Supplemental Digital Content 2. Total inpatient days and ED presentations in the periods before (-6 years to day -31, around (-30 to +30 days), and after (+31 days to +4 years) a cardinal event.

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|  |  | **Age category** | **Before event****(95% CI)** | **Around event****(95% CI)** | **After event****(95% CI)** |
|  ***Total Inpatient days during the period*** | ***Heart failure*** | <55 years | 27.37(21.67, 33.59) | 8.96(8.19, 9.72) | 34.97(28.59, 42.12) |
| 55-64 years | 27.93(24.31, 31.74) | 9.31(8.74, 9.87) | 35.19(30.62, 40.20) |
| 65-74 years | 32.00(29.04, 35.32) | 10.03(9.61, 10.44) | 39.09(36.12, 42.17) |
| 75-84 years | 40.50(38.67, 42.50) | 11.92(11.60, 12.27) | 42.73(40.14, 45.29) |
| 85+ years | 46.78(44.37, 49.57) | 13.30(12.91, 13.70) | 34.74(32.51, 37.03) |
| ***Type2 Diabetes*** | <55 years | 20.80(18.06, 24.11) | 6.09(5.66, 6.49) | 32.46(26.67, 38.59) |
| 55-64 years | 26.18(23.41, 29.28) | 7.79(7.31, 8.29) | 37.99(33.55, 42.85) |
| 65-74 years | 28.85(26.51, 31.13) | 8.89(8.44, 9.36) | 45.41(41.87, 49.14) |
| 75-84 years | 39.17(36.41, 42.08) | 11.50(11.05, 12.00) | 45.35(42.13, 49.02) |
| 85+ years | 47.85(43.54, 52.47) | 13.09(12.36, 13.88) | 48.06(40.35, 57.37) |
| ***COPD*** | <55 years | 25.49(19.19, 33.11) | 5.47(5.07, 5.93) | 25.61(20.13, 32.06) |
| 55-64 years | 25.80(22.23, 30.12) | 6.93(6.52, 7.36) | 33.36(28.62, 39.33) |
| 65-74 years | 27.04(24.90, 29.15) | 8.48(8.13, 8.79) | 35.06(32.59, 37.53) |
| 75-84 years | 35.79(33.80, 37.94) | 10.28(9.98, 10.59) | 41.87(39.39, 44.24) |
| 85+ years | 45.15(41.77, 48.64) | 11.97(11.40, 12.50) | 42.18(38.12, 46.58) |
| ***Total ED presentations during the period*** | ***Heart failure*** | <55 years | 4.52(3.74, 5.38) | 1.25(1.16, 1.35) | 4.85(3.95, 5.73) |
| 55-64 years | 4.34(3.56, 5.22) | 1.21(1.14, 1.29) | 4.27(3.75, 4.79) |
| 65-74 years | 4.24(3.83, 4.70) | 1.20(1.15, 1.26) | 4.50(3.63, 6.01) |
| 75-84 years | 4.01(3.78, 4.28) | 1.15(1.12, 1.18) | 3.56(3.34, 3.83) |
| 85+ years | 3.89(3.71, 4.07) | 1.11(1.08, 1.14) | 2.61(2.46, 2.76) |
| ***Type2 Diabetes*** | <55 years | 4.32(3.86, 4.83) | 0.78(0.72, 0.83) | 4.61(4.07, 5.23) |
| 55-64 years | 3.54(3.16, 3.97) | 0.72(0.68, 0.77) | 3.56(3.20, 3.96) |
| 65-74 years | 3.59(3.30, 3.95) | 0.74(0.70, 0.78) | 3.57(3.30, 3.88) |
| 75-84 years | 3.58(3.36, 3.83) | 0.88(0.84, 0.93) | 3.22(3.01, 3.44) |
| 85+ years | 3.97(3.64, 4.32) | 0.92(0.86, 0.97) | 2.85(2.54, 3.16) |
| ***COPD*** | <55 years | 6.57(5.49, 7.90) | 1.31(1.21, 1.42) | 5.69(4.88, 6.65) |
| 55-64 years | 5.12(4.50, 5.83) | 1.19(1.14, 1.24) | 5.09(4.48, 5.72) |
| 65-74 years | 4.72(3.85, 5.95) | 1.19(1.13, 1.26) | 4.69(4.21, 5.25) |
| 75-84 years | 3.80(3.59, 4.02 | 1.13(1.10, 1.16) | 3.93(3.71, 4.16) |
| 85+ years | 3.76(3.51, 4.03) | 1.06(1.01, 1.10) | 3.15(2.90, 3.42) |