

Online supplementary material

Effectiveness of the coordinated return to work model after orthopedic surgery for lumbar discectomy and hip and knee arthroplasty: a register-based study

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Supplemental figure 3. The effect of the CRtW model implementation on the estimated average length of sickness absence after hip arthroplasty in A) Central Finland, B) HUS Peijas Hospital, and C) NorthOstrobothnia from a **sensitivity analysis restricting the length of sickness absence to <180 days**.

Supplemental figure 4. The effect of the CRtW model implementation on the estimated average length of sickness absence after knee arthroplasty in A) Central Finland, B) HUS Peijas Hospital, and C) North Ostrobothnia from a **sensitivity analysis restricting the length of sickness absence to <180 days**.

Supplemental table 1. Definitions for patient groups.

Patient group	Surgical Procedure Codes (NOMESCO)	Diagnostic Codes (ICD-10)
Lumbar discectomy	ABC16, ABC26	G55.1, M51.1, M54, M54.1, M54.4, M54.5
Hip arthroplasty	NFB30, NFB40, NFB50	M16, M16.0, M16.1, M16.2, M16.9
Knee arthroplasty	NGB10, NBG20, NBG40	M17, M17.0, M17.1, M17.9

Supplemental table 2. Comparison of the length of sickness absence during one-year before and one-year after the implementation of the CRTW model.

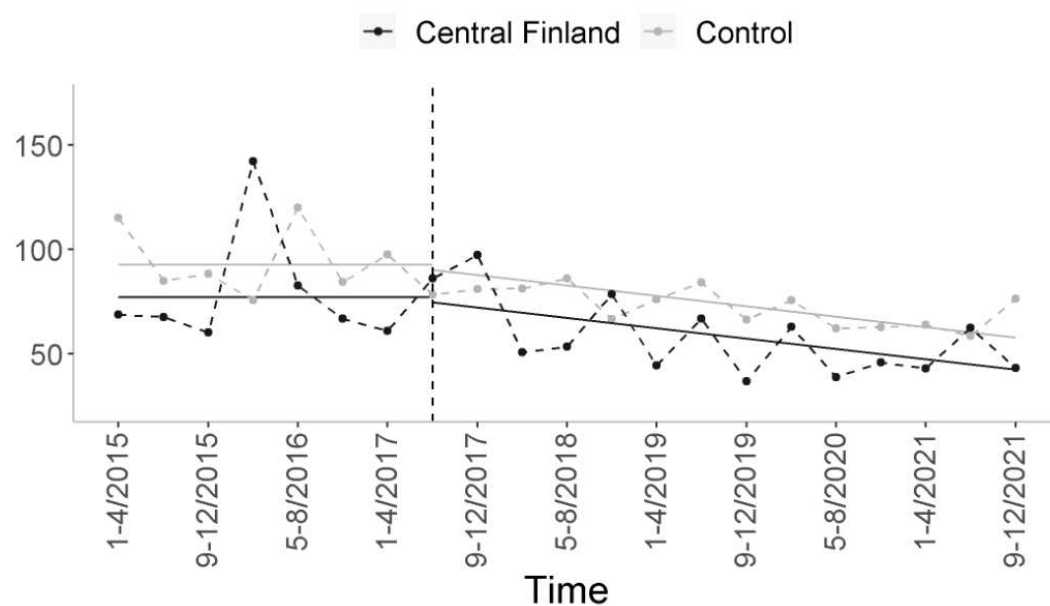
	One year <u>before</u> the CRTW model implementation				One year <u>after</u> the CRTW model implementation				One year after vs. one year before	
	All sickness absences		<180-day sickness absences		All sickness absences		<180-day sickness absences		All sickness absences	<180-day sickness absences
	N	Mean (SD), days	N	Mean (SD), days	N	Mean (SD), days	N	Mean (SD), days	Mean difference (95% CI), days	Mean difference (95% CI), days
Lumbar discectomy										
Central Finland	74	73.2 (73.8)	65	50.0 (39.9)	73	74.6 (89.3)	64	43.8 (26.2)	1.4 (-25.3 to 28.1)	-6.2 (-17.9 to 5.5)
South Karelia	35	62.7 (35.6)	34	59.3 (29.6)	27	54.3 (25.7)	27	54.3 (25.7)	-8.5 (-24.7 to 7.8)	-5.0 (-19.1 to 9.1)
Hip arthroplasty										
Central Finland	80	93.0 (41.0)	77	87.1 (27.4)	79	75.8 (38.0)	78	74.0 (34.8)	-17.3 (-29.6 to -4.9)	-13.1 (-23.0 to -3.2)
South Karelia	28	92.2 (45.2)	26	81.2 (20.4)	35	83.3 (31.2)	35	83.3 (31.2)	-9.0 (-28.2 to 10.3)	2.1 (-11.8 to 15.8)
HUS Peijas Hospital	227	83.6 (46.4)	217	75.3 (22.7)	391	81.9 (39.1)	378	77.2 (28.9)	-1.7 (-8.6 to 5.2)	1.9 (-6.4 to 2.6)
North Ostrobothnia	108	97.9 (39.3)	103	92.4 (30.4)	116	77.8 (39.2)	113	74.3 (33.2)	-20.1 (-30.5 to -9.8)	-18.1 (-26.7 to 9.5)
Knee arthroplasty										
Central Finland	94	117.2 (61.9)	82	97.8 (30.1)	66	102.3 (56.6)	60	88.2 (33.4)	-14.9 (-33.9 to 4.0)	-9.6 (-20.1 to 0.9)
South Karelia	44	105.8 (60.2)	38	85.5 (27.2)	44	98.6 (63.0)	40	83.4 (37.8)	-7.2 (-33.3 to 18.9)	-2.1 (-16.8 to 12.6)
HUS Peijas Hospital	224	96.8 (51.6)	212	87.3 (29.4)	230	81.8 (43.0)	221	75.6 (29.5)	-15.1 (-23.8 to -6.3)	-11.8 (-17.3 to -6.2)
North Ostrobothnia	119	123.9 (67.6)	99	98.7 (28.5)	114	109.4 (59.6)	102	93.4 (33.5)	-14.5 (-31.0 to 2.0)	-5.3 (-13.9 to 3.4)

