**TITLE (word limit:15/20)** Estimated Impact of Medication Dispensing Reforms for Public Hypertension Treatment Coverage in India

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**ABSTRACT (Word limit: 400/400)**

**Background:** Reforms to scale up hypertension treatment are needed in India, where <20% of individuals with hypertension have controlled blood pressure. Limited medication supply and short prescription periods are two key barriers to increase hypertension treatment coverage in the public health system.

**Objective and Design:** We estimated the benefits on medication coverage of three medication dispensing reforms to increase hypertension medication coverage in India’s public health system. The reforms included: 1) Increased use of single pill combinations (SPC, i.e., multiple medication classes within a pill); 2) Focused procurement by reducing the number of antihypertensive medication classes (from n=5 to n=3) and selecting one medication within class (e.g., amlodipine for calcium channel blockers) to be procured; and 3) Extended prescription duration (from one to three months) to reduce medication refill frequency. The alternative scenarios assuming implementation of individual or combined reforms were compared to a base case scenario (no use of SPC, current procurement of multiple medications across classes, and 1-month prescription duration). For each scenario, the maximal number of patients that could receive adequate medication was estimated using constrained optimization with a fixed budget (i.e., the cost of procuring and dispensing medication for n=1,000 patients in the base case scenario). Microsimulation was utilized to simulate medication dispensation for individual patients, each with a specific medication requirement. Key input data on prescription patterns and medication costs were derived from publicly available sources.

**Results:** We estimated that, at the same total costs as the base case scenario, ~25% more patients could receive sufficient medication if either the use of SPC increased or if the number of medication types procured and dispensed was restricted (**Figure**). Even greater medication coverage was estimated if both reforms were combined (+63%,) or if all patients were dispensed SPC (+80%). Extending the prescription duration from one to three months was estimated to alone increase the medication coverage by ~40% and could substantially enhance the effects of the other reforms when combined (e.g., Figure). The combination of only SPC and 3-month prescription can almost triple the number of patients able to receive antihypertensive medication.

**Conclusion:** In India’s public health care system, without additional costs to the health system, three reforms (increasing SPC use, restricting the number of medication types, and extending prescription periods) could substantially increase the number of patients to receive hypertension medications. Our study encourages the combination of these reforms to improve hypertension management coverage in India.

Base case scenario

**Figure.** The number of patients able to receive sufficient medication according to different reforms given the budget of treating 1,000 patients in the base case scenario with no SPC use, current prescription patterns, and 1-month prescription duration. SPC = single pill combination.