Supplemental material 5 corresponding to manuscript: "Cost-effectiveness Models for Alzheimer's disease and related dementias: IPECAD Modelling Workshop Cross Comparison Challenge". See www.ipecad.org.

Comparison of Cost-Effectiveness/Disease Progression (Health Economic) Models in Alzheimer's Disease

NETWORK Meeting, 2020

Aim

The key objective of this meeting is to systematically examine cross-model differences in predicted outcomes, with structured discussion in relation to model design choices and parameterization.

If possible, we intend to publish the meeting's findings: describe our methodology (common scenario, participant selection, short overview of participating models) and results (descriptive statistics on key/selected model outcomes), and discuss challenges, limitations and future steps.

Preparation to send in

1. **1 Sept. 2020:** Please send your model outcomes preferably in July/August, but at least before 1 Sept. 2020 (see work plan for details https://ipecadgroup.files.wordpress.com/2020/01/ipecad-model-cross-comparison-2020-01-28.pdf).
2. **14 Sept. 2020:** OPTIONAL/RECOMMENDED: As we have very limited time during the workshop itself, we strongly encourage you to record a presentation of your model that participants can review in advance. This way we can use the time available at the workshop for questions and clarifications. Please send a short (5-10 minute) pre-recorded presentation on your model. Please make sure to include:
    a. Description of the model population
    b. Key underlying data sources
    c. Basic model mechanics (e.g. disease progression, mortality, etc.)
    d. How treatment effect is implemented
    e. (please take into account key/primary outcomes stated below)
    f. (advise on recording options: see below the agenda some instructions)
3. **17 Sept. 2020:** Please send slides for your 'live' presentation to be given as scheduled in the agenda below. Feel free to highlight as you wish. Please use max. 8 minutes for presentation and min. 2 minutes for questions.

Please send all requested materials to ron.handels at maastrichtuniversity.nl

Preparation materials to review

14/15 Sept. 2020: The IPECAD modelling steering committee will share

1. all submitted model outcomes (table 1-3 from work plan)
2. all pre-recorded presentations
3. (link to materials shared by email)

Please make yourself familiar with this material as this will be the core material that will drive the discussions (except for the zip with model publications, this is meant only for your own consideration/reference).

Model overview

A: starting in MCI	B: starting in dementia
IPECAD (various)	Jutkowitz et al. (Brown)
SVEDEM (KI)	ADACE (Evidera)
KP (KI)	CEM (Eli Lilly)
FEM (USC)	CPEC (LSE)
ADACE (Evidera)	
Herring et al. (RTI-HS)	
BASQDEM (Osakidetza)	
MISCAN (Erasmus MC)	
Davis et al. (ME)	
CPEC (LSE)	

Selected key/priority outcomes for comparison and discussion:

1. Life expectancy
    a. Mean **life expectancy** in control strategy over 10-year time horizon.
    b. **Proportion dead** each year in control strategy over 20-year time horizon.
2. Time in MCI/mild-dementia
    a. Mean **time in MCI** (scenario A) **or mild dementia** (scenario B) in control strategy over 10-year time horizon.
    b. **Proportion in MCI** (scenario A) **or mild dementia** (scenario B) each year in control strategy over 20-year time horizon.
3. **Differences in above 4 outcomes** between control and intervention strategy.

Starting – end time

- Afternoon (time zone = +2 Central Europe) around 15:00 – 18:30h
- Afternoon (time zone = +1 UK) around 14:00 – 17:30h
- Morning (time zone = -4 US east coast) around 09:00 – 12:30h
- Very early morning (time zone = -6 CA mid) around 07:00 – 10:30h
- Very early morning (time zone = -7 US west coast) around 06:00 – 09:30h

Agenda – day 1 (17 Sept. 2020)

Time (minutes)	*Topic*	*Presenter [chair] AG notes*
15:00-15.10	**Welcome**	**Bengt Winblad & Ron Handels**
15:10-15:20	**Cross-comparison results part A**	**Ron Handels**
15:20-16:10	**Overview of models in part A**	**[Anders Wimo]**
	IPECAD (UoE/KI/UM/QR)	Colin Green
	Herring et al. (RTI-HS)	Will Herring
	ADACE (Evidera)	Ali Tafazzoli
	Davis et al. (ME)	Scott Johnson
	CPEC (LSE)	Robert Anderson
16:10-16:20	**Clarifications**	**[Anders Wimo]**
16:20-16:40	**Break**	
16:40-17:30	**Overview of models in part A (continue)**	**[Andreas Karlsson]**
	SVEDEM (KI)	Anders Wimo
	KP (KI)	Anders Wimo
	FEM (USC)	Bryan Tysinger
	BASQDEM (Osakidetza)	Javier Mar
	MISCAN (Erasmus MC)	Chiara Bruck
17:30-17:40	**Clarifications**	**[Andreas Karlsson]**
17:40-17:50	**Break**	
17:50-18:20	**Discussion on prior presentations on benchmarking process and results** 1. How did you manage applying the reference case? 2. Results: ○ How do you interpret the variation in the key/priority outcomes (small/large)? ○ What are the strongest drivers of this variation (please focus on design choices and parameterization e.g. population, setting, mortality, disease progression, treatment operationalization, model assumptions)? *Feel free to simultaneously respond in the chat.*	**[Ron Handels & Linus Jönsson]**
18:20-18:30	**Summary & closing**	**Colin Green & Bengt Winblad**
	IPECAD Team available over time period (30 mins) to speak individually to any participants on individual basis	

