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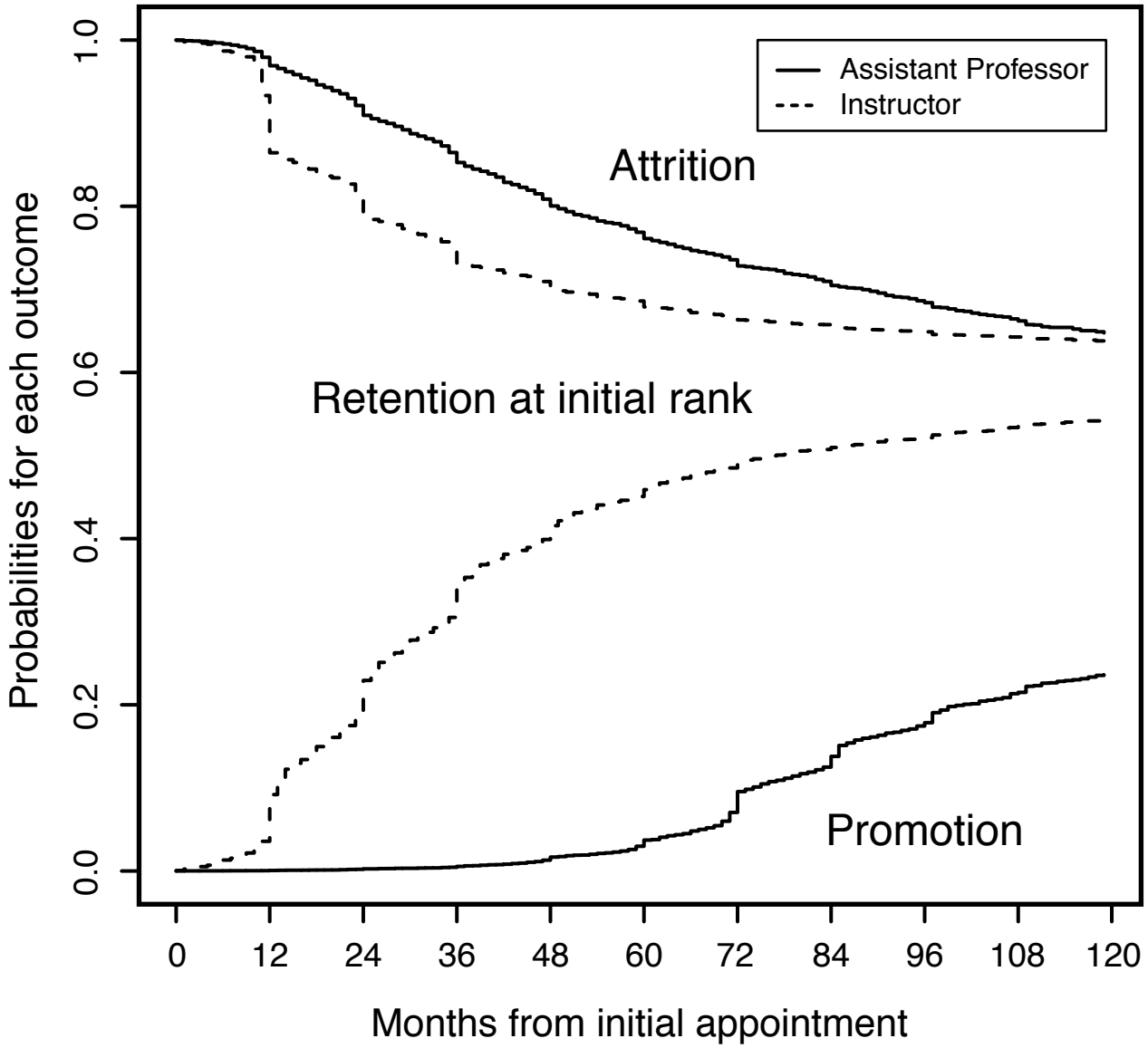
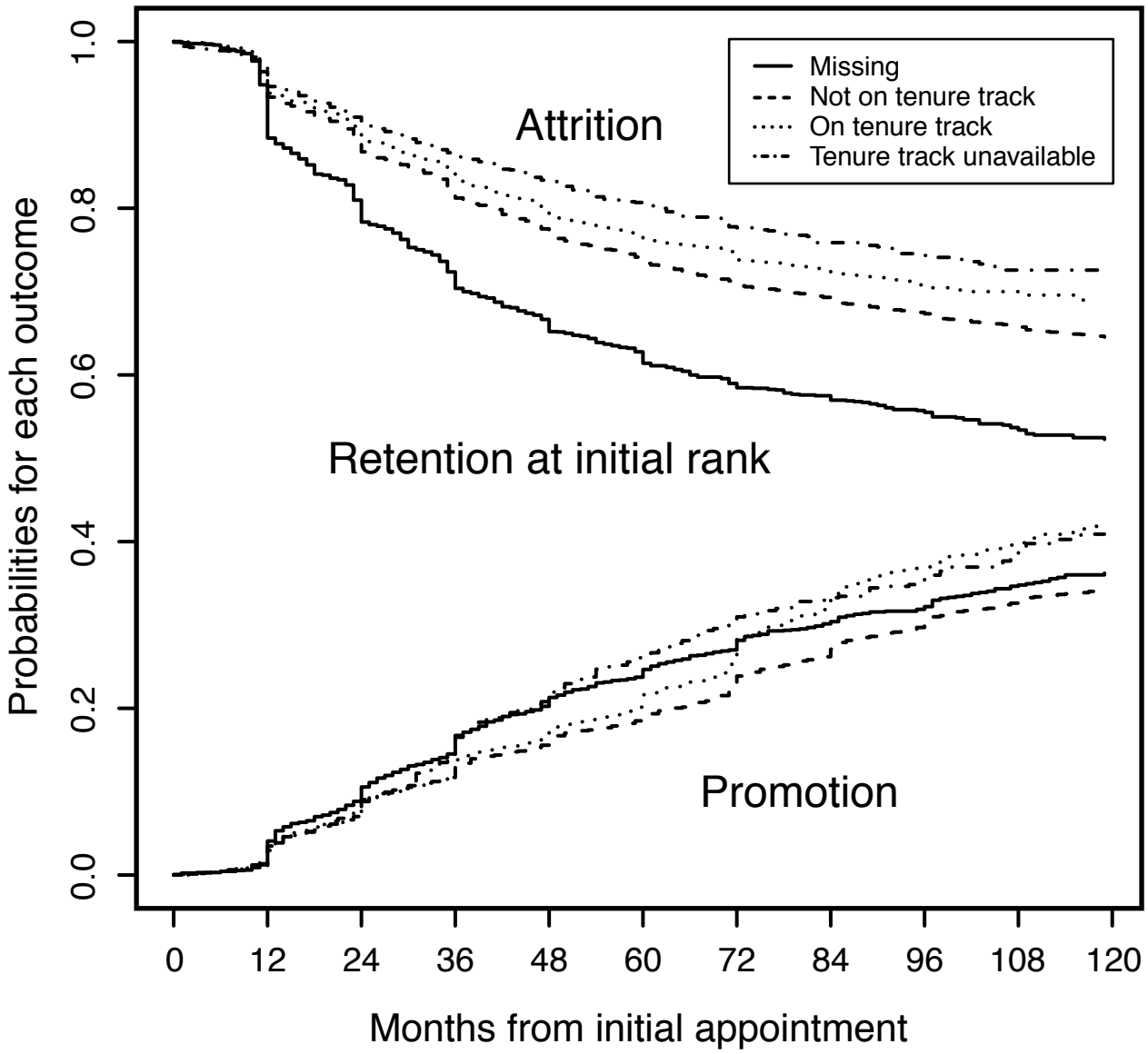
Supplemental Digital Appendix 1



