

Appendix 1 to Kreindler SA, Zhang L, Metge CJ, et al. The impact of a regional acute-care surgery model on patient access and outcomes. *Can J Surg* 2013;56(5).

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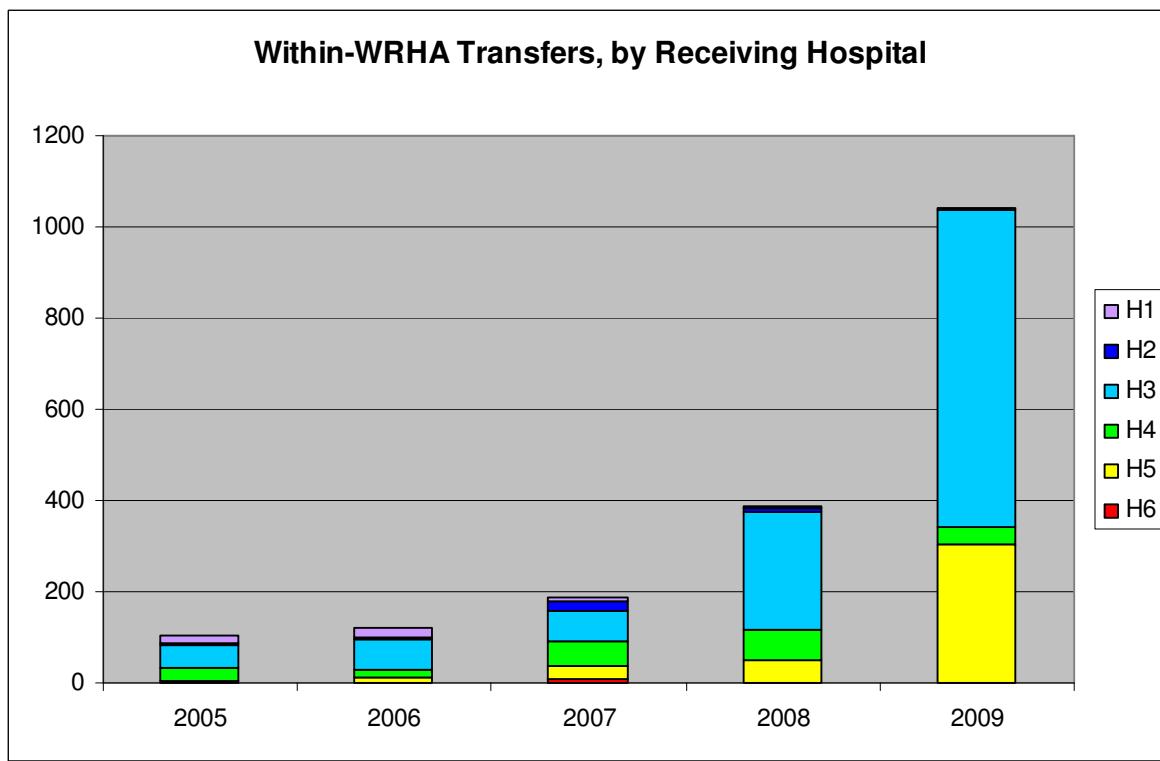


Fig. S1. Transfers received from Winnipeg Regional Health Authority (WRHA) hospitals.

