Title

Town and Gown Differences Among the 100 Largest Medical Groups in the United States

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Abstract

Purpose

The authors undertook a study to determine whether large academic and community-based medical groups differ in terms of their financial stake in Medicare Advantage or Medicare Accountable Care Organizations (ACOs) and whether their participation in these alternative payment models is related to their size, specialty mix, and Medicare physician market share in their local area.

Method

The authors used the 2013 Medicare Data on Provider Practice and Specialty database and a national database of ACOs to conduct a cross-sectional

descriptive study of the 100 largest medical groups in the United States. Medical groups were categorized as academic or community based on matches of their name with a list of U.S. medical schools or the results of a series of Internet search procedures.

Results

Sixty-eight of the 100 largest groups were academic, and 32 were community based. On average, community-based groups had more than twice the percentage of primary care physicians as academic groups (mean, 38.4%; 95% CI, 34.7%–42.0%; vs. 18.3%; 95% CI, 17.0%–19.6%). Community

groups were significantly ($P < .001$) more likely than academic groups to have a financial stake in a Medicare ACO or Medicare Advantage plan, but this difference was no longer significant when the percentage of primary care physicians in the group was added to the model.

Conclusions

The specialty mix within academic medical groups may hinder their ability to transform themselves into organizations that can manage the financial responsibilities of caring for a patient population through a Medicare ACO or Medicare Advantage.

Editor's Note: A Commentary by S.M. Retchin appears on pages 908–909.

The proportion of physicians practicing in large medical groups has grown over time.[1] The percentage of physicians in groups of more than 50 increased from 30.9% in 2009 to 35.6% in 2011.[2] Medicare is attempting to increase quality of care and moderate health care cost increases by offering large medical groups a financial stake (either directly or indirectly) in the cost of care, for instance, through managed care. The percentage

of Medicare beneficiaries enrolling in Medicare Advantage plans has grown from 13% to 31% in the past decade.[3] For the remainder of Medicare beneficiaries in the fee-for-service program, U.S. Secretary of Health and Human Services Sylvia Burwell has announced the goal of having 30% of Medicare payments in alternative payment models such as Accountable Care Organizations (ACOs) by the end of 2016, and 50% by 2018.[4]

Consistent with that goal, Congress included a provision called the Merit-Based Incentive Payment System (MIPS) as a part of the 2015 legislation repealing Medicare's Sustainable Growth Rate.[5] Beginning in 2019, all physicians participating in Medicare, regardless of their group size, will receive a 5% annual financial incentive to participate in ACOs and other alternative payment models or face financial risks of 4%, which will increase to 9% by 2022, related to the cost and quality of care they provide relative to other physicians participating in the traditional fee-for-service delivery model.

Large medical groups are a key feature of payment reform policy. Compared with individual physicians or small groups, larger groups of physicians may be better able to share staff and other resources to pursue quality improvement and cost

savings.[6] Larger groups also provide Medicare with a more statistically stable unit of analysis than individual physicians or small groups for forming judgments about health care quality and cost savings. Medicare ACOs and Medicare Advantage rely on contracting with medical groups rather than individual physicians, and it is likely that when the MIPS program is implemented, it will, as the current mandatory Medicare pay-for-performance program does, focus on large groups of physicians as well.

Academic medical groups (i.e., faculty practice plans) are a prominent subset of large medical groups. In 2013 (the most recent year of claims data), there were 129 Liaison Committee on Medical Education–accredited medical schools in the United States. (This figure excludes seven medical schools with fewer than 50 faculty members [in various stages of development], four schools in Puerto Rico, and one school whose physicians were federal employees and hence did not bill Medicare.) Physicians in their affiliated medical groups serve as the main teachers for medical students and residents throughout the country. Little is known about the size of academic medical groups, their specialty characteristics, their market share in their local area, and the rate at which

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they participate in Medicare ACOs and Medicare Advantage plans.

