

# Veterans overtreated for blood pressure on leaving hospital

September 12 2018

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One in seven older veterans with hypertension is discharged with increased blood pressure medications, despite half of those having well-controlled blood pressure prior to their hospital stay, according to a new study by researchers at UC San Francisco and the affiliated San Francisco VA Health Care System.

The study, which appears online Sept. 12, 2018, in *The BMJ (British Medical Journal)*, indicates a potential risk of causing harm due to medication confusion; adverse drug interactions; or dizziness, fainting or falls due to overtreatment, particularly among older adults who are recovering from acute illness.

"Our results show evidence that doctors are treating inpatient blood pressures aggressively, despite there being no evidence to suggest this is beneficial," said lead author Timothy Anderson, MD, a primary care research fellow in the Division of General Internal Medicine at UCSF.

"As there are no guidelines for physicians on how to manage inpatient blood pressures, it appears physicians are applying outpatient [blood pressure](#) targets to the inpatient setting," Anderson said. "Because hospitalized older adults are particularly vulnerable to medication harms, this may be quite risky."

The researchers reviewed records of 14,915 patients age 65 and older with hypertension who were admitted to a Veterans Affairs (VA) hospital between 2011-2013 for pneumonia, urinary tract infection or

venous thromboembolism—three common conditions that typically do not require strict blood pressure control. Prior to admission, 9,636 of the patients (65 percent) had well-controlled blood pressure.

They found that 14 percent (2,074) of the patients were discharged with intensified antihypertensives, either via a higher dose or multiple medications, despite more than half of those (1,082) having well-controlled blood pressure prior to hospitalization. Overall, 9 percent (1,293) were started on one antihypertensive, and 2 percent (300) on multiple new antihypertensive medications, with 4 percent (628) discharged on an increased dose of at least one antihypertensive.

The study found that elevated inpatient blood pressure was a stronger predictor of higher doses than outpatient readings. There were no differences in the rates of increased blood pressure medications in patients less likely to benefit from strict [blood pressure control](#), such as those with limited life expectancy, dementia or metastatic cancer, nor in those more likely to benefit, such as those with a history of stroke, heart attack or kidney disease.

Blood pressure is measured frequently during hospitalizations and often fluctuates. The researchers said higher blood pressure due to pain, stress, anxiety and exposure to new medications while in the hospital may lead clinicians to intensify antihypertensive treatment, potentially without knowledge of other patient factors, such as prior medication history, drug intolerance, barriers to medication adherence and long-term success at disease control.

The authors recommended that hospital clinicians review patients' prior blood pressure and [medication](#) records, and communicate elevated inpatient [blood pressure readings](#) to patients' outpatient providers for further management following discharge, rather than simply prescribing more antihypertensives.

"Just as outpatient hypertension guidelines recommend personalizing management to account for patients' clinical status and contextual factors, a shift away from treating all high numbers and towards a patient-centered approach to inpatient [blood pressure](#) management is urgently needed," said senior author Michael Steinman, MD, a UCSF professor of geriatrics and clinician in the geriatrics clinic and inpatient general medicine service at the San Francisco VA Medical Center.

Previous studies of hospital records have shown that more than half of all hospitalized adults are discharged with changes to four or more of their outpatient medications.

"While the VA patient population is unique, this research is more about physician prescribing patterns, which are likely to be similar between VA physicians and physicians at other hospitals, as the VA is a major training site for most U.S. medical schools and many residency programs," said Anderson, also a clinical instructor of medicine at UCSF. "The practices trainees learn at the VA may influence care down the road, regardless of where they end up practicing medicine."

Provided by University of California, San Francisco

Citation: Veterans overtreated for blood pressure on leaving hospital (2018, September 12) retrieved 26 April 2024 from

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