

Supplementary Online Content

Hayes J, Jackson JL, McNutt GM, Hertz BJ, Ryan JJ, Pawlikowski SA. Association between physician time-unlimited vs time-limited internal medicine board certification and ambulatory patient care quality. *JAMA*. doi: 10.1001/jama.2014.13992.

eTable 1. Primary Care Quality Indicators and Sampling Frame

eTable 2. Comparison of Time-Limited Current, Time-Limited Lapsed, and Time-Unlimited Internist Care Quality Measures

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Primary Care Quality Indicators and Sampling Frame

Process Measure	Sampling Frame	Criteria for Meeting Quality Standard
Colo-rectal screening	Veterans aged 51-75 years with a life expectancy greater than 6 months and no known metastatic cancer	Annual fecal occult blood testing (FOBT) or immunochemical-based (FIT), or Flexible sigmoidoscopy or double contrast barium enema (due every 5 years) or colonoscopy (due every 10 years).
Diabetic with Hemoglobin A1c <9.0%	Exclusions: - gestational diabetes - hyperglycemia NOS - nonclinical diabetes - borderline diabetes	Most recent Hemoglobin A1c in the past year is < 9%
Diabetic with Blood Pressure <140/90mmHg	Exclusions: - gestational diabetes - hyperglycemia NOS - nonclinical diabetes - borderline diabetes	Most recent blood pressure within past year is < 140/90mmHg
Diabetic with LDL cholesterol <100mg/dL	Exclusions: - gestational diabetes - Hyperglycemia NOS - Steroid induced - Terminal illness - Enrolled in hospice program - Life expectancy <6 months - Primary care is received in a non-VHA setting.	LDL-C within the past year is < 100mg/dL
Blood pressure < 140/90mmHg	Diagnosis of hypertension	Most recent blood pressure within past year is < 140/90mmHg
Thiazide use	Diagnosis of Hypertension on more than one hypertensive medication Exclusions	Current prescription for thiazide diuretic

	<ul style="list-style-type: none"> - Allergy to thiazide - Hypokalemia - Intolerance to thiazide 	
LDL cholesterol < 100mg/dL	<p>Patients with diagnosis of coronary vascular disease</p> <p>Exclusions:</p> <ul style="list-style-type: none"> - Terminal illness - Enrolled in Hospice - Life expectancy <6 months - primary care is non-VHA 	LDL-C < 100mg/dL in the past year
Aspirin therapy	<p>History of acute myocardial infarction</p> <p>Exclusions:</p> <ul style="list-style-type: none"> - Aspirin allergy - Taking warfarin/Coumadin - Other reason - Patient refusal 	Current prescription for Aspirin therapy
Beta Blocker therapy	<p>History of acute myocardial infarction</p> <p>Exclusions:</p> <ul style="list-style-type: none"> - Beta-blocker allergy - Bradycardia - 2nd or 3rd degree heart block without pacemaker - Post heart transplant - Severely decompensated heart failure - Other document reason - Patient refusal 	Current prescription order for a beta-blocker
Angiotensin Converting Enzyme inhibitor or Angiotensin receptor blocker therapy	<p>Diagnosis of congestive heart failure or known to have an ejection fraction < 40%</p> <p>Exclusions:</p> <ul style="list-style-type: none"> - Most recent ejection fraction >39% - Contraindications to ARB/ACE - ARB/ACE allergy 	Current prescription for Ace Inhibitor or ARB

eTable 2. Comparison of Time-Limited Current, Time-Limited Lapsed, and Time-Unlimited Internist Care Quality Measures

Variable	Groups	Number Who Met Standard/Total number (%)	Adjusted* OR (95% CI)
Received colorectal screening	Time-limited (reference)	16,559/22,616 (73%)	1.0
	Lapsed	2,789/3,941 (71%)	0.81 (0.74-1.09)
	Time-unlimited	7,109/9,452 (75%)	0.95 (0.88-1.2)
Diabetic with HgbA1c < 9.0%	Time-limited (reference)	5,792/7,416 (78%)	1.0
	Lapsed	1,009/1,322 (76%)	0.95 (0.74-1.2)
	Time-unlimited	2,324/2,941 (79%)	0.98 (0.83-1.1)
Diabetic with BP < 140/90mmHg	Time-limited (reference)	5,363/7,397 (73%)	1.0
	Lapsed	944/1,320 (72%)	0.88 (0.62-1.3)
	Time-unlimited	2,204/2,931 (75%)	1.06 (0.86-1.3)
Diabetic with LDL < 100mg/dL	Time-limited (reference)	5,012/7,397 (68%)	1.0
	Lapsed	845/1,320 (64%)	0.84 (0.68-1.04)
	Time-unlimited	1,963/2,931 (67%)	0.99 (0.83-1.19)
Hypertensive patients with Blood pressure < 140/90mmHg	Time-limited (reference)	12,094/17,183 (70%)	1.0
	Lapsed	2,086/2,966 (70%)	0.90 (0.78-1.03)
	Time-unlimited	5,097/7,090 (72%)	1.1 (0.99-1.3)
Hypertensive patients on more than one medication receiving thiazide diuretic	Time-limited (reference)	3,630/5,828 (62%)	1.0
	Lapsed	684/1,062 (64%)	1.1 (0.92-1.4)
	Time-unlimited	1,392/2,236 (62%)	1.0 (0.87-1.2)
LDL < 100mg/dL among patients with coronary vascular disease	Time-limited (reference)	3,555/5,043 (70%)	1.0
	Lapsed	633/912 (69%)	0.90 (0.69-1.1)
	Time-unlimited	1,525/2,207 (69%)	0.92 (0.75-1.1)
Post myocardial infarction patients On aspirin	Time-limited (reference)	1,762/1,954 (90%)	1.0
	Lapsed	227/281 (81%)	0.42 (0.15-1.13)
	Time-unlimited	644/708 (91%)	0.65 (0.38-1.09)
On beta-blocker	Time-limited (reference)	1,233/1,931 (64%)	1.0
	Lapsed	179/297 (60%)	0.86 (0.55-1.3)
	Time-unlimited	487/715 (68%)	1.1 (0.81-1.5)

On ACE/ARB with history of congestive heart failure	Time-limited (reference)	1,058/1,288 (82%)	1.0
	Lapsed	139/172 (81%)	0.85 (0.53-1.4)
	Time-unlimited	436/524 (83%)	0.93 (0.67-1.3)

Adjusted for years since certification, participation in MOC, panel size and for clustering by provider within site.