In this study, we make use of Medicare administrative data to characterize the 100 largest medical groups in the United States. We characterize each of these groups by their group type (academic or community), size, specialty mix, and share of the Medicare physician market in their local area. We also assess whether any of these characteristics are associated with whether the medical group has a financial stake in the cost of caring for patients through a Medicare ACO or a Medicare Advantage plan.

Method

Data collection

In April 2015, we conducted a cross-sectional descriptive study using the Medicare Data on Provider Practice and Specialty (MD-PPAS), version 2.0.[7] The MD-PPAS was created using two Medicare administrative databases to characterize physicians and assign them to medical groups: (1) the Medicare Provider Enrollment, Chain, and Ownership System (PECOS), and (2) the 100% physician/supplier file of fee-for-service Part B claims. Physicians participating in the Medicare program are required to enroll in PECOS using their national provider identifier (NPI) and to report their specialty. The vast majority of physicians in the United States participate in Medicare with the notable exception of pediatricians because of the age differences between their typical patients and those in the Medicare program.[8]

Provider groups participating in Medicare must enroll and report their tax identification number (TIN), the provider group name associated with the TIN, and its city and state. Records from PECOS and the Part B claims were linked at the individual physician level using the NPI. For those physicians who billed Medicare using multiple TINs, we assigned the physician to a single TIN based on the number of service lines on the claims. Medical group size was determined by the number of physician NPIs associated with a TIN or a set of TINs corresponding to the same organization.

"Town" or "gown"?

The MD-PPAS database does not include an indicator of whether a physician is associated with a medical school's academic medical group ("gown"). To categorize a physician's TIN as being within an academic medical group, we relied on a match of information in MD-PPAS with the name and location of the medical school available from the Association of American Medical Colleges Web site.[9] Those medical groups not linked to a medical school were classified as community based ("town").

Identification and aggregation of TINs

More so than large community-based medical groups, groups associated with a medical school sometimes have multiple TINs, often corresponding to different departments. We attempted to identify all of the TINs associated with a medical school and to count the unique NPIs associated with those TINs to calculate the size of a medical school's medical group.

To identify multiple TINs for each community medical group, we searched for names similar to the name of each TIN. We aggregated similarly named TINs that were in the same region within a state but did not aggregate to the level of a health system. For instance, the eight Permanente groups were not aggregated (e.g., to the Kaiser system).

To identify the TIN or TINs associated with a medical school's academic medical group, three approaches were used. First, all TINs whose name included the university's or medical school's name and that were located within the same state as the university were attributed to the academic medical group of that university. We did not, for example, assign the Mayo Clinic medical group in Arizona to Mayo Medical School, which is located in Minnesota. For state university systems with multiple medical schools (e.g., the University of California has five medical schools), we used information on the TIN's geographic location within the state to assign it to the proper medical school's academic medical group.

Second, if no TIN with the university or medical school name was found, we searched online for the university or medical school name and "practice plan." If this identified the name of the practice plan, we searched for a TIN with the same name in the MD-PPAS database.

Third, if an academic group TIN was still not identified, an online list of a medical school's faculty members was found. At least five spot checks of physicians at each medical school were conducted to determine their TIN within MD-PPAS. If several physicians from the same department were found to be billing under the same TIN, we assumed that the TIN was a part of an academic medical group and then assigned all other physician NPIs within that TIN to the medical school's academic medical group. We allowed for the possibility that physicians in the same medical school in the same department could work at different hospitals and bill under separate TINs. On the other hand, if physicians at the same medical school working at the same hospital and within the same department were billing under several different TINs, we assumed that the medical school lacked a consolidated academic medical group.

Using these methods, we identified academic medical groups for more than 95% of the 129 U.S. medical schools. The academic medical groups of 77 medical schools (with 64% of physicians in our study) were ascertained via searches of TIN names. For 37 medical schools (with 28% of physicians), assignment was based on a search of the Internet for the faculty practice name. For the remaining 15 medical schools (with 8% of physicians), the primary method was an Internet search for the names of faculty members. Supplemental Digital Appendix 1, http://links.lww.com/ACADMED/A359, includes details on the primary method used to assign TINs to each medical school, and Supplemental Digital Appendix 2, http://links.lww.com/ACADMED/A359, lists the assigned TINs.

