

Abstract 5 Figure 3 Statistical process control chart for acute hospitalization length of stay

Abstract 5 Table 1 Characteristics of patients undergoing TKA

	Pre-ERAS Group		ERAS bundle		p value
Number of patients	232		383		
Age, year (mean, (SD))	66.1	(10.1)	66.5	(9.9)	0.466
Female, n	148	(63.8%)	228	(59.5%)	0.334
ASA classification					0.090
ASA I	4	(1.7%)	5	(1.3%)	
ASA II	97	(41.8%)	123	(32.1%)	
ASA III	126	(54.4%)	243	(63.4%)	
ASA IV	5	(2.2%)	12	(3.1%)	
BMI, kg/m ² (mean, (SD))	31.0	(7.0)	32.45	(7.83)	0.023
Neuraxial anaesthetic	199	(85.8%)	329	(85.9%)	1.000

TKA = total knee arthroplasty, ERAS = enhanced recovery after surgery, ASA = American Society of Anesthesiologists, BMI = body mass index

Abstract 5 Table 2 Interrupted time series analysis (ITS) used to model monthly LOS and percent discharged to inpatient rehabilitation

Outcome	Final Month of Pre-Intervention	Final Month of Post-Intervention	Difference	Wald p value
LOS (days)	2.60 [2.30, 2.90]	1.81 [1.59, 2.03]	-0.79 [-1.16, -0.42]	< 0.001
LOS < 2 Days	18.3% [9.0, 27.8]	69.3% [62.4, 76.1]	50.9% [39.3, 62.6]	< 0.001
Discharge to Rehabilitation	19.9% [10.7, 29.1]	8.2% [1.4, 14.9]	-11.7% [-23.1, -0.3]	0.045

LOS = length of stay

Abstract 5 Table 3 Outcome, process, and balance measures

	Pre ERAS Bundle	ERAS Bundle	P value
Number of patients	282	383	
Hospitalization LOS, days (mean, (SD))	2.82 (1.25)	2.13 (1.09)	< 0.001
Inpatient rehabilitation	47 (20.2%)	41 (10.7%)	0.002
24-hour oral morphine, mg (mean, (SD))	59.7 (76.41)	38.05 (52.42)	< 0.001
Maximum VRS pain score first 24 hours			< 0.001
No pain	8 (3.6%)	47 (12.7%)	
Mild	54 (24.2%)	148 (40.1%)	
Moderate	97 (43.5%)	113 (30.6%)	
Severe	64 (28.7%)	61 (16.5%)	
Post-operative Nausea and Vomiting	120 (51.7%)	140 (36.6%)	< 0.001
Adductor Canal Block	35 (15%)	250 (65%)	< 0.001
IV dexamethasone	49 (21%)	244 (64%)	< 0.001
Foley Catheterization			
Pre-operative	221 (95.3%)	61 (15.9%)	< 0.001
Post-operative	4 (1.7%)	78 (20.4%)	< 0.001
Post discharge 30-day ED visits	30 (12.9%)	28 (7.3%)	0.030

ERAS = enhanced recovery after surgery, LOS = length of stay, VRS = verbal rating scale, IV = intravenous, ED = emergency department

(p<0.001). The percentage of patients experiencing moderate-to-severe pain and postoperative nausea and vomiting within the first 24-hours decreased by 25% and 15%, respectively (p<0.001). 30-day emergency department visits following discharge decreased by 5% (p=0.030) (table 3, figures 2 and 3).

Conclusions Significant improvements in the recovery of patients after TKA were achieved by performing a RCA and implementing a multi-disciplinary, patient-centered ERAS bundle.

6 REDUCING UNNECESSARY PATIENT ISOLATION ON GENERAL MEDICINE UNITS

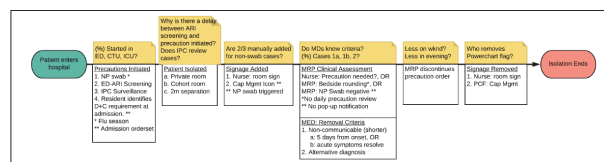
¹Joseph Carson, ²Mary-Margaret Taabazuig, ²Cody Sider, ²Michael Payne, ²Yassmin Behzadian, ³Alice Newman, ³Elaine Hunter Gutierrez, ³Linda Elliot, ³Brittany Devoe. ¹Western University; London Rheumatology, Canada; ²Western University; London Health Sciences Centre, Canada; ³London Health Sciences Centre, Canada

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Background Droplet+contact (DC) precautions are used to prevent the spread of acute respiratory infections. Clinicians at London Health Sciences Centre, an academic tertiary care organization in Ontario, Canada, have reported that many patients remain isolated longer than necessary. Research suggests that prolonged isolation may negatively impact patient outcomes, experience, and costs.

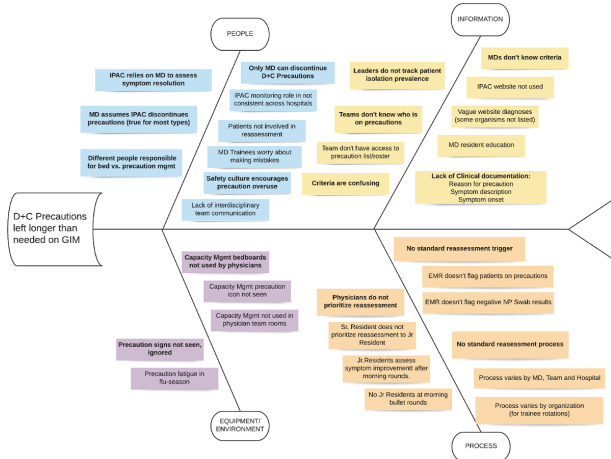
Objectives Reduce unnecessary DC precautions on general medicine units by 30% by March 31, 2020.

