Driving policy to optimise care for people with Alzheimer's Disease in Europe today and tomorrow

A policy white paper on overcoming the human rights, societal, ethical and economic issues linked to the treatment of people with Alzheimer's Disease, their families and carers

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Introduction

This paper sets out a strategic vision for how **joint policy action** by the Alzheimer's Disease (AD), dementia and broader stakeholder community can deliver better care for people with AD, their families and their carers in Europe. It outlines clear priorities for change, supported by recommendations for specific policy actions, which, if implemented, would significantly improve the care for people living with AD and the experience of their families and carers across Europe by supporting more patient-focused and sustainable care.

The priorities for change and ideas for actions presented in this paper stem from the ***What if*** series of policy roundtables hosted in the European Parliament by members of the European Alzheimer's Alliance (EAA), involving major stakeholders in the AD and neurology space. More information about the *What if* series, including a list of stakeholders involved, is contained in Appendix 1. The White Paper is also informed by seminal pieces of work such as the European Brain Council's Value of Treatment study.[1]

Whilst the policy roundtables covered numerous aspects of care for people with AD and the issues faced by their families and carers, the discussion centered around ways in which stakeholders can work together to support EU and national level policy actions that address these issues and uphold the importance of the early detection and diagnosis of AD. The key areas for action and policy recommendations in this paper were agreed and developed by the collaborative parties to this paper and informed by the *What if* series of roundtable discussions. The term "collaborative parties" refers to those stakeholders who have contributed to the development of the white paper, endorse its content and support the policy recommendations captured in the document.

As we approach the **2019 European Elections**, the white paper and its policy recommendations provide a valuable resource to inform the health policy agenda and policy action on national and EU level.

1 European Brain Council. *Policy White Paper towards optimizing research and care for brain disorders.* Accessible at: **http://www.braincouncil.eu/wp-content/uploads/2017/06/EBC_white_policy_paper_DEF26072017_Low.pdf**

Supportive statements

MSD

For more than 10 years, MSD has been researching different ways to treat Alzheimer's Disease. In addition to our dedicated internal research efforts, we're driving innovation in collaboration with others. For instance, the company is a long-time member of the Alzheimer's Disease Neuroimaging Initiative (ADNI), a private-public partnership created to develop and characterize methods for the early detection and monitoring of Alzheimer's Disease.

Addressing the tremendous personal and public health impact of Alzheimer's Disease requires significant resources and attention. MSD is committed to being a part of the solution to help those living with Alzheimer's and their loved ones around the world. We're working to improve our understanding of the disease so we can create comprehensive solutions for patients that go beyond just medicines to developing better diagnostic tools and therapies, and ensuring that patients have access to the care they need. The company remains committed to developing novel therapies for the treatment of Alzheimer's and other neurodegenerative diseases.

The European Brain Council (EBC)

Endorses this white paper on Alzheimer's Disease (AD) and its key areas for actions and policy recommendations. AD is one of the largest public health crises facing Europe; yet in the face of this growing challenge, and despite AD and dementia being high on the health policy agenda at EU level and across Member States, there are still concerns that the current level of action is not sufficient. EBC thus emphasizes the fact that it is now time to challenge the status quo and refresh the European policy debate on Alzheimer's, come together to recognize the consequences of the burdens of AD in society and encourage multi-stakeholder-driven policy.

The European Federation of Neurological Associations (EFNA)

Endorses this comprehensive white paper on Alzheimer's Disease (AD). The issues highlighted here are relevant not just for AD but, in many cases, for neurological disorders more generally. Progress made in the field of AD, can and should be replicated for other neurological disorders where we are also faced with similar challenges from social, economic and ethical perspectives. With more than 1 in 3 people facing the prospect of living with a neurological disorder in their lifetime, and spiralling costs for healthcare systems globally – together we must work to tackle the impact and burden of these disorders on our societies. This paper sets out a clear map to be followed by policy-makers and decision-makers to lessen the burden of AD in Europe. Success here could create a path for other brain disorders to follow in the future – leading to a better quality of life for all neurology patients, their families and wider society.

VITO

It is envisioned that future treatments to slow or stop the progression of AD will be most effective when administered early in the disease. As recognised by this White Paper, continued efforts of the international community to develop sensitive techniques for patient screening and early diagnosis are necessitated. Innovations in the field of brain scanning, eye scanning, cerebrospinal and blood biomarkers are promising, but have to find their way to the clinic. One of the challenges ahead is to make the analyses part of a sustainable healthcare system in a patient-centered approach.

ASDM Consulting

A diagnosis of AD is a life-changing experience for the newly diagnosed persons and their families. Nevertheless, as reflected in this White Paper, a diagnosis made early in the development of the disease will empower the persons and families to adjust to their new life, seek and benefit from support and medical treatment as early as possible, engage in clinical trials and plan the future. It is imperative to seriously address the challenges of people directly affected by AD and their carers now, after the EU elections and the designation of a new European Commission. AD must be on the EU health, social and research agenda.

Professor Chris Gastmans
Professor of Medical Ethics, KU Leuven

This White Paper recognises the need for this ethical reflection and dialogue by clearly identifying the ethically sensitive issues in the care for people with Alzheimer's Disease.

Professor Adrian Ivanoiu
Professor of Neurology, UCLouvain

Alzheimer's Disease is common, scary and often misunderstood. More people today are asking for an early diagnosis because they want to stay in control of their lives and their future. This White Paper summarizes current knowledge about early diagnosis and its personal, societal and ethical implications. The aim is to empower people to take more control over their healthcare and lifestyle choices and open the way to personalized support to individuals following the diagnosis of AD.

Context for Alzheimer's care in Europe: State of play and key challenges

AD is one of the largest public health crises facing Europe. The numbers are striking – an estimated **10.5 million people** in the European Union (EU) have dementia, with AD being the underlying cause in approximately 70%, or 7.4 million, of these cases.[2] AD is the leading cause of dependency and disability in older adults and the problem will be further exacerbated by demographic trends. The EU population is ageing, the fertility rate decreasing, the dependency ratio rising: this brings additional challenges in the field of health and long-term care.[3]

There are significant **human rights and ethical issues** affecting people living with AD and dementia as well as societal issues resulting, among other things, from stigma and discrimination. Moreover, AD is an immense economic burden for health systems: today, the worldwide cost of dementia in Europe is over €251 billion with costs estimated to rise to €764 billion by 2030.[4]

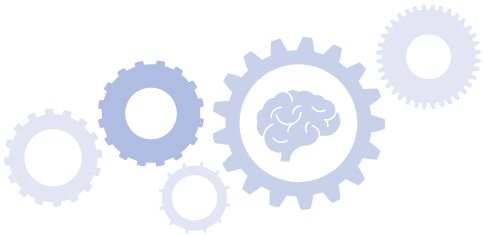
The **clinical challenge** posed by AD is also well documented. Scientists are still striving to develop an effective treatment which will address the underlying causes of AD or to reverse or, at least, slow down the symptoms. In 2018, 112 investigational medicines were being evaluated in total, 26 agents in 35 phase III clinical trials, 63 agents in 75 phase II clinical trials and 23 agents in 25 phase I clinical trials. 22% agents were symptomatic agents and 63% were disease-modifying treatments.[5] This offers hope that a treatment that is able to alter the pathology of AD will eventually be developed.