Abbreviations: CI, confidence interval; CRTW, Coordinated Return to Work; HUS, hospital district of Helsinki and Uusimaa; SD, standard deviation.

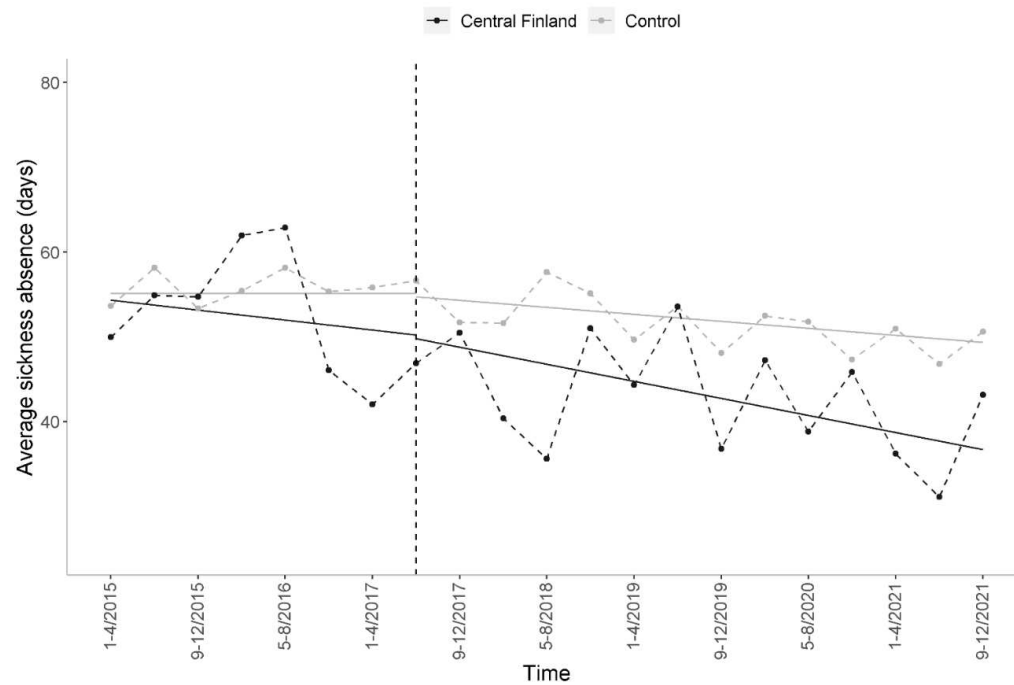
Supplemental table 3. Parameter estimates of the segmented regression models. Only statistically significant parameter estimates were kept in the model. Beta coefficients refer to the equation 1 presented in the manuscript.

