Solutions

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Solution Aim

> *As part of NHS-R Community's aim to support the learning, application and exploitation of R in the NHS, NHS-R provides funding to 'Solutions'.*

What do we have?

NHSDataDictionaRy – a package to scrape common NHS lookups and perform custom web scraping

FunnelPlotR – a funnel plot package with a standard interface to generate funnel plots

Shiny EndomineR (WIP) – a Shiny tool to interface with the EndomineR package, with the aim to extract as much information as possible from semi structured endoscopy reports

Patient Feedback NHS text classification (**WIP**) – text classification model to deal with all the patient notes out there

Phsmethods R package expansion (**WIP**)

Solution In Focus - NHSDataDictionaRy

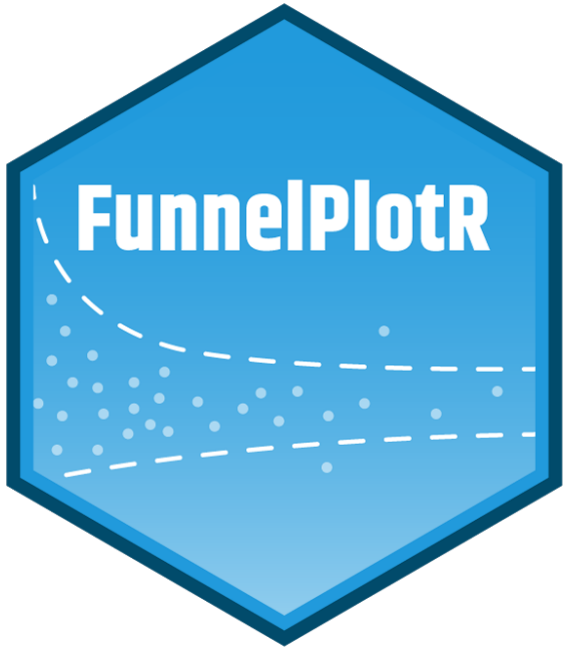
Commissioned by the NHS-R Community in late 2020

