges with access to care and poorer health outcomes.^{26,27} The absence of services that can proactively educate and treat patients in these settings is likely to exacerbate these problems.

Limitations

The findings of this study should be interpreted in light of several limitations. First, the analysis utilized self-reported data from the AHA Annual Survey to assess health promotion service capacity, which means that reporting inaccuracies may exist in the data (eg, a respondent who is not fully aware of all services offered by the hospital). Moreover, the measures of health promotion service capacity were based on dichotomous indicators of whether the hospital offered the service or not. Thus, these data cannot capture how many of these services actually were provided to patients in a given year. Finally, the services considered in this analysis were limited to those available in the AHA Annual Survey and likely do not encompass every type of health promotion service. Despite these limitations, these data reflect the most comprehensive data available on hospitals and their services that may have emerged in the ensuing years. Moreover, the objective in this analysis was not necessarily to be comprehensive, but rather to extend the initial study done by Olden and Clement; therefore, the study team believes it was important to focus on similar services.

Conclusion

Growing interest in population health management has given rise to greater emphasis on the role of organizations in providing services that can proactively promote better health in local communities. Hospitals, in particular, are poised to take an important role in providing such services. Like the study by Olden and Clement nearly 20 years ago, the findings of the present study offer good news and bad news. On one hand, it is evident that many hospitals are still actively engaged in offering health promotion services in their communities. On the other, these findings suggest that hospitals are providing modest levels of health promotion services, on average, a pattern that has remained relatively constant over the past 2 decades. Moreover, there is still substantial variation across hospitals in the number of services they offer. Collectively, these findings highlight the need for practical and policy approaches to better support the provision of these services.

Author Disclosure Statement

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