In the face of this growing challenge, and despite AD and dementia being high on the health policy agenda at EU level and across Member States, there are still concerns that the current level of preparedness and action is not sufficient. Notably, despite existing commitments across Europe, policy makers at a national and EU level are yet to take concrete policy steps to help find solutions to these challenges. These steps are needed in order to ensure that AD and dementia policies address the present-day human rights, societal, ethical, legal and economic issues that affect people with AD, their carers and society more broadly. In addition, policymakers must plan ahead to ensure that **health technology assessment, health systems, clinical policy and legal policy frameworks are adequately** prepared so that the arrival of a disease-modifying therapy for AD has optimal impact, i.e. can be given to the right patient at the right time, which in the case of AD, can be many years before the first symptoms appear.

AD and dementia care is subordinated to diagnosis. However, in clinical practice, **the diagnosis of AD is still occurring late** in the disease process,[6] when the symptoms become too difficult to cope with. It is now time for a paradigm shift from late diagnosis to early diagnosis. This is what MOPEAD (Models Of Patient Engagement in Alzheimer's Disease),[7] an IMI/EFPIA-funded project, is trying to do. Besides looking at the potential of innovative screening techniques, this project also looks at the ethical implications of early diagnosis of AD.[8]

2 Alzheimer's Disease International. World Alzheimer Report 2015. *The Global Impact of Dementia: An Analysis of Prevalence, Incidence, Cost and Trends.* Accessible at: **www.worldalzreport2015.org/downloads/world-alzheimer-report-2015.pdf** **3** European Commission, *The 2018 Ageing Report*, 2018, accessible at: **https://ec.europa.eu/info/sites/info/files/economy-finance/ip065_en.pdf** **4** Ibid. **5** Cummings, J et al (2018) – *Alzheimer's Disease drug development pipeline: 2018.* Alzheimer's & Dementia: Translational Research & Clinical Interventions, accessible at: **https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6021548/** **6** Global Action to Drive Innovation in Alzheimer's Disease and Other Dementias; OECD Science, Technology and Industry Policy Papers, No. 31, OECD Publishing, Paris **7** **www.mopead.eu** **8** MOPEAD (Models of Patient Engagement for Alzheimer's Disease) is an IMI-EFPIA funded project testing four patient engagement strategies to improve the early diagnosis of AD in five European countries (Germany, Slovenia, Spain, Sweden and the Netherlands). The project is exploring a new territory, where participants are pre-screened in ways that are rinnovative: with the 'Open House' ('testing in a Memory Clinic) and 'Citizen Science' (on-line screening tool) strategies, the individuals pro-actively engage in pre-screening and, if eligible and willing, are offered a diagnosis. In the 'Primary Care' and 'Tertiary Care' settings strategies (for people with Type 2 diabetes), where professionals identify individuals with a potential risk of developing AD and propose them a diagnosis if eligible and willing. These patient engagement strategies have called for reflection about possible ethical issues, especially because of the specific and unique aspect of the project design. **www.mopead.eu**

Key areas for action



Recognising the need to work together to address these challenges through policy, stakeholders from the AD and dementia community and policy environment have come together in three *What if* roundtable discussions in the European Parliament on 28 September 2017, 30 January 2018, and 25 September 2018.

The objectives of the roundtables were to:

- Challenge the status quo and refresh the European policy debate on the future of AD treatment and care, taking into account development at international level when relevant
- Generate new angles to connect AD with other policy fields such as human rights, ethics and the economy
- Bring together stakeholders in the AD policy environment to generate policy recommendations that are actionable on EU and national level

Three key priority areas for action emerged from the roundtable discussions. These being:

Ethics:
Overcoming the ethical challenges of early detection and diagnosis[i]

Medical science and our understanding of AD and dementia are progressing. Evolving biomarker research in particular has increased the likelihood of identifying lesions of AD type even at the asymptomatic stage – a period which may last some ten to fifteen years before the symptoms of AD become noticeable. Individuals with such lesions are at a greater risk of developing AD, although we cannot say with certainty that they will develop the disease. As this asymptomatic stage has become a major focus of research, the **potential benefits of early detection and diagnosis** have been thrust into the spotlight. Whilst this can be good news for patients, it leads to a number of important ethical questions that need to be considered by those active in the field of AD research and development as well as those living with AD in absence of a treatment.

There are also a number of questions on the need for clear policy guidance and solutions to address these issues.

i In this White Paper, early detection of AD is understood as the detection of biomarkers for AD at the asymptomatic stage. Early diagnosis of AD is a subsequent clinical decision which can only be made after exclusion of other possible causes of the cognitive impairment. However, we recognise that the validation of the clinical usefulness of these biomarkers is incomplete.

The right to dignity:
Overcoming the stigma, discrimination and inequalities faced by people with Alzheimer's Disease

AD is often a difficult diagnosis for the individuals affected and for their families. In addition to the uncertainty around how the disease might progress in the future, the lives of people with the condition and their carers are all too often marked by **debilitating stigma, discrimination and inequality in access to care and treatment** – all of which impact people's fundamental human rights. As a result, the affected individuals and their families often feel isolated and left alone with the diagnosis, further aggravating their declining health and quality of life.

The silver economy:
The socioeconomic impact of Alzheimer's Disease in Europe

The social and economic cost of AD has been well documented and currently amounts to some **€251 billion in Europe**.[9] Total costs on AD result from direct costs (e.g. money spent on diagnosis, follow-up or treatment) and indirect costs, which are harder to quantify and related to resources (ie. money and time) lost because of the disease.[10] Costs increase as AD grows in severity. Given demographic ageing and the overall number of people with AD continually rising until a cure or a treatment that slows down the disease is found, the costs of AD for healthcare systems and society in Europe are set to grow. This reflects a general trend of the increase in age-related expenditure from the past projected between 2016 and 2070 being driven by long-term care and health care spending.[11]

The following section will explore each area in more depth, underline how supporting the early detection and diagnosis agenda is key in order to address each issue and present area specific policy recommendations to advance these causes in the policy domain.