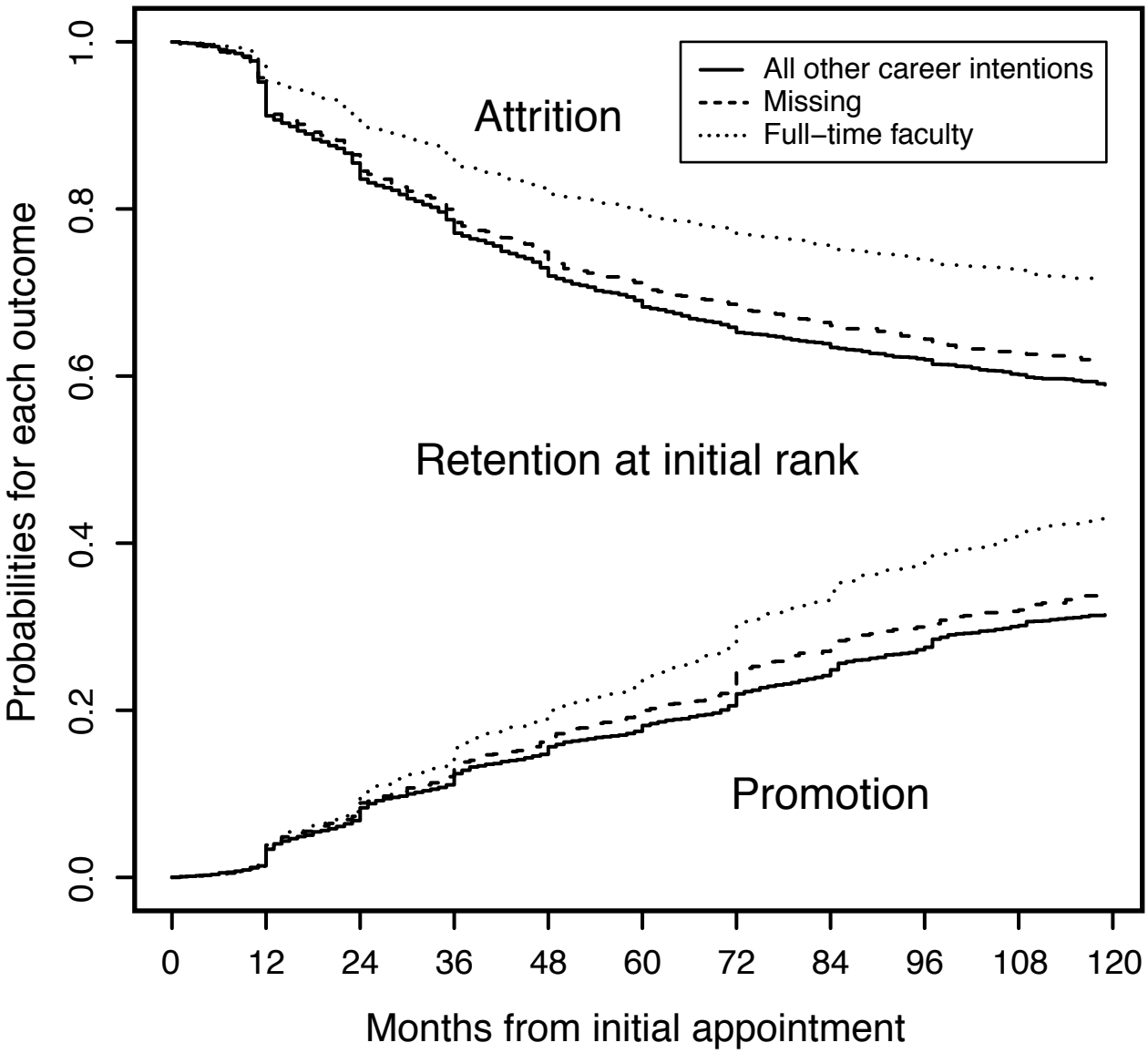
Supplemental Digital Appendix 1. Ten-year probabilities of MD faculty promotion (chi-square = 5385.2, df =1, $P < .001$) and attrition (chi-square = 171.7, df = 1, $P < .001$) since initial appointment as full-time instructor or assistant professor in U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools, by faculty rank at initial appointment. Individuals in the sample were U.S. LCME-accredited medical school graduates. Nonparametric estimates of cumulative incidence function (CIF) were used to plot the probabilities of promotion and attrition after initial appointment (from January 1, 2000 through December 31, 2012) and followed through December 31, 2013; CIFs were compared among groups using Gray's statistic.[14] The probability of promotion is the vertical distance from 0 to the promotion curve; the probability of attrition is the vertical distance from 1 to the attrition curve; and the probability of retention at initial appointment is the vertical distance between the two curves. Thus, at each time point for each faculty member in each category, the sum of the probabilities of promotion, attrition, and retention without promotion equals 1.