Characteristics of the medical groups

After aggregating the TINs of each medical group, we sorted all academic and community-based medical groups by the number of unique physician NPIs. The 100 groups with the largest number of physician NPIs in 2013 were selected for additional analysis. We characterized the 100 largest medical groups as academic or community based and by their size, the percentage of their physicians in primary care, their share of the Medicare physician market in their local area, and whether they have a financial stake in the cost of caring for patients through a Medicare ACO or a Medicare Advantage Plan.

The MD-PPAS database includes physician self-reported specialty information gathered in PECOS. Physicians who self-report that their specialty is general practice, family medicine, internal medicine, pediatrics, or geriatrics are categorized in MD-PPAS as primary care. All other physicians are categorized as non-primary-care specialists. The PECOS system does not have a designation for hospitalists, but in the MD-PPAS database, primary care physicians for whom inpatient claims make up 90% or more of their number of Medicare service lines are recategorized as hospitalists and included in the count of non-primary-care specialists.[10]

To determine the Medicare physician market share of a medical group in its local area, we divided the number of physicians in the group by the total number of Medicare physicians practicing in that area. MD-PPAS assigns each physician to a state and within that state to a metropolitan or micropolitan area (defined in terms of Core Based Statistical Area) based on the ZIP code reported on their claims. For ZIP codes outside of metropolitan areas, physicians are assigned to the rural area of a state. Our market share assessment only considers the supply of physicians in an area.

We ascertained whether a practice had a financial stake in either a Medicare ACO or Medicare Advantage plans. Leavitt Partners' database on ACOs was used to determine whether each medical group was participating as a Medicare ACO.[11] We focused on Medicare ACOs because our physician database only included physicians who billed Medicare. The Leavitt Partners' database is regularly updated from public records such as press releases, news articles, and conferences, as well as from interviews. A medical group was considered to have a financial stake in shared savings in a Medicare ACO if it appeared by name as the sponsor or as one of the providers of a Medicare ACO in the Leavitt database. In 2013, most Medicare ACOs selected the option of upside risk only, whereby they would receive a financial bonus if the ACO's costs were below historical levels.

We identified the medical groups that own (or whose parent organizations own) a Medicare Advantage plan using Medicare's monthly report on Medicare Advantage plans, which includes the name of the plan itself (technically a "contract") and of its "parent."[12] If the medical group had the same name as either the plan or its parent, we inferred that the medical group was the physician component of the Medicare Advantage plan. Those plans receive a capitation payment that serves as a global budget with both upside and downside risk; they reap all of the savings from below-average costs and must absorb any cost overrun. The payment arrangement between a Medicare Advantage plan and physicians in the medical group may vary, but ultimately the physicians in a medical group that takes part in the ownership of a Medicare Advantage plan have a stake in its financial performance.

Data analysis

We ran a multivariate logistic regression (or logit) to determine whether medical group type, group size, the percentage of primary care physicians in the group, or its Medicare physician market share was associated with the group's financial stake in either a Medicare ACO, a Medicare Advantage plan, or both, using Stata 12 (StataCorp LP, College Station, Texas). After entering all variables into a model, we systematically dropped one explanatory variable at a time to determine whether this impacted any estimated difference in the financial arrangements of academic and community medical groups with Medicare ACOs and Medicare Advantage plans.

The Leavitt database on ACOs was purchased. All other data were available under agreement (no. 21990) with the Centers for Medicare and Medicaid Services.

Results

The 100 largest medical groups in the United States based on counts of physicians participating in Medicare ranged in size from 506 to 5,634 (Table 1). Among the 609,670 physicians participating in Medicare in 2013, 103,873 (17.0%) were associated with 1 of these 100 medical groups. More than two-thirds (68) of the 100 largest medical groups were academic. The average number of TINs among the 68 academic medical groups was 6.9 (95% CI, 4.4–9.4), and the average among the community groups was 2.5 (95% CI, 1.6–3.4).

