

With the support of



Developed by



Real World Evidence and Alzheimer's Disease

AE Conference, October 2019

www.roadmap-alzheimer.org

Industrial consortium



Public stakeholders



Public consortium

Observational/cohorts
Study execution
Outcomes research

Modelling for:
(1) natural history of disease
(2) health economics

Data management
Data integration
Informatics, statistics

NICE National Institute for Health and Care Excellence

EMA-
NICE/HTA/payers
Qualification Pilot
use of RWE in AD



C B G
M E B
Medicines Evaluation Board

National/Regional
Health Authorities



Dementias Platform UK
Medical Research Council



Universiteit Utrecht



UNIVERSITY OF COPENHAGEN



UNIVERSITY OF GOTHENBURG

Project Management

SYNAPSE



Associated Data Providers

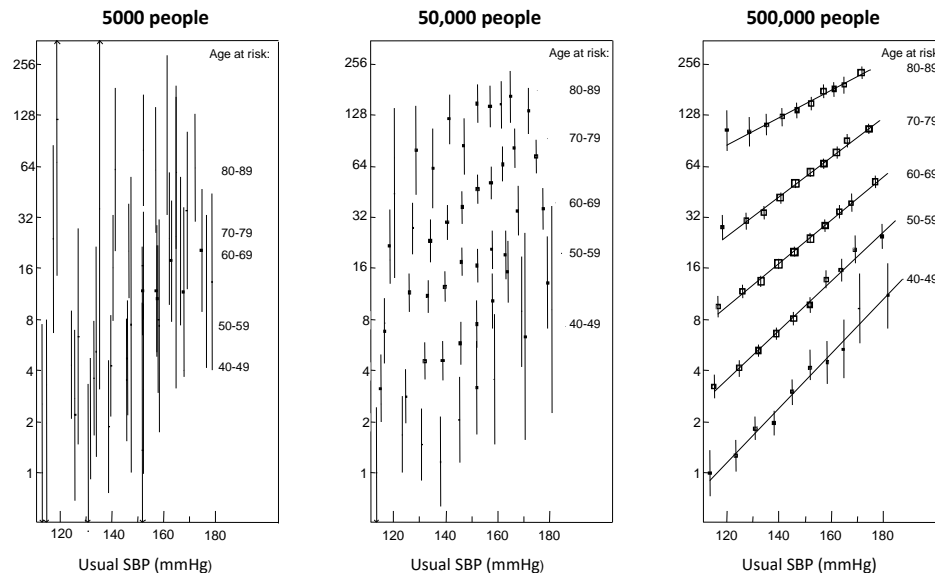


IMI-related projects

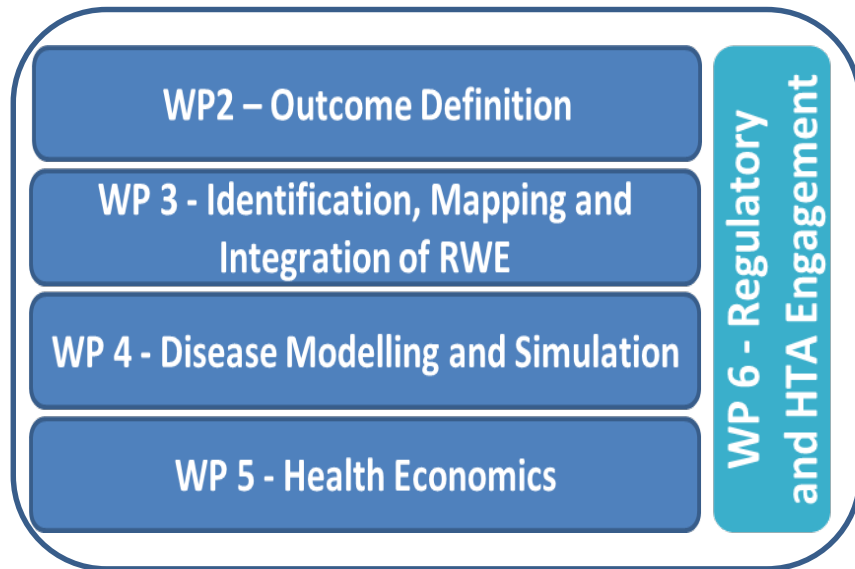


Associated Data Providers

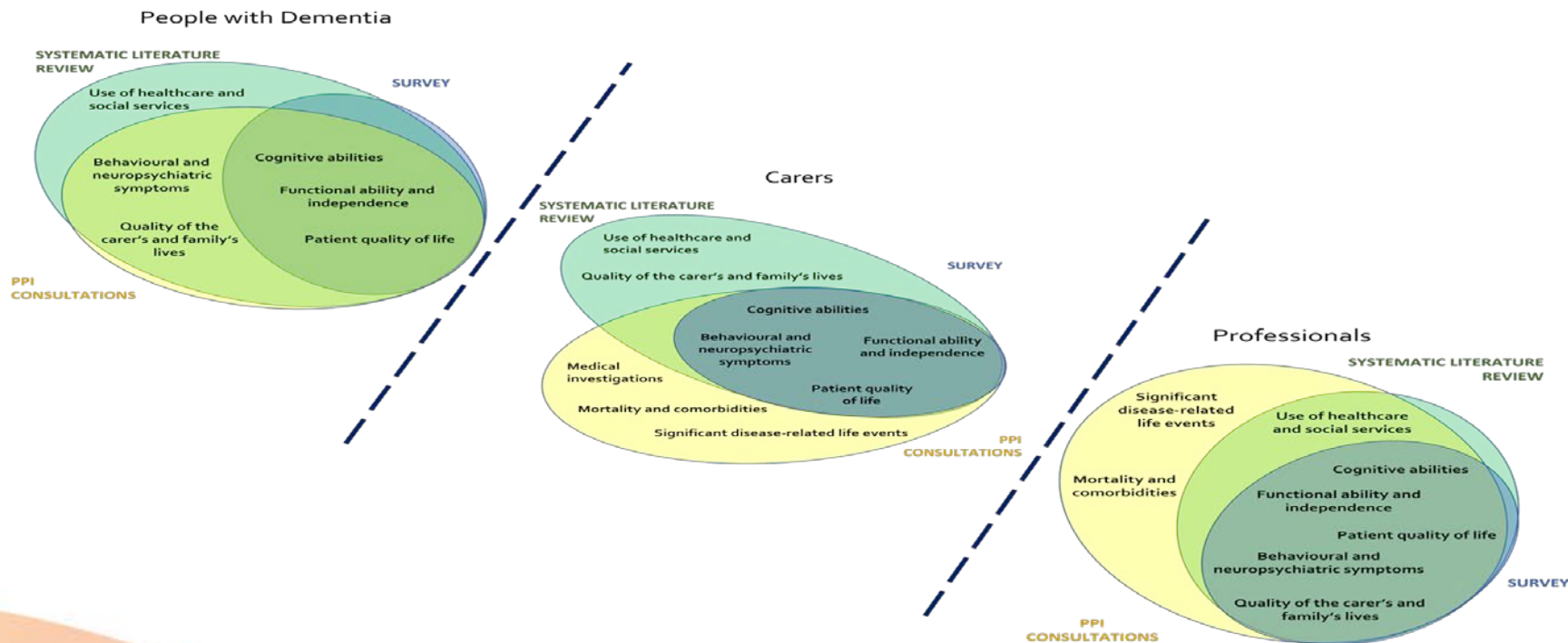
The precision medicine challenge



- Develop a natural history model across disease stages
- Develop appropriate health economic and budget impact models
- Set new standards for the collation and evaluation of RWE to inform decisions



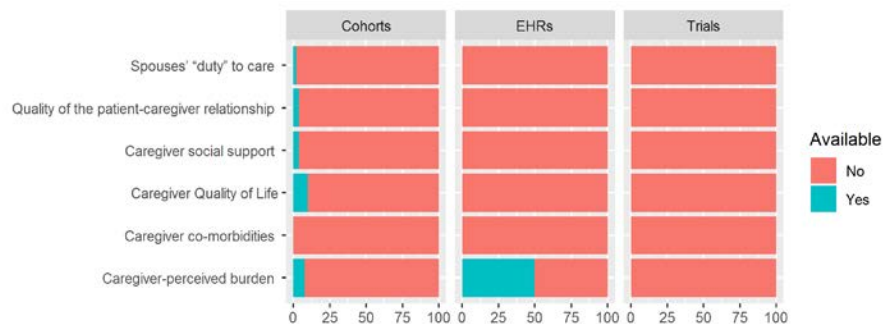
■ D2.3 Stakeholder generated lists of priority outcomes