	Control area				CRtW model area			
	β_0 (SE)	β_1 (SE)	β_2 (SE)	β_3 (SE)	β_4 (SE)	β_5 (SE)	β_6 (SE)	β_7 (SE)
Lumbar discectomy								
Central Finland	85.48 (4.94)	-1.22 (0.46)	NS	NS	NS	NS	NS	-1.36 (0.66)
Hip arthroplasty								
Central Finland	95.63 (1.83)	NS	NS	NS	NS	NS	-15.91 (3.57)	NS
HUS Peijas Hospital	92.86 (2.47)	NS	NS	NS	-8.98 (3.50)	NS	NS	NS
North Ostrobothnia	106.04 (2.99)	-0.63 (0.22)	NS	NS	NS	NS	-15.08 (4.34)	NS
Knee arthroplasty								
Central Finland	112.90 (1.98)	NS	NS	NS	NS	NS	-11.54 (3.86)	NS
HUS Peijas Hospital	120.92 (4.31)	-0.72 (0.24)	NS	1.78 (0.54)	-11.31 (3.64)	NS	-14.32 (5.38)	NS
North Ostrobothnia	117.53 (2.04)	NS	-9.76 (3.46)	NS	NS	NS	NS	NS

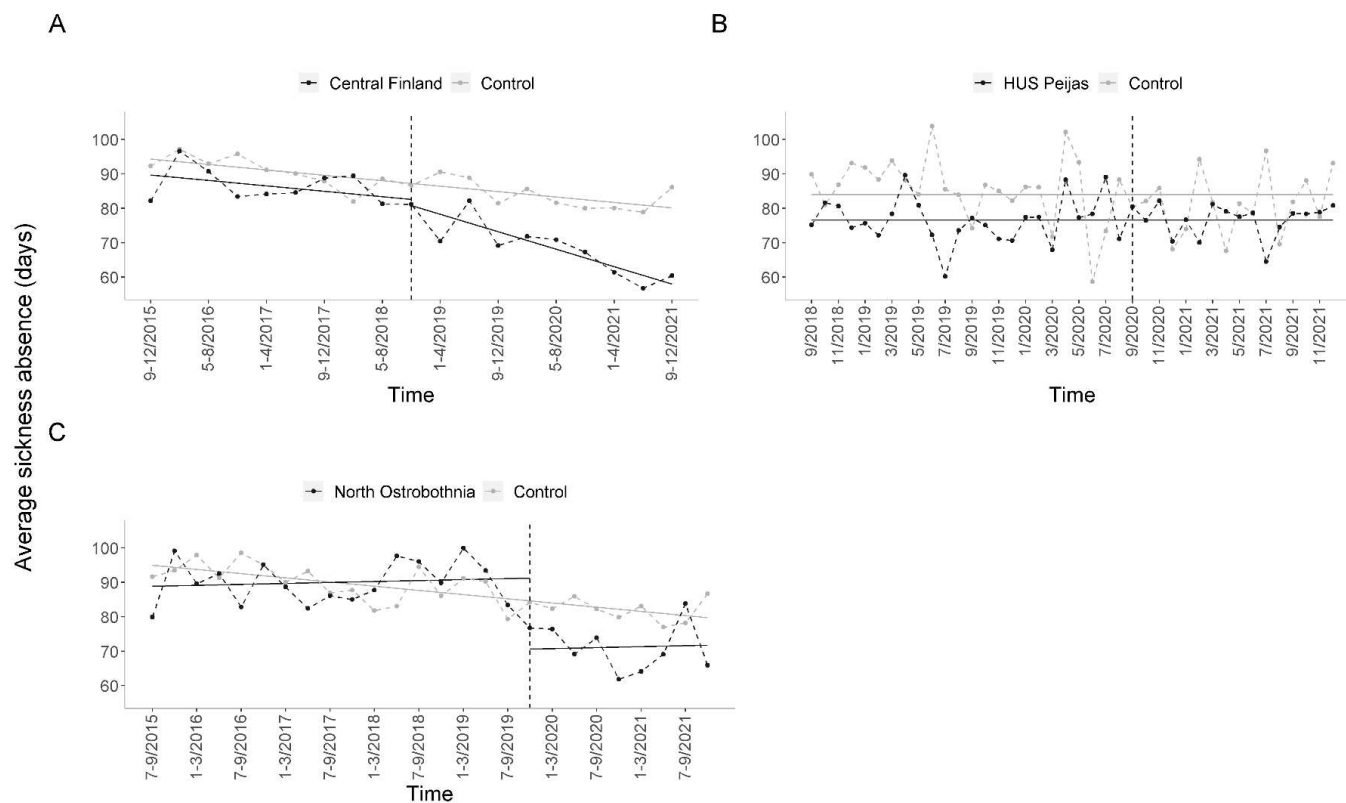
Abbreviations: CRtW, Coordinated Return to Work; HUS, hospital district of Helsinki and Uusimaa; NS, not statistically significant; SE, standard error.