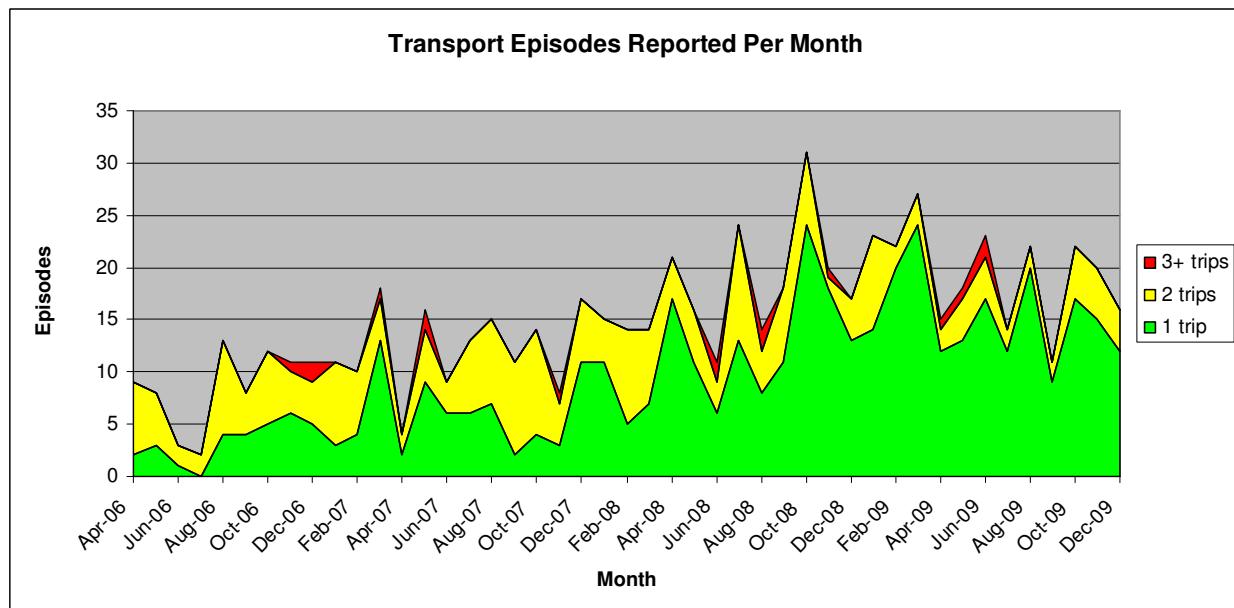


Fig. S2. Transport episodes reported per month.

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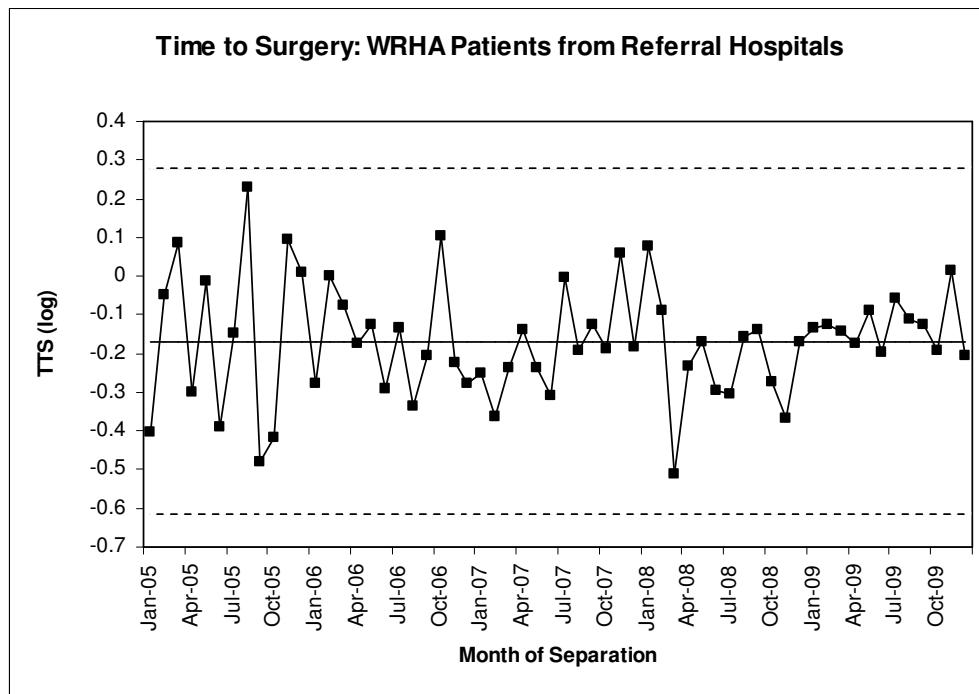


Fig. S3. Time to surgery (TTS) for Winnipeg Regional Health Authority (WRHA) patients from referral hospitals.