ISOLATION PROJECT: APPENDIX

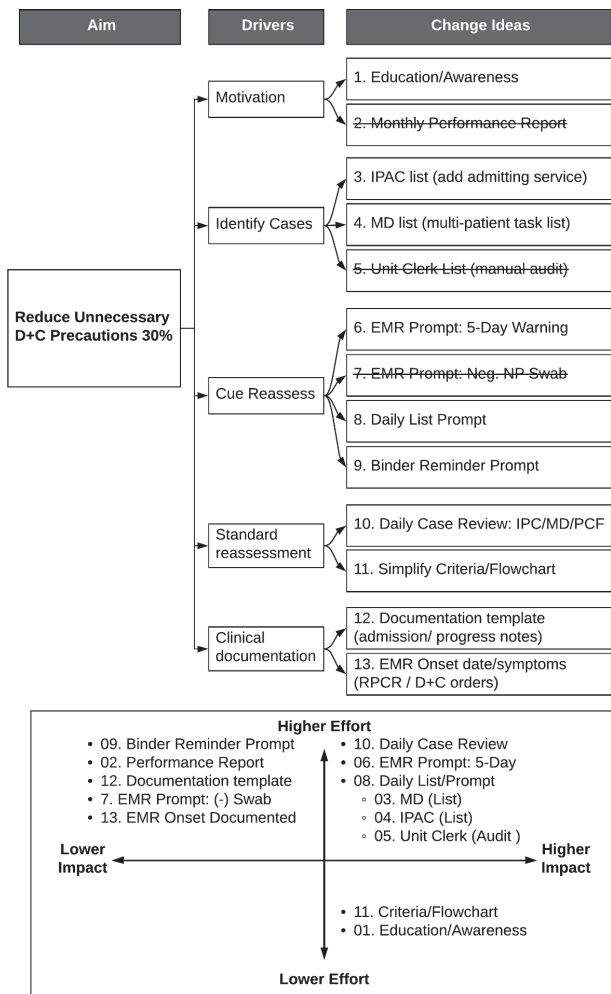


Abstract 6 Figure 1 Current state process map

Methods Our multi-disciplinary team designed this project using the Model for Improvement. We identified barriers to precaution removal through surveys, chart reviews, process mapping (figure 1), and fishbone diagramming (figure 2). Our change drivers focussed on motivation, precaution identification, reassessment cues, and standardized decision-making (figure 3). In a series of PDSA cycles, we tested and



Abstract 6 Figure 2 Fishbone barriers to removal



Abstract 6 Figure 3 Driver diagram and priority matrix

When to discontinue Droplet+Contact Precautions

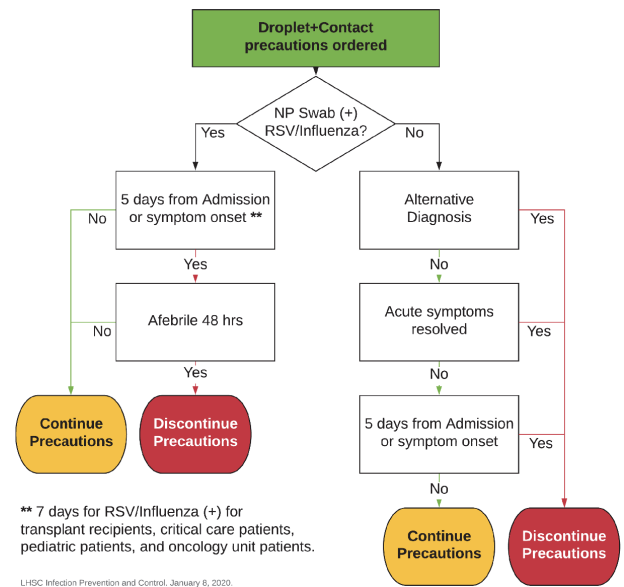
(+) RSV A/B or Influenza A/B: Choose the **longer** option

- Afebrile for 48 hours
- 5 days from admission or symptom onset **

(-) RSV A/B or Influenza A/B: Choose the **shorter** option

- Acute symptoms resolved
- Alternative diagnosis confirmed
- 5 days from admission or symptom onset

** 7 days for transplant recipients, critical care patients, pediatric patients, and oncology unit patients



** 7 days for RSV/Influenza (+) for transplant recipients, critical care patients, pediatric patients, and oncology unit patients.

LHSC Infection Prevention and Control, January 6, 2020.

Abstract 6 Figure 4 Criteria and decision support tool

implemented new discontinuation criteria and a decision-support tool across two hospitals (figure 4). Outcomes measures were: (1) % unnecessary DC precautions, collected by weekly physician audits, and (2) DC precautions lasting >5 days, collected from electronic medical records. Our process measures were: (1) user test fidelity, and (2) physician awareness. Our balance measure was physician satisfaction with new criteria. Statistical analysis was performed using Student's t-test, run charts, and process control charts (QI Macros, IHI Rules).

Results We completed eight appropriateness audits (n=212 patients) at two hospitals between December 2019 – March 2020. During user testing, eight physicians applied the new criteria and decision-support tool to five mock cases at 92% (37/40) fidelity. After implementing changes, mean precaution appropriateness increased from 30% (24/80) to 64% (85/132), (p<0.001). Out of 35 physicians surveyed, 22 (63%) were aware of new criteria; of those, 19 (86%) found the new criteria useful. However, there was no special-cause variation in DC precautions >5 days.

Conclusions Discontinuing prolonged DC precautions is important to conserve vital resources, especially during the COVID-19 pandemic. We reduced these incidents by implementing standard discontinuation criteria and a decision support tool. Our next step is to adapt these tools to standardize precaution removal for COVID-19 patients.