$_{g}ithub(”rcfgroup/clinconcept”)$
$helpermethodsareprovided.Werecommendusingtherccfromfileorrccfromhomefunctions.Theformerloadsoption$
$_{d}b.sqlite”$
$functionsalsorequireaconceptdictionarytype.Currentlysupportedare NHSReadV2, NHSReadV3, NHSICD10andNH$
$_{f}rom_{h}ome(”NHSReadV3”,”readv3.cfg”)$
$_{f}rom_{f}ile(”NHSReadV3”,”/home/user/readv3.cfg”)$
$_{f}rom_{l}ist(”NHSReadV3”,list(type = ”sqlite”,name = ”/path/to/readv3_{d}b.sqlite”))$
$_{c}oncept_{t}ables(dict,’/home/user/READV3’)$
$_{c}oncepts(dict,term == ”Asthma”)$
$_{c}oncepts(dict,term == ”Asthma”(!term == ”Eosinophilicasthma”)$
$_{c}ase_{s}ensitivity(dict)$
$_{c}oncepts(dict,read_{c}ode == ”H3...”)$
$_{c}oncepts(dict,read_{c}ode$
$_{c}oncepts(dict,read_{c}odesearch_{c}oncepts(dict,read_{c}ode == ”H3...”|read_{c}ode == ”H31..”)$
$_{c}ase_{s}ensitivity(dict)$
$_{c}oncepts functionisspecifiedthroughtheoutputargument.Thedefaultisadplyrtblobjectwhichcanbefurtherprocessed$
$_{c}oncepts(dict,term$
$_{c}odeterm < chr >< chr > 1H3122Acuteexacerbationofchronicobstructiveairwaysdisease2H3y..Otherspecifiedch$
$_{c}oncepts(dict,term$
$_{c}oncepts(dict,term$
$_{c}oncepts(dict,read_{c}ode == ”H3...”,output = ”terms”)$
$_{c}oncepts(dict,read_{c}ode == ”H3...”,include_{s}ynonyms = T,output = ”terms”)$
$_{c}oncepts functionallowslinearsearches,butdoesnottakeintoaccounttherelationshipbetweencodes.Toachievethisclin$
$_{c}hild_{c}odes(dict,”H3...”)[1]”H3122””H312z””H3y..””H3y0.””H3z..””H4641””Hyu31””X101i””X101l”[10]”X101m$
$_{c}hild_{c}odes(dict,”H3...”,immediate_{c}hildren = T)[1]”H3122””H312z””H3y..””H3z..””Hyu31””X101l””XaEIV””X$
$_{p}arent_{c}odes(dict,”H32..”)[1]”.....””H....””X0003””XaBVJ”$
$_{p}arent_{c}odes(dict,”H32..”,immediate_{p}arents = T)[1]”H....”$
$_{a}ncestors < -get_{p}arent_{c}odes(dict,”H32..”) > search_{c}oncepts(dict,read_{c}ode$
$_{c}odetermterm_{3}0term_{6}0term_{1}98term_{i}d < chr >< chr >< chr >< lgl >< lgl >< chr > 1.....ReadthesaurusReadthe$
$_{f}rom_{h}ome(”TESTCONCEPT”,”/path/to/dictconfig.json”)$

$

$_{c}table_{n}ame.TESTCONCEPT < -function(dict)”test_{c}oncept”get_{c}table_{c}ode_{f}ield.TESTCONCEPT < -functio$

Development
*PLOS ONE***11**
*Methods of information in medicine***34**http://www.ncbi.nlm.nih.gov/pubmed/9082130
*R: A Language and Environment for Statistical Computing*https://www.R-project.org/
*Classification of Diseases (ICD)*http://www.who.int/classifications/icd/en/