Supplementary Table 3. Annual proportions of secondary prevention indicator attainment among first-ever versus recurrent ischemic stroke admissions, Korean Stroke Registry 2018–2023

Characteristics	2018	2019	2020	2021	2022	2023	*P* for trend
Total	16,051	18,234	17,799	21,460	26,649	29,933	
First-ever stroke	13,101	14,785	14,385	17,545	21,694	24,433	
Recurrent ischemic stroke	2,950	3,449	3,414	3,915	4,955	5,500	
HbA1c <7.0% (DM patients only*)							
First-ever stroke	46.3 (44.9–47.6)	44.7 (43.3–46.0)	44.2 (42.9–45.6)	45.3 (44.1–46.5)	44.7 (43.6–45.7)	45.9 (44.9–46.9)	0.263
Recurrent ischemic stroke	63.3 (60.6–65.9)	61.0 (58.5–63.4)	62.8 (60.4–65.2)	61.7 (59.5–64.0)	61.9 (59.9–63.9)	62.1 (60.2–64.0)	0.700
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
LDL-C <70 mg/dL							
First-ever stroke	15.1 (14.5–15.7)	14.6 (14.1–15.2)	14.7 (14.1–15.2)	17.1 (16.5–17.6)	19.5 (18.9–20.0)	20.0 (19.5–20.5)	<0.001
Recurrent ischemic stroke	32.6 (31.0–34.3)	33.5 (31.9–35.0)	36.5 (34.9–38.1)	38.4 (36.8–39.9)	38.9 (37.6–40.3)	41.9 (40.6–43.2)	<0.001
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
LDL-C <100 mg/dL							
First-ever stroke	42.7 (41.8–43.5)	41.6 (40.8–42.4)	41.9 (41.1–42.8)	43.0 (42.3–43.8)	44.7 (44.0–45.4)	45.5 (44.9–46.1)	<0.001
Recurrent ischemic stroke	59.5 (57.7–61.2)	61.6 (60.0–63.2)	63.1 (61.4–64.7)	63.7 (62.2–65.2)	63.4 (62.1–64.8)	65.8 (64.5–67.0)	<0.001
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Non-current smoking							
First-ever stroke	64.9 (64.1–65.7)	65.8 (65.1–66.6)	65.8 (65.0–66.6)	68.1 (67.4–68.8)	66.5 (65.9–67.1)	67.7 (67.1–68.3)	<0.001
Recurrent ischemic stroke	69.5 (67.8–71.1)	70.6 (69.1–72.1)	71.3 (69.8–72.8)	71.4 (70.0–72.9)	71.5 (70.2–72.7)	73.3 (72.1–74.5)	0.178
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Obesity							
First-ever stroke	33.8 (32.9–34.6)	35.6 (34.8–36.4)	36.1 (35.3–36.8)	35.5 (34.7–36.2)	35.9 (35.3–36.5)	35.4 (34.8–36.0)	0.019
Recurrent ischemic stroke	31.4 (29.7–33.1)	31.6 (30.1–33.2)	32.9 (31.3–34.5)	32.7 (31.2–34.2)	32.1 (30.8–33.4)	32.5 (31.2–33.7)	0.506
P	0.015	<0.001	0.001	0.001	<0.001	<0.001	
Normal weight							
First-ever stroke	61.3 (60.5–62.1)	59.7 (58.9–60.5)	59.5 (58.7–60.3)	60.1 (59.4–60.9)	59.6 (58.9–60.3)	59.9 (59.3–60.5)	0.086
Recurrent ischemic stroke	62.0 (60.2–63.8)	62.9 (61.3–64.6)	61.7 (60.1–63.3)	61.9 (60.4–63.5)	62.3 (61.0–63.7)	61.8 (60.4–63.0)	0.766
P	0.471	<0.001	0.020	0.037	<0.001	0.013	
Underweight							
First-ever stroke	5.0 (4.6–5.3)	4.7 (4.4–5.1)	4.5 (4.1–4.8)	4.4 (4.1–4.7)	4.5 (4.2–4.8)	4.7 (4.4–4.9)	0.193
Recurrent ischemic stroke	6.6 (5.7–7.5)	5.5 (4.7–6.2)	5.4 (4.7–6.2)	5.3 (4.6–6.0)	5.5 (4.9–6.2)	5.7 (5.1–6.3)	0.339
P	<0.001	0.081	0.018	0.012	0.002	0.001	
Any antithrombotic therapy (antiplatelet agent or anticoagulant)							
First-ever stroke	25.0 (24.2–25.7)	24.7 (24.0–25.4)	24.7 (24.0–25.4)	24.6 (24.0–25.2)	24.9 (24.4–25.5)	25.3 (24.7–25.8)	0.021
Recurrent ischemic stroke	74.6 (73.0–76.1)	80.5 (79.2–81.8)	80.4 (79.0–81.7)	81.4 (80.2–82.6)	79.7 (78.6–80.8)	79.4 (78.3–80.4)	0.027
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Antiplatelet agent							
First-ever stroke	21.1 (20.4–21.8)	20.8 (20.2–21.5)	20.4 (19.8–21.1)	20.2 (19.6–20.8)	20.0 (19.5–20.6)	20.1 (19.6–20.6)	0.160
Recurrent ischemic stroke	63.0 (61.3–64.8)	67.6 (66.0–69.1)	67.3 (65.7–68.9)	67.6 (66.1–69.0)	64.7 (63.4–66.1)	64.9 (63.7–66.2)	0.969
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Anticoagulant							
First-ever stroke	4.6 (4.2–5.0)	4.5 (4.1–4.8)	4.9 (4.6–5.3)	5.1 (4.8–5.4)	5.7 (5.4–6.0)	5.9 (5.6–6.2)	<0.001
Recurrent ischemic stroke	15.4 (14.1–16.7)	16.1 (14.9–17.4)	16.5 (15.3–17.8)	16.9 (15.8–18.1)	18.8 (17.7–19.9)	18.1 (17.1–19.1)	<0.001
P	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

Data are presented as n or proportions (%) of patients achieving the prespecified risk-factor control indicators, with 95% confidence intervals shown in parentheses. Proportions were directly age-standardized to the age distribution of the overall 2018 Korean Stroke Registry analytic cohort using 10-year age strata. Antithrombotic therapy use was ascertained by self-report at admission and cross-referenced against the HIRA DUR system at data entry. *P* for trend: *P*-value from GEE logistic models with calendar year as continuous predictor. *P*-value (between groups): from X^2 test on crude (unstandardized) counts comparing first-ever versus recurrent ischemic stroke at each year; these descriptive tests do not account for age or hospital clustering and do not correspond directly to the age-standardized proportions shown.

HbA1c, glycated hemoglobin; DM, diabetes mellitus; LDL-C, low-density lipoprotein cholesterol; HIRA, Health Insurance Review and Assessment Service; DUR, Drug Utilization Review; GEE, generalized estimating equation.

*HbA1c <7.0% analyses were restricted to patients with DM, defined as prior physician-diagnosed DM or newly identified diabetes at admission (HbA1c ≥6.5%) (first-ever stroke: n=36,921; recurrent stroke: n=10,987). Proportions shown reflect indicator attainment within this combined diabetes population.

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