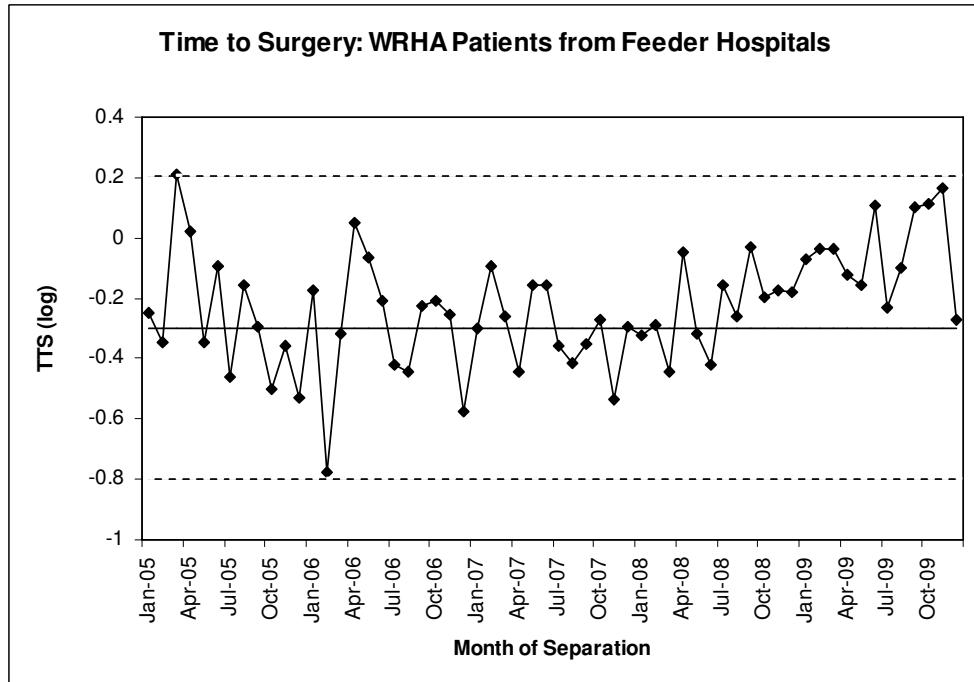


Fig. S4. Time to surgery (TTS) Winnipeg Regional Health Authority (WRHA) patients from nonreferral hospitals.

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Table S1. Time to surgery, log

Variable	Group; estimate, <i>p</i> value							
	All patients		WRHA patients		All patients by hospital		WRHA patients by hospital	
Intercept	-1.30	< 0.001	-0.96	< 0.001	-1.35	< 0.001	-1.00	< 0.001
Intervention	-0.29	0.07	-0.43	0.007	-0.37	0.019	-0.51	0.001
Month	0.01	0.07	0.01	0.007	0.01	0.06	0.01	0.006
Intervention × month	0.01	0.021	0.01	0.001	0.01	0.019	0.01	0.001
Age, 10 yr	0.02	0.001	0.03	< 0.001	0.02	0.001	0.03	< 0.001
Sex, male	-0.13	< 0.001	-0.11	< 0.001	-0.13	< 0.001	-0.11	< 0.001
Appendicitis	-0.25	< 0.001	-0.24	< 0.001	-0.24	< 0.001	-0.23	< 0.001
Cholecystitis	0.68	< 0.001	0.66	< 0.001	0.69	< 0.001	0.66	< 0.001
Intestinal obstruction	0.60	< 0.001	0.58	< 0.001	0.59	< 0.001	0.57	< 0.001
Pancreatitis	1.50	< 0.001	1.46	< 0.001	1.50	< 0.001	1.46	< 0.001
Diverticulitis	0.06	0.43	0.09	0.25	0.06	0.43	0.09	0.24
Non-WRHA	-0.48	< 0.001	—	—	-0.48	< 0.001	—	—
Referral hospital					-0.09	0.020	-0.08	0.027
Referral hospital × intervention					-0.20	< 0.001	-0.19	< 0.001
Level effects								
6 mo	0.06	0.15	0.07	0.10				
12 mo	0.10	0.021	0.13	0.004				
18 mo	0.15	0.008	0.20	0.001				
Total	<i>F</i> = 158.92, <i>p</i> < 0.001, <i>R</i> ² = 0.21, <i>n</i> = 6604		<i>F</i> = 142.53, <i>p</i> < 0.001, <i>R</i> ² = 0.20, <i>n</i> = 5779		<i>F</i> = 136.25, <i>p</i> < 0.001, <i>R</i> ² = 0.21, <i>n</i> = 6604		<i>F</i> = 120.54, <i>p</i> < 0.001, <i>R</i> ² = 0.20, <i>n</i> = 5779	