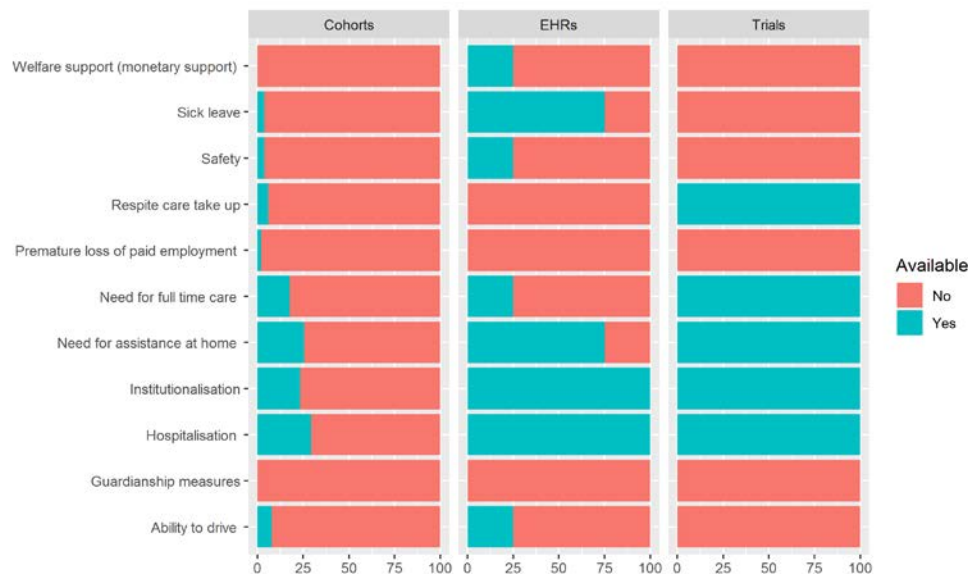
D2.5 gap analysis

Example outputs: Challenging to obtain

Quality of carer's and family's lives

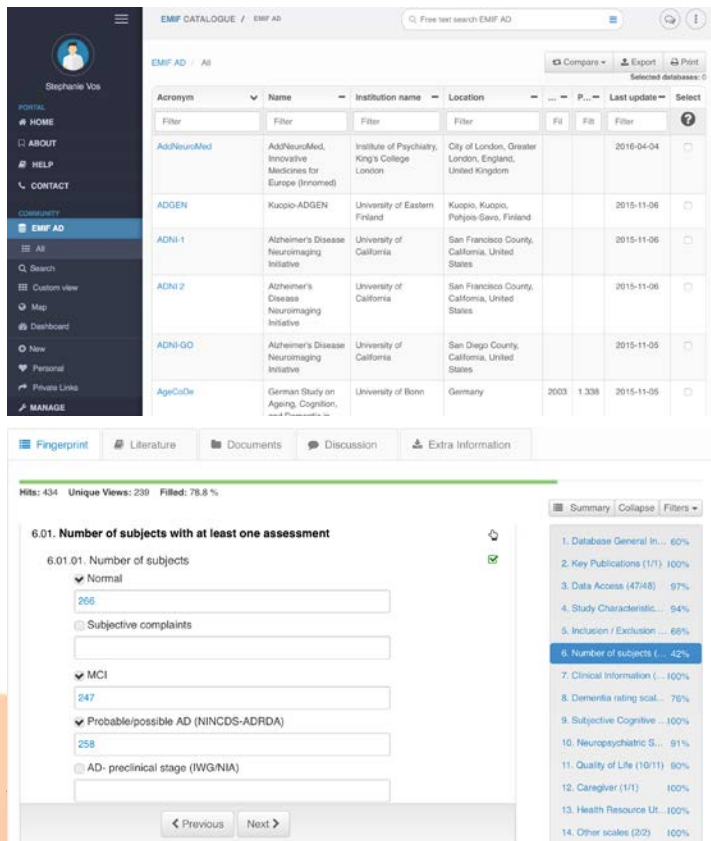


Significant disease related life events



EMIF-AD Catalogue including cohort meta data

Data analysis tools: Transmart, Switchbox



EMIF-AD Catalogue

Free text search EMIF AD

Acronym	Name	Institution name	Location	P...	Last update	Select
AdiNeuroMed	AdiNeuroMed, Innovative Medicines for Europe (InnovMed)	Institute of Psychiatry, King's College London	City of London, Greater London, England, United Kingdom	File	2016-04-04	
ADGEN	Kuopio-ADGEN	University of Eastern Finland	Kuopio, Kuopio, Pohjois-Savo, Finland	File	2015-11-06	
ADNI-1	Alzheimer's Disease Neuroimaging Initiative	University of California	San Francisco County, California, United States	File	2015-11-06	
ADNI-2	Alzheimer's Disease Neuroimaging Initiative	University of California	San Francisco County, California, United States	File	2015-11-06	
ADNI-GO	Alzheimer's Disease Neuroimaging Initiative	University of California	San Diego County, California, United States	File	2015-11-05	
AgeCoDe	German Study on Ageing, Cognition, and Emotion	University of Bonn	Germany	File	2003 1.338 2015-11-05	