Supplemental Digital Appendix 2



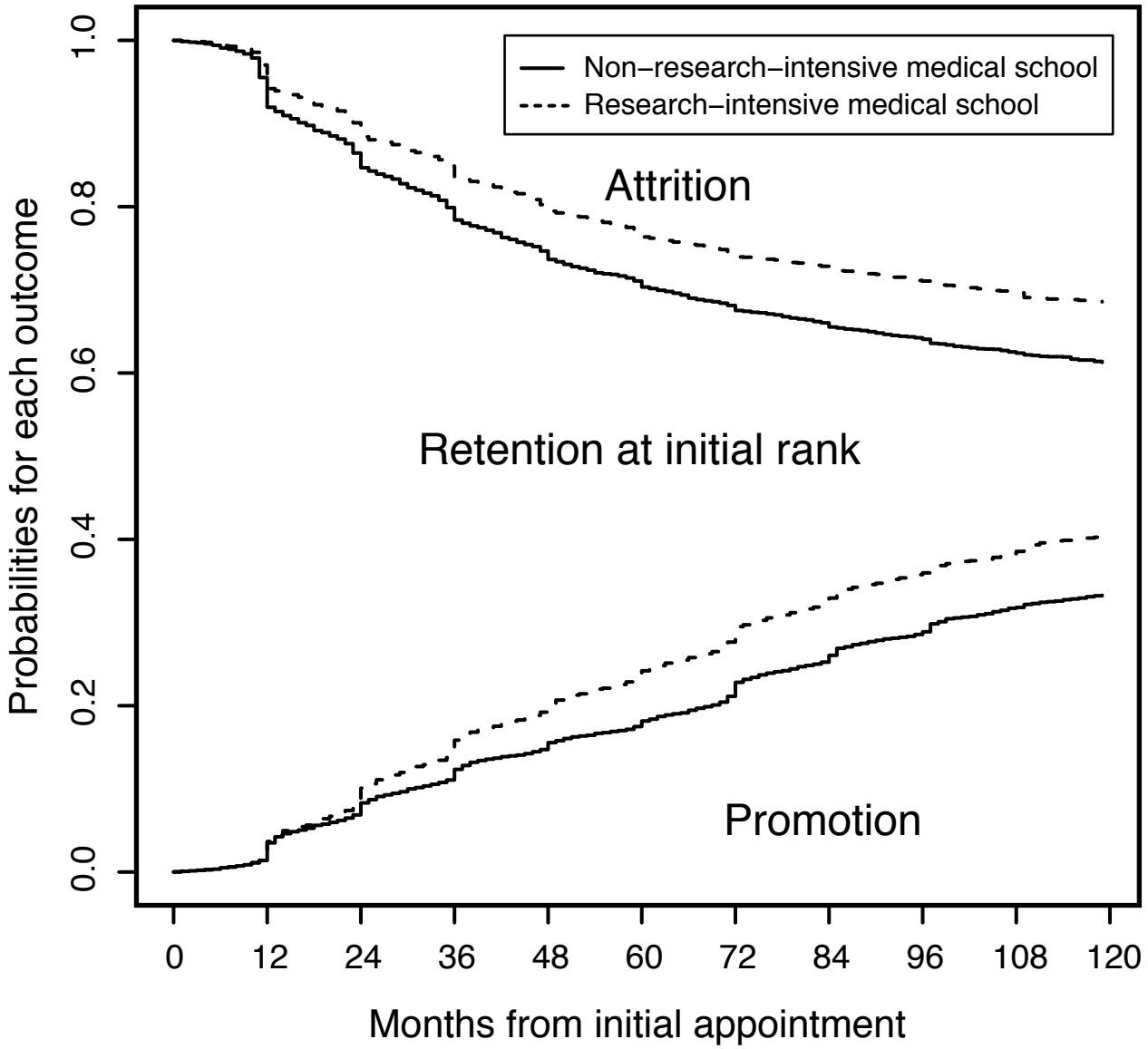
Supplemental Digital Appendix 2. Ten-year probabilities of MD faculty promotion (chi-square = 63.1, df = 3, $P < .001$) and attrition (chi-square = 295.6, df = 3, $P < .001$) since initial appointment as full-time instructor or assistant professor in U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools, by faculty track at initial appointment. Individuals in the sample were U.S. LCME-accredited medical school graduates. Nonparametric estimates of cumulative incidence function (CIF) were used to plot the probabilities of promotion and attrition after initial appointment (from January 1, 2000 through December 31, 2012) and followed through December 31, 2013; CIFs were compared among groups using Gray's statistic.[14] The probability of promotion is the vertical distance from 0 to the promotion curve; the probability of attrition is the vertical distance from 1 to the attrition curve; and the probability of retention at initial appointment is the vertical distance between the two curves. Thus, at each time point for each faculty member in each category, the sum of the probabilities of promotion, attrition, and retention without promotion equals 1.

Supplemental Digital Appendix 3



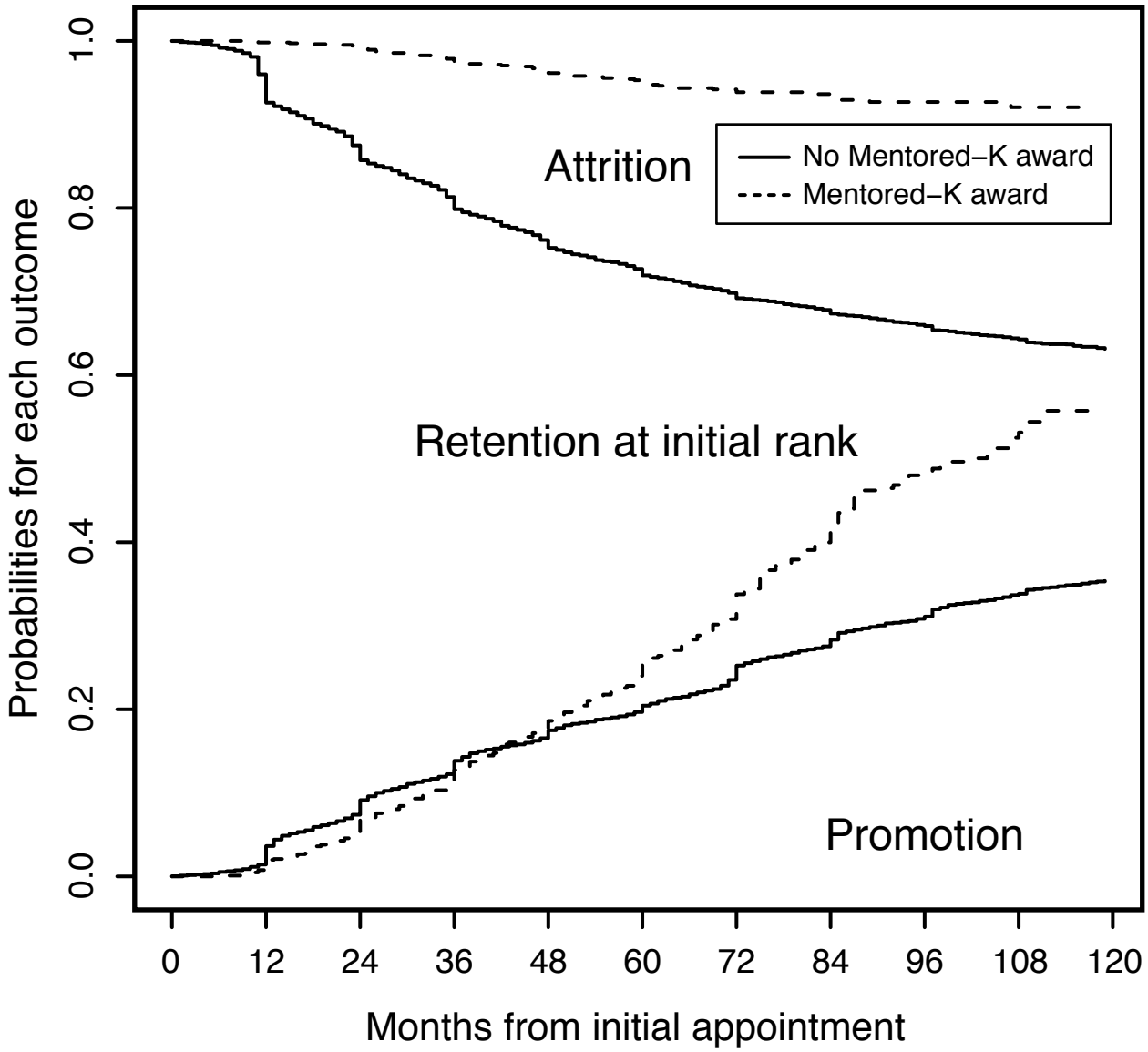
Supplemental Digital Appendix 3. Ten-year probabilities of MD faculty promotion (chi-square = 178.4, df = 2, $P < .001$) and attrition (chi-square = 376.0, df = 2, $P < .001$) since initial appointment as full-time instructor or assistant professor in U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools, by career intention at graduation. Individuals in the sample were U.S. LCME-accredited medical school graduates. Nonparametric estimates of cumulative incidence function (CIF) were used to plot the probabilities of promotion and attrition after initial appointment (from January 1, 2000 through December 31, 2012) and followed through December 31, 2013; CIFs were compared among groups using Gray's statistic.[14] The probability of promotion is the vertical distance from 0 to the promotion curve; the probability of attrition is the vertical distance from 1 to the attrition curve; and the probability of retention at initial appointment is the vertical distance between the two curves. Thus, at each time point for each faculty member in each category, the sum of the probabilities of promotion, attrition, and retention without promotion equals 1.