WRHA = Winnipeg Regional Health Authority.

Table S2. Time* to inpatient admission, for admissions through the emergency department and total admissions, log

Variable	Group; subgroup; estimate, <i>p</i> value							
	ED admissions				All admissions			
	All patients	WRHA patients		All patients	WRHA patients			
Intercept	-2.43	< 0.001	-1.69	< 0.001	-2.50	< 0.001	-1.48	< 0.001
Intervention	-0.19	0.06	-0.28	0.006	1.20	< 0.001	0.39	0.10
Month	0.01	< 0.001	0.01	< 0.001	-0.02	< 0.001	0.00	0.51
Intervention × month	0.00	0.09	0.01	0.013	-0.03	< 0.001	-0.01	0.06
Age, 10 yr	0.03	< 0.001	0.03	< 0.001	0.02	0.06	0.00	0.99
Sex, male	-0.12	< 0.001	-0.13	< 0.001	-0.04	0.27	-0.06	0.05
Appendicitis	-0.01	0.52	-0.01	0.62	0.49	< 0.001	0.49	< 0.001
Cholecystitis	0.22	< 0.001	0.24	< 0.001	0.52	< 0.001	0.53	< 0.001
Intestinal obstruction	0.09	< 0.001	0.10	< 0.001	0.43	< 0.001	0.49	< 0.001
Pancreatitis	0.04	0.18	0.05	0.13	0.37	< 0.001	0.45	< 0.001
Diverticulitis	0.11	0.001	0.14	< 0.001	0.47	< 0.001	0.51	< 0.001
Non-WRHA	-0.83	< 0.001	—	—	-1.82	< 0.001	—	—
Level effects								
6 mo	-0.02	0.36	-0.04	0.14	-0.08	0.20	-0.03	0.57
12 mo	0.00	0.95	-0.01	0.83	-0.25	< 0.001	-0.09	0.17
18 mo	0.02	0.57	0.03	0.47	-0.41	< 0.001	-0.15	0.08
Total	<i>F</i> = 174.20, <i>p</i> < 0.001, <i>R</i> ² = 0.13, <i>n</i> = 13 292		<i>F</i> = 55.36, <i>p</i> < 0.001, <i>R</i> ² = 0.04, <i>n</i> = 11 847		<i>F</i> = 153.54, <i>p</i> < 0.001, <i>R</i> ² = 0.10, <i>n</i> = 14 507		<i>F</i> = 26.39, <i>p</i> < 0.001, <i>R</i> ² = 0.02, <i>n</i> = 12 622	

ED = emergency department; WRHA = Winnipeg Regional Health Authority.

*Since zero has no logarithm, times of zero were recoded as 30 seconds.

