Appendix Table 1. Chronic conditions of Medicare beneficiaries assigned to different types of provider groups, adjusted for county of residence.

	Provider Group Type			
	Small groups (reference category) (N=1,924,001)	**Groups sufficiently large to participate in ACO programs**		
		Medium-sized independent groups (N=678,004)	**Large independent groups** (N=524,950)	**Hospital-based groups** (N=785,795)
Conditions from Chronic Condition Warehouse, %				
Diabetes	31.4	30.4	29.9	30.2
Ischemic heart disease	46.8	44.7	43.4	45.0
H/o myocardial infarction	5.2	5.0	4.8	5.1
Congestive heart failure	25.5	23.9	23.2	24.8
Atrial fibrillation	13.0	12.7	12.2	12.5
Chronic kidney disease	15.7	15.1	15.2	16.4
H/o stroke or TIA	12.3	12.1	12.0	12.0
COPD	22.1	20.9	20.3	20.9
Depression	26.6	27.2	27.5	28.2
OA or RA	41.3	40.3	39.6	39.1
Osteoporosis	29.4	29.6	28.7	28.6
H/o hip fracture	2.6	2.6	2.5	2.5
Dementia	7.6	7.7	7.6	7.6
Alzheimer's disease	2.7	2.9	2.8	2.8
Breast cancer	3.9	4.1	4.1	4.8
Colorectal cancer	2.3	2.1	2.2	2.4
Prostate cancer	4.9	4.5	4.5	4.8
Lung cancer	1.1	1.1	1.0	1.4
Endometrial cancer	0.5	0.5	0.5	0.6
Glaucoma	31.4	30.4	29.9	30.2
Cataracts	46.8	44.7	43.4	45.0

TIA = transient ischemic attack; COPD = chronic obstructive pulmonary disease; OA = osteoarthritis; RA = rheumatoid arthritis.

Appendix Table 2. Differences in spending and quality of care between larger and smaller groups, by HMO penetration

Annual spending or quality metric	Mean difference for ACO-eligible groups vs. reference category of small groups								
	Medium-sized independent physician groups			Large independent physician groups			Hospital-based groups		
	HMO Penetration			HMO Penetration			HMO Penetration		
	<25%	25-49%	≥50%	<25%	25-49%	≥50%	<25%	25-49%	≥50%
Total per-beneficiary medical spending, $	37§	-107	-421	181	-150	-433	741	881	1,042
Spending by type of claim, $									
Hospital facility	71	-12§	-89§	131	-26§	-96§	346	505	615
Physician/supplier services	-58	-108	-242	-104	-196	-288	103	-82	-260
Hospital outpatient department	43	12§	6§	76	68	-59	234	395	576
Spending on physician and ancillary services by BETOS category, $*									
Office visits	4§	0§	-8§	8	5§	-32	22	41	83
Specialty consultations	4§	-7	-17	1§	1§	-22	5§	-5§	6§
Major procedures†	-14§	-26	-59	-19§	-20§	-64	-6§	20§	27§
Minor and ambulatory procedures, endoscopy	-44	-22	-69	-5§	-12§	-87	14§	-3§	0§
Imaging	-5§	-15	-39	-3§	-13	-67	40	31	36
Cardiac interventions and tests	-1§	-9	-19	-2§	-12	-19	8	-1§	9§
Radiation therapy, chemotherapy and other Part B-covered drugs	10§	24§	-60§	3§	-27§	-52§	244	238	229
Lab tests	0§	0§	-9§	8	2§	-29	41	29	22
Quality of Care, %¶									
30-day readmission	0.4	0.2§	0.9	0.6	-0.1§	0.4§	1.4	1.0	2.0
Screening mammography	1.9	1.3	2.2§	1.1§	2.4	1.5§	2.8	2.6	2.9

Diabetes									
LDL cholesterol testing	2.5	0.9	-0.3§	2.0	0.9	0.9§	0.6§	-0.8	-1.6
Hemoglobin A1c testing	3.0	2.0	1.0§	3.4	2.8	2.2	1.1	0.3§	0.1§
Retinal exam	0.7	0.8	0.5§	1.2	1.2	0.8§	0.2§	0.7	-0.8§
All 3 services	2.9	1.6	0.9§	3.3	2.6	2.7	1.4	0.6§	-0.6§
Cardiovascular disease									
LDL cholesterol testing	1.8	-0.2§	0.7§	1.3	0.0§	-0.1§	0.2§	-1.5	-1.6

ACO = accountable care organization; BETOS = Berenson-Eggers Type of Service; LDL = low-density lipoprotein.

*Includes claims for physician and ancillary (supplier) services appearing in the carrier file as well as claims for physician and ancillary services appearing in the hospital outpatient department claims file. Analyses of spending by BETOS categories were restricted to the 5% sample of Medicare beneficiaries, for whom we had both hospital outpatient department and carrier claims files. BETOS codes were grouped as follows: office visits (M1A-M1B); specialty consultations (M5A-M5D, M6); major procedures (P0, P4A-P4E, P1A-P3D except P2D); minor and ambulatory procedure and endoscopy (P5A-P5E, P6A-P6D, P8A-P8I); imaging (I1A-I1F, I2A-I2D, I3A-I3F); cardiac catheterization, testing, and imaging (I4A-I4B, P2D, T2A-T2D); radiation therapy, chemotherapy, and other drugs (P7A-P7B, O1D-O1E); lab tests (T1A-T1H).

†Includes spending for anesthesia services.

