

Supplemental digital content for Hamstra SJ, Yamazaki K, Barton MA, Santen SA, Beeson MS, Holmboe ES. A national study of longitudinal consistency in ACGME milestone ratings by clinical competency committees: Exploring an aspect of validity in the assessment of residents' competence. Acad Med.

Supplemental Digital Appendix 1

CCC Milestone Ratings of First-Year Residents (During Their First 6 Months of Training) Over Time for 178 ACGME-Accredited Diagnostic Radiology Programs, 2013–2016

Subcompetency code	Intercept of milestone rating at time 0 (SE)	Slope of milestone ratings over time (SE)	Effect size (f^2) for slope	Between-program intercept variance (SE)	Between-program intercept-slope covariance (SE)	Between-program slope variance (SE)	Residual variance (SE)
PC01	1.15 (0.04) ^c	-0.049 (0.014) ^c	0.02	0.16 (0.03) ^c	-0.015 (0.008)	0.015 (0.004) ^c	0.104 (0.008) ^c
PC02	0.99 (0.04) ^c	-0.035 (0.015) ^a	0.01	0.16 (0.03) ^c	-0.010 (0.009)	0.014 (0.004) ^c	0.123 (0.009) ^c
MK01	1.04 (0.03) ^c	-0.038 (0.014) ^b	0.01	0.14 (0.02) ^c	-0.006 (0.007)	0.013 (0.004) ^c	0.099 (0.007) ^c
MK02	1.13 (0.03) ^c	-0.044 (0.013) ^b	0.02	0.13 (0.02) ^c	-0.006 (0.007)	0.014 (0.004) ^c	0.090 (0.007) ^c
SBP01	1.06 (0.05) ^c	-0.048 (0.018) ^b	0.01	0.22 (0.04) ^c	-0.017 (0.013)	0.018 (0.007) ^b	0.198 (0.015) ^c
SBP02	1.01 (0.06) ^c	-0.037 (0.026)	0.00	0.36 (0.07) ^c	-0.095 (0.026) ^c	0.056 (0.014) ^c	0.331 (0.025) ^c
PBLI01	1.01 (0.04) ^c	-0.021 (0.015)	0.00	0.16 (0.03) ^c	-0.009 (0.009)	0.016 (0.005) ^c	0.126 (0.009) ^c
PBLI02	1.03 (0.04) ^c	-0.024 (0.014)	0.00	0.20 (0.03) ^c	-0.023 (0.009) ^a	0.013 (0.004) ^b	0.120 (0.009) ^c
PBLI03	1.14 (0.06) ^c	-0.023 (0.022)	0.00	0.33 (0.06) ^c	-0.040 (0.020)	0.023 (0.010) ^a	0.312 (0.023) ^c
PROF01	1.32 (0.04) ^c	-0.066 (0.015) ^c	0.03	0.17 (0.03) ^c	-0.018 (0.009) ^a	0.015 (0.005) ^c	0.121 (0.009) ^c
ICS01	1.21 (0.04) ^c	-0.062 (0.014) ^c	0.03	0.16 (0.03) ^c	-0.011 (0.008)	0.011 (0.004) ^b	0.114 (0.009) ^c
ICS02	1.22 (0.04) ^c	-0.056 (0.014) ^c	0.02	0.19 (0.03) ^c	-0.025 (0.008) ^b	0.017 (0.004) ^c	0.093 (0.007) ^c

Abbreviations: CCC indicates clinical competency committee; ACGME, Accreditation Council for Graduate Medical Education; time 0, December 2013; SE, standard error; PC, patient care; MK, medical knowledge; SBP, systems-based practice; PBLI, practice-based learning and improvement; PROF, professionalism; ICS, interpersonal and communication skills.

^a $P < .05$.

^b $P < .01$.

^c $P < .001$.

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Supplemental Digital Appendix 2

CCC Milestone Ratings of First-Year Residents (During Their First 6 Months of Training) Over Time for 118 ACGME-Accredited Urology Programs, 2013–2016

