Re-purposing the Utilization of Routine Laboratory Tests Among Hospitalized Medical Patients (RePORT) Medicine Strategic Clinical Network

Background

Laboratory services account for a significant amount of the total health-care spending. The majority of these laboratory services are used to diagnose disease, establish relevant treatments, and monitor therapy response. However, concerns have been raised that some of these tests are unnecessary for patient treatment.

The high demand for testing by medical staff in teaching institutions, as well as the duplication of testing, led to the development of interventions to reduce the use of particular laboratory services.

Opportunity or Issue

Laboratory medicine is increasing at a rate that is incongruent with inflation and the aging population (Morgen & Naugler, 2015). Rising testing rates have highlighted the number of laboratory tests that are ordered inappropriately. Current literature suggests that on average, 20.6% of laboratory tests are over-utilized (Zhi et al., 2013).

Laboratory test overuse (LTO) occurs when these tests are ordered without consideration of pre-test probability of disease, and do not contribute to clinical decision making. 16-56% of laboratory testing is estimated to provide no clinical value. LTO often occurs in the form of unnecessary, repetitive testing.

Justification for the Project

LTO is associated with preventable patient harm through hospital acquired anemia, which in turn is associated with increased blood transfusions, prolonged length of stay, and higher mortality. Moreover, false positive results generated from inappropriate tests lead to a cascade of further unnecessary tests and interventions. There is also a financial impact to LTO. The inappropriate ordering practices consume a substantial portion of resources that can be otherwise allocated towards improving patient care and other essential processes. In 2018, the cost to Alberta for inappropriate repeats of two common tests, complete blood count and electrolytes, was estimated at CAD \$2.5 million (Kandalam et al., 2020).

The Initiative

The proposed solution leverages pilot work conducted by the University of Calgary and University of Alberta Departments of Medicine. In accordance with evidence that supports multi-modal intervention strategies (Rubinstein et al., 2018), the intervention bundle includes:

- (i) An educational online module accredited by the Royal College of Physicians and Surgeons of Canada (https://cards.ucalgary.ca/deck/432)
- (ii) A clinical decision support tool that includes a pictographic representation of a framework for purposeful ordering of laboratory tests.
- (iii) Design changes on order sets in ConnectCare.
- (iv) Audit and feedback that provides summarized information to providers
- (v) A patient directed infographic co-designed with a RePORT patient and family advisory council

For more information please contact: MedicineSCN@albertahealthservices.ca



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