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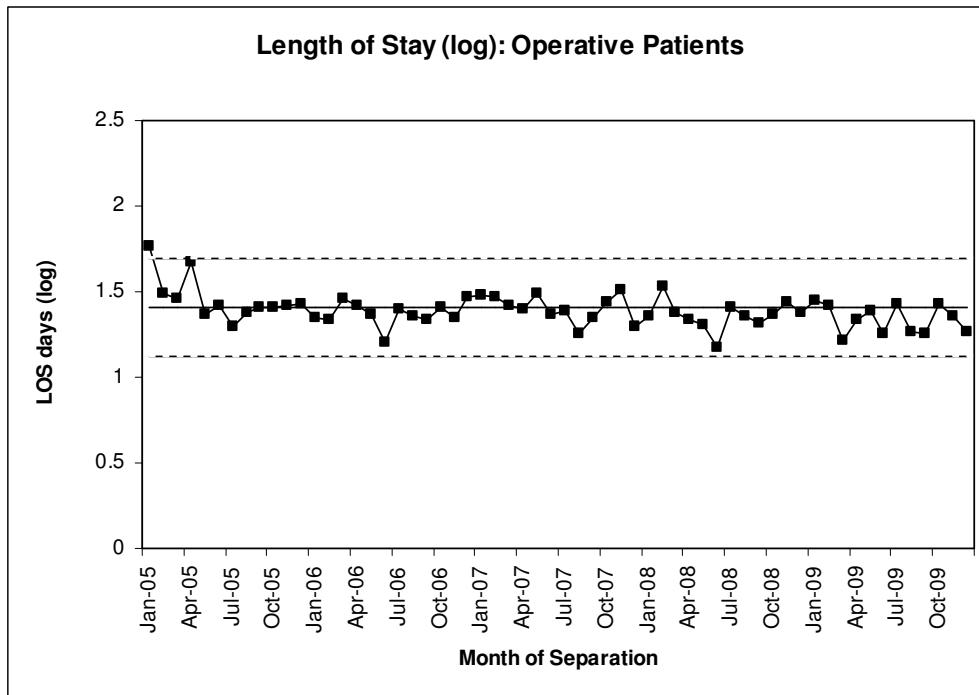


Fig. S5. Length of stay (LOS) for operative patients.

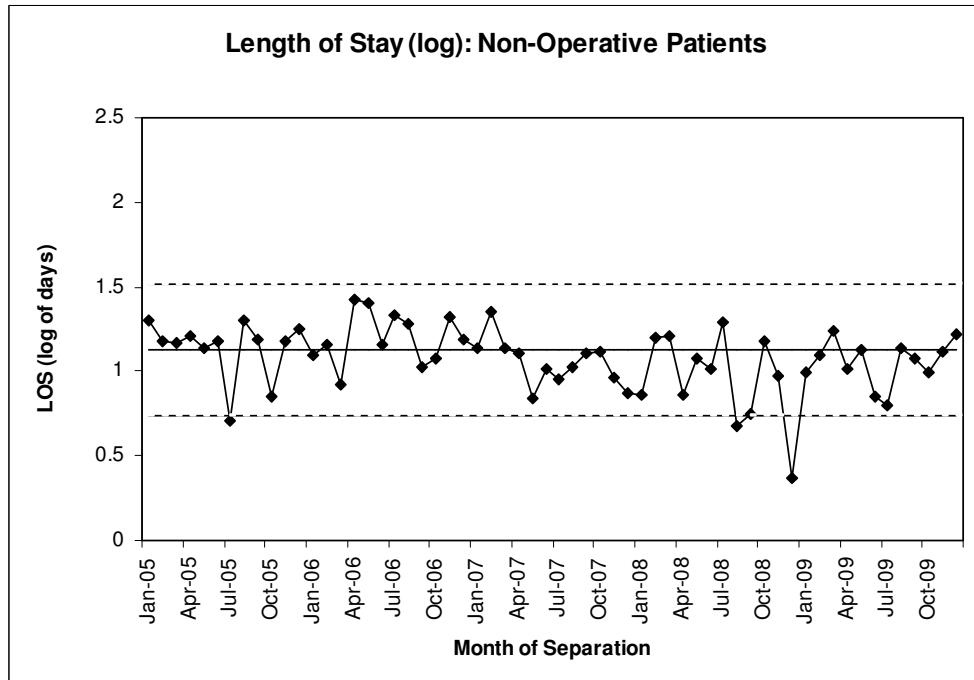


Fig. S6. Length of stay (LOS) for nonoperative patients.