The percentage of primary care physicians ranged from 3.9% to 53.1%, with a mean of 24.7% across the 100 largest medical groups. The percentage of primary care physicians differed markedly between academic and community medical groups; primary care physicians constituted 18.3% (95% CI, 17.0%–19.6%) of all physicians in academic medical groups and 38.4% (95% CI, 34.7%–42.0%) of physicians in community medical groups. Supplemental Digital Appendix 1, http://links.lww.com/ACADMED/A359, includes the percentage of physicians in primary care in each academic medical group, whether in the top 100 groups or not.

The average market share for Medicare physicians among the 100 largest medical groups was 23.6%, but it varied widely. The mean market share of 24.4% (95% CI, 19.3%–29.6%) for academic groups was not statistically different from the mean of 21.8% (95% CI, 12.1%–31.5%) for community groups.

Among the 100 largest medical groups, 38 have a financial stake in a Medicare ACO or a Medicare Advantage plan (or both): 27 as a part of a Medicare ACO and 14 as a part of a Medicare Advantage plan. Among academic groups, 25% (17 out of 68) had a financial stake in an ACO or MA (or both), whereas 66% (21 out of 32) of community groups did so ($P < .001$; Figure 1). Being community based, percentage of primary care physicians in the medical group, group size, and local market share each correlated with a financial stake either as a part of a Medicare ACO, a Medicare Advantage plan, or both (Table 2).

In multivariate models, the significant difference between community and academic groups in having a financial stake in a Medicare ACO and/or a Medicare Advantage plan is only apparent when the percentage of primary care physicians in the group is dropped as an explanatory variable (Table 2, logit model 2). This finding was not observed when primary care percentage was retained in the model (Table 2, logit model 1) and either group size or market share was dropped (data not shown).

Discussion

Academic physicians constitute more than two-thirds of physicians within the 100 largest medical groups in the United States. However, among the largest

Table 1
**The 100 Largest Physician Medical Groups in the United States, 2013,
Listed in Descending Order by Number of Physicians**

Order	Medical group name[a]	State	Group type	Physicians No.	Physicians % primary care	% of market share[b]	Participation in Medicare ACO	Participation in Medicare MA
1	Northern California Permanente Medical Group	CA	com	5,634	36	24	No	Yes
2	Southern California Permanente Medical Group	CA	com	4,652	46	13	No	Yes
3	Harvard University	MA	aca	3,827	15	25	Yes	No
4	Mayo Medical School	MN	aca	3,263	24	95	No	No
5	Case Western Reserve University	OH	aca	2,813	18	46	No	No
6	University of Pittsburgh	PA	aca	2,737	23	40	No	Yes
7	University of Washington	WA	aca	1,612	18	19	No	No
8	University of Michigan	MI	aca	1,597	19	64	No	No
9	Johns Hopkins University	MD	aca	1,588	18	19	Yes	No
10	University of Texas, Houston	TX	aca	1,556	16	15	Yes	No
11	Duke University	NC	aca	1,477	22	51	Yes	No
12	Hofstra North Shore–Long Island Jewish	NY	aca	1,472	13	3	No	No
13	Emory University	GA	aca	1,394	15	17	No	No
14	University of California, San Francisco	CA	aca	1,384	12	14	No	No
15	University of California, Los Angeles	CA	aca	1,292	25	6	Yes	No
16	University of Pennsylvania	PA	aca	1,252	10	8	No	No
17	Yeshiva University	NY	aca	1,239	22	3	Yes	No
18	New York University	NY	aca	1,201	17	3	Yes	No
19	Washington University, St. Louis	MO	aca	1,199	7	19	No	No
20	University of Minnesota	MN	aca	1,156	39	16	Yes	No
21	Vanderbilt University	TN	aca	1,145	14	31	No	No
22	Intermountain Health Care	UT	com	1,126	37	93	No	Yes
23	Henry Ford Health System	MI	com	1,119	26	12	No	Yes
24	Allina Health System	MN	com	1,110	50	14	Yes	No
25	Medical College of Wisconsin	WI	aca	1,107	21	26	No	No
26	University of Texas, Dallas	TX	aca	1,105	16	10	Yes	No
27	University of Florida	FL	aca	1,079	18	66	No	No
28	University of Wisconsin	WI	aca	1,078	25	56	Yes	No
29	University of Colorado	CO	aca	1,043	16	18	No	No
30	Aurora Medical Group	WI	com	1,037	34	12	Yes	No
31	University of Cincinnati	OH	aca	1,018	18	24	No	No
32	Geisinger Health System	PA	com	1,010	26	91	Yes	Yes
33	Palo Alto Medical Foundation	CA	com	988	43	18	No	No
34	Columbia University	NY	aca	977	16	2	No	No
35	Stanford University	CA	aca	975	10	21	No	No
36	Tufts University	MA	aca	973	29	29	Yes	No
37	Yale University	CT	aca	946	7	36	No	No
38	University of Massachusetts	MA	aca	934	25	45	No	No
39	Northwestern University	IL	aca	931	18	5	No	No
40	Scott & White	TX	com	928	37	80	Yes	No
41	CEP America	CA	com	918	4	2	No	No
42	University of Miami	FL	aca	904	16	8	No	No
43	University of North Carolina	NC	aca	887	19	33	Yes	No
44	University of California, Davis	CA	aca	886	23	27	No	No
45	Ohio State University	OH	aca	883	9	21	No	No
46	New York University	NY	aca	874	10	2	No	No