9 Alzheimer´s Disease International, *World Alzheimer Report 2015: The Global Impact of Dementia, Alzheimer's Disease International,* 2015, accessible at: **https://www.alz.co.uk/research/world-report-2015** **10** European Brain Council, *The potential treating of Alzheimer's Disease before the onset of dementia,* 2017, accessible at: **http://www.braincouncil.eu/wp-content/uploads/2017/06/EBC_white_policy_paper_DEF26072017_Low.pdf** **11** European Commission, *The 2018 Ageing Report: Economic & Budgetary Projections for the 28 EU Member States (2016-2070),* 2018, accessible at: **https://ec.europa.eu/info/sites/info/files/economy-finance/ip079_en.pdf**

Ethics:
Overcoming the ethical challenges of early detection and diagnosis

> ***"Health ethics is the interdisciplinary field of study and practice that seeks specifically to understand the values undergirding decisions and actions in health care [...] and to provide guidance for action when these values conflict."***[12]
> WHO, 2015

The right to know and not to know

Early detection provides a person with the opportunity to know about the very existence of the disease early, even before developing any symptoms.

In the context of early detection and diagnosis, **'knowing' can be a means of empowerment** that enables people affected by AD to take early action. For many, the opportunity to prepare themselves, as well as their social environment, for the future can help them live with the condition. Likewise, early diagnosis is helpful for families and caregivers since it enables them to be better equipped to deal with the situation and to give them certainty about what to expect. Recent studies also show that such strategies (including physical activities and diet, for instance) effectively benefit cognitive functions in persons at increased risk of dementia.[13]

Given the above, people have the right to early detection and diagnosis, should they wish to exercise this right. It is important to recognize, however, that the right to know equally implies the right not to know. 'Knowing' also carries with it **psychological, social and legal implications** which need to be addressed before an early diagnosis takes place. For some, the knowledge of cognitive impairment can become a burden, rather than the first step in enabling people to take action if, for instance, a person is already facing a difficult life situation and there are not sufficient support mechanisms in place.

As Prof. Adrian Ivanoiu outlines in a recent essay (see Appendix 2) on ***The ethics of early detection and diagnosis,*** a diagnosis of AD changes the way the diagnosed person is perceived by others.[14] There is a real risk of linking the diagnosis of AD with a state of incompetence, in legal as well as personal terms. Indeed, there are concerns that if health authorities start to focus on early detection, there may be a vested interest in using the results to – for example – withdraw the health insurance of patients/potential patients.

The pathology of AD means that **cognitive impairment progresses over time**, and those who are affected do not lose all their capacities at once. However, the freedom to drive a car, to marry, to buy a house, or to make a will, can be threatened for people with AD even if they are still perfectly capable of performing these tasks.[15]

As a result, it is critical that there exist rigorous regulatory and legal safeguards to protect the medical data of people who undergo procedure for the early detection and diagnosis of AD.

12 A World Health Organisation, *Global Health Ethics, Key Issues,* 2015, accessible at: **http://apps.who.int/iris/bitstream/handle/10665/164576/9789240694033_eng.pdf;jsessionid=E2A3314EE4B56571FD921FA88FC9C339?sequence=1** 13 M. Kivipelto et al. *From the Finnish geriatric intervention study to prevent cognitive impairment and disability to the global dementia prevention initiative: applicability of multi-domain interventions, Alzheimer's and Dementia,* July 2017, accessible at: **https://www.alzheimersanddementia.com/article/S1552-5260(17)33322-8/fulltext** 14 Adrian Ivanoiu, *The ethics of early detection and diagnosis: Paving the way for tomorrow's medical advances for people with Alzheimer's,* 2018, please see Appendix 2 **15** Ibid., please see Appendix 2

Detection in the absence of a cure

One of the core ethical challenges around early detection and diagnosis and AD is linked to the fact that **early detection has to take place in the absence of a cure**. This raises a number of important questions that need to be considered by those active in the field of AD research and development as well as those affected by it.[16] This includes how to communicate a diagnosis to those affected and how to support them after diagnosis.[17]

It is important to acknowledge that the hope for a treatment is precisely what drives the pursuit of innovation.[18] What is needed now is perseverance in the quest for a cure – such as been done in other areas such as oncology.

In the meantime, **early detection and diagnosis can effectively help deal with the disease** and slow down disease progression. Besides making life-style changes, access to non-medical support is an important factor to help people with AD be part of the community and spare families from heavy care-giving. This is even more important given the lack of a treatment to address the pathology of AD. Nevertheless, existing symptomatic treatments and support can positively transform the outcome for people with AD, their families, and their caregivers.[19]

Harnessing innovation in an ethical way

The advance of innovative technologies brings new hopes for the successful detection of AD. Digital technologies in particular promise less invasive and yet accurate means of detection – to the benefit of those being diagnosed.

Some new innovative technologies that can already help detect the retinal signs of AD at an early stage – using for instance portable eye cameras and miniaturized hyperspectral cameras – are being tested.[20] Again, in order to make the most of such innovative technologies, their **ethical dimensions need to be discussed** in a transparent manner and adequately addressed by sound guidelines and frameworks. This will help those developing and applying these technologies to ensure that they are designed and used to the benefit of people living with AD, their families and caregivers. In addition, people who are assessed using these new technologies must be properly and systematically informed of the implications of this assessment, with informed consent at the core of this process. Consent is also a key ethical concern further down the care pathway when determining whether a person with dementia can be included in research or if their data can be shared.[21]

Key policy recommendations

The collaborative parties of this white paper support:

- Collective stakeholder engagement with the WHO and EU Member States regarding the revision of global legal frameworks such as the Convention on the Rights of Person with Disabilities (CRPD) to:
  - Enshrine "the right to know" and "the right not to know"
  - Protect people's medical data privacy following the detection and/or diagnosis of AD to avoid undue consequences such as a loss of legal rights (eg to work)
- Collective stakeholder engagement with national governments on the setting-up and revision of national dementia strategies and clinical guidelines to reflect the human rights of people with AD, in particular the right to early detection, diagnosis and treatment

16 B. Dubois et al., *Preclinical Alzheimer's Disease: Definition, natural history, and diagnostic criteria, Alzheimer's & Dementia,* March 2016, accessible at: https://www.ncbi.nlm.nih.gov/pubmed/2701248 17 WHO. Neurological disorders: public health challenges, WHO Library Cataloguing-in-Publication Data, 2006, accessible at: **http://www.who.int/mental_health/publications/neurological_disorders_ph_challenges/en/** [accessed Jul 05 2018]. 18 Adrian Ivanoiu, *The ethics of early detection and diagnosis: Paving the way for tomorrow's medical advances for people with Alzheimer's*, 2018, accessible at: link to be added 19 World Health Organisation, *Neurological disorders: public health challenges, WHO Library Cataloguing-in-Publication Data,* 2006,accessible at: **http://www.who.int/mental_health/publications/neurological_disorders_ph_challenges/en/** [accessed Jul 05 2018]. 20 **https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4353376/** 21 Thorogood, A. et al. *Consent recommendations for research and international data sharing involving persons with dementia, Alzheimer's & Dementia,* 2018, accessible at: **https://www.sciencedirect.com/science/article/pii/S1552526018301651**

The right to dignity:
Overcoming the stigma, discrimination and inequalities faced by people with Alzheimer's Disease

> ***"Excellent care should include the exercise of autonomy and self-determination and to the greatest possible extent ensure that the person's rights and interests are fully protected in matters beyond their capability to act and decide for themselves."***[22]
>
> Adrian Ward, Consultant to the Council of Europe,
> 26th Alzheimer Europe Conference 2016

Stigma and Alzheimer's Disease

Due to the **misperception of AD as an "old people's disease"**, appropriate resources and support mechanisms are often not available, for example, in the workplace to allow a person with AD to continue their profession. Access to support services can be problematic too as they are designed for older adults. This issue will become increasingly important as research goes in the direction of early detection – people who are at risk of developing AD and who will be the ones that can benefit the most from a future disease-modifying therapy will be in their 40s or 50s, at the peak of their professional lives.