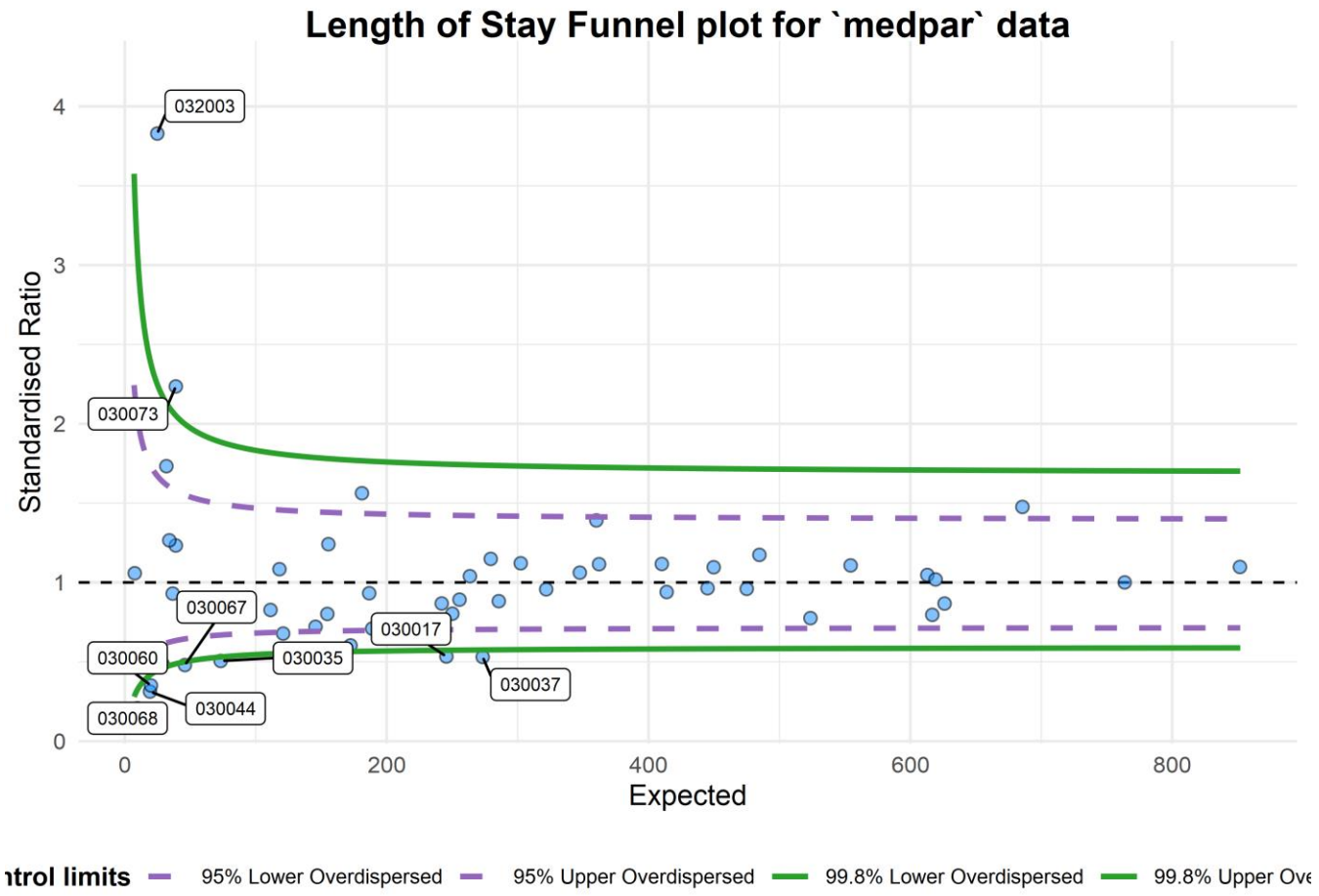
Provides functionality to perform web scraping and retrieve NHS lookups with ease

Always up to date and current

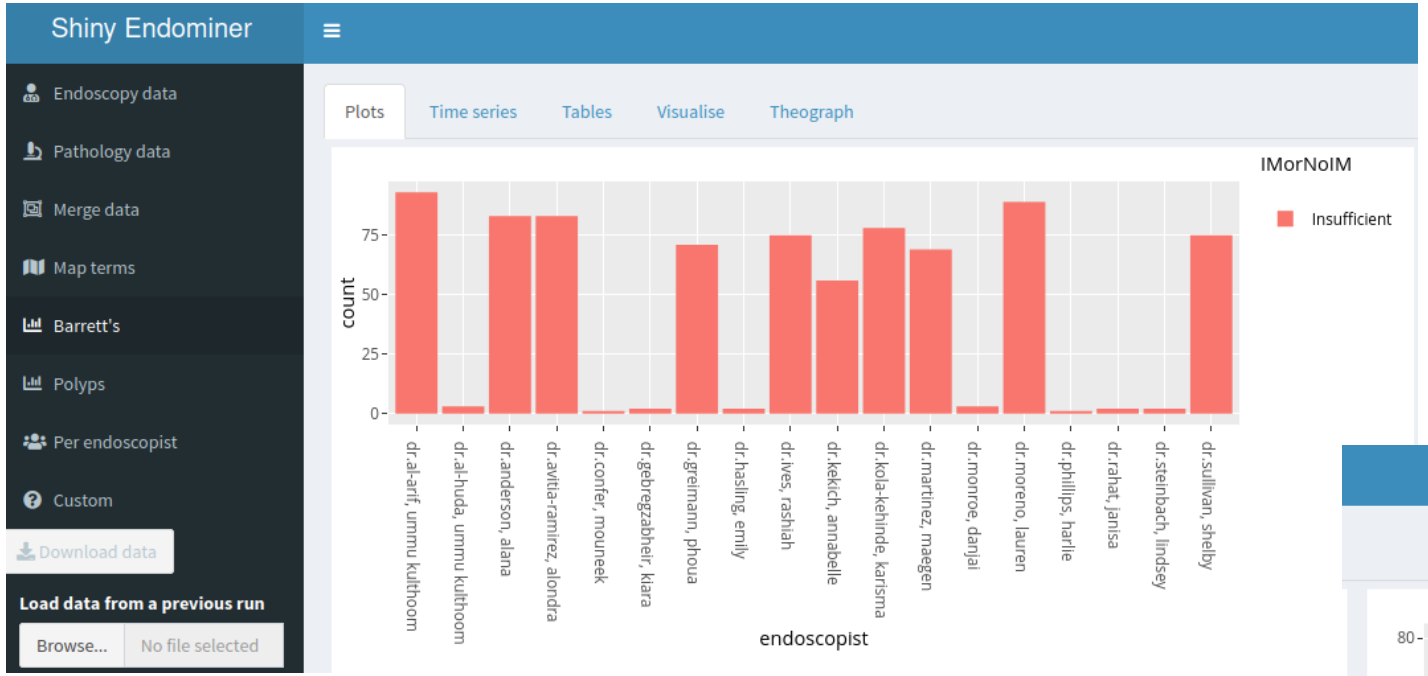
Recently part of an NHS-R workshop to show how to use the tool – refer to workshop section on YouTube

