Data Bulletin

Results from HSC Research

MOST MEDICARE OUTPATIENT VISITS ARE TO PHYSICIANS WITH LIMITED CLINICAL INFORMATION TECHNOLOGY

By Joy Grossman and Marie Reed

This Data Bulletin uses linked data from two sources: the Centers for Medicare and Medicaid Services (CMS) 2001 5 Percent Carrier File, which contains complete claims for a representative sample of 5 percent of Medicare fee-for-service beneficiaries, and the 2001 Center for Studying Health System Change (HSC) Community Tracking Study (CTS) Physician Survey, a nationally representative survey of nearly 12,400 physicians. The linked sample includes claims for more than 506,000 Medicare outpatient visits to 8,641 CTS physicians. Estimates are weighted to be nationally representative of all Medicare fee-for-service physician outpatient visits in 2001. Use of the Medicare data is permitted under a data use agreement between Peter B. Bach, M.D., of Memorial Sloan-Kettering Cancer Center and CMS.

Table 1

Medicare Outpatient Visits to Physicians in Practices with Information Technology (IT) Support for Specific Patient Care Functions in 2001, by Patient Health Status[1]

	Access Treatment Guidelines	Exchange Clinical Data with Other Physicians	Access Patient Notes	Generate Preventive Care Reminders	Electronic Prescribing
All	49%	33%	30%	23%	9%
Healthiest Third[2]	52	34	30	22	9
Middle Third	48*	33	30	23	9
Sickest Third	48*	32*	29	24*	9

[1] Patient health status as measured by the Klabunde index of relative comorbidity. For details see endnote 2.

[2] Reference group.

* Comparison with reference group is statistically significant at p <.05.

Source: Linked data from the Centers for Medicare and Medicaid Services 2001 5 Percent Carrier File and 2001 CTS Physician Survey

Adoption of clinical information technology (IT) in physicians' practices has the potential to improve quality and reduce the cost of care for people with complex health problems, including many Medicare patients. Monitoring adoption trends and assessing gaps in Medicare patients' access to physicians with clinical IT are important as policy makers try to speed IT adoption. A majority of Medicare fee-for-service outpatient visits in 2001 were to physicians without significant IT support for patient care, according to a new baseline analysis of Medicare claims data linked to the Community Tracking Study (CTS) Physician Survey. At the same time, more vulnerable beneficiaries, including those who were sicker, living in low-income or rural areas, or who were black, did not have significant differences in access to physicians with clinical IT.

More than half of Medicare outpatient visits (57%) were to physicians in practices that used IT for no more than one of the following five clinical functions: obtaining treatment guidelines, exchanging clinical data with other physicians, accessing patient notes, generating preventive treatment reminders for the physician's use, and writing prescriptions. Access rates across individual clinical functions varied considerably. While half of Medicare outpatient visits were to practices using IT to obtain treatment guidelines, the proportion of visits to practices with IT support for other patient care functions was much lower, falling to 9 percent of visits to practices with electronic prescribing (see Table 1). Medicare beneficiaries' limited access to physicians with clinical IT mirrors the general population, since it reflects physicians' slow rate of IT adoption.[1]

No Disadvantage for More Vulnerable Beneficiaries

The sickest Medicare patients are likely to benefit the most from seeing physicians using clinical IT because of the complexity of their cases and the need for care coordination. While access to physicians using IT was low for all beneficiaries, there were few differences in access between sicker and healthier beneficiaries. For example, across the five clinical functions, there were only small differences in the percentage of outpatient visits to physicians using IT between the sickest third of Medicare patients—as measured by a comorbidity index[2]—and the healthiest third. Similar results were found for outpatient visits by the frail elderly—those 85 and older—and by beneficiaries eligible for Medicare because of disability. However, there were substantial differences for patients with end-stage renal disease that vary by clinical IT function (see Supplementary Table 1).

Some policy makers are concerned that patients in rural areas or underserved low-income urban areas are less likely to have access to physicians with clinical IT because these providers may be slower to adopt IT. However, outpatient visits by Medicare patients living in rural or low-income areas were as likely as or, in a few instances, more likely than those in urban or more affluent areas to be with physicians in practices using IT (see Table 2). And, visits by black patients were as likely to be to physicians in practices with IT as visits by white patients.