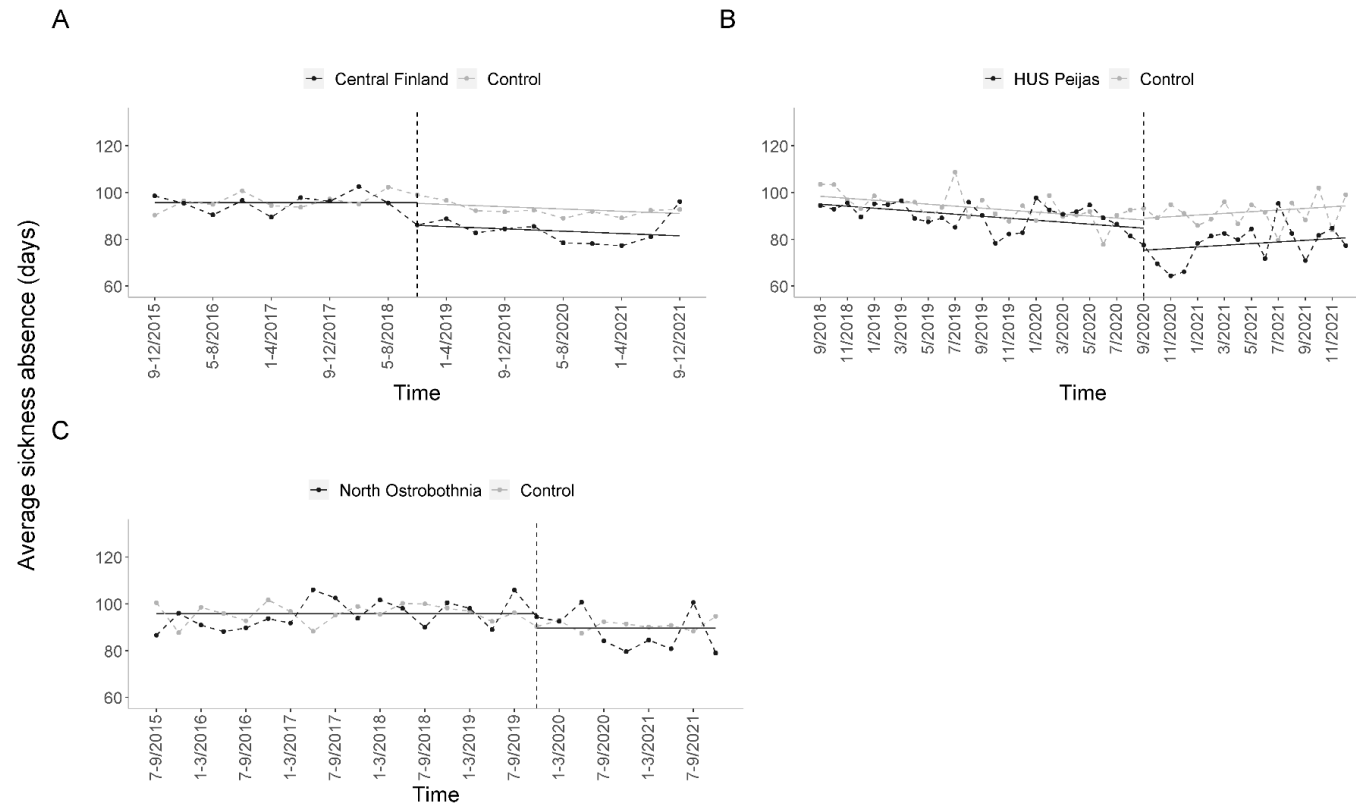
Supplemental figure 1. The effect of the CRtW model implementation on the estimated average length of sickness absence after lumbar discectomy surgery in Central Finland from a **sensitivity analysis excluding HUS from control area**. Solid line indicates estimated trend line and dashed line the observed values. Vertical dashed line indicates the time of the CRtW model implementation. Control area consists of Lapland, North Karelia, North Ostrobothnia, North Savo, and Ostrobothnia which had not implemented the CRtW model at the time of the study. All the presented changes from the baseline level since the start of the follow-up and differences between the areas are statistically significant. Abbreviations: CRtW, Coordinated Return to Work; HUS, hospital district of Helsinki and Uusimaa.