¶Analyses of quality measures were restricted to the 5% sample of Medicare beneficiaries, for whom we had hospital outpatient department, inpatient facility, and carrier claims to assess receipt of key services. Readmissions were assessed among beneficiaries with at least one acute care hospitalization in 2009. We counted only one readmission per beneficiary annually in calculating 30-day readmission rates. Screening mammography was assessed among women ages 65-69 years. Diabetes services were assessed among beneficiaries with a history of diabetes prior to 2009. LDL testing for cardiovascular disease was assessed among beneficiaries with ischemic heart disease, history of myocardial infarction, or history of stroke or TIA present prior to 2009.

§Denotes lack of statistically significant difference relative to reference category of small groups. All other estimates for ACO-eligible group types differ significantly from small groups at least at the P<0.05 level.

Appendix Table 3. Differences in spending and quality of care between ACO-eligible and ACO-ineligible groups, by primary care orientation

Annual spending or quality metric	Mean difference for ACO-eligible groups vs. reference category of small groups					
	Medium-sized independent physician groups		Large independent physician groups		Hospital-based groups	
	Primary care fraction of physicians		Primary care fraction of physicians		Primary care fraction of physicians	
	<35%	≥35%	<35%	≥35%	<35%	≥35%
Total per-beneficiary medical spending, $	795	-293	317	-176	1,741	29§
Spending by type of claim, $						
Hospital facility	374	-70	148	-12§	838	102
Physician services	149	-163	-52	-206	151	-196
Hospital outpatient department	260	-32	117	24	594	135
Spending on physician and ancillary services by BETOS category, $*						
Office visits	11	-2§	33	-9	76	7
Specialty consultations	-5§	-3§	6§	-5	4§	-1§
Major procedures†	28§	-36	25§	-41	50	-26
Minor and ambulatory procedures, endoscopy	31	-56	52	-40	34	-22
Imaging	44	-27	-1§	-23	88	-11
Cardiac interventions and tests	3§	-9	4§	-12	16	-5
Radiation therapy, chemotherapy and other Part B-covered drugs	207	-45	42§	-42	454	42
Lab tests	39	-12	13	-5§	70	-1§
Quality of Care, %¶						
30-day readmission	1.2	0.1§	0.4§	0.2§	2.1	0.6

Screening mammography	0.6[§]	2.0	0.4[§]	2.0	2.4	3.1
Diabetes						
LDL cholesterol testing	-1.3	2.3	-1.3	2.2	-2.4	1.7
Hemoglobin A1c testing	-1.2	3.3	0.5[§]	3.8	-1.3	2.6
Retinal exam	0.7[§]	0.7	0.2[§]	1.4	0.1[§]	0.5[§]
All 3 services	0.1[§]	2.7	0.1[§]	3.8	-0.9	2.3
Cardiovascular disease						
LDL cholesterol testing	-2.2	1.7	-1.6	1.2	-2.6	1.0

ACO = accountable care organization; BETOS = Berenson-Eggers Type of Service; LDL = low-density lipoprotein.

*Includes claims for physician and ancillary (supplier) services appearing in the carrier file as well as claims for physician and ancillary services appearing in the hospital outpatient department claims file. Analyses of spending by BETOS categories were restricted to the 5% sample of Medicare beneficiaries, for whom we had both hospital outpatient department and carrier claims files. BETOS codes were grouped as follows: office visits (M1A-M1B); specialty consultations (M5A-M5D, M6); major procedures (P0, P4A-P4E, P1A-P3D except P2D); minor and ambulatory procedure and endoscopy (P5A-P5E, P6A-P6D, P8A-P8I); imaging (I1A-I1F, I2A-I2D, I3A-I3F); cardiac catheterization, testing, and imaging (I4A-I4B, P2D, T2A-T2D); radiation therapy, chemotherapy, and other drugs (P7A-P7B, O1D-O1E); lab tests (T1A-T1H).

[†]Includes spending for anesthesia services.

[¶]Analyses of quality measures were restricted to the 5% sample of Medicare beneficiaries, for whom we had hospital outpatient department, inpatient facility, and carrier claims to assess receipt of key services. Readmissions were assessed among beneficiaries with at least one acute care hospitalization in 2009. We counted only one readmission per beneficiary annually in calculating 30-day readmission rates. Screening mammography was assessed among women ages 65-69 years. Diabetes services were assessed among beneficiaries with a history of diabetes prior to 2009. LDL testing for cardiovascular disease was assessed among beneficiaries with ischemic heart disease, history of myocardial infarction, or history of stroke or TIA present prior to 2009.

[§]Denotes lack of statistically significant difference relative to reference category of small groups. All other estimates for ACO-eligible group types differ significantly from small groups at least at the P<0.05 level.

Appendix Table 4. Evaluation and management (E&M) service codes used to assign Medicare beneficiaries to Shared Savings Program and Pioneer ACOs

Current Procedural Terminology Codes for E&M Physician Services	Setting/Description of E&M Physician Services
99201-99215	Office or other outpatient services
99304-99318	Nursing facility services
99324-99340	Domiciliary, rest home, or custodial care services
99341-99350	Home services
G0402, G0438, G0439*	Wellness visits

*Codes G0438 and G0439 were not in use in 2009

Appendix Table 5. Beneficiary assignments by source of provider group identifiers

Source of provider group identifiers	Number of beneficiaries assigned by group size			
	Groups not eligible for ACO programs (<5,000 assigned beneficiaries)	**Groups eligible for Shared Savings Program** (5,000-14,999 assigned beneficiaries)	**Groups eligible for Pioneer program** (≥15,000 assigned beneficiaries)	**Total ACO-eligible groups** (≥5,000 assigned beneficiaries)
TINs from Medicare claims	2,997,541	837,471	455,984	1,293,455
AMA Group Practice File	2,386,710	906,852	997,434	1,904,286
Both (beneficiary assigned to larger of the two)	2,302,247	960,904	1,027,845	1,988,749