Policy Implications

While patient characteristics are only loosely associated with the likelihood that Medicare outpatient visits will be to physicians in practices using clinical IT, multivariate analysis suggests that physician characteristics are far more important. In particular, practice setting—especially practice size—and, to a lesser extent, physician specialty played far more important roles in predicting whether outpatient visits were to physicians with clinical IT (see Supplementary Table 2). More than three-fourths of Medicare outpatient visits were to physicians in practices with fewer

Table 2

Medicare Outpatient Visits to Physicians in Practices with IT Support for Specific Patient Care Functions in 2001, by Patient Demographics

	ACCESS TREATMENT GUIDELINES	EXCHANGE CLINICAL DATA WITH OTHER PHYSICIANS	ACCESS PATIENT NOTES	GENERATE PREVENTIVE CARE REMINDERS	ELECTRONIC PRESCRIBING
LOCATION OF PATIENT RESIDENCE[1]					
URBAN[2]	48%	34%	28%	22%	9%
RURAL	52	32	35*	26*	10
NEIGHBORHOOD INCOME IN 2000[1]					
WEALTHIEST QUARTILE[2]	47	33	26	23	9
3RD QUARTILE	48	33	30*	23	9
2ND QUARTILE	52	36	32*	24	9
POOREST QUARTILE	50	31	30*	23	9
RACE					
WHITE[2]	49	33	29	23	9
BLACK	48	33	32	21	9
OTHER	48	34	31	27	10

[1] Patient zip code of residence was used to determine urban/rural location and neighborhood income. Urban refers to metropolitan areas defined by the Office of Management and Budget. Income data are from the U.S. Bureau of the Census.

[2] Reference group.

* Comparison with reference group is statistically significant at p <.05.

Source: Linked data from the Centers for Medicare and Medicaid Services 2001 5 Percent Carrier File and 2001 CTS Physician Survey

than 50 physicians, the practices that are least likely to adopt clinical IT. Currently, Medicare is targeting some efforts to speed IT adoption at smaller practices, including technical assistance and a chronic-care pay-for-performance demonstration. Broader policy efforts—including financial incentives—may be needed, however, to substantially improve patient access. Policy makers also will need to monitor trends to assure that patients who can benefit most from clinical IT have access to physicians using these tools.

Notes

1. Reed, Marie C., and Joy M. Grossman, *Limited Information Technology for*

Patient Care in Physician Offices, Issue Brief No. 89, Center for Studying Health System Change, Washington, D.C. (September 2004).

2. Comorbidity is a measure of the relative number and severity of health conditions, such as diabetes and hypertension, that may cause or aggravate other conditions. The Klabunde relative comorbidity index was calculated from all claims in the 2001 5 Percent Carrier File. See Klabunde, Carrie N., et al., "Development of a Comorbidity Index Using Physician Claims Data," *Journal of Clinical Epidemiology*, Vol. 53, No. 12, (December 2000).

Most Medicare Outpatient Visits are to Physicians with Limited Clinical Information Technology
Supplementary Table No. 1

Supplementary Table 1
Medicare Outpatient Visits to Physicians in Practices with IT Support for Specific Patient Care Functions in 2001, by Patient Age and Medicare Eligibility

	ACCESS TREATMENT GUIDELINES	EXCHANGE CLINICAL DATA WITH OTHER PHYSICIANS	ACCESS PATIENT NOTES	GENERATE PREVENTIVE CARE REMINDERS	ELECTRONIC PRESCRIBING
PATIENT AGE					
< 65	51%	35%	34%*	21%*	9%
65-74[1]	50	34	30	24	9
75-84	49	33	29	24	9
85+	46*	32	26*	23	8
MEDICARE ELIGIBILITY					
65+, NO ESRD[1,2]	49	33	29	24	9
DISABLED, NO ESRD	49	33	33*	20*	10
ESRD	64*	48*	48*	17*	4*

[1] Reference group.