(*Table continues*)

Table 1
(Continued)

| Order | Medical group name[a] | State | Group type | Physicians | | % of market share[b] | Participation in Medicare | |
				No.	% primary care		ACO	MA
47	University of Alabama	AL	aca	870	16	32	No	No
48	Mid-Atlantic Permanente Medical Group	MD	com	867	46	7	No	No
49	Wake Forest University	NC	aca	858	19	59	No	No
50	Dartmouth College	NH	aca	840	27	71	Yes	No
51	Cornell University	NY	aca	838	16	2	No	No
52	Colorado Permanente Medical Group	CO	com	833	42	14	No	Yes
53	Group Health Cooperative	WA	com	809	51	5	No	Yes
54	Oregon Health & Science University	OR	aca	808	16	15	No	No
55	University of Iowa	IA	aca	806	15	79	Yes	No
56	Advocate Health Care	IL	com	806	44	4	Yes	No
57	Providence Health Oregon	OR	com	797	49	12	No	Yes
58	Northwest Permanente Medical Group	OR	com	795	42	13	No	Yes
59	Northshore University Health	IL	com	788	33	4	No	No
60	Ochsner Clinic	LA	com	787	23	23	Yes	No
61	University of California, San Diego	CA	aca	784	14	13	No	No
62	University of Maryland	MD	aca	773	12	9	No	No
63	Marshfield Clinic	WI	com	762	29	92	Yes	Yes
64	University of Virginia	VA	aca	725	19	75	No	No
65	Indiana University	IN	aca	722	27	12	Yes	Yes
66	Pennsylvania State University	PA	aca	684	20	40	No	No
67	Medical University of South Carolina	SC	aca	678	16	37	No	No
68	Baylor University	TX	aca	664	28	6	No	No
69	University of Utah	UT	aca	651	21	31	No	No
70	Novant Medical Group	NC	com	645	47	16	No	No
71	George Washington University	DC	aca	643	21	6	No	No
72	University of Chicago	IL	aca	635	15	3	No	No
73	Scripps Clinic	CA	com	635	34	11	No	No
74	University of New Mexico	NM	aca	619	21	31	No	No
75	Virginia Commonwealth University	VA	aca	618	17	23	No	No
76	Thomas Jefferson University	PA	aca	616	14	4	No	No
77	Sutter Medical Foundation	CA	com	602	41	15	No	No
78	Park Nicollet Clinic	MN	com	600	43	8	No	No
79	University of Oklahoma	OK	aca	598	23	17	No	No
80	Group Health Plan	MN	com	596	43	8	Yes	No
81	Lehigh Valley Physician Group	PA	com	583	37	28	No	No
82	University of Texas, San Antonio	TX	aca	568	19	15	No	No
83	Lahey Clinic	MA	com	561	26	4	Yes	No
84	Loyola University	IL	aca	558	21	3	No	No
85	University of South Carolina, Greenville	SC	aca	555	25	41	No	No
86	University of Kansas	KS	aca	551	14	13	Yes	No
87	University of Kentucky	KY	aca	546	14	34	No	No
88	University of Illinois	IL	aca	544	19	3	No	No
89	State University of New York, Stony Brook	NY	aca	542	12	1	No	No
90	Steward Medical Group	MA	com	542	44	3	Yes	No
91	Oakland University	MI	aca	541	23	6	No	No
92	Loma Linda University	CA	aca	540	19	11	No	No
93	Harvard Vanguard Medical Associates	MA	com	535	48	3	Yes	No