Some 'pockets' of good practice are beginning to emerge across Europe including the development of ***dementia-friendly communities***. These are communities which include a wide range of activities and initiatives such as dementia-friendly supermarkets aimed at better supporting the integration of people living with AD and improving their quality of life.[23]

AD is worsened by **stigma and misconceptions** that hinder access to early detection and diagnosis and consequently access to support and treatment. Awareness about the disease, its symptoms, available treatment and support would certainly address the stigma and discard the misconceptions. Awareness-raising on specific occasions like World Alzheimer's Day, Brain Awareness Week and best practise sharing of dementia-friendly initiatives must pave the way for a better understanding and management of the disease.

22 Ward, Adrian, *Legal capacity and proxy-decision making: an overview of Council of Europe activities, Alzheimer Europe,* 2016, accessible at: **https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwik0ePX4ZHdAhUSdcAKHffjBUwQFjAAegQIABAC&url=https%3A%2F%2Fwww.alzheimer-europe.org%2Fcontent%2Fdownload%2F131714%2F820924%2Ffile%2FPL1.3%2520WARD%2520Adrian.docx&usg=AOvVaw04Eh9DZU-A-Li2r7nvn8Gw** 23 European Commission, *Mapping dementia-friendly communities across Europe,* accessible at: **https://ec.europa.eu/eip/ageing/library/mapping-dementia-friendly-communities-across-europe_en**

Women and informal care

AD poses a particularly **high burden on women** who experience the manifestation and progression of dementia differently. According to the Alzheimer's Association's report 'Alzheimer's Disease Facts and Figures', almost two-thirds of American seniors living with AD are women. There is a disproportionately higher incidence of the disease in women compared to men. This can be partly explained by the longevity of women compared to men but may also be due to other risk factors such as genetic reasons and employment and life-style attitudes.[24]

As a result, affected women are confronted with what has been called a "triple jeopardy", facing stigmatization due to their age, gender and condition.[25]

The vast majority of carers for people with AD and dementia are also women, both in formal and informal capacities.[26] They provide the bulk of informal care throughout Europe; between 60-70% of all carers are women.[27]

The role of early detection and diagnosis

AD and dementia remains **under-diagnosed or are diagnosed too late**. Without a diagnosis people with AD may be excluded from accessing support and services.

In line with the UN's call to "leave no one behind", with the Convention on the Rights of Persons with Disabilities and with the WHO global action plan on the public health response to dementia, the time has come to better recognise the **inalienable human rights of people living with AD**, in particular their right to equitable access to treatment, and to enforce them through better laws and policies.[28]

Supporting **further research into the early detection and diagnosis** could play an important role in upholding the right to dignity and combating stigma. Firstly, early detection and diagnosis would give people with AD and their carers more time to understand the signs and symptoms as well as allowing them earlier access to the relevant information and support services. In turn, it would also give the person and their families time to plan for the difficult journey ahead and to put the necessary means in place for preserving the individual's dignity. On a broader societal level, new technologies allow early detection of AD-type lesions, signs at asymptomatic and mild cognitive impairment (MCI) levels. This helps raise awareness of the actual pathology of AD and encourages society to recognise that AD caused by cognitive decline can start early in adult life - thus altering the perception of AD as a disease which only affects older adults.

Key policy recommendations

The collaborative parties of this white paper support:

- A collective call for the European Commission as well as health ministers at national levels to ensure the implementation the UN Convention on the Rights of Persons with Disabilities (CRPD)
- Collective stakeholder engagement with national governments to improve the human rights protection of people with AD, their families and their carers, in particular the right to diagnosis, treatment and care through revising national dementia strategies and clinical guidelines as necessary

24 Sauer (2018), accessible at: **https://www.alzheimers.net/8-12-15-why-is-alzheimers-more-likely-in-women/** 25 Alzheimer's Disease International, *Women carry weight of global dementia crisis*, London, 8 March 2017, accessible at: **https://www.alz.co.uk/media/170308** 26 Alzheimer's Disease International (2014). World Alzheimer's Report 2014. Alzheimer's Disease International: London, UK. 27 Alzheimer's Association (2014) 2014 Alzheimer's Disease Facts and Figures, Alzheimer and Dementia, 10(2). 28 United Nations, Convention on the Rights of Persons with Disabilities (CRPD), "Leaving no one behind through the full implementation of the CRPD", accessible at: https://www.un.org/development/desa/disabilities/conference-of-states-parties-to-the-convention-on-the-rights-of-persons-with-disabilities-2/cosp11.htm ;WHO, Global action plan on the public health response to dementia, 2017 – 2025, accessible at: **http://apps.who.int/iris/bitstream/handle/10665/259615/9789241513487-eng.pdf;jsessionid=6D956524D27B5A63719FA9F324FC05D5?sequence=1**

The silver economy:
The socioeconomic impact of Alzheimer's Disease in Europe

> ***"Informal care is estimated to represent more than 40% of the total costs of dementia worldwide and can be considerably more in regions where formal care services are less well established."***[29]
> OECD, 2018

Socioeconomic cost of informal, unpaid care

As the prevalence of dementia in OECD-countries is expected to rise to around **41 million people by 2050 and 18.7 million in the EU**,[31] informal care becomes an even more important factor to be addressed.

An **informal carer** can be defined as a person in or out of employment providing informal, substantial and usually unpaid personal care, assistance or support to a relative in a non-professional, unpaid capacity.[32] However, a common definition for informal care is pending and some people may not consider themselves to be carers even when they provide caregiving services. The costs of informal care are calculated in terms of unpaid labour, notably the opportunity costs which often relate to paid employment opportunities that a carer must forgo.