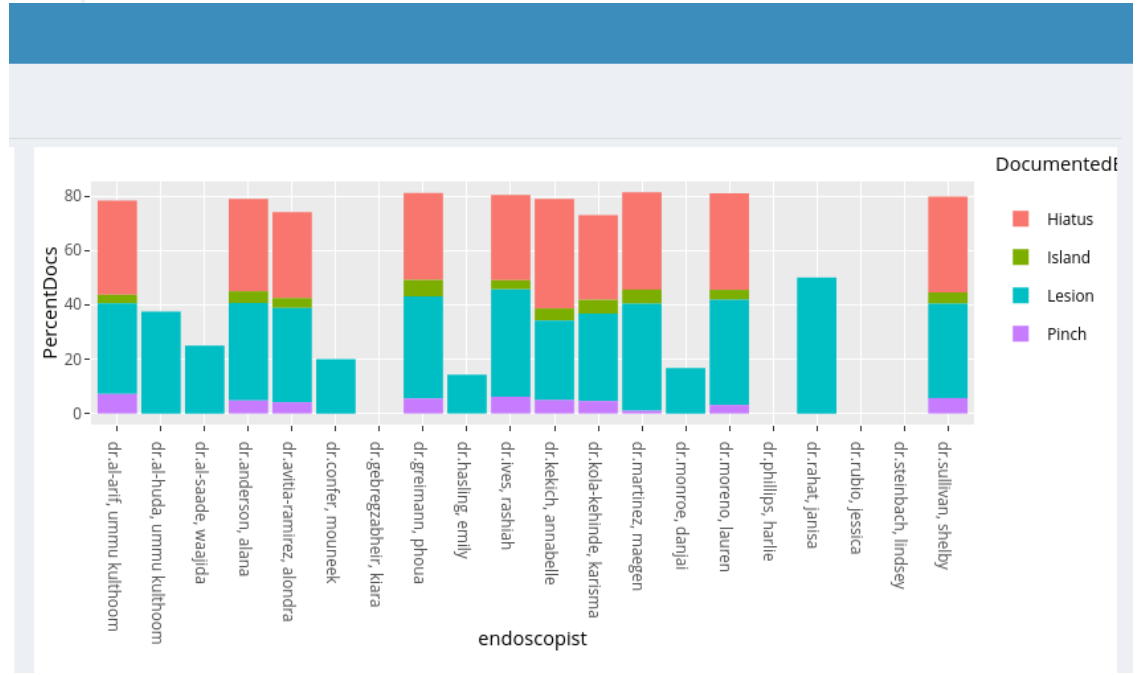
Solution In Focus – FunnelPlotR (WIP)





