Supplementary data

Supplementary Appendix 1. Methods for calculating medication index

The index is determined by the class, numbers, and doses of each medication using the following formula:

$$I = \sum_{k=1}^{K} \text{class}_k \frac{\text{dose}_k}{\text{std. dose}_k},$$

where K is the number of prescribed medications, class_k, dose_k, and std. dose_k are the class weight, prescribed dose, and standard dose of the k-th prescribed medication ($k = 1, \ldots, K$). The standard dose for each medication is defined as the maximum dose recommended by the JNC-7 Guidelines [10]. The class weights are each fixed to be equal to 1 based on prior observation that diuretics, ACE inhibitors, beta-blockers, angiotensin receptor blockers, and calcium channel blockers all similarly reduced blood pressure at standard doses [11]. As an example, for a subject taking the following three medications:

1. Hydrochlorothiazide (class: diuretic; dosage: 25 mg/day; standard dose: 50 mg/day);
2. Enalapril (class: ACE inhibitor; dosage: 20 mg/day; standard dose: 40 mg/day);
3. Amlodipine (class: calcium channel blocker; dosage: 10 mg/day; standard dose: 10 mg/day).

The medication index for this subject would be 0.5 + 0.5 + 1 = 2. Alternatively, if the subject were instead prescribed a dosage of 10 mg/day for enalapril, the medication index would total 1.75. Similarly, if the patient had been prescribed each medication at standard dose, the summed index would equal 3.