Supplemental figure 2. The effect of the CRtW model implementation on the estimated average length of sickness absence after lumbar discectomy surgery in Central Finland from a **sensitivity analysis restricting the length of sickness absence to <180 days**. Solid line indicates estimated trend line and dashed line the observed values. Vertical dashed line indicates the time of the CRtW model implementation. Control area consists of HUS, Lapland, North Karelia, North Ostrobothnia, North Savo, and Ostrobothnia which had not implemented the CRtW model at the time of the study. All the presented changes from the baseline level since the start of the follow-up and differences between the areas are statistically significant. Abbreviations: CRtW, Coordinated Return to Work; HUS, hospital district of Helsinki and Uusimaa.



Supplemental figure 3. The effect of the CRTW model implementation on the estimated average length of sickness absence after hip arthroplasty in A) Central Finland, B) HUS Peijas Hospital, and C) North Ostrobothnia from a **sensitivity analysis restricting the length of sickness absence to <180 days**. Solid line indicates estimated trend line and dashed line the observed values. Vertical dashed line indicates the time of the CRTW model implementation. In each of the parts A–C, the control area consists of Lapland, North Karelia, and Ostrobothnia which had not implemented the CRTW model at the time of the study. All the presented changes from the baseline level since the start of the follow-up and differences between the areas are statistically significant. Abbreviations: CRTW, Coordinated Return to Work; HUS, hospital district of Helsinki and Uusimaa.



Supplemental figure 4. The effect of the CRTW model implementation on the estimated average length of sickness absence after knee arthroplasty in A) Central Finland, B) HUS Peijas Hospital, and C) North Ostrobothnia from a **sensitivity analysis restricting the length of sickness absence to <180 days**. Solid line indicates estimated trend line and dashed line the observed values. Vertical dashed line indicates the time of the CRTW model implementation. In each of the parts A–C, the control area consists of Lapland, North Karelia, North Savo, and Ostrobothnia which had not implemented the CRTW model at the time of the study. All the presented changes from the baseline level since the start of the follow-up and differences between the areas are statistically significant. Abbreviations: CRTW, Coordinated Return to Work; HUS, hospital district of Helsinki and Uusimaa.