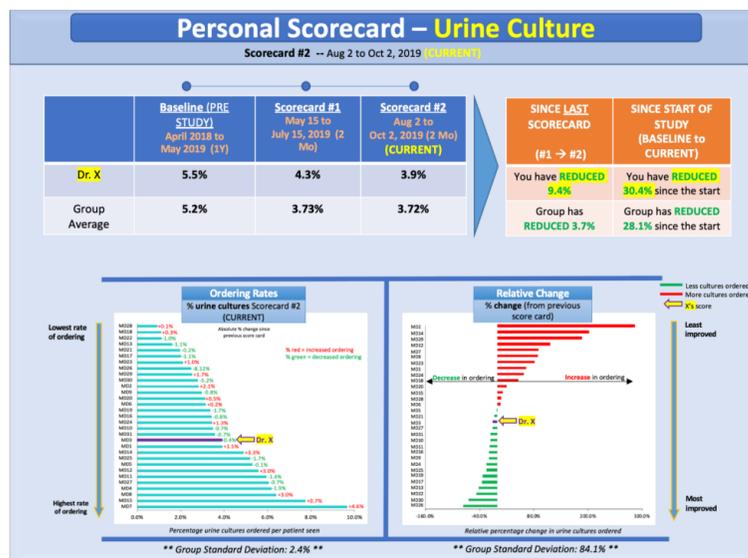


Introduction

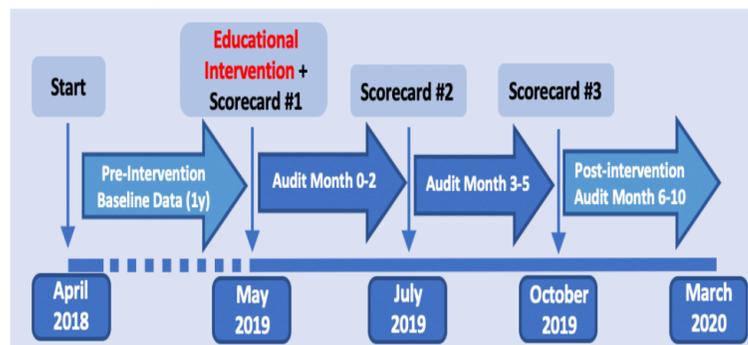
- The responsible and sustainable use of medical resources has become a priority for hospitals across Canada^{1,2}.
- Choosing Wisely Canada provides physicians with awareness campaigns to reduce unnecessary testing by highlighting latest guidelines, evidence and expert consensus. To date however, efforts to change ordering behaviour in clinical practice has seen limited success³⁻⁵.
- This study evaluates the effectiveness of changing physician ordering behaviour of two common tests in a Canadian Emergency Department (ED) by using education, audit and feedback, and personalized performance scorecards.

Methods

- Single center, prospective controlled trial of thirty-one ED physician ordering rates for two common ED tests at the Montfort Hospital in Ottawa, Ontario.



- This study included an online educational intervention with videos highlighting evidence and indications for appropriate ordering, and subsequent personalized scorecards with chart audit and feedback.



- The time period for the scorecards and chart audit was April 1, 2018 to April 30, 2019. The educational intervention took place on May 2, 2019.

Results

Table 1. Participants' characteristics at baseline (N = 31).

Age (years)	41.6 ± 6.84
Gender	
Female	11 (35.5%)
Male	20 (64.5%)
Years Practicing	11.0 ± 6.69
Designation	
CCFP-EM	26 (83.9%)
FRCPC	5 (16.1%)

Data presented as mean ± SD or number (%).

- On average, there was a 35.7% reduction in Urine Culture ordering and a 79.6% reduction in Rib X-ray ordering between the baseline intervention and the 5-month post-scorecard period (p<0.01).
- Additionally, the group dispersion during the 5-10-month post-scorecard period was relatively smaller compared to the wide dispersion present at baseline.

Table 2. Percentage of Urine Cultures and Rib X-rays ordered per patients at the Emergency Department at various points in time (N = 31).