Solution In Focus – ShinyEndoMineR (WIP)



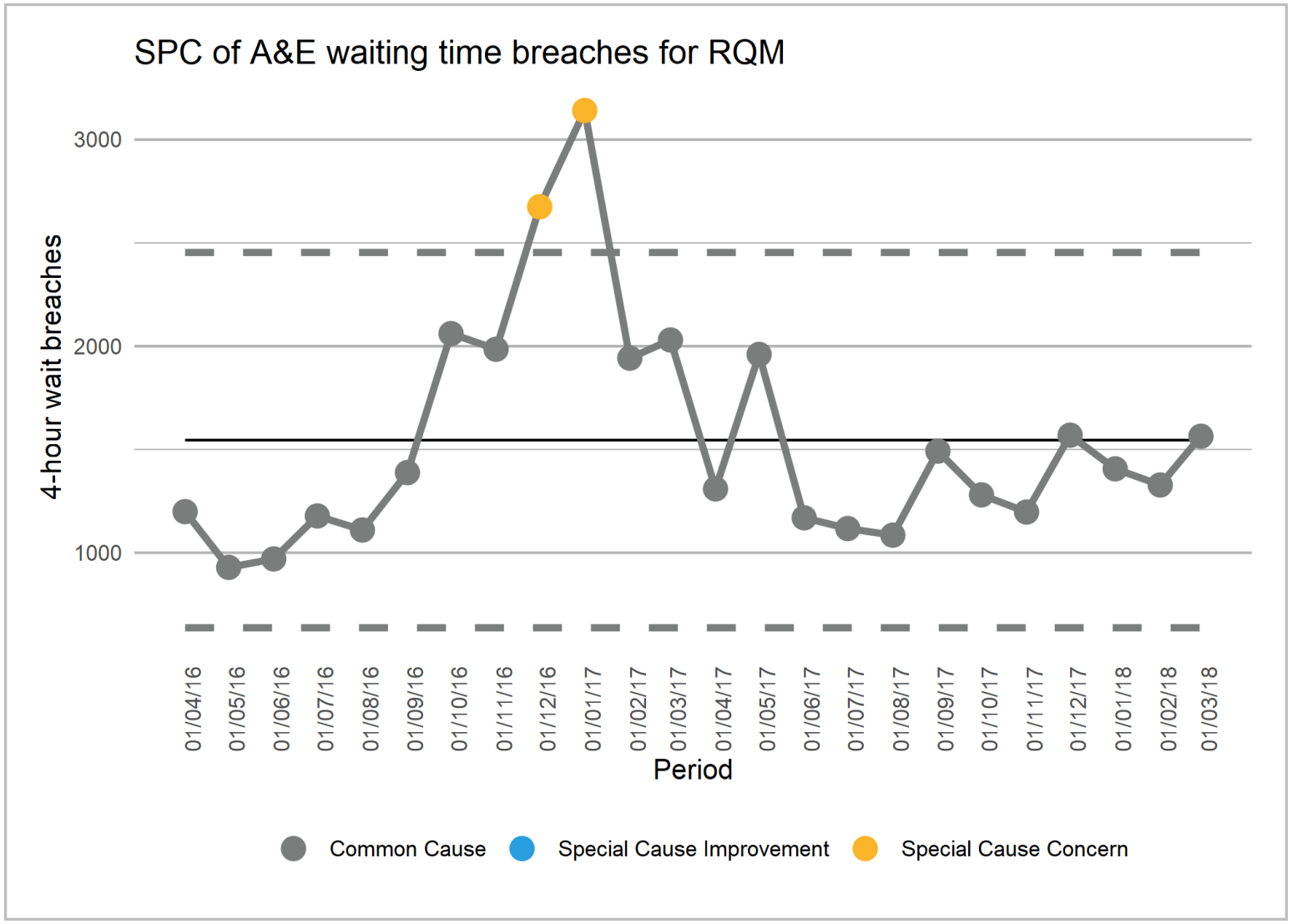


GitHub

Solution In Focus – pxtextmineR (WIP)