(*Table continues*)

Table 1
(Continued)

Order	Medical group name[a]	State	Group type	Physicians		% of market share[b]	Participation in Medicare	
				No.	% primary care		ACO	MA
94	Dignity Health	CA	com	534	45	11	No	No
95	Texas Health Physician Group	TX	com	527	53	5	No	No
96	University of Arkansas	AR	aca	526	20	26	No	No
97	University of Southern California	CA	aca	519	15	2	No	No
98	Spectrum Health	MI	com	510	33	27	No	Yes
99	University of Arizona, Tucson	AZ	aca	507	21	24	No	No
100	Presbyterian Healthcare	NM	com	506	36	24	No	Yes

Abbreviations: aca indicates academic group; com, community group; ACO, Accountable Care Organization; MA, Medicare Advantage.
[a]Because it may be difficult to infer a medical group's relationship to a medical school from its official name (e.g., "university physicians" is a common name), the listed names are not necessarily the official ones.
[b]"Market share" refers to the Medicare physician market share.

medical groups, academic groups are less likely than community-based ones to have a financial stake in a Medicare ACO or Medicare Advantage plan.

Although there could be a variety of unobserved local market factors to explain this difference,[13] the lower availability of primary care physicians relative to specialists in academic groups may be a contributing factor. It has long been recognized that HMOs employ or contract with a greater percentage of primary care physicians,[14] and our results suggest that this applies to Medicare Advantage plans as well. Academic medical groups, often considered to be cutting-edge in how they deliver medical care, lag behind community groups when it comes to payment reform. These groups may need time and assistance to transform themselves into organizations that are prepared to manage the financial responsibilities of caring for a patient population through a Medicare ACO or a Medicare Advantage plan.

Academic medical groups have considerable market power due to their size and unique clinical capabilities, which might decrease their interest in pursuing the financial responsibilities and potential financial risk of a Medicare ACO or a Medicare Advantage plan. The very specialized tertiary care available from academic medical groups also makes it difficult to exclude them from the networks of private insurers who continue to pay them on a fee-for-service basis. Academic medical groups should be assessing their own local market conditions to determine whether they expect to continue to be paid by fee-for-service, which would enable them to function primarily as a specialty referral center, or if they will have to accept greater financial risk sharing such as with Medicare ACOs and Medicare Advantage plans, in which case they will likely need to alter their workforce to play a greater role in population-based care.

There are several strengths of the physician data available in MD-PPAS used to conduct this study. The data are comprehensive, timely, regularly updated, national in scope (with local market detail), and available to researchers (subject to data use agreements).[15] The counting of physicians based on their NPI and our assignment of each NPI to a single TIN ensures no double counting of physicians.