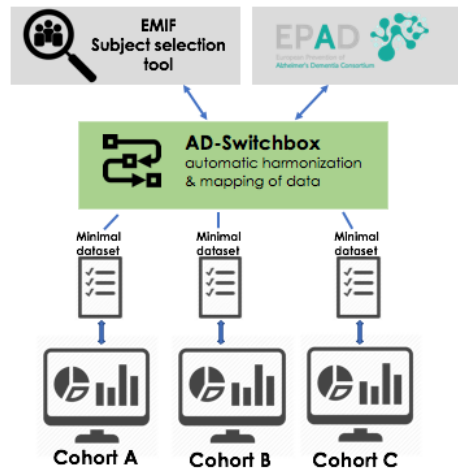
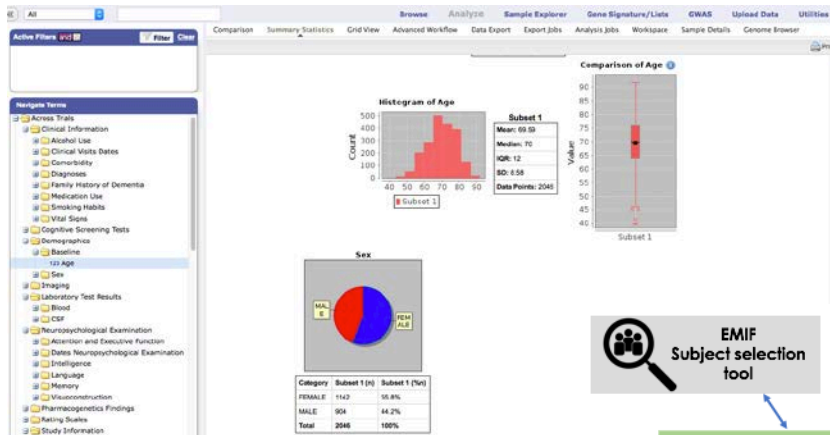
6.01. Number of subjects with at least one assessment

6.01.01. Number of subjects

- Normal: 266
- Subjective complaints: []
- MCI: 247
- Probable/possible AD (NINCDS-ADRDA): 258
- AD: preclinical stage (IWG/NIA): []

Summary | Collapse | Filters

- Database General In... 60%
- Key Publications (1/1) 100%
- Data Access (47/48) 97%
- Study Characteristic... 94%
- Inclusion / Exclusion ... 69%
- Number of subjects ... 42%**
- Clinical Information (...) 100%
- Dementia rating scal... 79%
- Subjective Cognitive ... 100%
- Neuropsychiatric S... 91%
- Quality of Life (10/11) 90%
- Caregiver (1/1) 100%
- Health Resource Ut... 100%
- Other scales (2/2) 100%



ing from the Innovative Medicines Initiative 2 Joint Undertaking under grant agreement No 101019719. The Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme.

Cohort Matrix

Use our Cohort Matrix to quickly scan and compare what types of data are available from our cohorts. For more detailed information about our cohorts, please visit the Cohort Directory.

- Cohort Directory
- Data Availability
- Apply for Data Access

You can filter by:

- Clicking on a column header to refine the matrix down to only cohorts that have that value.
- Clicking on a cohort name to only display cohorts that also have the same data present.

Reset the filters to start again.

[View filter instructions](#)

	Coordinated ID	Start Date	Age at Recruitment	Sex	Addressed alive	Genetic/Genomic	Family History	Early Life History	Health Status	Reproductive History	Psychological
The Alzheimer's Disease Monitoring Study	15,400	2004	57+	50%	✓	✓	✓	✓	✓	✓	✓
Advised memory for Phenotyping Large Study Research	80	2013	60+	50%	✓	✓	✓	✓	✓	✓	✓
Study for Scientific Research	3,200	2009	65+	50%	✓	✓	✓	✓	✓	✓	✓
Cambridge Centre for Ageing and Neuroscience	3,700	2010	18-87	50%	✓	✓	✓	✓	✓	✓	✓

Cohort Directory

Welcome to the DPUK Cohort Directory. Below you will find a list of cohorts representing a wide range of studies from across the UK. We will add to the list as cohorts are brought into the Platform.

These cohorts have been characterised and the comparison function provides a summary of the data that have been collected within that cohort. To compare cohorts, click on the tick box beside two or more cohorts and then scroll to the bottom of the table and click Compare.

To find a more detailed account of data that have been collected in the study, please click on the Cohort Name to see the Cohort Description. This view will also enable you to access supporting documents to further outline the methods, as well as publications arising from the study.

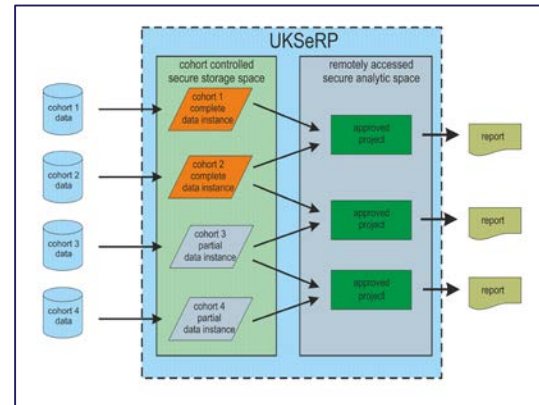
For a further overview and quick comparisons, please see our [cohort matrix](#).

