

Assessment of Real World Observational Studies (ArRoWS)



What is real-world evidence?

Real-world evidence describes evidence generated from large observational studies of routine clinical data.



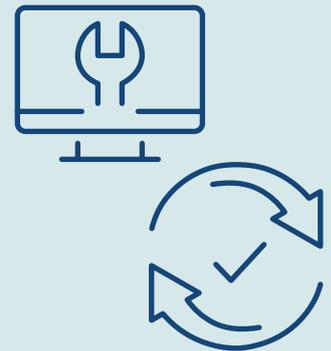
What is the problem?

1. A large number of research articles are published every month that claim to produce real world evidence.
2. Many of these articles are based on specific populations and are not relevant to other clinical settings.
3. Some of these articles make flawed conclusions because their studies are of poor methodological quality or they do not use an appropriate analysis.



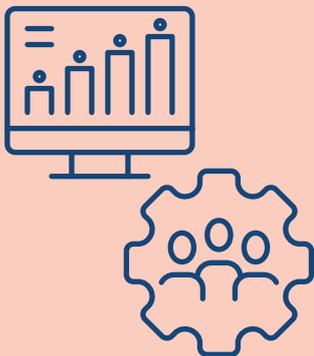
What is the solution?

- We have systematically developed and tested a critical appraisal tool for real-world evidence called the 'Assessment of Real World Observational Studies (ArRoWS)'.
- This tool was initially developed by identifying items found in existing assessment tools and adapting these to assess real-world evidence studies.
- The tool was validated by asking a panel of 14 expert epidemiologists (11 professors of medical statistics/epidemiology; 3 senior doctors) around the world to rate the items ('content validation').
- The tool was tested for reliability by three statisticians/epidemiologists who repeat assessed 47 articles in total to see if the same conclusions were drawn.



The questions are:

1. Is the research question or objective(s) clear?
2. Is the study sample representative of its target population?
3. Has a sample size, power calculation or measure of uncertainty (e.g., confidence intervals, standard errors) been provided?
4. Are the exposure measures clearly defined and appropriate?
5. Is/are the outcome(s) clearly defined and appropriate?
6. Are confounders clearly defined and appropriate?
7. Are the statistical analyses clearly defined and appropriate?
8. Are the limitations of the study defined and appropriate?
9. Have the authors drawn appropriate conclusions from their results?



Who is it for?

ArRoWS can be used by researchers, clinicians, practitioners and/or educators as a tool to help standardise the assessment of real-world evidence studies

Access to paper: <https://pubmed.ncbi.nlm.nih.gov/33011384/>

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