

# Implementation of the World Health Organization Trauma Care Checklist Program in 11 Centers Across Multiple Economic Strata: Effect on Care Process Measures

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## Background

Trauma contributes more than ten percent of the global burden of disease. Initial assessment and resuscitation of trauma patients often requires rapid diagnosis and management of multiple concurrent complex conditions, and errors are common. We investigated whether implementing a trauma care checklist would improve care for injured patients in low-, middle-, and high-income countries.

## Methods

From 2010 to 2012, the impact of the World Health Organization (WHO) Trauma Care Checklist program was assessed in 11 hospitals using a stepped wedge pre- and post-intervention comparison with randomly assigned intervention start dates. Study sites represented nine countries with diverse economic and geographic contexts. Primary end points were adherence to process of care measures; secondary data on morbidity and mortality were also collected. Multilevel logistic regression models examined differences in measures pre- versus post-intervention, accounting for patient age, gender, injury severity, and center-specific variability.

## Results

Data were collected on 1641 patients before and 1781 after program implementation. Patient age (mean  $34 \pm 18$  vs.  $34 \pm 18$ ), sex (21 vs. 22 % female), and the proportion of patients with injury severity scores (ISS)  $\geq 25$  (10 vs. 10 %) were similar before and after checklist implementation ( $p > 0.05$ ). Improvement was found for 18 of 19 process measures, including greater odds of having abdominal examination (OR 3.26), chest auscultation

(OR 2.68), and distal pulse examination (OR 2.33) (all  $p < 0.05$ ). These changes were robust to several sensitivity analyses.

## **Conclusions**

Implementation of the WHO Trauma Care Checklist was associated with substantial improvements in patient care process measures among a cohort of patients in diverse settings.