Supplemental Digital Appendix 4



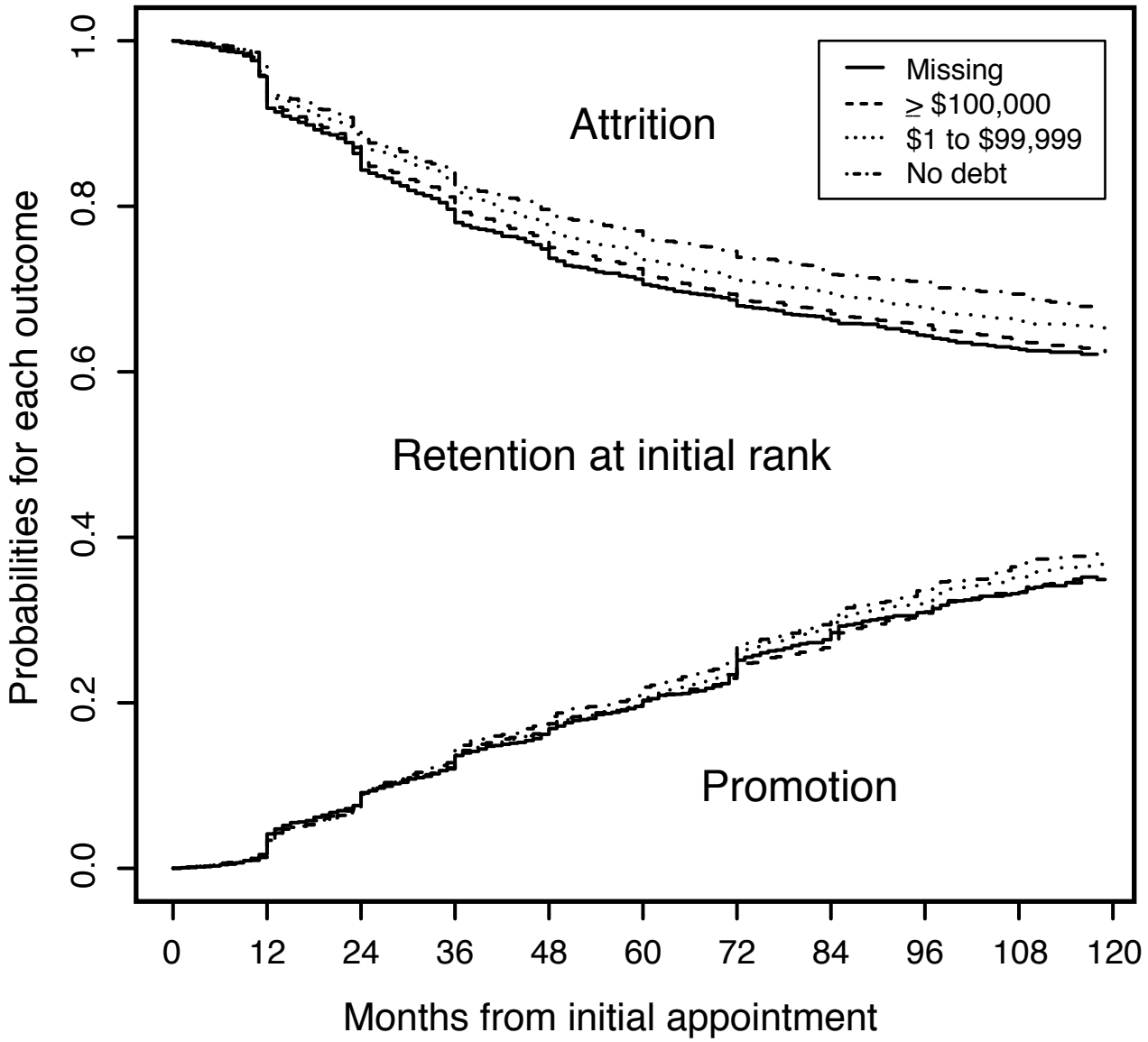
Supplemental Digital Appendix 4. Ten-year probabilities of MD faculty promotion (chi-square = 125.2, df = 1, $P < .001$) and attrition (chi-square = 142.0, df = 1, $P < .001$) since initial appointment as full-time instructor or assistant professor in U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools, by research-intensive medical school attendance. Individuals in the sample were U.S. LCME-accredited medical school graduates. Nonparametric estimates of cumulative incidence function (CIF) were used to plot the probabilities of promotion and attrition after initial appointment (from January 1, 2000 through December 31, 2012) and followed through December 31, 2013; CIFs were compared among groups using Gray's statistic.[14] The probability of promotion is the vertical distance from 0 to the promotion curve; the probability of attrition is the vertical distance from 1 to the attrition curve; and the probability of retention at initial appointment is the vertical distance between the two curves. Thus, at each time point for each faculty member in each category, the sum of the probabilities of promotion, attrition, and retention without promotion equals 1.

Supplemental Digital Appendix 5



Supplemental Digital Appendix 5. Ten-year probabilities of MD faculty promotion (chi-square = 51.8, df = 1, $P < .001$) and attrition (chi-square = 287.3, df = 1, $P < .001$) since initial appointment as full-time instructor or assistant professor in U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools, by receipt of mentored-K award after graduation and before event date or date of censorship (December 31, 2013). Individuals in the sample were U.S. LCME-accredited medical school graduates. Nonparametric estimates of cumulative incidence function (CIF) were used to plot the probabilities of promotion and attrition after initial appointment (from January 1, 2000 through December 31, 2012) and followed through December 31, 2013; CIFs were compared among groups using Gray's statistic.[14] The probability of promotion is the vertical distance from 0 to the promotion curve; the probability of attrition is the vertical distance from 1 to the attrition curve; and the probability of retention at initial appointment is the vertical distance between the two curves. Thus, at each time point for each faculty member in each category, the sum of the probabilities of promotion, attrition, and retention without promotion equals 1.

Supplemental Digital Appendix 6



Supplemental Digital Appendix 6. Ten-year probabilities of MD faculty promotion (chi-square = 6.2, df = 3, *P* = .10) and attrition (chi-square = 44.8, df = 3, *P* < .001) since initial appointment as full-time instructor or assistant professor in U.S. Liaison Committee on Medical Education (LCME)-accredited medical schools, by total debt at graduation. Individuals in the sample were U.S. LCME-accredited medical school graduates. Nonparametric estimates of cumulative incidence function (CIF) were used to plot the probabilities of promotion and attrition after initial appointment (from January 1, 2000 through December 31, 2012) and followed through December 31, 2013; CIFs were compared among groups using Gray's statistic.[14] The probability of promotion is the vertical distance from 0 to the promotion curve; the probability of attrition is the vertical distance from 1 to the attrition curve; and the probability of retention at initial appointment is the vertical distance between the two curves. Thus, at each time point for each faculty member in each category, the sum of the probabilities of promotion, attrition, and retention without promotion equals 1.

