

Master Thesis

MSc Health Economics, Policy & Law
2011-2012

Institute of Health Policy & Management
Erasmus University Rotterdam
The Netherlands

Who has the most influence on HTA and reimbursement decisions in the UK? A pilot study of drugs for Alzheimer's disease.

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Rotterdam, July 25th, 2012

This Master thesis project was performed during my 6-months internship in Quintiles Consulting. Quintiles is the fully integrated bio and pharmaceutical services provider offering clinical, commercial, consulting and capital solutions. Quintiles' consulting team provides health economic evaluations, pricing and reimbursement strategy and support, monitoring health technology assessment activities, market research and market analyses, outcomes research study design and implementation.

I enjoyed time spent with Quintiles very much and I got broad knowledge and experience which undoubtedly will help me in a future career. I appreciate my university supervisor Ken Redekop and all Quintiles Consulting team's members for their invaluable help and support.

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Abstract

Objectives: To identify and analyze the most influential individuals involved in the health technology assessment (HTA) and reimbursement of drugs for Alzheimer's disease in the UK together with individuals' interconnections within a complex HTA network.

Methods: Three national UK HTA agencies (NICE, SMC, AWMSG) were identified as the most important for reimbursement decisions in the UK. Information about agencies' members was extracted from the agency websites, then supplemented by additional data and divided into different categories (person's role, specialization, membership of other organizations, etc.). Next, HTA reports published from 2001-2012 were identified which described the HTA of one or more treatments of Alzheimer's disease. Information about the individuals involved in those assessments was extracted from the reports and put in the database. A scoring algorithm was developed to calculate each person's weight of influence based on involvement in assessments and membership to the HTA agencies and other organizations. A visualization tool was applied to the dataset to observe interconnections.

Results: In total, 291 individuals were directly or indirectly involved in the HTA process. The majority of them (61%) were clinicians, whereas 11% and 16% had an economic and policy background respectively. We identified a segment of top influential people within the dataset and analyzed their interconnections (involvement in multiple assessments, organizational affiliations). The NHS, University of Southampton, University of Glasgow, and NIHR HTA were identified as key organizations indirectly involved in HTA through their members' connections.

Discussion: This pilot study provides some insight into the UK HTA and reimbursement process at the people level within the therapeutic area of Alzheimer's disease and shows that clinicians have the most influence on HTA and reimbursement in the UK. The results can be used for development of the pharmaceutical market access strategy. The research has methodological limitations and further methodology validation will be conducted in future studies.

Introduction

Health care expenditures have been rising permanently over the last decades. There are many reasons for this, including ageing of the population, prevalence of chronic diseases, new high technologies, etc. In 2009, total expenditures on health as % of GDP in the USA, UK and Netherlands rose by 16.2%, 9.3% and 10.8% respectively.^[1] However, because resources are limited and the whole state budget cannot be spent only on health care, there is a need to choose which medical technologies can be included in the basic benefit package and reimbursed and which cannot.^[2] In many countries, reimbursement decisions are often made based on certain criteria including data from health technology assessment (HTA).^[3] According to the European Network for Health Technology Assessment (EUnetHTA), HTA is *'a multidisciplinary process that summaries information about the medical, social, economic and ethical issues related to the use of a health technology in a systematic, transparent, unbiased and robust manner. Its aim is to inform decision makers of safe, effective health policies that are patient focused and seek to achieve best value.'*^[4] Therefore HTA can be seen as an important advisory tool for deciding on the introduction or reimbursement of new technologies in health care.^[5,6]

In the past a degree of technological innovation and potential benefits of new interventions were the highest priority while the associated costs of such innovations were of less importance. However, this changed: *'In the 1970s escalating costs, in large part fuelled by the open-ended goals of access and quality, were aggravated by a global recession and oil crisis. One result was an unmistakable shift in emphasis from access and quality to cost containment in order to constrain unbridled health care spending. Ageing population, boundless technological expansion and heightened public expectations solidified this goal in the 1990s.'*^[7] So today HTA is compulsory for deciding on reimbursement of new innovative medicines in many countries. Although each country usually has its own approach to HTA, they aim to share experience and learn from each other in order to improve the HTA process and to avoid unnecessary duplications of activities.^[2] The examples of organizations that provide a base for international collaborations and integrate HTA agencies into one global network are EUnetHTA, International Network of Agencies for Health Technology Assessment (INAHTA), and Health Technology Assessment International (HTAi). Thus, the global HTA network is a complex system of different HTA agencies and other stakeholders, who can be more or less important and influential than another. An insight in this system patterns was provided in a project performed by Quintiles in 2011. The results of that research^[8] showed that indeed, there are complex relationships and collaboration patterns between different stakeholders involved in HTA with assignable leaders. A good example of one of the world HTA leaders is the UK National Institute of Health and Clinical Excellence (NICE).