The **cost of informal caring** varies substantially between countries: informal care represents an estimated 40% of total costs in Northern and Western Europe but 75% of costs of dementia in Southern and Eastern Europe. This means that estimates for the cost of informal care range from €125bn to €150bn across Europe. The intensity of caring also varies: in the Czech Republic, more than 10% of adults over 50 provide informal care services on a daily basis while just 4% do so in Switzerland and Sweden.[33]

In countries with higher investment in social care and health systems this leads to a reduced informal care workforce.

Worldwide, women are still more likely to bear the burden of informal care. As the role of women in the labour market has risen, so has their contribution to household finances, thus **increasing the opportunity costs** when women are required to reduce or completely stop their employment owing to their informal care. More generally, informal carers are less likely to be formally employed and more likely to have part-time employment when compared to non-caring workers. Additionally, family caregivers of people with dementia are at an increased risk of developing affective disorders such as major depression or anxiety.[34]

Direct cost of social and medical care

The direct cost per person with dementia in the EU has been estimated at around **€22,000 per year**, although with great variations between countries since the social care costs differ greatly from Northern to Eastern Europe.[35]

People with dementia are more likely to be admitted to general hospital than people of similar age and medical infirmity. In high-income countries the costs of healthcare are substantially higher for people with dementia, with a substantial proportion of costs arising from hospitalisation.

29 OECD, *Care Needed – Improving the lives of people with dementia, OECD Health policy studies*, 2018, accessible at: **https://read.oecd-ilibrary.org/social-issues-migration-health/care-needed_9789264085107-en#page1** 30 Ibid. 31 EurActiv, *Is Europe ready for Alzheimer´s? EurActiv*, 2016, accessible at: **https://euractiv.eu/wp-content/uploads/sites/2/special-report/EURACTIV-Special-Report-Is-Europe-ready-for-Alzheimers-1.pdf** 32 Wanless, D., *Securing Good Care for Older People: Taking a long-term view*, King's Fund, 2006, accessible at: **https://www.kingsfund.org.uk/publications/securing-good-care-older-people** 33 *OECD, Care Needed: Improving the Lives of People with Dementia.* OECD Publishing, Paris, 2018, accessible at: **https://read.oecd-ilibrary.org/social-issues-migration-health/care-needed_9789264085107** 34 WHO, *Dementia: A public health priority*, WHO, 2012, accessible at: **http://apps.who.int/iris/bitstream/handle/10665/75263/9789241564458_eng.pdf;jsessionid=695FF77284E1D3CDF9579A07112E753D?sequence=1** 35 EurActiv, *Is Europe ready for Alzheimer's?* EurActiv, 2016, accessible at: **https://euractiv.eu/wp-content/uploads/sites/2/special-report/EURACTIV-Special-Report-Is-Europe-ready-for-Alzheimers-1.pdf**

Reducing rates of hospitalisation would potentially reduce costs. One suggested approach is to improve community-based services in lieu of hospitalization, potentially shifting costs from acute hospital to community health and social care.[36] The Alzheimer's Society 'Counting the Cost' report found that supporting people with dementia to leave hospital one week sooner than they currently do could result in savings of at least £80 million (around €90 million) a year.[37]

Alzheimer's Society estimated that, in the UK alone, £11,296 (around €12,800) per year per person diagnosed with dementia could be saved in health and social care costs by supporting individuals with dementia to continue living in their own home for longer. By delaying moves to residential homes for 5% of people living with dementia in the UK, an annual saving of £55 million (around €62 million) in health, social care and housing costs could be achieved.[38]

Once admitted to care, people with AD as well as their care givers should benefit from a **coherent patient pathway** that facilitates navigating the care system and receiving timely care and support. Policy actions are hence required to break silos between countries, within institutions and across therapy areas.

The role of early detection and diagnosis

Early detection and diagnosis also has an important role to play in **reducing both the indirect and direct costs** of care for people with AD and enabling improvements in care.

For instance, early access to services following the detection or diagnosis of AD would allow people with AD, their families and their carers to plan ahead, providing people with AD with the tools to better manage their condition and carers with more time to plan their care. This could potentially reduce the need for informal, social and medical care on behalf of people with AD and reduce the time that informal carers dedicate to care, thus lowering costs.

Early training and support for families and carers is also effective in reducing their strain and psychological burden, which could increase the efficiency of care and delay, or even avoid, transition into care homes of people with AD.[39] Early detection and diagnosis would also enable better coordination of nursing home placements, increasing the efficiency of direct care.[40] Early diagnosis and intervention is thus likely to reduce the care cost of AD for carers and states, but also a way to improve quality of life for people with AD, their families' and their carers.

Once a disease modifying treatment is available, diagnosing and treating AD early can prevent the progression to more severe stages of AD and thereby enable **gains in quality and length of life**, correlating with substantial cost savings. It has been modelled that a treatment delaying the progression by for instance 50% would provide a gain of 1.75 quality adjusted life years (QALYs) per patient.[41] Deferring the onset of a mild AD for only one year is related to care savings of £28.000 (31.500 €).[42]

Key policy recommendations

The collaborative parties of this white paper support:

- Collective stakeholder engagement with MEPs, national parliamentarians and organisations representing people with AD on the need for policy action and further social care funding to alleviate the informal care burden of AD
- Constructive stakeholder dialogue with national and regional governments on the need for action today to ensure that national HTA and pricing and reimbursement systems are prepared for the arrival of disease modifying treatments for AD

36 Alzheimer's Disease International, *World Alzheimer Report 2016: Improving healthcare for people living with dementia,* Alzheimer´s Disease International, 2016, accessible at: **https://www.alz.co.uk/research/world-report-2016** 37 Alzheimer' Society, *Counting the Cost.* **https://www.alzheimers.org.uk/sites/default/files/2018-05/Counting_the_cost_report.pdf** 38 EFID, *Mapping dementia-friendly communities across Europe,* EFID, 2016, accessible at: **https://ec.europa.eu/eip/ageing/sites/eipaha/files/results_attachments/mapping_dfcs_across_europe_final.pdf** 39 Alzheimer's Disease International, *World Alzheimer Report 2016: Improving healthcare for people living with dementia, Alzheimer's Disease International,* 2016, accessible at: **https://www.alz.co.uk/research/world-report-2016** 40 Kerpershoek, L. et al, *Access to timely formal dementia care in Europe: protocol of the Actifcare (Access to Timely Formal Care) study,* BMC Health Services Research, 2016, accessible at: **https://bmchealthservres.biomedcentral.com/track/pdf/10.1186/s12913-016-1672-3** 41 European Brain Council, 2017, *Policy White Paper towards optimizing research and care for brain disorders.* Accessible at: **http://www.braincouncil.eu/wp-content/uploads/2017/06/EBC_white_policy_paper_DEF26072017_Low.pdf** 42 Personal Social Services Research Unit, 2018, *Economic Modelling of Disease-Modifying Therapies in Alzheimer's Disease.* Accessible at: **http://www.lse.ac.uk/pssru/assets/documents/EconomicmodellingAD.pdf**