ACRONYM	FULL NAME	INSTITUTION	SELECT FOR COMPARISON
SMC Amnol PET	Samaritans Medical Centre Amnol PET cohort	SAMARITANS MEDICAL CENTRE	<input type="checkbox"/>
TRACE HD	TRACE HD	University College London	<input type="checkbox"/>
UK Biobank	UK Biobank	UK Biobank	<input type="checkbox"/>
UCLH Medical	UCLH Medical	University College London	<input type="checkbox"/>

Showing 3 to 63 of 63 entries

[Compare](#)

- Cohort Matrix
- Data Availability
- Access Agreement
- Apply for Data Access
- GDPR Notice

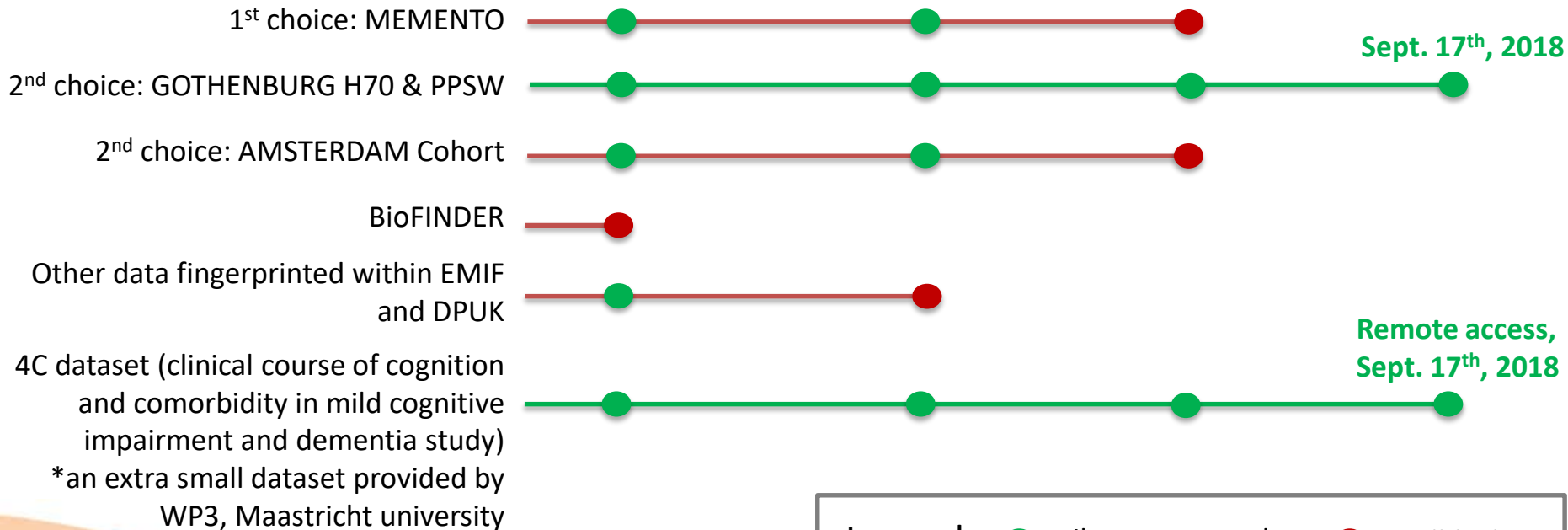


DPUK data platform: Meta data catalogue and data analyses platform

- Handels' MMSE model
 - Predict MMSE for incident AD dementia cases
 - Predictors: age, time since onset
- Eli Lilly's institutionalization model
 - Predict time to institutionalization for AD dementia cases
 - Predictors: MMSE, NPI, ADCS-ADL, spousal caregiver
- Novartis' presymptomatic model
 - Predict APCC and time to diagnosis of MCI or AD for cognitively normal patients
 - Predictors: age, sex, APCC, ApoE4, education

Despite extensive effort, data access remained the key roadblock

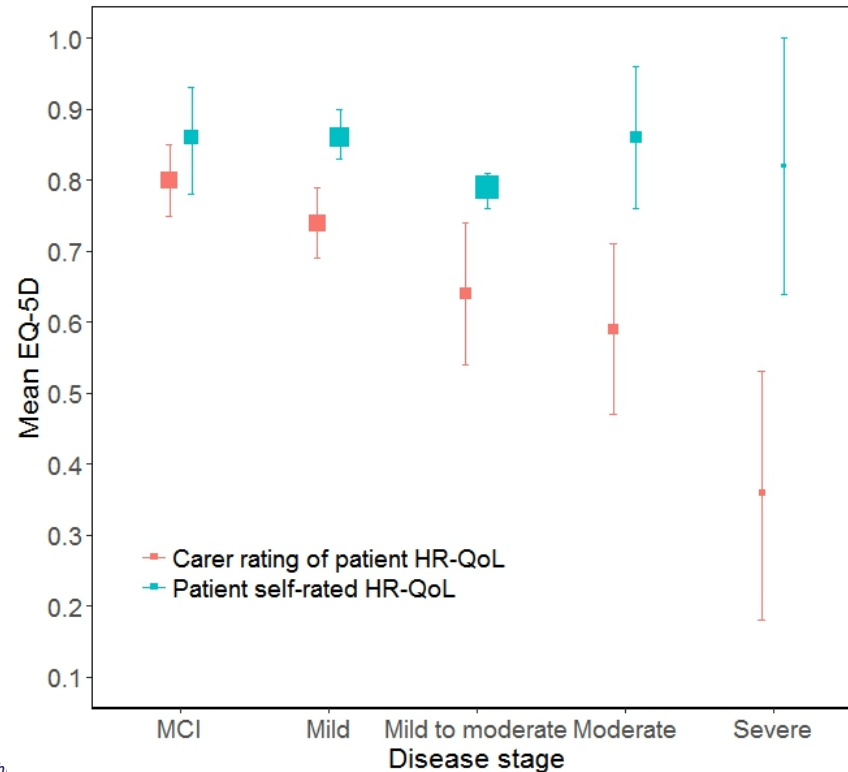
Milestones: Approached Fingerprinted Negotiated Accessed