	Scorecard #1 Baseline	Scorecard #2 0-2 Mo	Scorecard #3 3-5 Mo	Post-Scorecard 6-10 Mo	P-value
Urine Culture	5.40 ± 2.32	3.97 ± 2.53 ^a	3.84 ± 2.04 ^a	3.53 ± 1.85 ^a	< 0.01
Rib X-ray	0.83 ± 0.51	0.10 ± 0.23 ^a	0.11 ± 0.22 ^a	0.17 ± 0.27 ^a	< 0.01

Values are presented as mean ± standard deviation.

^a Significantly different from baseline.

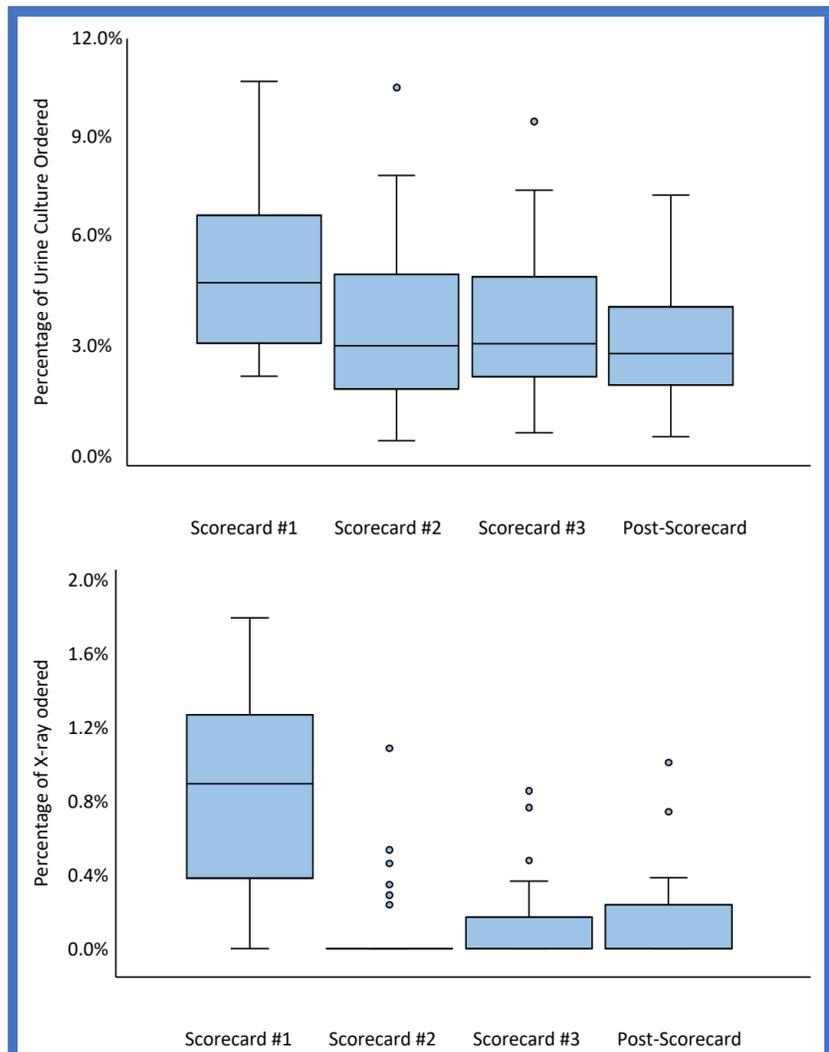


Figure 1. Box-and-whisker plot of the ordering percentage of Urine Cultures (top graph) and Rib X-rays (bottom graph) by ED physicians. Each graph shows the median (50th percentile; dark bar), values to the 1.5 interquartile range (whiskers), 25th to 75th percentile range (box) and outliers (o).

Conclusion

- The methods employed in our study combining education, audit and feedback, and personalised scorecards proved to be an effective tool in sustainably reducing unnecessary testing in the ED.

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