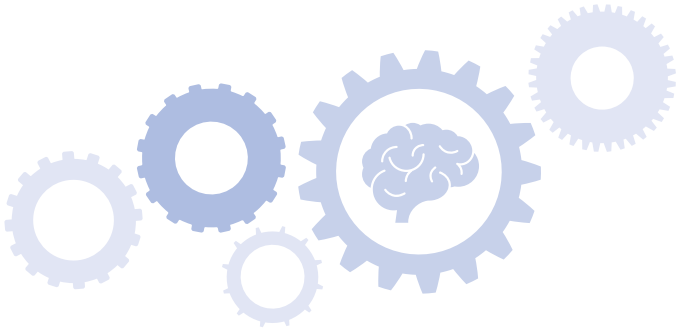
Overarching and issue specific policy recommendations

In addition to the area specific policy recommendations above, please see below the overall policy recommendations which target all three priority areas for action:

Overarching policy recommendations

The collaborative parties of this white paper support:

- Continued engagement with organisations representing people with AD, their families and their carers to ensure the systematic involvement of people with AD to drive policy change at a national, EU or global level
- EU, national and sub-national stakeholder task forces involving government, industry, the national health service, clinicians and organisations representing people with AD and other relevant conditions to scrutinise policy action for better treatment and care for people with AD, including robust support and legal frameworks to support timely detection, diagnosis an intervention in AD
- Collective stakeholder engagement with the European Commission to ensure that:
  - The 2021-2027 Multi-annual Financial Framework and Horizon Europe will sufficiently support research into AD and dementia
  - A "brain mission" is dedicated to overcoming the challenges posed by brain disorders including AD
- Multi stakeholder advocacy for the European Commission to put in place a high-level coordinator for neurological disorders to ensure coherence across the European Commission Directorate Generals and policies
- National health ministers to begin the national dialogue on developing new clinical practices to support the early detection and diagnosis of AD and other neurological disorders, such as the cognitive roadmap to enable regular check-ups on cognitive health
- Constructive, multi-stakeholder dialogue with the European Commission and Member States to unlock further investment in schemes to combat the stigma associated with early detection and diagnosis of AD, as well as the stigma associated with care for older adults more generally



Issue specific policy recommendations

Ethics: Overcoming the ethical challenges of early detection and diagnosis

- Collective stakeholder engagement with the WHO and EU Member States regarding the revision of global legal frameworks such as the UN Convention on the Rights of Person with Disabilities (CRPD) to:
  - Enshrine "the right to know" and "the right not to know"
  - Protect people's medical data privacy following the detection and/or diagnosis of AD to avoid undue consequences such as a loss of legal rights (eg to work) and disproportionate increases in insurance premiums
- Collective stakeholder engagement with national governments on the revision of national AD and dementia strategies and clinical guidelines to reflect the human rights of people with AD, in particular the right to early detection, diagnosis and treatment

The right to dignity: Overcoming stigma, discrimination and inequalities faced by people with Alzheimer's Disease and their families and carers

- A collective call for the European Commission as well as health ministers at national levels to ensure the implementation the UN Convention on the Rights of Persons with Disabilities (CRPD)
- Collective stakeholder engagement with national governments to strengthen their commitment to protecting the human rights of people with AD, their families and their carers, in particular the right to treatment, diagnosis, access to services and guardianship, through revising national AD and dementia strategies and clinical guidelines as necessary

The silver economy: The economic cost of Alzheimer's Disease in Europe

- Collective stakeholder engagement with MEPs, national parliamentarians and organisations representing people with AD on the need for policy action and further social care funding to alleviate the informal care burden of AD
- Constructive stakeholder dialogue with national and regional governments on the need for action today to ensure that national HTA and pricing and reimbursement systems are prepared for the arrival of disease modifying treatments for AD

Appendix 1

The genesis of this paper – The *What if* series of policy roundtables

In September 2017, MSD launched the series of *What if* Alzheimer's policy roundtables sponsored by Members of the European Parliament. The key objectives of the series were to:

- Challenge the status quo and refresh the European debate on the future of Alzheimer's Disease (AD) treatment and care
- Generate new angles to connect AD with other policy fields such as human rights, ethics and the economy
- Bring together stakeholders in the AD policy environment to generate policy recommendations that can be implemented on EU and national levels

Three *What if* policy roundtables have been held – the first on 28 September 2017, the second on 30 January 2018 and the third on 25 September 2018. To ensure focused discussions with added value, each roundtable focused on a particular theme:

- *Roundtable #1* **Human rights:** The Right to dignity – Overcoming the stigma, discrimination and inequalities faced by people with Alzheimer's Disease
- *Roundtable #2* **Ethics:** Overcoming the ethical challenges of early detection and diagnosis
- *Roundtable #3* **The silver economy:** The socioeconomic impact of Alzheimer's Disease in Europe

Please see below a list of stakeholders involved in the *What if* series:

AGE Platform Anne-Sophie Parent

Alzheimer Europe (AE) Vanessa Challinor

Alzheimer's Disease International (ADI) Christopher Lynch

ASDM Consulting Annette Dumas

Eurocarers Claire Champeix

European Brain Council (EBC) Frédéric Destrebecq

European Disability Forum (EDF) An-Sofie Leenknecht

European Federation of Associations of People with Mental Illness (EUFAMI) Margaret Walker

European Federation of Neurological Associations (EFNA) Donna Walsh

European Institute for Women's Health (EIWH) Vanessa Maria Moore

European Patients' Forum (EPF) Kostas Aligiannis

Global Alzheimer's & Dementia Action Alliance (GADAA) Amy Little

VITO Health/Hasselt University Patrick De Boever

KU Leuven Dr Chris Gastmans

Organisation for Economic Co-operation and Development (OECD) Elina Suzuki

Radboud University Dr Myrra Vernooij-Dassen

St Luc University Hospital Dr Adrian Ivanoiu

Appendix 2

The ethics of early detection and diagnosis: Paving the way for tomorrow's medical advances for people with Alzheimer's

Professor Adrian Ivanoiu
Professor of Neurology, UCLouvain

"C'est donc d'abord parce que les hommes se sentent malades qu'il y a une médecine. Ce n'est que secondairement que les hommes, parce qu'il y a une médecine, savent en quoi ils sont malades" (First of all, there is medicine because men feel sick. Then men know why they are sick because medicine exists)
Georges Canguilhem, Le Normal et le Pathologique, 1966

Introduction

Alzheimer's Disease (AD) is the term used today to designate both the clinical manifestations of mental deterioration and the brain lesions found in persons suffering from it, most of them elderly people. In this essay, I will discuss the ethical challenges which are intrinsic to the early detection and diagnosis of AD, before the stage of dementia is reached. In terms of my background on this subject, I am a neurologist who, since 1994, has been in charge of the Memory Clinic of a university hospital in Belgium where I supported many people suffering from AD and helped these people to deal with the numerous problems that AD can present, including problems of an ethical nature. I have participated in many research projects and I was involved in ethical reflections on the quality of life following diagnosis with AD, the evaluation of driving capacities and the end of life in dementia (1,2,3).