There are also some important limitations to consider when interpreting our results, most of which may result in our underestimating the size of medical groups. First, our estimates of group size are based on physicians who participate in Medicare and therefore exclude pediatricians and other physicians
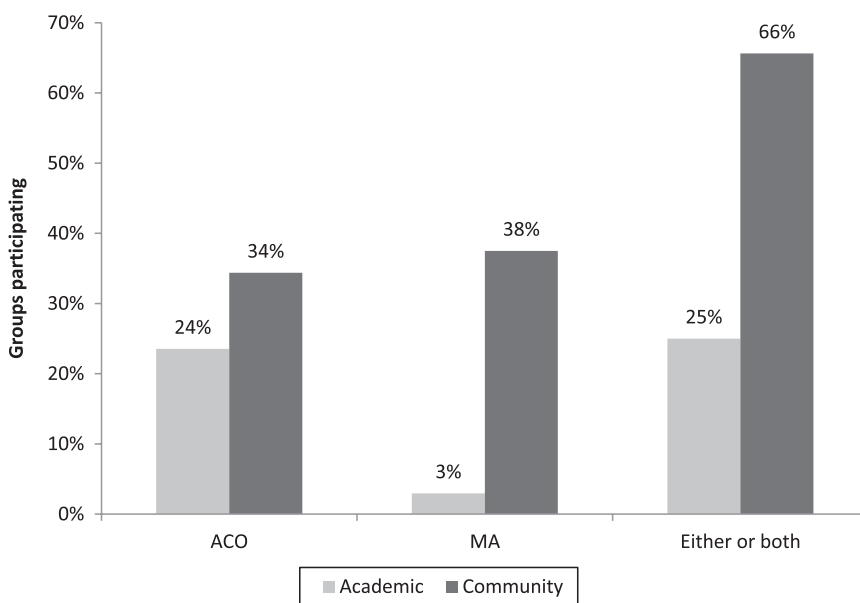

Figure 1 Academic and community medical groups' financial stake in Medicare Accountable Care Organization (ACO), Medicare Advantage (MA) plan, or both, 2013.

Table 2

Predictors Among the 100 Largest U.S. Medical Groups of Financial Stake in Medicare ACO, MA Plan, or Both, 2013

Predictors	Correlation	P value	Logit Model 1		Logit Model 2	
			Coeff.	P value	Coeff.	P value
Community medical group[a]	0.39	< .001	1.14	.16	2.23	< .001
% of primary care physicians	0.40	< .001	5.76	.08		Excluded
Group size (log)	0.25	.01	1.75	.007	1.64	.009
% share of local Medicare physician market	0.14	.01	1.03	.96	1.02	.35
Pseudo R-square	NA		0.23		0.20	

Abbreviations: ACO indicates Accountable Care Organization; MA, Medicare Advantage; Coeff., coefficient.
[a]Relative to academic medical group.

who do not participate in Medicare. We suspect that this limitation applies similarly to academic and community-based medical groups, but we lack an independent way of judging whether there is a bias in this undercount by group type.

Second, we applied several strategies to identify TINs that should be combined to determine the size of medical groups. While believing our approach has substantial face validity, we lack a gold standard for assessing whether we did this correctly. To the extent that there are errors in our effort, we believe that we more likely missed TINs that were, in fact, a part of a medical group rather than incorrectly including TINs that were not. Although this bias applies to both academic and community-based medical groups, the finding that academic groups on average have more TINs than community groups may suggest that our undercounting of medical group size is more likely in academic than community groups.

Third, although we could identify whether a medical group has a financial stake in a Medicare ACO or a Medicare Advantage plan, we were not able with the available information to determine the financial risk arrangement between medical groups and physicians or whether those arrangements systematically differ between physicians in academic and community groups.

Finally, we did not combine TINs that are part of an academic group but whose physicians practice in the community (e.g., Johns Hopkins

Community Physicians).[16] We also had no way to identify physicians in the community who contract to work in close collaboration with academic medical groups. If these community-based physicians are functioning in an integrated way with an academic medical group, then we may have further underestimated the market power of academic groups.

