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### Supplementary Material

# Factors and Prediction Models for Unplanned Hospital Readmissions at a Pediatric Tertiary Centre

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**Table S1.** Distribution of extracted variables for the clinical dataset.

Variable		2007-2009		2017-2019	
		Index-UHR (n = 408)	Control (n = 7979)	Index-UHR (n = 317)	Control (n = 7999)
Demographics	Age (years)	7.00 [1.65;13.0]	6.00 [1.33;12.0]	6.00 [1.67;12.0]	6.00 [1.92;13.0]
	No. of preadmission comorbidities	0 [0;1]	0 [0;1]	0 [0;2]	0 [0;1]
	No. of postadmission comorbidities	0 [0;0]	0 [0;0]	0 [0;0]	0 [0;0]
Gender	Female	190 (46.6)	3472 (43.5)	159 (50.2)	3620 (45.3)
	Male	218 (53.4)	4507 (56.5)	158 (49.8)	4379 (54.7)
Entry Code	Clinic admission	15 (3.7)	136 (1.7)	4 (1.2)	99 (1.2)
	Direct/scheduled	100 (24.5)	3058 (38.3)	96 (30.3)	3403 (42.5)
	ER admission	293 (71.8)	4767 (59.7)	217 (68.5)	4490 (56.1)
	Day surgery admission	0 (0.0)	18 (0.2)	0 (0.0)	7 (0.09)
Hospital Stay	Length of stay (days)	4.00 [1.75;9.00]	2.00 [1.00;5.00]	3.00 [2.00;7.00]	2.00 [1.00;5.00]
	Pediatric ICU length of stay (days)	0 [0;0]	0 [0;0]	0 [0;0]	0 [0;0]
	No. in-hospital interventions	00 [0;2]	1 [0;1]	1 [0;2]	1 [0;2]
	Resource Intensity Weight	0.93 [0.51;2.63]	0.69 [0.43;1.46]	0.94 [0.53;1.97]	0.74 [0.50;1.56]
	Surgical admission	133 (32.6%)	3692 (46.3%)	128 (40.4%)	4024 (50.3%)
	Medical admission	275 (67.4%)	4287 (53.7%)	189 (59.6%)	3975 (49.7%)
Previous Visits	No. ER visits past 6 months	1 [0;1]	1 [0;1]	1 [1;2]	1 [0;1]
	No. SDC visits past 6 months	0 [0;0]	0 [0;0]	0 [0;0]	0 [0;0]
Health Authority	Unknown	0 (0.0)	0 (0.0)	1 (0.3)	19 (0.2)
	Vancouver Coastal	161 (39.5)	3127 (39.2)	130 (41.0)	2703 (33.8)
	Fraser	186 (45.6)	3225 (40.4)	144 (45.4)	3333 (41.7)
	Interior	22 (5.4)	636 (8.0)	12 (3.8)	705 (8.8)
	Vancouver Island	21 (5.2)	439 (5.5)	18 (5.7)	518 (6.5)
	Northern	14 (3.4)	348 (4.4)	10 (3.2)	480 (6.0)
	BC*	1 (0.3)	33 (0.4)	0 (0.0)	3 (0.04)
	Out of Province/Country	3 (0.7)	171 (2.1)	2 (0.6)	238 (3.0)

*Note.* Continuous data is displayed as median [IQR] and categorical as n (%) unless otherwise specified. No. = number; ER = emergency room; ICU = intensive care unit; SDC = surgical day care. \* BC health authority refers to patients who reside in BC, but for whom there is not enough information to determine exactly where in the province.

**Table S2.** Results of multivariate analysis testing associations between extracted variables and UHR occurrence in the clinical dataset.

Variable		2007-2009		2017-2019	
		Multivariate OR (upper - lower 95% CI)	P-value	Multivariate OR (upper - lower 95% CI)	P-value
Demographics	Age (years)	<b>1.04 (1.02 - 1.06)</b>	<b>&lt;0.001</b>	0.99 (0.97 - 1.02)	0.576
	No. of preadmission comorbidities	1.03 (0.94 - 1.13)	0.55	1.08 (1 - 1.18)	0.055
	No. of postadmission comorbidities	1.07 (0.95 - 1.2)	0.277	0.98 (0.86 - 1.13)	0.787
Gender	Female	Reference		Reference	
	Male	0.91 (0.72 - 1.14)	0.401	0.88 (0.68 - 1.13)	0.31
Entry Code	Clinic admission	Reference	-	Reference	-
	Direct/scheduled	<b>0.41 (0.2 - 0.82)</b>	<b>0.012</b>	1.17 (0.35 - 3.92)	0.799

	ER admission	0.67 (0.34 – 1.32)	0.251	1.33 (0.4 - 4.39)	0.638
	Day surgery admission	-	-	-	-
Hospital Stay	Length of stay (days)	1 (0.99 - 1.01)	0.936	1 (0.99 - 1.01)	0.83
	Pediatric ICU length of stay (days)	0.98 (0.96 – 1.01)	0.248	1.03 (0.99 - 1.07)	0.177
	No. in-hospital interventions	<b>1.11 (1.04 - 1.19)</b>	<b>0.003</b>	1 (0.94 - 1.07)	0.993
	Resource Intensity Weight	1 (0.97 - 1.03)	0.997	1.04 (1 – 1.09)	0.058
	Surgical admission	<b>0.62 (0.47 - 0.8)</b>	<b>&lt;0.001</b>	0.82 (0.61 - 1.09)	0.168
Previous Visits	No. ER visits past 6 months	<b>1.26 (1.14 - 1.4)</b>	<b>&lt;0.001</b>	<b>1.28 (1.13 - 1.45)</b>	<b>&lt;0.001</b>
	No. SDC visits past 6 months	0.89 (0.61 - 1.29)	0.539	<b>1.39 (1.02 - 1.89)</b>	<b>0.039</b>
Health Authority	Vancouver Coastal	Reference	-	Reference	-
	Unknown	-	-	1.49 (0.2 – 11.34)	0.701
	Fraser	1.27 (0.99 - 1.01)	0.061	0.97 (0.73 - 1.29)	0.858
	Interior	0.97 (0.58 - 1.62)	0.902	<b>0.41 (0.2 - 0.84)</b>	<b>0.014</b>
	Vancouver Island	1.21 (0.7 - 2.09)	0.491	0.71 (0.38 - 1.33)	0.283
	Northern	1.04 (0.54 - 1.97)	0.913	0.67 (0.34 - 1.32)	0.251
	BC	0.83 (0.11 - 6.21)	0.856	-	-
	Out of Province/Country	0.5 (0.15 - 1.59)	0.237	<b>0.13 (0.02 – 0.94)</b>	<b>0.044</b>

Note. Values in bold are statistically significant. No. = number; - = not applicable, ER = emergency room; ICU = intensive care unit; SDC = surgical day care.

**Figure S1.** Receiver Operator Curves (ROCs) for the 2007-2009 and 2017-2019 UHR prediction models using the clinical dataset.