Arguably, the most important discovery in the field during the last three decades was that the two specific AD lesions occur and develop very slowly in the brain many years before the slightest clinical signs.[1] This asymptomatic stage called "preclinical AD" may last 10 to 15 years (4).

Following this, before becoming demented (i.e. unable of taking care of themselves), people with AD go through a phase of very mild symptoms ("mild cognitive impairment" - MCI), often characterized by memory losses, largely compensated in everyday life by taking notes, being better organized or abandoning some of the most challenging activities. This period may last between 5 and 10 years (5).

Recently, consortiums of international experts, public and private organizations such as the *National Institute of Aging (NIA)* in the United States and the *Alzheimer Association (AA),* have pleaded for an early diagnosis of AD, before the stage of dementia is reached (6,7). This situation primarily concerns patients presenting for medical attention who have been found to have MCI. For those with asymptomatic AD brain lesions, the prospect of early detection and diagnosis has thus far been restricted to research programs with diagnostic or therapeutic goals (7). The current guidelines on the diagnosis of AD stressed the use of biological markers (biomarkers) for disclosing the AD lesions "in vivo", in order to make a precise diagnosis (6,7).[2] Methods to detect these biomarkers include brain imaging using the magnetic resonance (MRI) or the positron emission tomography (PET) as well as the analysis of the cerebrospinal fluid (CSF) obtained by lumbar puncture (8).[3] They are costly, often not reimbursed (depending on the national health insurance systems) and not readily available outside of academic research centers in most countries, as it has been shown recently by a Belgian (9) and a European survey (10).

What are the ethical challenges of early detection and diagnosis?

1. Diagnosis in the absence of a cure

Before anything else, one should consider the reasons why someone would opt for early detection or early diagnosis of a disease, with dreadful consequences on the person's physical abilities and personality, when there is no cure. Probably the most obvious reason that brings together the patients, doctors, healthcare providers and pharma companies is precisely the hope to find a cure and to apply it at a stage when the brain is not damaged by the disease beyond repair.

So far, trials to treat AD dementia during the last 15 years were unsuccessful but trials have only recently started for people who have MCI and trials including only those people who have positive AD biomarkers are even more recent. This means that only a few trials are ongoing with people at the earliest stages of AD. We need a greater focus and funding for trials in the early stages of AD because there is no fundamental reason today to decide it is impossible to curb the evolution of this disease through a Disease Modifying Therapy (DMT) or via other means such as the management of risk factors.[4]

It is perfectly reasonable to contend that we have not made enough progress in finding a way of stabilizing the AD lesions in order to slow down the evolution, preferably at a stage where the quality of life of the patients is still unaffected. It took a long way to get effective medications for cancer or AIDS and we are far behind the evolution in these fields both in terms of volume of research and money invested. Indeed, although dementia represents a substantial financial burden on society, one that is at least similar to the financial burden of heart disease and cancer (11), dementia research gets 13 times less funding than cancer, as UK researchers recently showed (12).

If the hope to find a cure is, arguably, the leading stimulus for an early diagnosis of AD, it is not the only one. Patients with mild memory loss keep coming to specialized Memory Clinics and asking to know if they are affected by AD, despite being aware there is no cure so far.

When questioned on their willingness to know such a diagnosis they usually explain it is preferable to be aware of whether they are affected, even when the news is bad, instead of remaining in the unknown with the anxiety of a potential threat over one's head.

Dealing with uncertainty is difficult for us, humans, in all domains. Many people do not want to be taken by surprise and to become a burden for their relatives. Besides, those patients who consult believe they could do something in order to fight the disease and this is not only about getting a "magic pill" but also about doing cognitive training or changing their lifestyle. Recent evidence seems to prove them right, as, for instance, the Finnish Geriatric Intervention Study showed that to effectively modify lifestyles (including physical activity and diet) and cardiovascular risk factors exposure in older adults at risk of dementia is indeed beneficial (13). Fair enough, not all people are willing to proceed to complicate technical tests, some of them are simply happy with some advice from the doctor.

2. The complexity and consequences of the diagnosis of AD

Although there is indeed a demand from patients to know their diagnosis at an early stage, it may still be better not to do it for ethical reasons. The ethical challenges of making an early detection and/or diagnosis of AD include the impossibility to be certain of the evolution, the potentially devastating psychological effect and the possibility that such a diagnosis leads to stigmatization. I will discuss each of these arguments in detail further.

a. Uncertainty about the evolution

In the case of MCI patients included in research protocols we arrive to have a reasonably good prediction when the biomarkers are used (8). Indeed, only those MCI patients who have positive AD markers (about 50-60% of them) evolve negatively during the following 4-5 years, whereas those who have not remain stable. We can only compute

a statistical risk coming from group studies but this may not apply in every individual, something not unusual in medicine.

It is true, however, that the interpretation of biomarkers may be difficult in some cases because of two potential problems. The first one is the occurrence of these markers many years before the patient have reached the stage of dementia. Although the prediction at 5 years is reasonably good in research settings we do not have the data yet to be sufficiently confident beyond that period. The second one is the increase in the probability that a marker is positive with age. Indeed, in elderly people without cognitive impairment, the relevant AD biomarkers may be present (14) but that does not mean he/she will have the time to develop dementia if their life expectancy is taken into account.
There is no evidence today allowing to make predictions at the individual level about the evolution of asymptomatic people carrying AD lesions. However, in younger MCI patients (less than 80 years old) in particular, the predictive power of biomarkers seems reliable enough to become helpful for the clinician.

b. A devastating psychological effect

Although one may believe that the announcement of a diagnosis of AD, be it at an early stage, is a serious blow, threatening to result in psychological breakdown and potentially pushing the individual to extreme actions such as suicide, such cases are rare. As mentioned above, patients attending a Memory Clinic in search for an explanation of their cognitive failures are already depressed and, paradoxically, feel somehow released to know there is a specific cause of their ailment, even if there is no cure for it.