GitHub

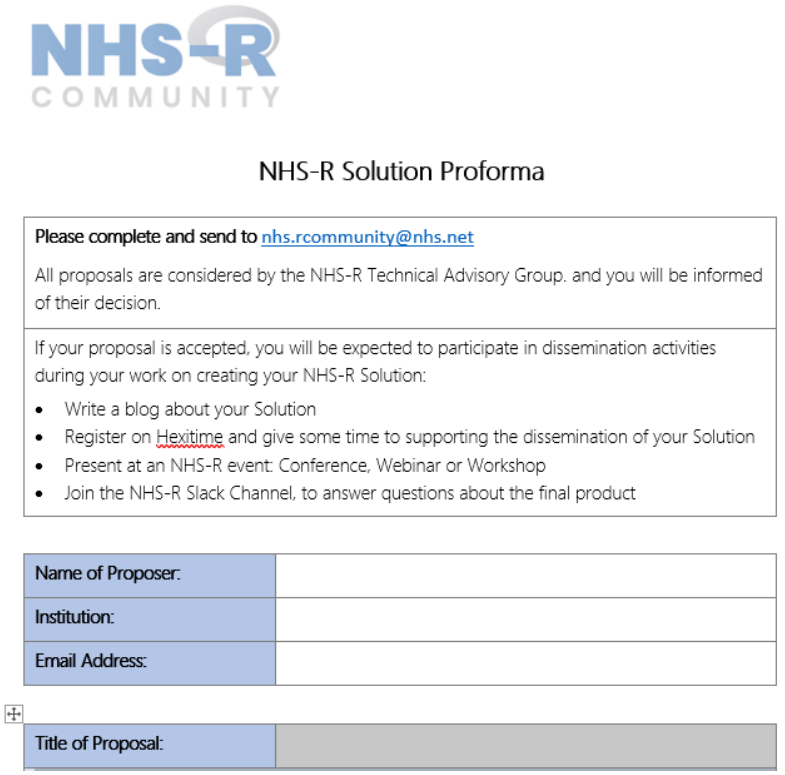
Solution In Focus – NHSRplotthedots



GitHub

Applying to build a package or create a solution

- Solutions do not need to be packages, they can be training offerings as well , such as Shiny Training, Markdown training, etc.
- We are happy to receive preliminary enquiries, support the development of ideas and the people who identify a potential solution DO NOT have to be the same people to address it. The first step is identifying the solution,.
- What we ask from you?
  - Write a blog about your solution
  - Register on Hexitime
  - Run a webinar, present at the conference or organise a workshop
  - Join the NHS-R Slack channel and be technical support for the package



NHS-R COMMUNITY

NHS-R Solution Proforma

Please complete and send to nhs.rcommunity@nhs.net

All proposals are considered by the NHS-R Technical Advisory Group. and you will be informed of their decision.

If your proposal is accepted, you will be expected to participate in dissemination activities during your work on creating your NHS-R Solution:

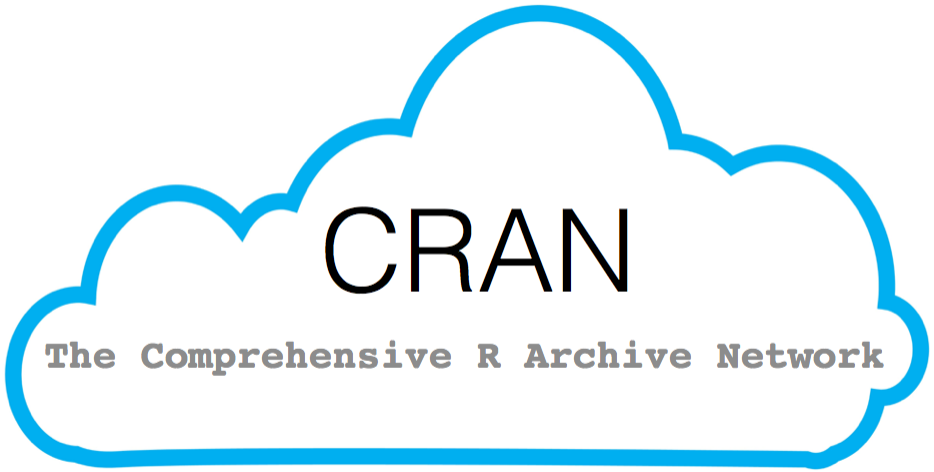
- Write a blog about your Solution
- Register on Hexitime and give some time to supporting the dissemination of your Solution
- Present at an NHS-R event: Conference, Webinar or Workshop
- Join the NHS-R Slack Channel, to answer questions about the final product

