

Supplemental materials for

Arndt BG, Micek MA, Rule A, Shafer CM, Baltus JJ, Sinsky CA. More tethered to the EHR: EHR workload trends among academic primary care physicians, 2019-2023. *Ann Fam Med.* 2024;22(1):12-18.

Supplemental Table 1: EHR time and inbox message volume by study year, normalized per FTE-Week

| | '19-'20 ^a | '20-'21 ^b | '21-'22 ^c | '22-'23 ^d | Change, '19-20 to '20-'21 | | | Change, '20-'21 to '21-'22 | | | Change, '21-'22 to '22-'23 | | | Change, '19-'20 to '22-'23 | | |
|---|----------------------|----------------------|----------------------|----------------------|---------------------------|---------------------|----------------|----------------------------|---------------------|----------------|----------------------------|-----------------------|----------------|----------------------------|----------------------|----------------|
| | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Obs. (%) | Est. (95% CI) | P ^e | Obs. (%) | Est. (95% CI) | P ^e | Obs. (%) | Est. (95% CI) | P ^e | Obs. (%) | Est. (95% CI) | P ^e |
| EHR Time (Minutes, per ambulatory FTE per Week) | | | | | | | | | | | | | | | | |
| EHR | 1227.4 (493.0) | 1263.9 (554.8) | 1306.0 (533.7) | 1309.9 (500.9) | 36.5 (3.0) | 30.6 (9.2 to 52.0) | 0.006 | 42.1 (3.3) | 39.0 (18.3 to 59.6) | <.001 | 3.9 (0.3) | 8.9 (-11.8 to 29.5) | 0.45 | 82.5 (6.7) | 78.4 (57.1 to 99.8) | <.001 |
| Notes | 421.0 (260.8) | 421.7 (287.0) | 439.2 (277.1) | 426.7 (259.6) | 0.7 (0.2) | -1.2 (-10.6 to 8.2) | 0.84 | 17.5 (4.1) | 16.9 (7.8 to 25.9) | <.001 | -12.5 (-2.8) | -10.5 (-19.5 to -1.4) | 0.03 | 5.7 (1.4) | 5.2 (-4.2 to 14.5) | 0.32 |
| Inbox | 194.4 (92.7) | 230.9 (117.9) | 250.0 (124.3) | 238.3 (110.9) | 36.4 (18.7) | 33.2 (28.4 to 38.1) | <.001 | 19.2 (8.3) | 20.2 (15.5 to 24.9) | <.001 | -11.7 (-4.7) | -14.0 (-18.7 to -9.3) | <.001 | 43.9 (22.6) | 39.5 (34.6 to 44.4) | <.001 |
| Orders | 132.4 (47.5) | 160.1 (70.7) | 196.3 (83.8) | 209.0 (84.9) | 27.7 (21.0) | 25.1 (21.6 to 28.6) | <.001 | 36.2 (22.6) | 36.5 (33.2 to 39.9) | <.001 | 12.7 (6.5) | 13.0 (9.7 to 16.4) | <.001 | 76.6 (57.9) | 74.7 (71.2 to 78.1) | <.001 |
| Review | 186.9 (92.3) | 215.7 (111.9) | 216.0 (110.0) | 209.2 (102.2) | 28.8 (15.4) | 27.4 (23.5 to 31.4) | <.001 | 0.3 (0.2) | -0.2 (-4.0 to 3.7) | 0.94 | -6.8 (-3.1) | -6.5 (-10.3 to -2.6) | 0.001 | 22.3 (11.9) | 20.8 (16.8 to 24.8) | <.001 |
| TOSH | 269.4 (204.2) | 270.1 (203.9) | 282.3 (213.6) | 285.9 (206.0) | 0.7 (0.3) | -1.3 (-9.4 to 6.8) | 0.81 | 12.1 (4.5) | 11.6 (3.7 to 19.4) | 0.005 | 3.6 (1.3) | 4.6 (-3.2 to 12.4) | 0.29 | 16.5 (6.1) | 14.9 (6.8 to 23.0) | <.001 |
| TUSD | 234.8 (239.0) | 265.9 (319.7) | 275.6 (282.8) | 272.0 (260.1) | 31.1 (13.2) | 28.9 (18.1 to 39.7) | <.001 | 9.7 (3.6) | 9.6 (-0.8 to 20.1) | 0.09 | -3.5 (-1.3) | -3.3 (-13.8 to 7.1) | 0.59 | 37.2 (15.9) | 35.2 (24.4 to 46.1) | <.001 |
| Inbox Volume (Messages, per ambulatory FTE per Week) | | | | | | | | | | | | | | | | |
| PatientCall | 87.2 (39.6) | 86.8 (39.4) | 83.7 (35.2) | 77.4 (31.1) | -0.4 (-0.5) | -0.0 (-1.6 to 1.6) | 0.99 | -3.1 (-3.6) | -3.7 (-5.2 to -2.1) | <.001 | -6.3 (-7.6) | -5.9 (-7.5 to -4.4) | <.001 | -9.9 (-11.3) | -9.6 (-11.2 to -8.0) | <.001 |
| Rx | 39.4 (23.9) | 46.3 (29.7) | 48.8 (32.0) | 46.2 (25.9) | 6.9 (17.6) | 6.8 (5.8 to 7.8) | <.001 | 2.4 (5.2) | 2.4 (1.4 to 3.3) | <.001 | -2.6 (-5.3) | -2.7 (-3.7 to -1.8) | <.001 | 6.8 (17.1) | 6.4 (5.5 to 7.4) | <.001 |
| Results | 41.9 (20.3) | 37.5 (17.7) | 40.8 (17.7) | 40.4 (16.5) | -4.3 (-10.3) | -4.5 (-5.1 to -3.8) | <.001 | 3.3 (8.8) | 3.3 (2.7 to 3.9) | <.001 | -0.4 (-1.0) | -0.4 (-1.0 to 0.3) | 0.32 | -1.4 (-3.4) | -1.5 (-2.2 to -0.8) | <.001 |
| MyChart | 33.4 (21.9) | 49.5 (28.0) | 51.3 (29.2) | 50.4 (26.6) | 16.2 (48.5) | 15.7 (14.7 to 16.7) | <.001 | 1.8 (3.6) | 1.9 (0.9 to 2.9) | <.001 | -1.0 (-1.9) | -1.2 (-2.2 to -0.2) | 0.02 | 17.0 (51.0) | 16.4 (15.3 to 17.4) | <.001 |
| eConsult | 0.69 (1.0) | 0.89 (1.51) | 0.99 (1.76) | 1.12 (1.89) | 0.2 (28.3) | 0.17 (0.1 to 0.24) | <.001 | 0.1 (11.0) | 0.1 (0.03 to 0.17) | 0.006 | 0.14 (13.7) | 0.12 (0.05 to 0.19) | 0.002 | 0.43 (62.0) | 0.39 (0.32 to 0.46) | <.001 |

^aMay 2019 to February 2020, ^bJune 2020 to March 2021, ^cMay 2021 to March 2022, ^dApril 2022 to March 2023 ^eP-values adjusted by Benjamini-Hochberg procedure to limit false discovery rate to 5%. Obs.=Observed; Est.=Model estimate; FTE=Full-time equivalency.