Given the rapid reorganization of physicians into large medical groups, future research should attempt to evaluate the performance of these organizations in terms of their access, cost, and quality of care. Our data do not allow us to determine the degree to which physicians who bill Medicare using the same TIN or set of TINs function clinically as an integrated medical group. The finding that many academic medical groups bill under multiple TINs whose names reflect different clinical departments within the medical school might suggest that the physicians who constitute these academic medical groups did not start as an integrated group, as is more common in the community.

Research on hospital consolidation has not found that bigger is not necessarily better.[17] Similar scrutiny should be brought to the issue of physician consolidation into large groups. More than one out of every eight physicians (14.0%) participating in the Medicare program in 2013 billed Medicare using a TIN identifying that they were primarily affiliated with an academic medical group. Given the prominent role that academic physicians play in these large groups, we need to better understand the implications of this consolidation

on the shaping of the future physician workforce.

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Teaching and Learning Moments
Learning How to Learn on the Wards

BLOG

"Mrs. C's blood pressure is 90/60. Her other vitals are normal."

"Let's bolus her and recheck," I said. Mrs. C was a 97-year-old Chinese-speaking lady who had been hospitalized for a urinary tract infection. Her course had been uncomplicated, and the plan was to discharge her the following morning.

An hour later, my pager read, "Pressure is 66/33." I sent my senior resident an urgent page and ran up to Mrs. C's room. She was febrile and barely rousable. We ran more fluids, initiated the workup, and called her son to ask him to consent to a possible ICU transfer. He declined to come to the hospital but made it clear that she should be full code.

A rapid response was called, and Mrs. C's room filled with people—nurses dashing in with IV needles, ICU residents jostling to auscultate her chest, and techs barking off her deteriorating vitals. My stomach filled with fear. I had never seen a blood pressure so low, and although I had the differential for shock down cold, I felt utterly helpless. As the room filled with briskly moving senior residents, what I could contribute as a medical student felt trivial. Surely she was in good care, so I turned to start my next admission. The prospect of completing the familiar steps of taking a complete history and

physical was comforting. At least this was something I knew how to do. I edged towards the door, but my resident grabbed my arm and said, "Stay with her." So I stayed and helped in the small ways I could. I comforted Mrs. C in Chinese and relayed her clinical course to the ICU team. With fluids, she became more alert, and when a nurse attempted to place a urinary catheter, she said clearly in Chinese: "I don't want this. I forbid you to do this. No more medications or needles. I'd rather die than continue like this." As the only Chinese-speaking person in the room, I translated her words aloud, and the team, focused on providing lifesaving treatment, hesitated momentarily but continued on.

It was 3 AM, but I felt compelled to call her son again. I pleaded: "I know it's late but your mother is deteriorating quickly. She is really distraught and needs you here." He agreed to come in but wanted assurance that his mother would receive "everything." When he arrived, Mrs. C was resisting the nurses who were valiantly attempting to place lines and tubes in every orifice. Her son looked at me and said, "I don't think she wants this." The team stopped. We ran fluids and antibiotics in the lines we had already established but did not pursue pressors or any other invasive measures. She died a few days later.

Reflecting back, Mrs. C was the first patient who taught me what it means to learn medicine on the wards. I had always thought that learning on the wards meant executing knowledge that I had learned from books, but Mrs. C taught me that medical decisions do not come just from books and that learning opportunities can come from surprising and uncomfortable places. If I had left her room that night, I probably would have read about septic shock. What I would have missed out on, though, was learning how to advocate for a patient's wishes in a situation as it developed. Since that night, I have attempted to embrace rather than shy away from the discomfort of the unfamiliar. Doing so, I have come to understand how I can participate in and learn from providing care, even as a junior trainee. Listening to the patient is usually a pretty good place to start.

Author's Note: The names and details in this essay have been changed to protect the identity of those involved.

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