Name of Proposer:	
Institution:	
Email Address:	

Title of Proposal:	

What to put in your proposal?

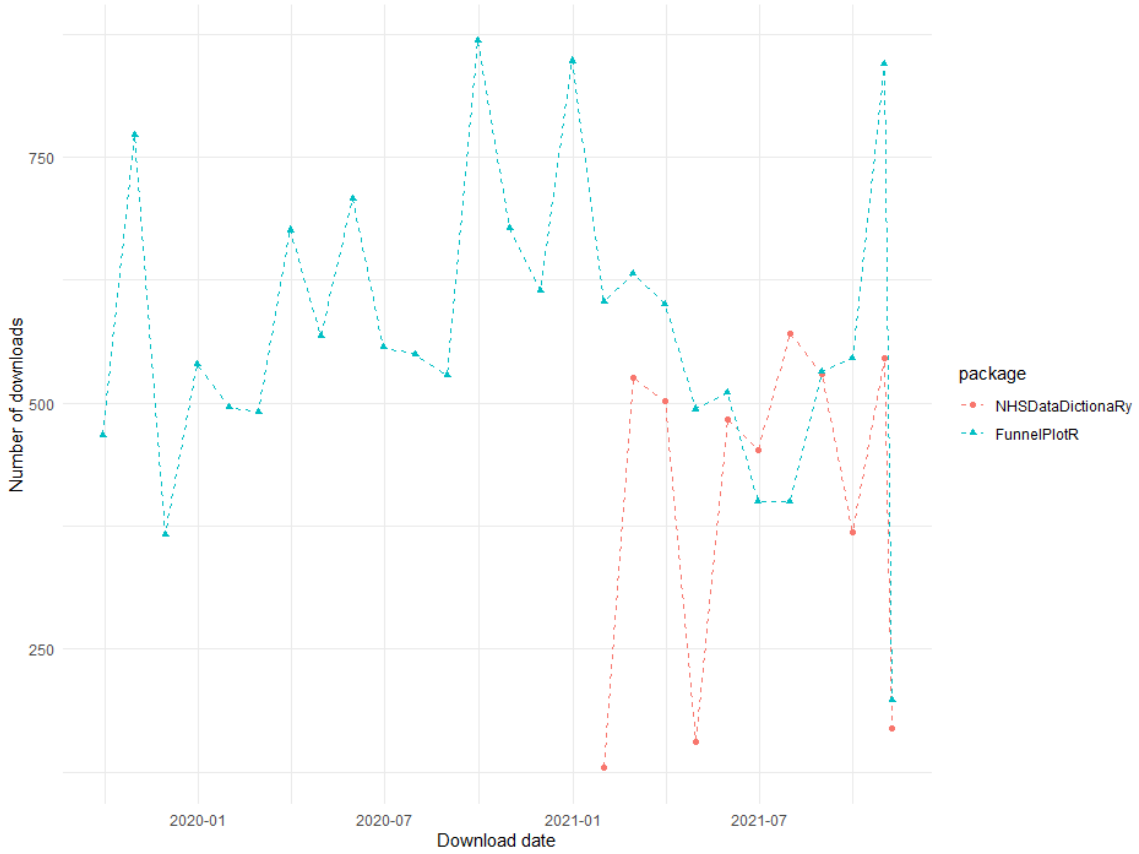
- Name, organisation, title and summary of proposal
- Why you think it is a good candidate for an NHS-R funded package?
- What will be required to develop the solution to be released on CRAN
- Solutions released with Open Code and an appropriate licence https://choosealicense.com/
- Work estimate and days to develop solutions – normally capped at 15 days max
- Dependencies to deliver, such as people, resource, etc.