In most cases people put up strategies to "cope with" the diseases they suffer from and this is exactly what happens with the patients having received a diagnosis of AD. In a Belgian study, we have shown that the patients having been diagnosed with mild or moderate AD and their relatives actually declare having a better quality of life six months after the diagnosis when a follow up was put in place and both drugs and support measures were prescribed(3). This is not to say there cannot be catastrophic reactions, especially in individuals whose intellectual abilities are held in high esteem, their loss being considered intolerable by themselves or by those around them. The announcement of a diagnosis of AD should always been done with extreme care, only by professionals with expertise in the domain, and this is particularly true at the early stages of the disease.

c. The risk of stigmatization

A diagnosis of AD changes the way other people look at the person affected. The stigmatization is, first of all, about being different. It was certainly not better when the condition was labelled "senility", without any reference to a disease but only to ageing. This confusion is still relevant today, even if it is clear that a majority of elderly people do not suffer from cognitive impairment. In the same time, those who do suffer of cognitive deterioration because of AD are not losing all their capacities at once(15). The risk is real, however, to link the diagnosis of AD with a state of legal incompetence in various domains, such are driving a vehicle, buying/selling a house, making a will or getting married. In the early, pre-dementia stages of AD, all these competencies are preserved, and many of them still are in mild and, sometimes, even in moderate dementia stages. However, when people are diagnosed with AD and then their liberty is immediately curtailed, sometimes for no valid reason, it is no surprise that there is resistance to early detection and diagnosis.

One of my patients with moderate AD dementia proved by passing a driving test with an instructor that he still had perfect control of driving a car. He has exceptional expertise in the domain, as he worked all his life as a driver. The legislation is moving slowly towards accepting this differential loss of abilities in aged people with cognitive deterioration but more work needs to be done in this field(16). Receiving a diagnostic label of AD may lead to stigmatization but at the same time, policy and practices which recognize and address this issue are ripostes to stigmatization. The development and implementation of innovative methods to assess biomarkers for AD

detection and diagnosis holds the potential to enhance access to services for dementia patients who are currently undiagnosed and thus empower people to access help. However, for people to embrace such technologies, we must work to combat stigma, which is recognized as one of the key ethical challenges currently associated with the early detection and diagnosis of AD.

How can we overcome the challenges?

The first step in dealing with the ethical challenges related to an early diagnosis of AD is to avoid extreme positions and to reinforce that the most important value to take into account is the well-being of people. On one side, one should avoid to consider AD as reductive to an imbalance in the biology of the body, because a disease is always about values. On the other side, those who believe AD is not a disease but only differential ageing and put all the emphasis on psychosocial approaches and societal care for aged people have little to offer beyond what people already do for demented individuals today.

A recent article summarized and reported an ethical debate organized by the Task Force for the Roadmap of Alzheimer's Biomarkers in Geneva in 2014(17) . The participants identified several key ethical issues that need to be taken into account in the process of implementing an early diagnosis for AD and made recommendations to manage them. I will group these issues in the main themes and develop them below.

1. The opportunity for detection and diagnosis vs. the right of "not knowing"

As the early stages do not imply a functional decline the two options, i.e. the right to know and the right not to know, appear as equally valuable. We should make sure that the ones who believe it is better for them to have a more precise idea about their future have the possibility to seek help from specialists. The knowledge about their AD biomarker status may enable individuals to obtain a more truthful picture of their situation. The option of "not wanting to know" is perfectly respectable too and no mandatory screening of AD lesions should be considered, event in those patients with MCI. The individuals who accept to participate in studies where biomarkers are collected should be able to opt to receive no or limited feedback on biomarker results.

2. Avoiding the confusion between clinical routine and research for new diagnostic tools

It was recently proposed that the use of AD biomarkers for diagnostic purposes should follow the framework in the five phases established for cancer (8).[5] The analysis of AD biomarkers is considered as having accomplished the first three phases of this process, meaning that it has showed the ability to detect in research settings those MCI subjects who have a high likelihood of exhibiting AD pathology and therefore progressing to dementia. However, phases 4 and 5 of the framework, i.e. their clinical diagnostic validity in everyday practice and their effects on mortality, morbidity, disability and social costs are still under evaluation. Therefore, these methods are, basically, still in the research domain, even if they may be applied in representative clinical populations in phase 4 and 5 protocols.

Patients should be correctly informed about this incomplete validation and a structured diagnostic research protocol should be applied to make sure patients are conscious of this. Nevertheless, recruitment into such studies is justified even in the absence of effective therapies, to allow scientific validation of diagnostic tests and because participants are autonomous persons entitled to make decisions about their health and life for the present time and the future.

3. The disclosure of diagnosis in a medically appropriate environment

Disclosing the detection or diagnosis of AD to the person who is not yet demented is a sensitive matter. It is preferable to entrust this delicate task to experienced professionals, benefitting of team work in Memory Clinics. There is no such thing as a simple test to make an early diagnosis of AD easy and accessible to everyone. Follow-up and appropriate counseling programs should be put in place

for all those MCI patients with positive AD biomarkers. The possibility of participating in clinical trials with new drugs that may impact the evolution of AD should be offered to all those who what to participate. Advices about lifestyle changes that may have a positive impact on the risk of developing AD should be provided. Ideally, the physician should also explore the person's willingness to involve a family member or a close friend whenever possible in order to improve the accuracy of the diagnostic process and to provide further support and beneficence in the future.

4. Public health policies, legal matters and societal costs

Individuals should be enabled to collectively play a central role in this matter and fairness in access to diagnosis should be guaranteed. Law will need to adapt to the change in the meaning of the AD label, which does not necessarily equate to disability and should not equate to stigma. Public health policies should protect the privacy and interests of people who may access biomarker diagnosis against discrimination in health insurance, employment, and civil rights in general. As experimental tests, biomarkers costs should be covered solely by research grants or ad hoc funds. Some economic models suggest that a timely diagnosis is not associated with extra costs as the procedures and criteria do not vary, they are simply applied earlier (18). However, if biomarkers are confirmed to be reliable and accurate, determining whether their coverage adheres to fair resource allocation will require further econometric analysis. It should not be overlooked that even a mildly cognitive impaired individual already generates an extra cost which is "invisible" because it mainly consists of the time allowed by the relatives to pay attention to their actions and help him/her when needed.

What benefit would this bring to the patient?

If we manage to overcome the above challenges, the early detection and diagnosis of AD should empower people to take more control over their healthcare and lifestyle choices. Early detection and diagnosis would help to provide an environment in which we can offer more personalized support to individuals diagnosed with AD following diagnosis. In addition, overcoming the ethical concerns outlined in the essay would also help to address issues such as stigma, dignity and autonomy.

Conclusions and calls to action

The WHO defines health ethics as: *"... the interdisciplinary field of study and practice that seeks specifically to understand the values undergirding decisions and actions in health care, health research and health policy"*

This definition reflects the fundamental role that EU-level policy makers and stakeholders have to play in addressing the challenges highlighted in this essay and enabling the vision of a society in which a considered policy framework of ethics based care empowers people to benefit from early detection and diagnosis.

The *What if* roundtable is an exciting opportunity to work towards this goal. Although tackling the ethical issues raised above is no easy task, I hope that our efforts leave a legacy of fruitful discussion and concrete actions to improve care for people with Alzheimer's Disease across the EU.

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