NICE was established in 1999 'to reduce variation in the availability and quality of NHS treatments and care - the so called 'postcode lottery'.^[9] NICE is an independent organization which produces national guidance on health technologies and clinical practice through its Technology Appraisal process (single or multiply Technology Appraisal) and Clinical Guidelines

development process. NICE's Technology Appraisal Committees conduct the appraisals and decide if a new drug or intervention represents value for money and therefore if it can be recommended for use. Since 2002 NHS organizations in England and Wales are obliged to fund medicines and treatments which are recommended in NICE Technology Appraisals guidance, therefore the weight of NICE's recommendations is very high.^[10] However, NICE is influential not only within the UK. HTA agencies worldwide often refer to the UK assessments knowing that NICE has a strong health economics component, thorough methodology and vast experience.^[10,11] The process of NICE's guidance development is transparent and reports are directly available through the NICE website.

Other important national organizations which perform HTAs in the UK are the Scottish Medicines Consortium (SMC) and the All Wales Medical Strategy Group (AWMSG). The SMC is responsible for assessing all new medicines at launch and for providing recommendations regarding the use of those medicines within Scotland.^[12] Like NICE, the SMC performs HTAs of new medicines based on both clinical and cost-effectiveness. The AWMSG advises the Welsh Assembly in its decisions and strategy, although the AWMSG does not assess technologies if they were already assessed by NICE.^[9,13,14]

Taking NICE as an example, the general decision making process regarding drug's reimbursement in the UK can be described as follows (Figure 1). First, the Department of Health produces a list of provisional appraisal topics which come from different sources, including the Department of Health itself, NICE, National Horizon Scanning Centre (NHSC), health professionals, patients, carers, and general public. Then consultees and commentators who will have a part in appraisal process are identified. Consultee organizations include national groups representing patients and carers, bodies representing health professionals, manufacturer(s) or sponsor(s) of the technology in development, the Department of Health, the Welsh Assembly Government, specialized commissioning groups, primary care trusts and local health boards. Consultees can submit evidence during the appraisal, comment on the appraisal documents and appeal against the Appraisal Committee's final recommendations. Commentator organizations include manufacturers of comparator's technologies, NHS Quality Improvement Scotland, the relevant National Collaborating Centre, research groups working in the area, and other groups. Commentators take part in the appraisal process and comment on the various documents produced during the process but they cannot appeal against the final appraisal decision. A technology's manufacturer is invited to provide an evidence of clinical and cost-effectiveness once the appraisal topic is chosen and the scope of a project is defined. Defining the scope usually include assigning the disease and the technology covered by the appraisal. After this, NICE commissions an independent academic centre (Annex 1) to review the evidence and to prepare an Evidence Review Group (ERG) report. The next step is reviewing of an ERG's report by NICE Technology Appraisal Committee (TAC). TAC is an independent advisory committee and it includes members from the NHS, patient and carer organizations, academia, pharmaceutical and medical devices industries. They review an ERG report and evidence submitted by expert advisers, patients and carers and produce the provisional and then final

recommendations. Based on the TAC’s final recommendations NICE produces its guidance which is mandatory for funding by the NHS,^[15] meaning that there is a direct influence of NICE’s recommendations on the reimbursement decision making process. Though neither NICE nor the SMC do not use the term 'HTA reports' for their guidance, we will use this term throughout this thesis for the sake of simplicity when referring to agencies' final recommendations. Because of the similar HTAs development process in the SMC and the AWMSG the influence of those HTAs on reimbursement decisions in Scotland and Wales is the same as the influence of NICE in England.^[16] Although the process is clear and transparent, not much is known about how individuals influence HTA process. There is therefore an important gap in information about people involved in each stage of developing HTA reports and making reimbursement decisions.