Process of getting package approval

Submission of form → Technical Advisory Group Rubber Stamps → Notification sent

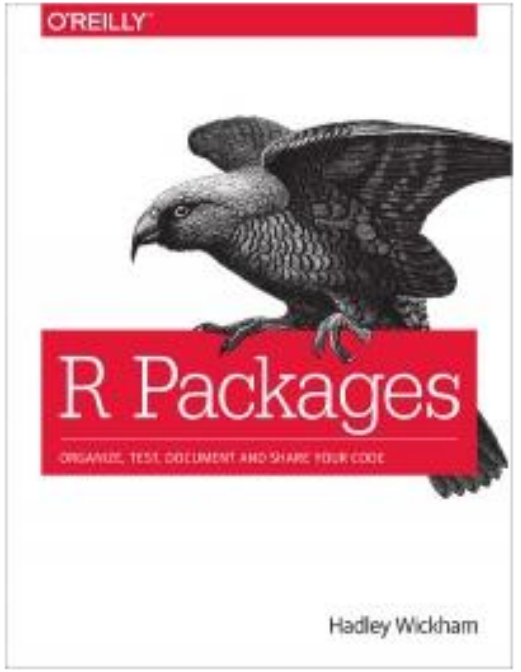
How we track our solutions, in R of course…

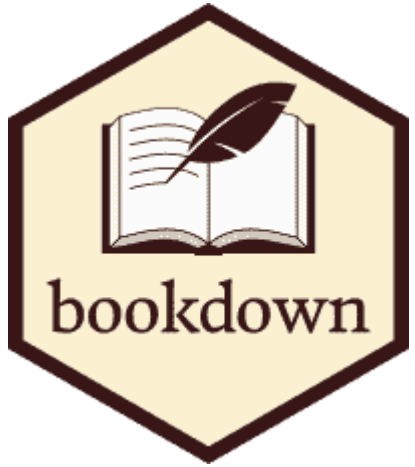



```r
#Load these libraries
library(ggplot2)
library(dlstats)
library(tibble)

#Create the wrapper function
package_trackeR <- function(packages){
  #Create the downloads for the package
  dl <- dlstats::cran_stats(c(packages))
  #Create the plot
  plot <- ggplot(dl,
                 aes(end, downloads, group=package)) +
    geom_line(aes(color=package),linetype="dashed") +
    geom_point(aes(shape=package, color=package)) +
    theme_minimal()
  plot <- plot + xlab("Download date") +
    ylab("Number of downloads")
  #Create a list for multiple returns
  returns_list <- list("download_df"=as_tibble(dl),
                       "downloads_to_date"=sum(dl$downloads),
                       "downloads_plot"=plot)

  return(returns_list)
}

#Call the new function
package_trackeR(c("NHSDataDictionaRy", "FunnelPlotR"))
```

Good references for getting started with package development

- Without a doubt the best reference for building R packages: https://r-pkgs.org/
- Why and how to build an R package: https://www.youtube.com/watch?v=qmTaAIEXxSQ – Chris Mainey's webinar for NHS-R community
- Building R packages: https://bookdown.org/rdpeng/RProgDA/building-r-packages.html
- Come along and ask the team on Slack to contribute – this is how the NHS-R plotthedots and NHSRdatasets packages arose





Training as a solution

- Training started when NHS-R Community started, in 2018, with the introduction to R and R Studio. It was a 3 day workshop course that was delivered in-person. That course was then passed onto a train the trainer course for people around the community to train people in their own areas and, hopefully, train others who could travel to them.
- The course has now been developed from pdf slides to the more accessible and version controlled {xaringan} slides. Some have also been updated on more recent graph examples and an additional module for SQL connections. These are hosted on GitHub for people to use as slides and the code that generates those slides.

