REALITY: A Trial of Transfusion Strategies for Myocardial Infarction and Anemia

**Purpose:** The study assessed cost-effectiveness and clinical outcomes of liberal vs restrictive red blood cell transfusion strategies in patients with acute MI and anemia.

**Trial Design:** N= 668, joint French/Spanish trial across 35 hospitals, Open label Randomized trial. All patients were with acute MI and 7<Hb ≤ 10g/dL at any time during admission. In the restrictive strategy, transfusion was withheld unless hemoglobin dropped to 8 g/dL. In the liberal strategy, transfusion was given when hemoglobin was 10 g/dL or below.

**Primary Endpoints:**
Clinical end point: Composite of major adverse cardiac events (MACE) at 30 days. MACE included death reinfarction, stroke, and emergency revascularization prompted by ischemia.

Cost-effectiveness endpoint: Incremental Cost-effectiveness ratio (ICER) at 30 days

**Secondary:** MACE at 1 year, cost-utility at 30-days and 1 year

### Results
This was the largest randomized trial comparing a restrictive versus liberal blood transfusion strategy in MI patients with anemia. The restrictive transfusion strategy was non-inferior (upper bound of confidence interval was 1.18 for protocol population) to a liberal strategy in preventing 30-day MACE, saves blood and is safe, thus supporting the use of restrictive strategy. Restrictive strategy had an 84% probability of being cost-saving while improving clinical outcomes.