Supplemental Digital Appendix 7. Characteristics of Study Sample of MD Faculty, by Faculty Status Outcome as of December 31, 2013, among New Full-Time Instructors Appointed at U.S. LCME-accredited Medical Schools from January 1, 2000 through December 31, 2012[a]

Characteristics[b]	Total N = 10,470 (%)	Promotion n = 5,118 (%)	Retention n = 1,841 (%)	Attrition n = 3,511 (%)
Race/ethnicity				
White	6,933 (66.2)	3,475 (67.9)	1,190 (64.6)	2,268 (64.6)
Underrepresented racial/ethnic minorities in medicine[c]	1,187 (11.3)	530 (10.4)	211 (11.5)	446 (12.7)
Asian/Pacific Islander	2,204 (21.0)	1,038 (20.3)	411 (22.3)	755 (21.5)
Other/multiple/unknown	146 (1.4)	75 (1.5)	29 (1.6)	42 (1.2)
Gender				
Men	5,465 (52.2)	2,689 (52.5)	844 (45.8)	1,932 (55.0)
Women	5,005 (47.8)	2,429 (47.5)	997 (54.2)	1,579 (45.0)
Research-intensive medical-school attendance				
No	5,741 (54.8)	2,676 (52.3)	915 (49.7)	2,150 (61.2)
Yes	4,729 (45.2)	2,442 (47.7)	926 (50.3)	1,361 (38.8)
Debt at graduation				
No debt	1,620 (15.5)	802 (15.7)	321 (17.4)	497 (14.2)
$1-$99,999	3,650 (34.9)	1,862 (36.4)	578 (31.4)	1,210 (34.5)
≥ $100,000	3,557 (34.0)	1,701 (33.2)	614 (33.4)	1,242 (35.4)
Missing	1,643 (15.7)	753 (14.7)	328 (17.8)	562 (16.0)
Career intention at graduation				
Full-time university faculty in basic or clinical sciences	4,122 (39.4)	2,282 (44.6)	803 (43.6)	1,037 (29.5)
All other careers	4,753 (45.4)	2,112 (41.3)	721(39.2)	1,920 (54.7)
Missing	1,595 (15.2)	724 (14.2)	317 (17.2)	554 (15.8)
Track of initial appointment				
Non-tenure track	6,621 (63.2)	3,079 (60.2)	1,445 (78.5)	2,097 (59.7)
Tenure track	1,443 (13.8)	869 (17.0)	104 (5.6)	470 (13.4)
Tenure unavailable at school	658 (6.3)	377 (7.4)	137 (7.4)	144 (4.1)
Missing	1,748 (16.7)	793 (15.5)	155 (8.4)	800 (22.8)
Department at initial appointment				
Internal medicine	3,913 (37.4)	2,029 (39.6)	746 (40.5)	1,138 (32.4)
Family medicine	315 (3.0)	160 (3.1)	54 (2.9)	101 (2.9)
Obstetrics-gynecology	573 (5.5)	294 (5.7)	68 (3.7)	211 (6.0)
Surgery	1,511 (14.4)	698 (13.6)	197 (10.7)	616 (17.5)
Pediatrics	1,472 (14.1)	729 (14.2)	324 (17.6)	419 (11.9)
Psychiatry	509 (4.9)	226 (4.4)	130 (7.1)	153 (4.4)
Radiology	873 (8.3)	302 (5.9)	113 (6.1)	458 (13.0)
All other clinical/all basic sciences	1,304 (12.4)	680 (13.3)	209 (11.4)	415 (11.8)
K-award before event				
No	10,111 (96.6)	4,883 (95.4)	1,737 (94.4)	3,491 (99.4)
Yes	359 (3.4)	235 (4.6)	104 (5.6)	20 (0.6)

Abbreviation: LCME indicates Liaison Committee on Medical Education.

[a] Individuals in the sample were U.S. LCME-accredited medical school graduates. Each outcome is for the first event (either promotion or attrition) within a 10-year follow-up after initial appointment at rank of full-time instructor; outcomes are mutually exclusive categories.

[b] Each variable was significantly associated with the outcome in chi-square tests at $P < .001$, except race/ethnicity was significant at $P = .004$.

[c] Includes Black or African American, Hispanic, and American Indian/Alaska Native.

Supplemental Digital Appendix 8. Characteristics of Study Sample of MD Faculty, by Faculty Status Outcome as of December 31, 2013, among New Full-Time Assistant Professors Appointed at U.S. LCME-accredited Medical Schools from January 1, 2000 through December 31, 2012[a]

Characteristics[b]	Total N = 16,749 (%)	Promotion n = 1,635 (%)	Retention n = 10,949 (%)	Attrition n = 4,165 (%)
Race/ethnicity				
White	11,165 (66.7)	1,182 (72.3)	7,297 (66.6)	2,686 (64.5)
Underrepresented racial/ethnic minorities in medicine[c]	2,026 (12.1)	120 (7.3)	1,296 (11.8)	610 (14.6)
Asian/Pacific Islander	3,331 (19.9)	302 (18.5)	2,218 (20.3)	811 (19.5)
Other/multiple/unknown	227 (1.4)	31 (1.9)	138 (1.3)	58 (1.4)
Gender				
Men	9,230 (55.1)	1,058 (64.7)	6,091(55.6)	2,081 (50.0)
Women	7,519 (44.9)	577 (35.3)	4,858 (44.4)	2,084 (50.0)
Research-intensive medical-school attendance				
No	10,147 (60.6)	919 (56.2)	6,457 (59.0)	2,771 (66.5)
Yes	6,602 (39.4)	716 (43.8)	4,492 (41.0)	1,394 (33.5)
Debt at graduation				
No debt	2,474 (14.8)	250 (15.3)	1,701 (15.5)	523 (12.6)
$1-$99,999	6,245 (37.3)	748 (45.8)	3,910 (35.7)	1,587 (38.1)
≥ $100,000	5,493 (32.8)	425 (26.0)	3,688 (33.7)	1,380 (33.1)
Missing	2,537 (15.2)	212 (13.0)	1,650 (15.1)	675 (16.2)
Career intention at graduation				
Full-time university faculty in basic or clinical sciences	6,546 (39.1)	786 (48.1)	4,476 (40.9)	1,284 (30.8)
All other careers	7,715 (46.1)	652 (39.9)	4,835 (44.2)	2,228 (53.5)
Missing	2,488 (14.8)	197 (12.0)	1,638 (15.0)	653 (15.7)
Track of initial appointment				
Non-tenure track	10,794 (64.4)	996 (60.9)	7,061 (64.5)	2,737 (65.7)
Tenure track	3,472 (20.7)	476 (29.1)	2,251 (20.6)	745 (17.9)
Tenure unavailable at school	898 (5.4)	75 (4.6)	633 (5.8)	190 (4.6)
Missing	1,585 (9.5)	88 (5.4)	1,004 (9.2)	493 (11.8)
Department at initial appointment				
Internal medicine	4,846 (28.9)	520 (31.8)	3,101 (28.3)	1,225 (29.4)
Family medicine	727 (4.3)	67 (4.1)	395 (3.6)	265 (6.4)
Obstetrics-gynecology	859 (5.1)	67 (4.1)	549 (5.0)	243 (5.8)
Surgery	3,187 (19.0)	352 (21.5)	2,266 (20.7)	569 (13.7)
Pediatrics	2,559 (15.3)	231 (14.1)	1,774 (16.2)	554 (13.3)
Psychiatry	838 (5.0)	53 (3.2)	499 (4.6)	286 (6.9)
Radiology	1,224 (7.3)	92 (5.6)	828 (7.6)	304 (7.3)
All other clinical/all basic sciences	2,509 (15.0)	253 (15.5)	1,537 (14.0)	719 (17.3)
K-award before event				
No	16,054 (95.8)	1,492 (91.2)	10,438 (95.3)	4,124 (99.0)
Yes	695 (4.2)	143 (8.8)	511 (4.7)	41 (1.0)

Abbreviation: LCME indicates Liaison Committee on Medical Education.