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Table S3. Length of stay, log

Variable	Group; estimate, <i>p</i> value					
	All patients		Operative		Nonoperative	
Intercept	0.88	< 0.001	0.83	< 0.001	0.15	0.56
Intervention	-0.25	0.07	0.00	0.99	-0.70	0.007
Month	0.00	0.70	0.00	0.32	0.01	0.08
Intervention × month	0.01	0.06	0.00	0.89	0.01	0.008
Age, 10 yr	0.13	< 0.001	0.17	< 0.001	0.05	< 0.001
Sex, male	-0.06	0.001	-0.06	0.002	-0.11	0.001
Appendicitis	-0.44	< 0.001	-0.44	< 0.001	0.51	< 0.001
Cholecystitis	-0.09	0.002	-0.13	< 0.001	0.36	< 0.001
Intestinal obstruction	0.46	< 0.001	0.60	< 0.001	0.43	< 0.001
Pancreatitis	0.74	< 0.001	0.39	< 0.001	0.86	< 0.001
Diverticulitis	0.56	< 0.001	0.90	< 0.001	0.46	< 0.001
Non-WRHA	0.29	< 0.001	0.26	< 0.001	0.27	< 0.001
Operative	0.67	< 0.001	—	—	—	—
Level effects						
6 mo	0.00	0.96	0.02	0.59	-0.06	0.38
12 mo	0.03	0.41	0.02	0.57	0.03	0.69
18 mo	0.06	0.18	0.03	0.62	0.11	0.20
Total	$F = 227.53, p < 0.001,$ $R^2 = 0.17, n = 13\,729$		$F = 282.99, p < 0.001,$ $R^2 = 0.27, n = 8\,447$		$F = 36.24, p < 0.001,$ $R^2 = 0.07, n = 5\,282$	

WRHA = Winnipeg Regional Health Authority.

Table S4. Rates of 30-day readmission, mortality and complications

Variable	Group; estimate, <i>p</i> value					
	Readmissions		Mortality		Complications	
Intercept	-2.37	< 0.001	-9.07	< 0.001	-3.09	< 0.001
Intervention	-0.02	0.93	-0.39	0.36	0.42	0.21
Date, 30 d	0.00	0.56	0.01	0.43	-0.01	0.21
Intervention × Date, 30 d	0.00	0.61	0.01	0.37	-0.01	0.27
Age, 10 yr	0.08	< 0.001	0.66	< 0.001	0.16	< 0.001
Sex, male	0.04	0.11	0.04	0.50	0.08	0.09
Appendicitis	-0.47	< 0.001	-2.55	0.002	-0.41	0.004
Cholecystitis	-0.11	0.08	-0.70	0.015	-0.57	< 0.001
Intestinal obstruction	0.06	0.34	0.73	0.001	0.66	< 0.001
Pancreatitis	0.44	< 0.001	0.79	0.004	-1.24	0.003
Diverticulitis	-0.21	0.020	0.57	0.031	1.31	< 0.001
Non-WRHA	-0.11	0.004	0.25	0.001	0.27	< 0.001
Operative	-0.18	< 0.001	0.33	< 0.001	—	—
Level effects						
6 mo	0.08	0.10	-0.01	0.94	0.07	0.41
12 mo	0.09	0.08	0.04	0.70	0.02	0.80
18 mo	0.10	0.12	0.09	0.51	-0.02	0.85
Total	-2 Log L = 10593.81 <i>n</i> = 13 652		-2 Log L = 2658.32 <i>n</i> = 14 429		-2 Log L = 3687.22 <i>n</i> = 8 719	