

Supplementary file

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Characteristics of patients in three general internal medicine wards

Table 1: Characteristics of patients in three GIM wards during study.

Variable	CTU Central (n=1,667)	CTU West (n= 1,848)	DCD (n=1,004)	Total (n=3,246)
Age (years): mean (SD)	69.0 (18.4)	70.7 (17.3)	69.5 (18.1)	69.9 (17.8)
Gender (female): n (%)	897 (53.7)	989 (53.3)	553 (54.9)	2439 (53.9)

Interrupted time series model:

$$Y = \beta_0 + \beta_1 \text{Time}_1 + \beta_2 \text{Intervention} + \beta_3 \text{Time}_2 + \varepsilon_t \quad \text{where:}$$

Y is the number (or median) of outcome measures occurring per month e.g. the median length of stay per month

β_0 estimates the baseline level of the outcome (month 1)

β_1 estimates the change in the outcome each month before the intervention (months 1-6)

Time_1 indicates the time that the outcome is measured (months 1-6 and weeks 7-21)

β_2 estimates the change in the weekly number of the outcome occurring immediately after the intervention i.e. month 7

Intervention is a dummy variable (0=before the intervention; 1=after the intervention)

Time_2 is a variable indicating the number of month that have passed after the implementation of the intervention (0 for time before the intervention; 1-15 for time after the intervention)

Error term (ε_t) at time t represents the random variability not explained by the model

Results of interrupted time series analysis

Table 1: Outcomes in CTUC

Outcome	Coefficient	Standard Error	t	P-value
Falls				
Pre-intervention baseline level	3.857	2.154	1.790	.090
Post intervention level change	.250	.482	.519	.610
Post intervention trend change	-2.131	2.221	-.959	.350
Pre-intervention trend change	-.168	.505	-.332	.744
$R^2=5\%$; Ljung-Box Q 10.919; df 18; p=0.898				
Moderate to severe falls				
Pre-intervention baseline level	-2.041	3.980	-.513	.614
Post intervention level change	1.020	.890	1.147	.267
Post intervention trend change	-1.216	4.104	-.296	.770
Pre-intervention trend change	-1.297	.933	-1.390	.182
$R^2=11\%$; Ljung-Box Q 13.621; df 17; p=0.753				
Length of stay				
Pre-intervention baseline level	5.357	1.128	4.749	.000
Post intervention level change	.268	.252	1.062	.302
Post intervention trend change	-.399	1.163	-.343	.736
Pre-intervention trend change	-.443	.265	-1.674	.111
$R^2 = 32\%$; Ljung-Box Q 14.592; df 18; P= 0.690				
Resources intensity weights				
Pre-intervention baseline level	1.094	.114	9.611	.000
Post intervention level change	.006	.025	.227	.823
Post intervention trend change	.033	.117	.279	.784
Pre-intervention trend change	-.026	.027	-.990	.336
$R^2=36\%$; Ljung-Box Q 14.922; df 18; p=0.667				

Table 2: Outcomes in CTUW

Outcome	Coefficient	Standard Error	t	P-value
Falls				
Pre-intervention baseline level	1.571	3.593	.437	.667
Post intervention level change	1.143	.804	1.422	.172
Post intervention trend change	1.371	3.705	.370	.716
Pre-intervention trend change	-1.361	.843	-1.615	.124
$R^2=23\%$; Ljung-Box Q 17.526; df 18; p=0.487				
Moderate to severe falls				
Pre-intervention baseline level	10.714	6.846	1.565	.135
Post intervention level change	-1.449	1.531	-.946	.356
Post intervention trend change	-1.495	7.060	-.212	.835
Pre-intervention trend change	2.273	1.606	1.415	.174
$R^2=18\%$; Ljung-Box Q 16.086; df 18; p=0.587				
Length of stay				
Pre-intervention baseline level	13.857	1.964	7.054	.000
Post intervention level change	-1.518	.439	-3.455	.003
Post intervention trend change	3.106	2.026	1.533	.143
Pre-intervention trend change	1.371	.461	2.977	.008
$R^2=52\%$; Ljung-Box Q 11.540; df 18; p=0.870				
Resources intensity weights				
Pre-intervention baseline level	1.844	.209	8.819	.000
Post intervention level change	-.156	.047	-3.333	.004
Post intervention trend change	.306	.216	1.419	.173
Pre-intervention trend change	.148	.049	3.014	.007
$R^2=46\%$; Ljung-Box Q 7.409; df 18; p=0.986				

Table 2: Outcomes in DCD

Outcome	Coefficient	Standard Error	t	P-value
Falls				
Pre-intervention baseline level	.571	2.437	.234	.817
Post intervention level change	1.464	.545	2.687	.015
Post intervention trend change	-9.098	2.513	-3.620	.002
Pre-intervention trend change	-1.321	.572	-2.312	.033
R ² =46%; Ljung-Box Q 28.445; df 18; p=0.056				
Moderate to severe falls				
Pre-intervention baseline level	2.555	7.914	.323	.751
Post intervention level change	1.026	1.770	.580	.569
Post intervention trend change	-11.202	8.161	-1.373	.187
Pre-intervention trend change	-.586	1.856	-.316	.756
R ² =11%; Ljung-Box Q 28.177; df 18; p=0.059				
Length of stay				
Pre-intervention baseline level	9.857	.999	9.864	.000
Post intervention level change	-.607	.223	-2.717	.014
Post intervention trend change	.664	1.030	.645	.527
Pre-intervention trend change	.486	.234	2.073	.053
R ² = 59%%; Ljung-Box Q 22.973; df 18; P= 0.192				
Resources intensity weights				
Pre-intervention baseline level	1.620	.083	19.432	.000
Post intervention level change	-.086	.019	-4.589	.000
Post intervention trend change	.031	.086	.356	.726
Pre-intervention trend change	.080	.020	4.112	.001
R ² =76%; Ljung-Box Q 18.851; df 18; p=0.401				