Training as a solution

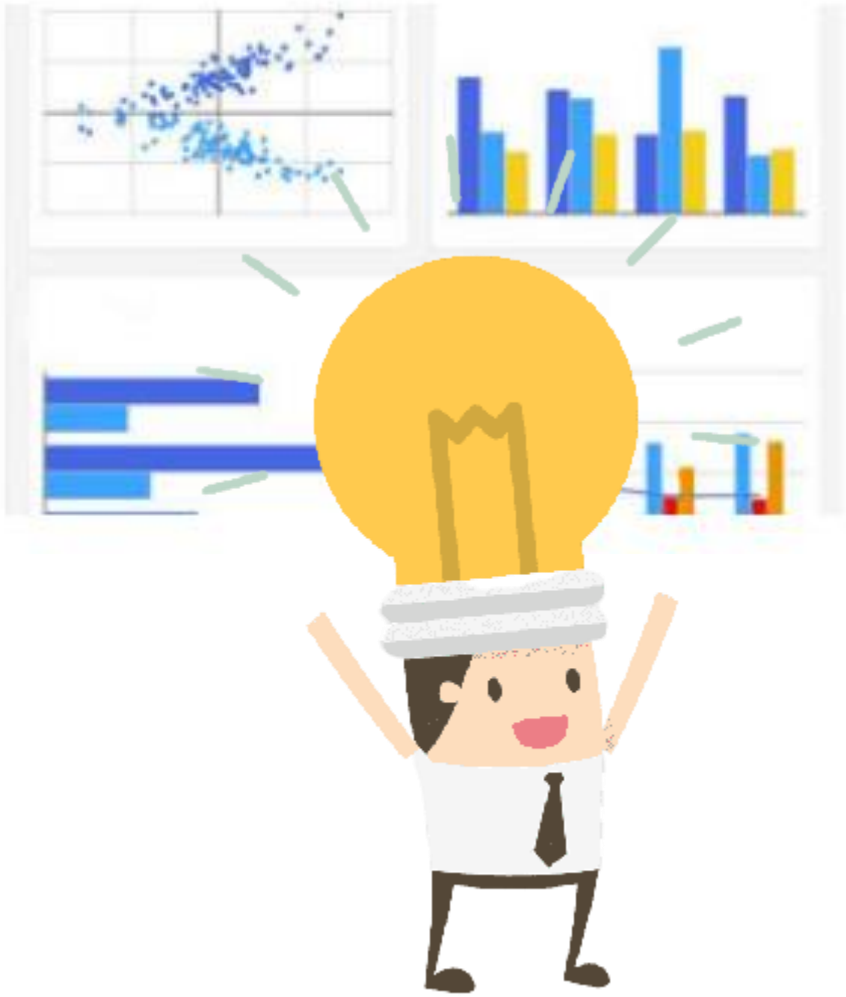
- The future of the training provision will be a development of the introduction to ~~R and R Studi~~o course into a package {NHSRtraining} which can complement, reinforce or stand alone to the delivered training. We've also had Shiny training developed and delivered to the community and finally an Rmarkdown workshop was developed and first delivered at this year's conference. Both Shiny and Rmarkdown are hoped to be delivered by other members of the community using Train the Trainer type workshops.
- Training is integral to what we can do as a community as people are at varying levels of R knowledge who can benefit from the training or who can improve their own learning by delivering the courses. R is about collaboration and community and training underpins this. We connect with each other, build those relationships and learn.

NHS-R package and solution mentorship

Hexitime

NHS-R COMMUNITY

Join the R solution club!



"The best solutions are often simple, yet unexpected, and created by passionate and devoted R aficionados"