Frameworks for collaborative working: What is out there? And what might work?

Anthony J Hatswell

Delta Hat Limited, Nottingham

Department of Statistical Science, UCL

✉ ahatswell@deltahat.co.uk

Why me?

$\hat{\delta}$

- Background across multiple sectors (pharma, consulting) with a much more academic focus than most in the private sector
  - I understand the pressures each sector faces

- Involvement in project HERCULES
  - Hatswell AJ, Chandler F. Sharing is Caring: The Case for Company-Level Collaboration in Pharmacoeconomic Modelling. PharmacoEconomics. 2017 Aug;35(8):755–7

Topics I'll discuss – keeping it short

- Existing ways of collaborative working
  - How models have been developed, and what we can learn from them

- Model registries
  - Why does one not exist now, and why we have the *option* of creating one

- Maintaining the movement
  - How do we keep the pressure up?

- My suggestion

How have others collaborated on individual models? Abbreviated edition…

$\hat{\delta}$

- At the most basic level, there exist 'standard' models which groups can recreate, and are well documented in publications
  - The Birmingham Rheumatoid Arthritis Model (BRAM) and Sheffield Multiple Sclerosis model are good examples – data collection can then be standardised around the model health states

- Some groups go further, and work together under different arrangements to create models
  - The 'Mount Hood' diabetes group / IMS CORE diabetes model – groups 'buy in' and are a part of development, with a chance to use the model

- Some go further still, with fully open source models available to download
  - See Sullivan et al. (2016) & the IVI Rheumatoid Arthritis model (https://innovationvalueinitiative.github.io/IVI-RA/)

How might we, as the R CEA community, collaborate?

$\hat{\delta}$

- Do we want to try and promote inputs being standardised?
  - Think *flexsurv* and other packages, so we have consistency in reporting
  - Moving between programs can be a horror show at present due to different implementations of common functions

- Perhaps we want to go further, and have a standardised way of working
  - *bcea* would do this, but is not the only way
  - For example good quality *ggplot2* code snippets could be shared

- Making models available?
  - There is also the option for models to be open source
  - Being practical, this just won't work as a default option with many stakeholders
  - Even if they are available, how do we do this? Dedicated website vs ad hoc hosting vs attachment to journal article?

Model registration / registry

- This idea has been around for as long as I have, but unsurprisingly has never come about
  - It recently was raised against in a Pharmacoeconomics editorial (Sampson & Wrightson, 2017) – this reflects an ongoing level of interest

- In practice, it doesn't look like happening in general any time soon
  - The low barrier to entry, and burden / lack of benefit to using one are prohibitive, plus also, who will set it up?
  - I think it is safe to say we can plan for a future without this being a standard

Team work makes the dream work

$\hat{\delta}$

- If we all have a nice day out, then go home, the day will have been wasted

- It would be nice to get a broad agreement about what next, and a plan of action

- The Mount Hood meetings work because they are regular
  - Could we convert this in to a mini (yearly) conference/workshop?
  - Also a chance to exhibit best practice?

- In the room are probably 80% of the people using R in this way
  - Before it proliferates, we have a chance to set out a framework which others will need to work in

My thoughts

- We have a chance to try and do better than the ad hoc information available on Excel (and other) models

- R is more transparent, and more easily shared than Excel (or appears to be for now)

- We could set up a registry for publicly reported models, with links to posters/publications, and source code if available
  - This would help promote existing work, cut duplication, and yet keep everyone onside
  - Think the Tufts utility registry
  - A wiki of standard code snippets would also save us all a lot of time: pretty GGplots, etc.

- This would give us a central resource to use and promote the use of R in this context, and accommodate everyone
  - If you want to share your model, it can be linked to, if not, at least others are aware it exists and can look at the publication to recreate it if they so desire

Idea:

$\hat{\delta}$

Author	Disease area	Link to poster(s)	Link to publication	Link to source code
Sullivan et al.	Chronic pain		Link	Link
Incerti & Janssen	Rheumatoid arthritis	Link		Link
Davies et al.	Osteoporosis		Link	Link
…				

Over to discussion

$\hat{\delta}$

References

- Hatswell AJ, Chandler F. Sharing is Caring: The Case for Company-Level Collaboration in Pharmacoeconomic Modelling. PharmacoEconomics. 2017 Aug;35(8):755–7

- Sampson CJ, Wrightson T. Model Registration: A Call to Action. PharmacoEconomics - Open. 2017 Jun 1;1(2):73–7.

- Sullivan W, Hirst M, Beard S, Gladwell D, Fagnani F, López Bastida J, et al. Economic evaluation in chronic pain: a systematic review and de novo flexible economic model. Eur J Health Econ HEPAC Health Econ Prev Care. 2016 Jul;17(6):755–70.