R-HTA in LMICs

Increasing accessibility to R for HTA in LMICs

R-HTA: a brief background

- [R-HTA](#) is an consortium focused on popularising the use of R for health economics and health technology assessment (HTA)
- The main body of R-HTA includes members primarily from the Americas and UK, who have diverse experience in government (including [NICE](#) in the UK), academia, and industry
- The aims of R-HTA, in general, are to:
    - Provide discussion on the many R [packages](#) available to HTA analysts;
    - Assist users to get the most out of R for cost-effectiveness analysis; and
    - Host [presentations](#) and [public discussions](#) to facilitate the development of R for HTA

- **'R-HTA in LMICs' is the LMIC-focused chapter of this consortium that aims to introduce and showcase the strengths of R specifically to LMIC analysts and health care institutions**

The Problem: why an LMIC chapter?

- Microsoft Excel and TreeAge remain popular software for HTA modelling, especially in LMICs.
    - Many standard software used for HTA and health economics require costly subscriptions
        - [R is a free](), open source software - an obvious benefit in LMICs
- Because LMICs are moving towards the principles of Universal Health Coverage (UHC) there will be an increased demand for complex HTA methodology, especially in oncology and other rare diseases
    - This will make the need for more efficient and comprehensive software for HTA within LMICs gradually more necessary
- Most LMIC institutions do not offer in-depth HTA tutorials in R
    - There is a need to provide accessible workshops that showcase the strengths of R while also providing online tutorial and coding resources for LMIC analysts

But why R?

- ***R scales efficiently***

  - Especially true when an HTA model becomes increasingly complex compared to other commonly used software

- ***R has an established user-base***

  - There are several health economics packages which make coding in R more user-friendly:

    - BCEA, hesim, heemod, and dampack

- ***R ensures reproducibility***

  - Models can easily and safely be hosted and shared via services such as Github

  - Using 'version control', updates do not 'break' models

  - With RMarkdown and Shiny, analysts can deliver transparent, reproducible reports and interactive models
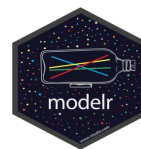
Our Vision and Value Proposition

The **aim** of the *LMIC chapter* is to bridge the gap in the use of R software among HTA analysts in LMICs

How?

- By hosting both presentation-focused and tutorial-focused R workshops
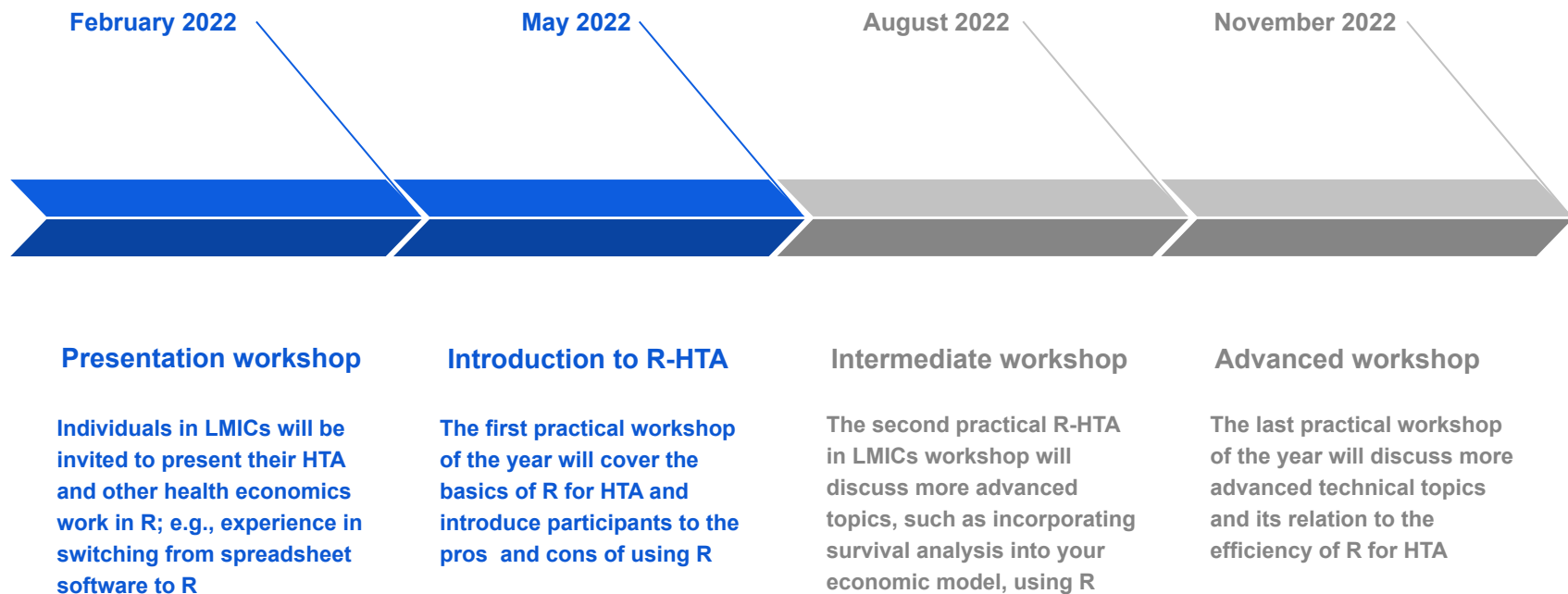
Short term:

