



EDITORIALS

Managing blood pressure medication at discharge

What happens in hospital stays in hospital

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Discharge from hospital is an especially high risk transition for older adults. Despite recovery from the condition for which they were admitted, many patients are discharged with a functional status that is substantially worse than their pre-admission baseline.¹ Recently, increasing attention has been paid to this problem, including the generalized period of risk immediately after discharge now known as post-hospital syndrome.² One major contributor to post-hospital syndrome is medication related harm from drugs newly started or intensified during hospital admission.

In the *BMJ* this week (doi:10.1136/bmj.k3503), Anderson and colleagues report a retrospective cohort analysis of older adults admitted to hospital, conducted using national inpatient and outpatient Veterans Affairs pharmacy data merged with Veterans Affairs and Medicare claims data.³ The study investigated the frequency of intensification of antihypertensive treatment at hospital discharge (a new or higher dose antihypertensive at discharge compared with treatment before admission). The study included nearly 15 000 older adults admitted to hospital for non-cardiac conditions from 2011 to 2013 and reported that 1 in 7 (14%) were discharged with intensified antihypertensive regimens. Of note, no difference was seen in rates of intensification between patients thought to be least likely to benefit from tight blood pressure control (those with limited life expectancy, dementia, or metastatic malignancy) and those thought to be most likely to benefit from tight blood pressure control (history of myocardial infarction or cerebrovascular disease).

The study did not determine whether intensified blood pressure control resulted in drug related harm. Data from other settings, including the landmark Systolic Blood Pressure Intervention Trial (SPRINT), show higher rates of adverse drug events with more aggressive blood pressure control, including hypotension, syncope, electrolyte abnormalities, and acute kidney injury or failure.^{4,5} Elsewhere, starting antihypertensive treatment in older adults was associated with increased risk of hip fracture.⁶

Whether or not intensified antihypertensive treatment at hospital discharge results in measurable harm, the study findings

highlight two pressing matters of concern to frontline clinicians and researchers: the need for a more judicious approach to the in-hospital management of chronic diseases, especially for older adults; and the need to move beyond more traditional means of medication reconciliation at hospital discharge.

The hospital inpatient setting is often a hazardous environment for older adults, where they are exposed to substantial physiological and psychological stress.⁷ Inpatients are commonly sleep deprived and malnourished, feel pain and anxiety, and experience forced dependence and immobilization.^{2,8} These disturbances may provoke transient exacerbations of chronic diseases, including elevated blood pressure and blood glucose readings in inpatients with hypertension and type 2 diabetes mellitus, respectively. Reflex intensification of drug treatments used to manage these chronic diseases may result in overtreatment after discharge.^{9,10} Notably, in the study by Anderson and colleagues, predictors of intensified antihypertensive regimens included moderately and severely elevated inpatient blood pressure readings but not pre-admission outpatient blood pressure control.³

Of course, hospital admission may be an opportunity to optimize chronic disease management.¹¹ It is important, however, that clinicians pursue a conscientious and judicious approach to intensification of treatment that considers any reversible provoking causes (such as pain and anxiety), the risks and benefits of intensifying treatment (including the recognition that most risk associated with chronic diseases is incurred over the long term rather than the short term), and the availability of the clinician to reassess the effect of treatment throughout the remainder of the admission. Central to this process is the consideration of patients' preferences, including the option to intensify treatment in the outpatient rather than inpatient setting.

Anderson and colleagues' research also underscores the need for more comprehensive and robust medication reconciliation at hospital discharge. When medication reconciliation was introduced in the early 2000s, the process mainly involved comparing drug lists at admission and discharge to correct any unintended variances.¹² However, the drugs patients are

discharged with should not only be reconciled but also be assessed for correctness and appropriateness.¹³ In the case of intensified antihypertensive treatment during hospital admission, the discharge reconciliation process should include measuring blood pressure before discharge to reassess the need for the intensification, communicating changes in antihypertensive treatment to all outpatient entities responsible for the patient, and ensuring prompt outpatient follow-up with the patient's primary care provider.

Overall, clinicians would be wise to adopt Sin City's famous tagline, "What happens in Vegas, stays in Vegas;" often the safest approach to inpatient chronic disease management should be to let what happens in hospital stay in hospital.

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