# Low-dose Aspirin for Primary Prevention in Veterans: Using Data Analysis to Quantify Guideline Scope

Shawn Y. Ong MD[1,2], Chris Ruser MD[2,3], Jeff Kravetz MD[2,3], Brian Malm MD[2,3], Todd Kawecki DC[2,3], Ronald G. Hauser MD[1,2]
[1]Clinical Informatics, Yale School of Medicine, New Haven, CT
[2]Veterans Affairs Connecticut Healthcare System, West Haven, CT
[3]Yale School of Medicine, New Haven, CT

Description of the problem and purposes: An estimated 10 million people over age 70 take low-dose aspirin for primary prevention of atherosclerotic cardiovascular disease (ASCVD) despite evidence that show it is harmful in this population due to increased risk of major bleeding.[1] The number of Veterans who qualify for recent guidelines for aspirin de-prescribing as quantified by a database search of structured data elements is unknown.

Methodology: Specific lab and diagnosis criteria were formulated with West Haven VA CT Departments of Primary Care and Cardiology since the published guidelines provide only general guidance. Data was extracted using SQL queries from the CT VA data warehouse. A total of 2,643 ICD-10 codes and 759 ICD-9 codes were used to identify ASCVD and ASCVD risk factors. Where possible, the NIH Value Set Authority Center (VSAC) was used for diagnosis grouping. Veterans were identified by those without ASCVD and a subset without ASCVD risk factors.



CT VETERANS AGE 70+ TAKING ASPIRIN (N=11,640)
- Primary prevention, few or no ASCVD risks, 2149, 18%
- Primary prevention, some ASCVD risk factors, 1821, 16%
- Aspirin for secondary or tertiary prevention, 7670, 66%

Results: There are 31,119 CT Veterans over age 70 who were seen within the past two years, of which 37.4% (11,640/31,119) are taking low-dose aspirin. Out of this group, 34.1% (3,970/11,640) meet guideline criteria to discontinue aspirin. Within that population, there is a subset of 18.5% (2,149/11,640) Veterans who qualify for even stricter criteria to discontinue aspirin.
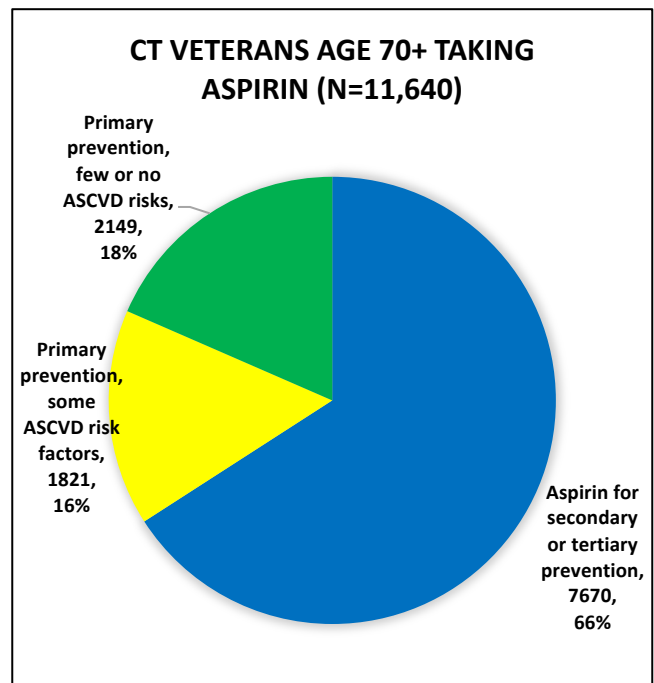
Conclusions: Many Veterans within the VA CT healthcare system are prescribed aspirin against the advice of recently published cardiology guidelines. Our results, however, likely represent an underestimate given the availability of aspirin over the counter. More specific verbiage in the guideline regarding a structured database search would ensure consistency and benefit its implementation. In addition, the availability of data such as ankle-brachial index and coronary artery calcium scoring could further refine the algorithm. Opportunities exist to educate both physicians and Veterans to engage in shared decision-making for possible de-prescribing. Future directions include analyzing VA national data and determining the most efficient methods to implement clinical decision support. Post-intervention data can then be analyzed to quantify the decrease in aspirin use and its impact on the incidence of major bleeding events.

References:
1. Arnett DK, Blumenthal RS, Albert MA, Buroker AB, Goldberger ZD, Hahn EJ et al. 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease. Journal of the American College of Cardiology. 2019:74(10):e177-e232.