# CTLS Journal Club, episode 3: [Comparison of Observed Harms and Expected Mortality Benefit for Persons in the Veterans Health Affairs Lung Cancer Screening Demonstration Project](https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/10.1001/jamainternmed.2017.8170) by tanner caverly, md et al in jama internal medicine

*“In RLS Journal Club we examine publications (peer-reviewed articles, opinion pieces, etc.) that discuss CTLS, either in general or focusing on a specific topic, and review the statements or conclusions that are made. It is our goal to highlight the facts of screening and provide support/evidence of benefits and risks of CT lung screening in current clinical practice.”*

1. “The Veterans Health Affairs (VHA) lung cancer screening (LCS) demonstration project identified a much higher false-positive rate following initial low-dose computed tomographic screening than did the National Lung Screening Trial (58.2% vs 26.3%).”

“That is, the overall 56.2% rate of false-positive results requiring tracking remained relatively stable across risk quintiles…”

* +  It would be more accurate to say that the high rate of positive of findings in this study is in line with the 2003 Mayo Clinic lung cancer screening experience which similarly did not use a positive nodule size threshold. It is misleading to imply that the high positive rate reported in this study does not “confirm” the positive rate reported by the National Lung Screening Trial (NLST) which used a size threshold for a positive exam of a maximum dimension >/= 4mm. Since 2014 in clinical practice using Lung-RADS®the expected positive rate at the prevalence (baseline) exam is 12-13% and around 5% at incidence (annual follow-up) exam. There are no CTLS reporting systems in clinical use which do not have a positive nodule size threshold in part because of lessons from the 2003 Mayo Clinic lung cancer screening experience.

1. “Patients in higher quintiles of LC risk had significantly more lung cancers diagnosed during the project, supporting the Bach model's ability to risk stratify in this population.”
   *  Patients deemed at higher risk as determined by a validated risk prediction model are more likely to be diagnosed with lung cancer and have a more favorable risk/benefit ratio than those determined to be at lower risk.
2. “….as did the overall 2.0% rate of false-positive results requiring downstream diagnostic evaluations.”
   *  Diagnostic procedures (rather than serial imaging alone) were only performed for suspicious findings in the study, as is the case in clinical practice. As such, this 2% rate is representative of what we see/expect in clinical practice as well[4](https://pubmed.ncbi.nlm.nih.gov/33023746/).
3. “The high rate of false-positive results found in the VA demonstration project may represent a substantial overestimate of future rates for 2 reasons: (1) initial screens likely have more false-positive results than recurrent screening, and (2) newer nodule management guidelines are showing great promise in lowering false-positive rates”
   *  It has been known since at least 2003 that performing CT lung cancer screening without a positive nodule size threshold will result in an overwhelming number of positive exams but little to no benefit in earlier cancer detection compared with using a 4 or 6mm threshold.
4. “These real-world findings reinforce the need to risk-stratify patients for LCS and provide support for personalized, risk-based harm-benefit estimates for all eligible persons during LCS decision-making.”
   *  These are not “real-world” findings. There is no parallel in current clinical practice of performing lung screening without a positive nodule size threshold. The results of this study are of limited to confirming the failings of this approach as reported by the Mayo Clinic lung screening experience in 2003. Personalized risk analysis should be conducted as part of the CTLS shared decision making process and the results of this study highlight the need for individuals considering CTLS to ensure the program reporting the screening exams will use a minimum positive nodule size threshold.

**References:**

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