[a] Individuals in the sample were U.S. LCME-accredited medical school graduates. Each outcome is for the first event (either promotion or attrition) within a 10-year follow-up after initial appointment at rank of full-time assistant professor; outcomes are mutually exclusive categories.

[b] Each variable was significantly associated with the outcome in chi-square tests at $P < .001$.

[c] Includes Black or African American, Hispanic, and American Indian/Alaska Native.

Supplemental Digital Appendix 9. Ten-year Probabilities (Cumulative Incidence Function [CIF]) of MD Faculty Promotion and Attrition as of December 31, 2013, among Instructors Appointed at Liaison Committee on Medical Education (LCME)-accredited Medical Schools from January 1, 2000 through December 31, 2012 (N=10,470)[a]

Characteristics	Promotion (n = 5,118) CIF (95% CI)	*P* value[b]	Attrition (n = 3,511) CIF (95% CI)	*P* value[b]
Total sample	0.54 (0.53-0.55)		0.36 (0.35-0.37)	
Race/ethnicity		.008		.003
White	0.55 (0.54-0.57)		0.35 (0.34-0.36)	
Underrepresented racial/ethnic minorities in medicine[c]	0.50 (0.47-0.53)		0.41 (0.38-0.44)	
Asian/Pacific Islander	0.53 (0.51-0.55)		0.37 (0.35-0.39)	
Other/unknown	0.55 (0.46-0.64)		0.33 (0.24-0.42)	
Gender		.26		<.001
Men	0.55 (0.53-0.56)		0.38 (0.37-0.39)	
Women	0.54 (0.52-0.55)		0.35 (0.33-0.36)	
Research-intensive medical-school attendance		< .001		< .001
No	0.52 (0.50-0.53)		0.40 (0.39-0.42)	
Yes	0.57 (0.56-0.59)		0.32 (0.30-0.33)	
Debt at graduation		.11		.005
No debt	0.56 (0.53-0.58)		0.34 (0.32-0.37)	
$1-$99,999	0.55 (0.54-0.57)		0.35 (0.34-0.37)	
≥ $100,000	0.53 (0.51-0.55)		0.38 (0.36-0.40)	
Missing	0.52 (0.50-0.55)		0.37 (0.34-0.39)	
Career intention at graduation		< .001		< .001
Full-time university faculty in basic or clinical sciences	0.62 (0.60-0.64)		0.28 (0.26-0.29)	
All other careers	0.48 (0.47-0.50)		0.43 (0.42-0.45)	
Missing	0.52 (0.49-0.55)		0.37 (0.35-0.40)	
Track of initial appointment		< .001		< .001
Not on tenure track	0.52 (0.51-0.54)		0.35 (0.34-0.36)	
Tenure track	0.63 (0.60-0.65)		0.33 (0.31-0.36)	
Tenure unavailable at school	0.66 (0.62-0.71)		0.24 (0.21-0.28)	
Missing	0.49 (0.46-0.51)		0.47 (0.45-0.50)	
Department at initial appointment		< .001		< .001
Internal medicine	0.58 (0.56-0.60)		0.32 (0.30-0.33)	
Family medicine	0.54 (0.48-0.59)		0.35 (0.29-0.40)	
Obstetrics-gynecology	0.56 (0.51-0.61)		0.40 (0.36-0.44)	
Surgery	0.50 (0.48-0.53)		0.43 (0.41-0.46)	
Pediatrics	0.57 (0.54-0.60)		0.31 (0.29-0.34)	
Psychiatry	0.50 (0.45-0.55)		0.35 (0.30-0.40)	
Radiology	0.38 (0.34-0.42)		0.54 (0.51-0.58)	
All other clinical/all basic sciences	0.55 (0.52-0.58)		0.35 (0.32-0.38)	
K-award before event		< .001		< .001
No	0.53 (0.52-0.54)		0.37 (0.36-0.38)	
Yes	0.83 (0.75-0.88)		0.07 (0.04-0.10)	

Abbreviation: CI indicates confidence interval.

[a] Individuals in the sample were U.S. LCME-accredited medical school graduates. Probabilities of retention without promotion (not shown) can be calculated as 1.00 minus (promotion + attrition) probabilities.

[b] Significance of probabilities of promotion and attrition determined using Gray's statistic,[14] comparing groups within a 10-year follow-up after initial appointment at rank of full-time instructor. Each outcome is for the first event (either promotion or attrition) within a 10-year follow-up; outcomes are mutually exclusive categories.

[c] Includes Black or African American, Hispanic, and American Indian/Alaska Native.

Supplemental Digital Appendix 10. Ten-year Probabilities (Cumulative Incidence Function [CIF]) of MD Faculty Promotion and Attrition as of December 31, 2013, among Assistant Professors Appointed at Liaison Committee on Medical Education (LCME)-accredited Medical Schools from January 1, 2000 through December 31, 2012 (N = 16,749)[a]

Characteristics	Promotion (n = 1,635) CIF (95% CI)	*P* value[b]	Attrition (n = 4,165) CIF (95% CI)	*P* value[b]
Total sample	0.24 (0.23-0.25)		0.35 (0.34-0.36)	
Race/ethnicity		< .001		< .001
White	0.26 (0.24-0.27)		0.34 (0.33-0.35)	
Underrepresented racial/ethnic minorities in medicine[c]	0.14 (0.12-0.17)		0.42 (0.39-0.45)	
Asian/Pacific Islander	0.23 (0.21-0.26)		0.36 (0.34-0.39)	
Other/unknown	0.28 (0.19-0.38)		0.32 (0.25-0.39)	
Gender		< .001		<.001
Men	0.28 (0.26-0.29)		0.32 (0.31-0.34)	
Women	0.20 (0.18-0.21)		0.39 (0.37-0.41)	
Research-intensive medical-school attendance		< .001		< .001
No	0.22 (0.21-0.23)		0.38 (0.36-0.39)	
Yes	0.27 (0.25-0.29)		0.31 (0.30-0.33)	
Debt at graduation		<.001		< .001
No debt	0.26 (0.23-0.30)		0.30 (0.27-0.32)	
$1-$99,999	0.25 (0.24-0.27)		0.35 (0.33-0.36)	
≥ $100,000	0.21 (0.19-0.24)		0.37 (0.35-0.39)	
Missing	0.23 (0.20-0.26)		0.39 (0.36-0.42)	
Career intention at graduation		< .001		< .001
Full-time university faculty in basic or clinical sciences	0.30 (0.28-0.32)		0.29 (0.27-0.31)	
All other careers	0.20 (0.18-0.22)		0.40 (0.38-0.41)	
Missing	0.21 (0.18-0.24)		0.39 (0.36-0.42)	
Track of initial appointment		< .001		< .001
Non-tenure track	0.23 (0.21-0.24)		0.36 (0.34-0.37)	
Tenure track	0.33 (0.30-0.36)		0.30 (0.28-0.33)	
Tenure unavailable at school	0.21 (0.15-0.26)		0.30 (0.26-0.34)	
Missing	0.15 (0.11-0.18)		0.49 (0.44-0.53)	
Department at initial appointment		< .001		< .001
Internal medicine	0.25 (0.23-0.28)		0.36 (0.34-0.38)	
Family medicine	0.17 (0.13-0.22)		0.46 (0.41-0.50)	
Obstetrics-gynecology	0.17 (0.13-0.22)		0.39 (0.34-0.43)	
Surgery	0.36 (0.31-0.41)		0.28 (0.26-0.31)	
Pediatrics	0.22 (0.19-0.25)		0.32 (0.29-0.35)	
Psychiatry	0.12 (0.09-0.15)		0.45 (0.40-0.49)	
Radiology	0.23 (0.17-0.30)		0.36 (0.32-0.40)	
All other clinical/all basic sciences	0.23 (0.20-0.26)		0.37 (0.35-0.40)	
K-award before event		< .001		< .001
No	0.23 (0.22-0.24)		0.37 (0.35-0.38)	
Yes	0.42 (0.35-0.49)		0.09 (0.06-0.12)	