- Host R-HTA in LMICs events and encourage LMIC Masters and PhD students at universities and members of other partnership organisations to present their R related HTA work

Long term:

- Introductory, intermediate and advanced workshops, applied within an LMIC context, will focus on in-depth topics, for example: R-HTA models in interactive formats using Shiny (click here for details)

Timeline

4 workshops *will be held on an annual basis, split by a quarterly cycle*

February 2022

May 2022

August 2022

November 2022

Presentation workshop

Individuals in LMICs will be invited to present their HTA and other health economics work in R; e.g., experience in switching from spreadsheet software to R

Introduction to R-HTA

The first practical workshop of the year will cover the basics of R for HTA and introduce participants to the pros and cons of using R

Intermediate workshop

The second practical R-HTA in LMICs workshop will discuss more advanced topics, such as incorporating survival analysis into your economic model, using R

Advanced workshop

The last practical workshop of the year will discuss more advanced technical topics and its relation to the efficiency of R for HTA

Target Market

Who do we want to reach?

- HTA/Health Economics/Biostatistics students in LMICs
    - E.g., HTA analysts as well as Masters and PhD students in LMIC institutions
- Universal Healthcare Coverage committees
    - E.g., Health Technology Assessment units, National Health Insurance
- Healthcare insurers
    - E.g., Medscheme, Discovery Health Insurance (in South Africa); Government Employees Medical Scheme (GEMS)
- Pharmaceutical companies operating in LMICs
- Individuals from *The Professional Society for Health Economics and Outcomes Research* (ISPOR) LMIC chapters

Topic areas for February

- ***Some suggested topics for the presentation segment:***

    - Covid-19 related modelling using R

    - Translation of model built in Excel into R

    - First time experiences with R

    - Useful [frameworks](#) for R-HTA modelling in LMICs

    - Expected difficulties in making R more accessible to LMIC analysts (potential panel discussion)

- ***Some expected topics for the tutorial segments:***

    - Integrating survival modelling and decision models in R

    - Presenting interactive HTA models using Shiny

    - Performing parameter sensitivity analysis in R

    - Using R for reproducibility: Creating secure, online repositories for your models and reports

The Team: R-HTA in LMICS

Founding Members of R-HTA in LMICs

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R-HTA Advisory Panel

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Ass. Prof. Fernando Alarid-Escudero, R-HTA; founding partner of DARTHgroup; Center for Research and Teaching in Economics (CIDE), MX

R for Health Technology Assessment

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