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The Best Laid Plans of Mice and Men

When writing a grant proposal, many of us do a power analysis to ensure that we will have a sufficient number or “n” to detect a statistically significant difference between two populations. We estimate the number needed in each group by considering the likely intergroup difference and then add additional subjects depending on the number who will not give informed consent, refuse, die, are lost to follow up, etc. Often the number of nonparticipants is estimated based on previous experience, but sometimes a small study is done first called a feasibility study which tests the assumptions about recruitment. For both clinical trials and epidemiologic studies, a pilot or feasibility study also helps assure that participants will be representative of the relevant population (1). (For examples, will only the most seriously ill participate in a drug trial, or will the most vulnerable workers decline participation in a study. Will some drugs only make a difference in early stage or late stage disease, and having Latinx or Native American participants disproportionately refuse to participate in a workplace study creates biases).

In this month’s SWJPC we publish a feasibility study from New Mexico which was hoping to test the hypothesis that thoracic malignancies (TMs) are likely higher in New Mexico because of the relative high proportion of the population with occupational exposures in mining and oil/gas extraction which are known risk factors (2).

The authors conducted a feasibility study of adult lifetime occupational history among TM cases using the population-based New Mexico Tumor Registry (NMTR), from 2017- 2018. Despite identifying 400 eligible cases only 43 were able to complete the study mostly due to early mortality and refusals. This 11% completion rate was insufficient to reach a statistically significant conclusion whether New Mexico has statistically significant more TMs than the National average of 10-14%.

After some discussion we decided to publish the manuscript with this editorial to "educate" the SWJPC readership about the challenges of population-based mortality studies, the persistent risk of occupational thoracic malignancies, and the concept of population burden. The authors worked just as hard getting these unsatisfying results as if they had a study demonstrating the study was feasible. If only the "successful and positive studies" are published, because planning is necessary and lack of planning often resulting in publication bias. Someone in the future will likely ask a similar question hoping to use similar methodology. However, they will now have numbers that might be more realistic or do interventions to decrease refusals, increase valid addresses or increase the number that could be reached by phone.

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References

1. Orsmond GI, Cohn ES. The Distinctive Features of a Feasibility Study: Objectives and Guiding Questions. *OTJR* (Thorofare N J). 2015 Jul;35(3):169-77. [\[CrossRef\]](#) [\[PubMed\]](#)
2. Pestak CR, Boyce TW, Myers OB, Hopkins LO, Wiggins CL, Wissore BR, Sood A, Cook LS. A Population-Based Feasibility Study of Occupation and Thoracic Malignancies in New Mexico. *Southwest J Pulm Crit Care*. 2021;22(1):23-35. doi: [\[CrossRef\]](#)