Abbreviation: CI indicates confidence interval.

[a] Individuals in the sample were U.S. LCME-accredited medical school graduates. Probabilities of retention without promotion (not shown) can be calculated as 1.00 minus (promotion + attrition) probabilities.

[b] Significance of probabilities of promotion and attrition determined using Gray's statistic,[14] comparing groups within a 10-year follow-up after initial appointment at rank of full-time assistant professor. Each outcome is for the first event (either promotion or attrition) within a 10-year follow-up; outcomes are mutually exclusive categories.

[c] Includes Black or African American, Hispanic, and American Indian/Alaska Native.

Supplemental Digital Appendix 11. Unadjusted Subdistribution Hazard Ratios (uSHR) and Adjusted Subdistribution Hazard Ratios (aSHR) for Promotion and Attrition as of December 31, 2013, among Instructors Appointed at Liaison Committee on Medical Education (LCME)-accredited Medical Schools from January 1, 2000 through December 31, 2012 (N = 10,470)[a]

Characteristics	Promotion uSHR (95% CI)	*P* value	Promotion aSHR (95% CI)	*P* value	Attrition uSHR (95% CI)	*P* value	Attrition aSHR (95% CI)	*P* value
Appointment year[b]	0.98 (0.97-0.99)	< .001	0.98 (0.97-0.99)	< .001	0.98 (0.97-0.996)	.009	0.98 (0.97-0.99)	.004
Race/ethnicity								
White	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Underrepresented racial/ethnic minorities in medicine[c]	0.86 (0.78-0.94)	< .001	0.87 (0.80-0.96)	.004	1.17 (1.06-1.29)	.002	1.15 (1.04-1.27)	.006
Asian/Pacific Islander	0.94 (0.88-1.01)	.09	0.95 (0.88-1.01)	.12	1.07 (0.99-1.16)	.10	1.09 (1.004-1.18)	.04
Other/unknown	1.06 (0.84-1.34)	.61	1.05 (0.84-1.32)	.66	0.84 (0.62-1.13)	.25	0.88 (0.65-1.17)	.37
Gender								
Men	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Women	0.97 (0.92-1.02)	.26	0.96 (0.91-1.02)	.19	0.85 (0.80-0.91)	< .001	0.91 (0.85-0.98)	.007
Research-intensive medical-school attendance								
No	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Yes	1.14 (1.08-1.21)	< .001	1.10 (1.04-1.16)	.001	0.72 (0.68-0.77)	< .001	0.81 (0.76-0.87)	< .001
Debt at graduation								
No debt	1.00 (reference)		1.00 (reference)		(reference)		1.00 (reference)	
$1-$99,999	1.02 (0.94-1.11)	.57	1.04 (0.96-1.13)	.32	1.09 (0.99-1.21)	.09	1.08 (0.97-1.19)	.17
≥ $100,000	0.95 (0.88-1.04)	.26	0.98 (0.90-1.07)	.69	1.18 (1.06-1.30)	.002	1.15 (1.03-1.27)	.01
Missing	0.92 (0.83-1.01)	.09	1.09 (0.89-1.33)	.41	1.16 (1.03-1.31)	.01	0.94 (0.75-1.19)	.63
Career intention at graduation								
Full-time university faculty in basic or clinical sciences	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
All other careers	0.74 (0.69-0.78)	< .001	0.75 (0.71-0.80)	< .001	1.76 (1.64-1.90)	< .001	1.63 (1.51-1.76)	< .001
Missing	0.78 (0.72-0.85)	< .001	0.75 (0.61-0.91)	.003	1.49 (1.35-1.65)	< .001	1.60 (1.28-2.01)	< .001
Tenure track								
Non-tenure track	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Tenure track	1.42 (1.31-1.52)	< .001	1.43 (1.33-1.54)	< .001	1.04 (0.94-1.15)	.47	1.03 (0.94-1.14)	.52
Tenure unavailable at school	1.28 (1.16-1.42)	< .001	1.31 (1.18-1.45)	< .001	0.66 (0.56-0.78)	< .001	0.62 (0.52-0.74)	< .001
Missing	0.92 (0.85-0.99)	.03	0.91 (0.84-0.98)	.02	1.55 (1.43-1.68)	< .001	1.53 (1.41-1.66)	< .001

Table continues

Supplemental Digital Appendix 11. (Continued)

Characteristics	Promotion uSHR (95% CI)	*P* value	Promotion aSHR (95% CI)	*P* value	Attrition uSHR (95% CI)	*P* value	Attrition aSHR (95% CI)	*P* value
Department at initial appointment								
Internal medicine	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Family medicine	0.96 (0.82-1.12)	.62	1.04 (0.89-1.22)	.61	1.09 (0.90-1.33)	.39	0.88 (0.72-1.08)	.24
Obstetrics-gynecology	0.95 (0.85-1.06)	.35	1.01 (0.90-1.13)	.87	1.24 (1.08-1.42)	.002	1.09 (0.95-1.25)	.22
Surgery	0.94 (0.86-1.03)	.18	1.02 (0.93-1.11)	.68	1.60 (1.45-1.76)	< .001	1.48 (1.34-1.63)	< .001
Pediatrics	0.95 (0.87-1.03)	.18	1.01 (0.93-1.09)	.87	0.96 (0.86-1.08)	.53	0.89 (0.80.996)	.04
Psychiatry	0.80 (0.70-0.92)	.001	0.84 (0.73-0.96)	.008	0.99 (0.84-1.16)	.87	0.93 (0.79-1.09)	.37
Radiology	0.64 (0.56-0.72)	< .001	0.69 (0.60-0.78)	< .001	2.33 (2.09-2.61)	< .001	2.08 (1.85-2.33)	< .001
All other clinical/all basic sciences	1.11 (1.02-1.22)	.02	1.20 (1.09-1.31)	< .001	1.11 (0.99-1.24)	.07	0.97 (0.87-1.08)	.59
Mentored-K award								
No	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Yes	1.43 (1.29-1.59)	< .001	1.28 (1.15-1.43)	< .001	0.14 (0.09-0.21)	< .001	0.20 (0.13-0.31)	< .001

Abbreviation: CI indicates confidence interval.