Agenda – day 2 (18 Sept. 2020)

Time (minutes)	*Topic*	*Person [chair] AK notes*
15:00-15:10	**Welcome back & recap yesterday**	**Linus Jönsson & Colin Green**
15:10-15:20	**Cross-comparison results part B**	**Ron Handels**
15:20-16:00	**Overview of models in part B**	**[Ron Handels]**
10	Jutkowitz et al. (Brown)	Eric Jutkowitz
10	CEM (Eli Lilly)	Mark Belger
10	ADACE (Evidera)	Ali Tafazzoli
10	CPEC (LSE)	Robert Anderson
16:00-16:30	**Discussion** (same questions as previous discussion)	**[Colin Green & Anders Gustavsson]**
16:30-16:40	**Break**	
16:40-17:20	**Break-out session**	[IPECAD modelling steering]
16:40-17:00	Discuss in 5 groups of 4 persons 1. What steps to take/prioritize to better understand the causes of cross-model variation? 2. What uniformity/standardization in inputs, assumptions and reported outcomes by models would you suggest? 3. What evidence development is needed to implement trial effectiveness into a model? 4. Future steps: what should be done for next year's workshop? *Please summarize your findings in the chat (supported by IPECAD modelling steering member).*	
17:00-17:20	Summary from break-out session and overall discussion (all participants)	Linus Jönsson & Anders Gustavsson
17:20-17:35	**Next steps & actions**	**Ron Handels**
17:35-17:45	**Closing**	**Bengt Winblad**
17:45-18:05	**(Optional) Availability for participants for individual communication**	
20	**(Optional) IPECAD Team available (30 mins) to speak individually to any participants on individual basis**	

You should have received a link to our shared folder where you can upload your presentations as well as any other supporting documentation you would like to share. If you have trouble accessing the folder please let us know.

Attendees

First name	Last name	Organization	Country	Model name
Colin	Green	University of Exeter	UK	IPECAD
Ron	Handels	Maastricht University; Karolinska Institutet	NL	IPECAD
Linus	Jönsson	Karolinska Institutet	SE	IPECAD
Anders	Gustavsson	QuantifyResearch; Karolinska Institutet	SE	IPECAD
Anders	Wimo	Karolinska Institutet	SE	SVEDEM
Anders	Sköldunger	Karolinska Institutet	SE	KP
Bengt	Winblad	Karolinska Institutet	SE	IPECAD
Andreas	Karlsson	Karolinska Institutet	SE	IPECAD
Eldon	Spackman	University of Calgary	CA	n/a
Eric	Jutkowitz	Brown	US	Jutkowitz et al.
Mauricio	Lopez Mendez	Brown	US	Jutkowitz et al.
Peter	Shewmaker	Brown	US	Jutkowitz et al.
Jakub	Hlávka	University of Southern California	US	FEM
Bryan	Tysinger	University of Southern California	US	FEM
Pei-Jung	Lin	Tufts Medical Center	US	n/a
Will	Herring	RTI Health Solutions	US	Herring et al.
Jorgen	Moller	Evidera	UK / US	ADACE
Ali	Tafazzoli	Evidera	UK / US	ADACE
Mark	Belger	Eli Lilly	UK	CEM
Michael	Happich	Eli Lilly	DE	CEM
Javier	Mar	Basque Health Service	ES	BASQDEM
Myriam	Soto-Gordoa	Mondragon Unibertsitatea	ES	BASQDEM
Inge	de Kok	Erasmus MC	NL	MISCAN
Chiara	Brück	Erasmus MC	NL	MISCAN
Matthew	Davis	Medicus Economics	US	Davis et al.
Scott	Johnson	Medicus Economics	US	Davis et al.
Robert	Espinosa	Medicus Economics	US	Davis et al.
Robert	Anderson	London School of Economics	UK	CPEC
Raphael	Wittenberg	London School of Economics	UK	CPEC