Legend: ● milestone passed ● roadblock

SLR on HRQoL of people with pre-dementia or dementia

Meta-analysis of HRQoL measured using EQ-5D



This project has received support from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska Curie Grant Agreement No 101019718 (ROADMAP). This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA.

- Complexity:
 - Broad scope of interest:
 - full range of disease stages
 - Breadth and depth of data
 - EHRs, population/clinical cohorts, trials, wearables
 - Comprehensive range of stakeholders
 - Industry, HTA, academic, patients, carers, HCP

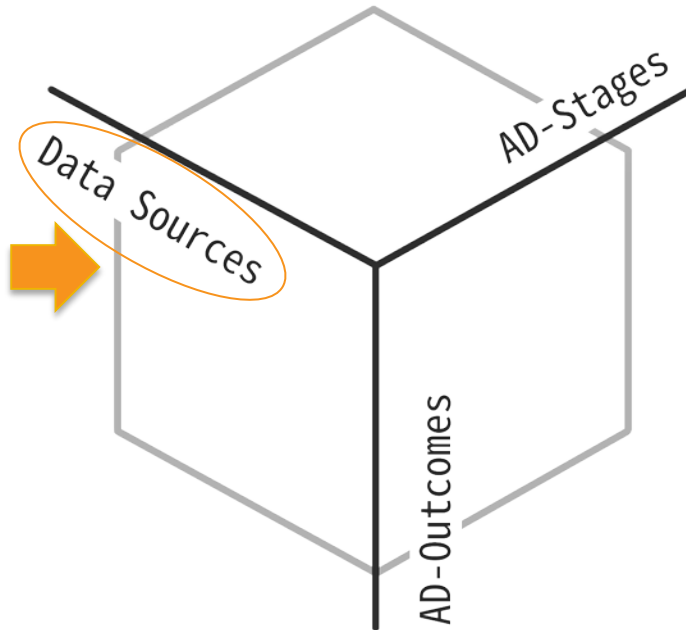
Data Cube

Axis: European (EU) Data sources

67 EU Data sources

Including:

