**Table S1.** Sensitivity analysis showing the patient's characteristics and length of time (between survey return date and index admission) association with unplanned readmission episode within 28 days of hospital discharge among older women aged 75 years and over from 1921 to 1926 birth cohort of ALSWH (2001–2016).

| Characteristics | Univariate Analysis HR (95% CI) | p-Value | Multivariate Analysis AHR (95% CI) | Multivariate Analysis AHR (95% CI) After Time Adjustment |
|---|---|---|---|---|
| *Predisposing factors* | | | | |
| Woman's survey returned (Ref= before 3 years before admission) | 1 | | | 1 |
| >3 years before admission | 1.12 (0.85, 1.49) | 0.117 | | 0.82 (0.55, 1.21) |
| Age | 1.01 (0.98, 1.05) | 0.584 | 1.02 (0.98, 1.06) | 1.03 (0.99, 1.07) |
| Marital status (Ref: Partnered) | 1 | <0.01 | 1 | 1 |
| Not Partnered | 1.61 (1.21, 2.14) ** | | 1.43 (1.05, 1.95) * | 1.42 (1.04, 1.94) * |
| English speaking (Ref: Yes) | 1 | 0.012 | 1 | 1 |
| No | 1.59 (1.11, 2.28) * | | 1.62 (1.07, 2.47) * | 1.65 (1.08, 2.51) * |
| *Enabling factor* | | | | |
| Area (Ref: Metropolitan) | 1 | 0.043 | 1 | 1 |
| Inner regional | 1.37 (1.02, 1.84) * | | 1.28 (0.92, 1.78) | 1.27 (0.91, 1.77) |
| Outer regional/remote/very remote | 1.50 (1.04, 2.15) * | | 1.47 (0.97, 2.22) | 1.46 (0.97, 2.21) |
| Education (Ref: Higher/above school certificate) | 1 | | | |
| School certificate | 0.97 (0.65, 1.44) | 0.947 | | |
| Less than high school | 1.07 (0.68, 1.68) | | | |
| Private insurance (Ref: Yes) | 1 | 0.085 | 1 | 1 |
| No | 0.78 (0.59, 1.04) | | 0.79 (0.58, 1.08) | 0.79 (0.57, 1.08) |
| *Need factors* | | | | |
| Smoking (Ref: Non-smoker) | 1 | | | |
| Ex-smoker | 0.96 (0.71, 1.31) | 0.609 | | |
| Current smoker | 1.25 (0.77, 2.01) | | | |
| LOS in index (Ref: ≤3) | 1 | 0.026 | 1 | 1 |
| Greater than 3 | 1.36 (1.04, 1.77) * | | 1.41 (1.04, 1.90) * | 1.41 (1.04, 1.90) * |
| BMI (Ref: Normal weight) | 1 | | | |
| Underweight | 0.95 (0.48, 1.88) | 0.709 | | |
| Overweight | 1.13 (0.56, 2.25) | | | |
| Obese | 1.09 (0.52, 2.27) | | | |

| | | | | |
|---|---|---|---|---|
| Perceived general health (Ref: Good/excellent) | 1 | 0.971 | | |
| Poor/not good | 1.01 (0.77, 1.31) | | | |
| GP/family doctor visit (Ref: ≤4) | 1 | 0.123 | 1 | 1 |
| >4 | 0.81 (0.63, 1.06) | | 0.82 (0.61, 1.11) | 0.82 (0.61, 1.11) |
| Chronic disease (Ref: No) | 1 | | 1 | 1 |
| 1–2 | 1.66 (1.19, 2.32) * | 0.007 | 1.68 (1.19, 2.36) * | 1.66 (1.18, 2.34) * |
| >2 | 1.21 (0.79, 1.83) | | 1.18 (0.77, 1.83) | 1.19 (0.77, 1.84) |

* is significant covariate at 5% significance level; ** is significant covariate at 1% significance level. HR—hazard ratio; AHR—adjusted hazard ratio; CI—confidence interval; Ref—reference; LOS—length of hospital stay; BMI—body mass index; GP—general practitioner.