[a] Individuals in the sample were U.S. LCME-accredited medical school graduates. To study the effects of several variables on MD faculty promotion and attrition, we used proportional subdistribution hazards models.[15] Point estimates for uSHRs and aSHRs, their 95% CIs, and two-tailed *P* values are shown. Adjusted models include all variables shown. Note that SHRs > 1.00 indicate greater hazards and SHRs < 1.00 indicate lower hazards of the outcome of interest (promotion or attrition).

[b] SHRs < 1.00 indicate lower hazards of promotion and attrition with each more recent year of appointment.

[c] Includes Black or African American, Hispanic, and American Indian/Alaska Native.

Supplemental Digital Appendix 12. Unadjusted Subdistribution Hazard Ratios (uSHR) and Adjusted Subdistribution Hazard Ratios (aSHR) for Promotion and Attrition as of December 31, 2013, among Assistant Professors Appointed at Liaison Committee on Medical Education (LCME)-accredited Medical Schools from January 1, 2000 through December 31, 2012 (n = 16,749)[a]

Characteristics	Promotion uSHR (95% CI)	*P* value	Promotion aSHR (95% CI)	*P* value	Attrition uSHR (95% CI)	*P* value	Attrition aSHR (95% CI)	*P* value
Appointment year[b]	0.88 (0.86-0.89)	< .001	0.86 (0.85-0.88)	< .001	0.92 (0.91-0.93)	< .001	0.93 (0.92-0.94)	<.001
Race/ethnicity								
White	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Underrepresented racial/ethnic minorities in medicine[c]	0.53 (0.44-0.64)	< .001	0.59 (0.49-0.72)	< .001	1.30 (1.19-1.42)	< .001	1.22 (1.12-1.33)	< .001
Asian/Pacific Islander	0.92 (0.81-1.04)	.17	0.91 (0.80-1.03)	.13	1.05 (0.97-1.14)	.22	1.12 (1.04-1.22)	.004
Other/unknown	1.04 (0.74-1.46)	.81	0.85 (0.61-1.18)	.33	1.02 (0.78-1.32)	.91	1.01 (0.78-1.31)	.93
Gender								
Men	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Women	0.61 (0.55-0.68)	< .001	0.68 (0.61-0.75)	< .001	1.24 (1.17-1.32)	< .001	1.20 (1.13-1.28)	< .001
Research-intensive medical-school attendance								
No	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Yes	1.32 (1.20-1.45)	< .001	1.20 (1.08-1.32)	< .001	0.76 (0.71-0.80)	< .001	0.84 (0.79-0.90)	< .001
Debt at graduation								
No debt	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
$1-$99,999	1.05 (0.91-1.21)	.52	1.08 (0.94-1.25)	.27	1.16 (1.05-1.28)	.003	1.08 (0.98-1.19)	.14
≥ $100,000	0.78 (0.67-0.91)	.002	0.89 (0.76-1.04)	.14	1.25 (1.13-1.38)	< .001	1.19 (1.08-1.32)	< .001
Missing	0.86 (0.72-1.03)	.11	1.15 (0.85-1.55)	.36	1.38 (1.23-1.54)	< .001	1.39 (1.14-1.71)	.002
Career intention at graduation								
Full-time university faculty in basic or clinical sciences	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
All other careers	0.63 (0.57-0.69)	< .001	0.72 (0.64-0.80)	< .001	1.54 (1.44-1.64)	< .001	1.34 (1.25-1.44)	< .001
Missing	0.67 (0.57-0.78)	< .001	0.64 (0.47-0.85)	.003	1.48 (1.35-1.63)	< .001	1.12 (0.92-1.36)	.24
Tenure track								
Non-tenure track	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Tenure track	1.59 (1.43-1.77)	< .001	1.41 (1.26-1.57)	< .001	0.81 (0.75-0.88)	< .001	0.94 (0.87-1.02)	.17
Tenure unavailable at school	0.90 (0.71-1.14)	.40	0.92 (0.72-1.17)	.49	0.81 (0.70-0.94)	.005	0.82 (0.71-0.94)	.006
Missing	0.73 (0.58-0.90)	.004	0.74 (0.60-0.92)	.007	1.43 (1.30-1.58)	< .001	1.45 (1.32-1.60)	< .001

Table continues

Supplemental Digital Appendix 12. (Continued)

Characteristics	Promotion uSHR (95% CI)	*P* value	Promotion aSHR (95% CI)	*P* value	Attrition uSHR (95% CI)	*P* value	Attrition aSHR (95% CI)	*P* value
Department at initial appointment								
Internal medicine	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Family medicine	0.70 (0.55-0.90)	.005	0.82 (0.64-1.05)	.12	1.44 (1.26-1.64)	< .001	1.10 (0.97-1.26)	.15
Obstetrics-gynecology	0.66 (0.52-0.86)	.002	0.87 (0.68-1.12)	.28	1.11 (0.97-1.27)	.14	0.94 (0.82-1.08)	.35
Surgery	1.40 (1.22-1.60)	< .001	1.40 (1.22-1.61)	< .001	0.76 (0.68-0.84)	< .001	0.81 (0.73-0.90)	< .001
Pediatrics	0.83 (0.71-0.96)	.02	0.95 (0.81-1.10)	.49	0.82 (0.75-0.91)	< .001	0.77 (0.70-0.85)	< .001
Psychiatry	0.52 (0.39-0.69)	< .001	0.56 (0.42-0.74)	< .001	1.35 (1.19-1.54)	< .001	1.26 (1.11-1.43)	< .001
Radiology	0.84 (0.68-1.05)	.12	0.97 (0.77-1.21)	.78	1.05 (0.92-1.19)	.45	1.03 (0.91-1.17)	.63
All other clinical/all basic sciences	0.90 (0.77-1.04)	.15	0.92 (0.79-1.07)	.27	1.14 (1.04-1.25)	.007	1.04 (0.95-1.15)	.36
Mentored-K award								
No	1.00 (reference)		1.00 (reference)		1.00 (reference)		1.00 (reference)	
Yes	2.10 (1.78-2.48)	< .001	1.66 (1.39-1.98)	< .001	0.18 (0.14-0.25)	< .001	0.22 (0.16-0.30)	< .001

Abbreviation: CI indicates confidence interval.

[a] Individuals in the sample were U.S. LCME-accredited medical school graduates. To study the effects of several variables on MD faculty promotion and attrition, we used proportional subdistribution hazards models.[15] Point estimates for uSHRs and aSHRs, their 95% CIs, and two-tailed *P* values are shown. Adjusted models include all variables shown. Note that SHRs > 1.00 indicate greater hazards and SHRs < 1.00 indicate lower hazards of the outcome of interest (promotion or attrition).

[b] SHRs < 1.00 indicate lower hazards of promotion and attrition with each more recent year of appointment.

[c] Includes Black or African American, Hispanic, and American Indian/Alaska Native.