- Clinical trials
- Electronic Health Records
- Cohorts



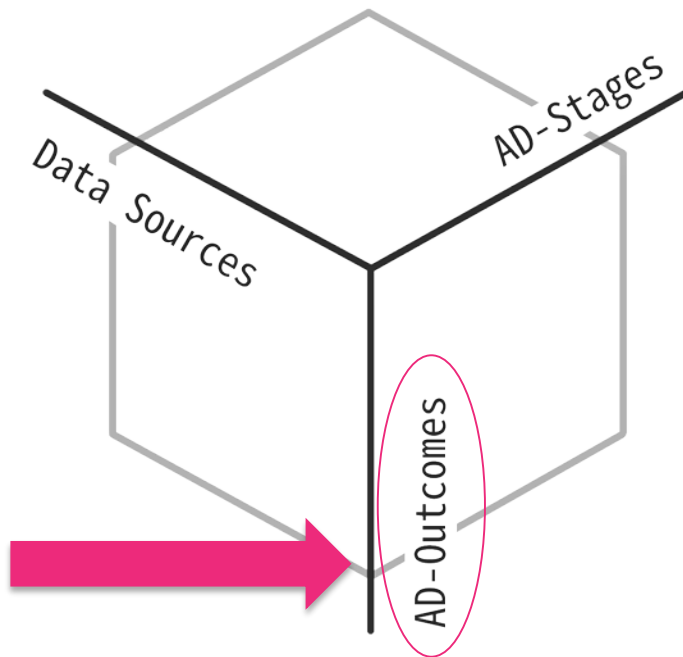
Data Cube

Axis: Alzheimer's disease (AD) outcomes

148 AD-outcomes

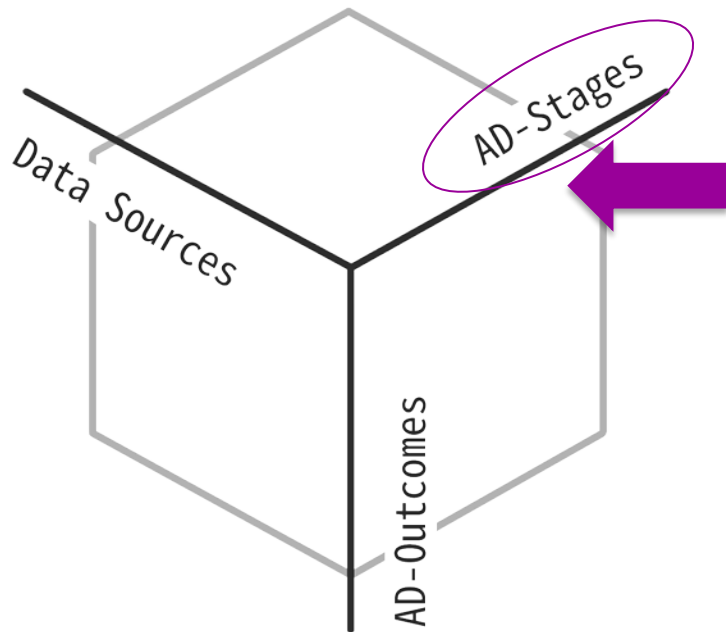
Gathered from:

- Literature Reviews (Pragmatic & Systematic)
- Consultation with working groups
- Survey shared among people with dementia, carers and health professionals
- Refined with feedback from data sources



Data Cube

Axis: AD-Stages



3 AD-Stages

defined:

- Mild Cognitive Impairment (MCI)
- Mild dementia
- Moderate to severe dementia

Sorted by data type



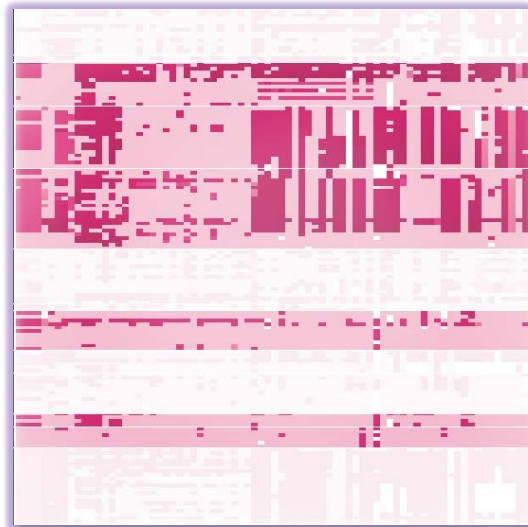
Sorted by country



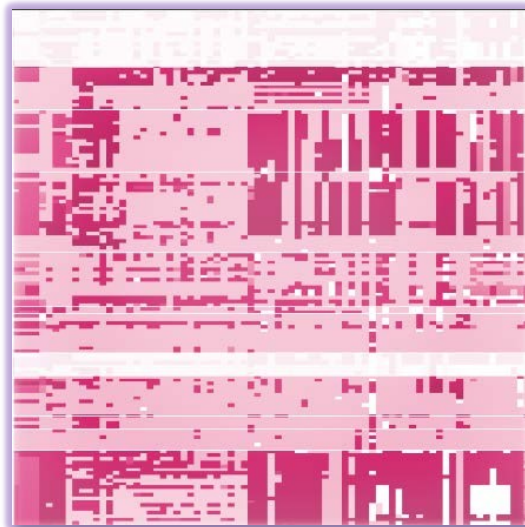
Data Cube

AD outcomes prioritisation per stakeholders

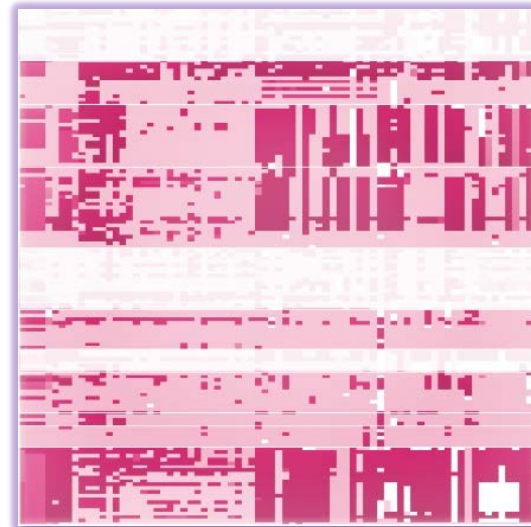
People with dementia



Carers



Healthcare professionals



Data Cube at the 6th GAM: Data Sources vs AD-Stages

AD Outcomes' Relevance within the AD-Stages

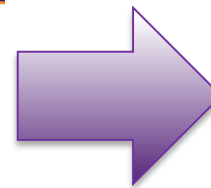
3 = ✓✓
2 = ✓
1 = --

AD-Outcomes availability within the Data Sources

5 = Yes, directly
4 = Yes, indirectly
3 = Yes, partially
2 = We can access to this information via other sources
1 = No
0 = "Empty"