Subcompetency code	Intercept of milestone rating at time 0 (SE)	Slope of milestone ratings over time (SE)	Effect size (f^2) for slope	Between-program intercept variance (SE)	Between-program intercept-slope covariance (SE)	Between-program slope variance (SE)	Residual variance (SE)
SBP01	2.30 (0.06) ^c	-0.047 (0.023) ^a	0.02	0.333 (0.063) ^c	-0.031 (0.019)	0.023 (0.009) ^b	0.204 (0.019) ^c
SBP02	2.03 (0.06) ^c	-0.032 (0.024)	0.00	0.347 (0.064) ^c	-0.044 (0.020) ^a	0.029 (0.009) ^b	0.193 (0.018) ^c
SBP03	2.13 (0.06) ^c	-0.021 (0.022)	0.00	0.307 (0.060) ^c	-0.024 (0.018)	0.019 (0.009) ^a	0.201 (0.019) ^c
SBP04	2.36 (0.06) ^c	-0.067 (0.024) ^b	0.02	0.277 (0.057) ^c	-0.027 (0.019)	0.025 (0.010) ^b	0.213 (0.020) ^c
PBLI01	2.38 (0.06) ^c	-0.066 (0.026) ^a	0.02	0.288 (0.067) ^c	-0.020 (0.022)	0.020 (0.011) ^a	0.289 (0.027) ^c
PBLI02	2.23 (0.07) ^c	-0.048 (0.026)	0.01	0.339 (0.065) ^c	-0.050 (0.022) ^a	0.035 (0.011) ^c	0.218 (0.020) ^c
PBLI03	2.19 (0.06) ^c	-0.066 (0.026) ^a	0.01	0.313 (0.062) ^c	-0.043 (0.021) ^a	0.035 (0.011) ^c	0.216 (0.020) ^c
PBLI04	2.11 (0.07) ^c	-0.051 (0.026)	0.01	0.342 (0.067) ^c	-0.045 (0.022) ^a	0.034 (0.011) ^b	0.233 (0.021) ^c
PBLI05	2.08 (0.07) ^c	-0.064 (0.025) ^a	0.01	0.366 (0.066) ^c	-0.054 (0.021) ^b	0.035 (0.010) ^c	0.185 (0.017) ^c
PBLI06	2.04 (0.07) ^c	-0.038 (0.024)	0.01	0.353 (0.071) ^c	-0.036 (0.022)	0.020 (0.010) ^a	0.252 (0.023) ^c
PBLI07	2.17 (0.06) ^c	-0.061 (0.025) ^a	0.01	0.265 (0.056) ^c	-0.033 (0.019)	0.029 (0.010) ^b	0.217 (0.020) ^c
PROF01	2.70 (0.07) ^c	-0.061 (0.031)	0.01	0.438 (0.093) ^c	-0.028 (0.030)	0.041 (0.016) ^b	0.359 (0.033) ^c
PROF02	2.77 (0.07) ^c	-0.075 (0.029) ^a	0.01	0.368 (0.080) ^c	-0.011 (0.026)	0.038 (0.014) ^b	0.318 (0.029) ^c
PROF03	2.68 (0.07) ^c	-0.060 (0.029) ^a	0.01	0.356 (0.080) ^c	-0.014 (0.027)	0.034 (0.015) ^b	0.338 (0.031) ^c
PROF04	2.86 (0.07) ^c	-0.081 (0.029) ^b	0.02	0.390 (0.081) ^c	-0.001 (0.026)	0.040 (0.014) ^b	0.302 (0.028) ^c
PROF05	2.61 (0.07) ^c	-0.051 (0.030)	0.01	0.354 (0.079) ^c	-0.024 (0.027)	0.042 (0.015) ^b	0.333 (0.031) ^c
PROF06	2.87 (0.07) ^c	-0.081 (0.030) ^b	0.02	0.433 (0.086) ^c	-0.011 (0.027)	0.047 (0.015) ^c	0.304 (0.028) ^c
ICS01	2.38 (0.06) ^c	-0.035 (0.026)	0.00	0.274 (0.061) ^c	-0.021 (0.021)	0.026 (0.011) ^a	0.256 (0.024) ^c
ICS02	2.30 (0.07) ^c	-0.036 (0.026)	0.00	0.367 (0.070) ^c	-0.047 (0.022) ^a	0.035 (0.011) ^c	0.224 (0.021) ^c
ICS03	2.33 (0.06) ^c	-0.046 (0.025)	0.01	0.278 (0.062) ^c	-0.018 (0.021)	0.023 (0.011) ^a	0.262 (0.024) ^c
ICS04	2.43 (0.07) ^c	-0.061 (0.029) ^a	0.01	0.324 (0.073) ^c	-0.038 (0.026)	0.034 (0.014) ^b	0.311 (0.029) ^c
ICS05	2.25 (0.06) ^c	-0.034 (0.025)	0.01	0.267 (0.061) ^c	-0.013 (0.020)	0.019 (0.010) ^a	0.260 (0.024) ^c

Abbreviations: CCC indicates clinical competency committee; ACGME, Accreditation Council for Graduate Medical Education; time 0, December 2013; SE, standard error; PC, patient care (the results for the PC subcompetencies are not reported here because the milestone language

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for urology was modified prior to the end of the study period); MK, medical knowledge (the results for the MK subcompetencies are not reported here because the milestone language for urology was modified prior to the end of the study period); SBP, systems-based practice; PBLI, practice-based learning and improvement; PROF, professionalism; ICS, interpersonal and communication skills.

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