[2] ESRD: End-stage renal disease

* Comparison with reference group is statistically significant at p <.05.

Source: Linked data from the Centers for Medicare and Medicaid Services 2001 5 Percent Carrier File and 2001 CTS Physician Survey

Most Medicare Outpatient Visits are to Physicians with Limited Clinical Information Technology
Supplementary Table No. 2

Supplementary Table 2
Adjusted Odds Ratios for Likelihood of Medicare Outpatient Visits to Physicians in Practices with IT to Support Specific Patient Care Functions in 2001

	Access Treatment Guidelines	Exchange Clinical Data with Other Physicians	Access Patient Notes	Generate Preventive Care Reminders	Electronic Prescribing
PATIENT CHARACTERISTICS					
HEALTH STATUS[1]					
HEALTHIEST THIRD[2]	1.00	1.00	1.00	1.00	1.00
MIDDLE THIRD	0.86***	0.97	1.02	1.05	1.01
SICKEST THIRD	0.90*	0.93	0.98	1.06	1.03
AGE					
< 65	0.99	1.01	1.17*	0.86**	1.06
65-74[2]	1.00	1.00	1.00	1.00	1.00
75-84	1.01	0.98	0.99	1.01	1.08
85+	0.91	1.00	0.91*	0.97	0.95
LOCATION OF RESIDENCE[3]					
URBAN[2]	1.00	1.00	1.00	1.00	1.00
RURAL	1.18	1.02	1.46***	1.30*	1.08
INCOME[3]					
WEALTHIEST QUARTILE[2]	1.00	1.00	1.00	1.00	1.00
3RD QUARTILE	1.00	0.99	1.12	0.97	1.02
2ND QUARTILE	1.10	1.10	1.14	0.99	0.96
POOREST QUARTILE	1.03	0.89	1.01	0.89	0.92
RACE					
WHITE[2]	1.00	1.00	1.00	1.00	1.00
BLACK	0.91	0.97	1.07	0.90	1.06
OTHER	0.94	1.08	1.13	1.24	1.12
PHYSICIAN CHARACTERISTICS					
PRACTICE TYPE					
SOLO/TWO PHYSICIANS	0.54*	0.19***	0.25***	1.07	0.55**
SMALL GROUP (<10)	0.52**	0.24***	0.33***	0.97	0.68
MEDIUM GROUP (10 TO 49)	0.36***	0.31***	0.34***	0.63	0.54
LARGE GROUP (50+)[2]	1.00	1.00	1.00	1.00	1.00
OFFICE OWNED BY HOSPITAL	0.50**	0.32***	0.27***	0.65	0.55
HOSPITAL STAFF	1.23	0.34**	0.35**	1.40	0.44*
MEDICAL SCHOOL	0.76	1.39	1.54	1.02	1.10
STAFF/GROUP HMO	1.03	0.80	1.50	2.29*	1.73
OTHER	0.60*	0.37***	0.56*	1.03	0.53*
SPECIALTY CATEGORY					
PRIMARY CARE	0.74**	0.82	0.86	1.36**	1.63*
SURGICAL SPECIALTY	0.60***	0.82	1.11	1.44**	0.87
MEDICAL SPECIALTY[2]	1.00	1.00	1.00	1.00	1.00
PHYSICIAN AGE					
UNDER 35	1.30	1.03	0.94	1.00	1.12
35-54[2]	1.00	1.00	1.00	1.00	1.00
55+	0.77*	0.87	0.72**	1.08	0.64*

[1] Patient health status as measured by the Klabunde index of relative comorbidity.   For details see endnote 2.

[2] Reference group.

[3] Patient zip code of residence was used to determine urban/rural location and neighborhood income. Urban refers to metropolitan areas defined by the Office of Management and Budget. Income data are from the U.S. Bureau of the Census.

Comparison with reference group is statistically significant at ***p<.001, **p<.01, *p<.05.

Source: Linked data from the Centers for Medicare and Medicaid Services 2001 5 Percent Carrier File and 2001 CTS Physician Survey