ROADMAP LIST OF OUTCOMES - RELEVANCE OF OUTCOMES TO
DISEASE STAGE

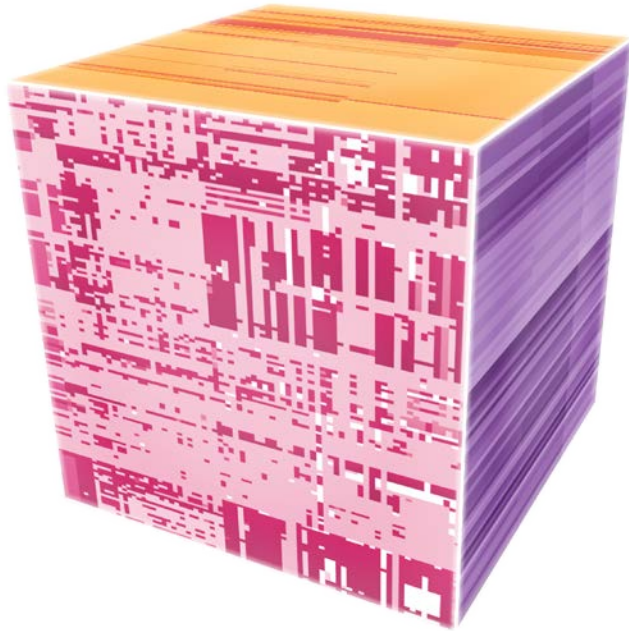
	Relevance provided by WP2			Availability	LFAN		
	MCI	Mild Deme	Moderate		MCI	Mild Deme	Moderate
	All evidence	All evidence	All evidence		All evidence	All evidence	All evidence
Subjective Memory Complaint	1	1	1	No	1	1	1
Subjective Cognitive Complaint	1	1	1	No	1	1	1
Mild Cognitive Impairment (MCI)	1	1	1	No	1	1	1
Amnesic MCI (aMCI)	1	1	1	No	1	1	1
Non-amnesic MCI (naMCI)	1	1	1	No	1	1	1
Dementia	1	1	1	No	1	1	1
Alzheimer's disease	1	1	1	Yes, directly	5	5	5
Prodromal AD (pAD)	1	1	1	No	1	1	1
Preclinical AD	1	1	1	No	1	1	1
Vascular dementia	1	1	1	No	1	1	1
Mixed dementia	1	1	1	No	1	1	1
Frontotemporal dementia	1	1	1	No	1	1	1
Dementia with Lewy bodies	1	1	1	No	1	1	1
Dementia in other diseases classified elsewhere	1	1	1	No	1	1	1
Staging severity of dementia	1	1	1	Yes, directly	5	5	5
Global improvement/stability/ decline	1	2	1	Yes, directly	5	10	5
Memory	3	3	1	Yes, indirect	4	12	4
Language and communication	3	2	1	Yes, indirect	4	12	4
Visuospatial ability	1	1	1	Yes, indirect	4	4	4
Attention/Executive functions	2	3	1	Yes, indirect	4	8	12
Intelligence	1	1	1	No	1	1	1
Getting lost in own home	1	1	2	No	1	1	2
Not recognising family	1	1	3	No	1	1	3



	MCI	Mild Dementia	Moderate Severe Dementia
ROADMAP			
LFAN	539	564	469
LFBC	539	564	469
LZAM	541	566	471
LZAN	541	566	471
IPCI	400	411	354
AUH	395	410	355
SIDIAP	552	571	484
SIDIGI	550	569	482
ReDeGi	344	357	305
CaPS	561	576	477
CFAS	556	579	500
CFASII	590	613	526
ELSA	638	649	530
ICICLE_PD	474	477	410
Whitehall_II	597	616	501
CamPaG			

Data Cube

Concept



ROADMAP's Interactive Data Cube is a 3D heat map assessment which allows the visualisation of the **landscape** on available Alzheimer's disease data in Europe, together with their **relevance** for different stages of the disease.

<https://datacube.roadmap-alzheimer.org>

Enhanced data collection: the importance of a controlled environment

- **Fit for purpose**
 - Population based at scale
 - Frequent cognitive assessment (before and after diagnosis)
 - Regulatory approved standard assessments
 - Outcomes: Research partners / Record linkage (Primary Care)
- **Depletibles ring-fenced for dementia**
 - Biosamples
 - Recruitment to early disease stage experimental studies
- **Cost effective technologies**
 - Remote assessment: information technology hub
 - Purpose driven (risk prediction, disease progression)
 - De-novo or enhancement of existing data