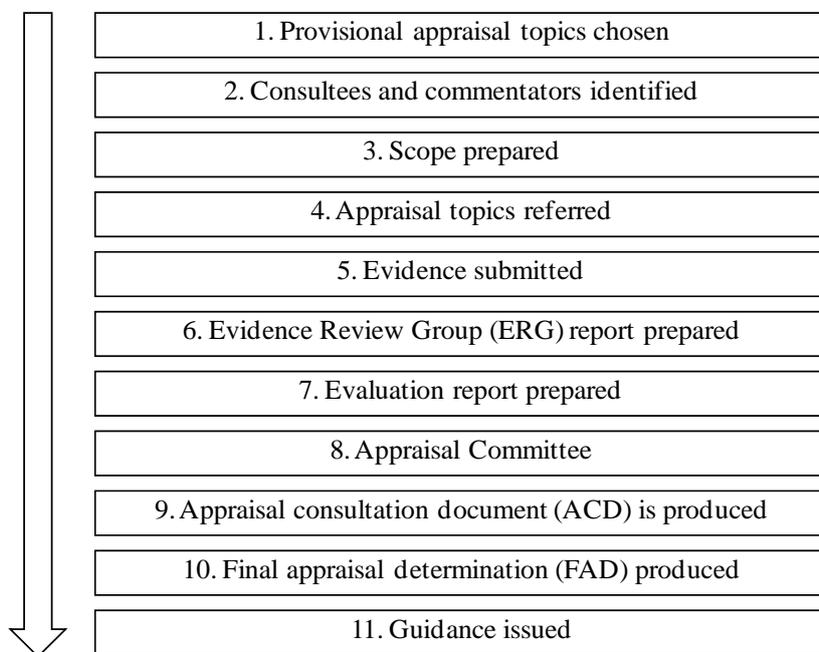


Figure 1. NICE’s guidance development process

When we say that an *agency* performs HTA reports, what do we mean by this? Assessments are performed by *people*, who are professionals from different areas. There is a team of specialists who prepare HTAs, and then these HTAs become a key informational source for policy makers. But who are the people behind agencies’ decisions? Are they health economists, medical doctors, researchers, public health specialists, manufacturers or patients? What are the factors influencing their decisions? It is important to investigate those questions because answers to such questions can lead us to the deeper understanding of how the HTA system works and whose interests are

the first priority when making reimbursement decisions (e.g. patients, payers, manufacturers, etc.).

During the course of this project we decided to conduct a pilot study focusing on a particular type of drugs in a particular therapeutic area. For this study Alzheimer's disease was chosen to research a multi-stakeholder influence on HTA and reimbursement in the UK in this particular therapeutic area. The reason for choosing Alzheimer's disease was the fact that currently there are only four main drugs for the treatment of Alzheimer's disease (donepezil, galantamine, rivastigmine, and memantine) and therefore given the project's timeline it was possible to study the entire therapeutic area.

A research question for this study was: Who are the most important people in the UK regarding influence on HTA and reimbursement decisions of drugs for Alzheimer's disease and how do they interconnect within the HTA network?

At the first sight this question can be easily answered by conducting a simple research directly looking at people who signed off HTA reports and made the reimbursement decisions or by asking HTA experts in the UK about their opinions. However, it is often the case that in fact the people who sign papers and make final decisions are not the key people. The key people are those who are directly involved in for example a project development. Although their influence can be hidden, they are the people whose actions and opinions then influence decision-makers. Therefore we decided that to answer the research question it was necessary to identify and measure the influence of all people involved in HTAs and reimbursement of drugs for Alzheimer's disease in the UK by applying a methodology and a scoring algorithm which were developed for this research.

Methods

The methodology consisted of three main steps: 1) data collection and categorization, 2) data analysis and visualization, 3) correlation and sensitivity analysis.

Data collection and categorization

Data from different sources were collected, categorized and combined in one specifically designed database using Excel.

First, three key national HTA agencies in the UK were identified as those whose judgments are crucial for decision making regarding reimbursement of drugs and medical technologies. The identified agencies were NICE, SMC and AWMSC. General information about the agencies was added to the database: address, phone number, web-site, if an agency is a member of INAHTA and EUnetHTA, if HTA reports are available online, if an agency performs assessments of drugs, medical devices and interventional procedures, if an agency develops clinical guidelines, number of reports published in 2011(Annex 2). Then the data about the agencies' employees were

extracted from their web-sites and put into excel database under different categories. The information about each person included a formal title, name, specialization, specialization category (clinical, economic or policy), the membership of other organizations, the year when a person was an active member of an organization. When it was not enough information provided on an agency's web-site, other resources were used such as LinkedIn and other professional networks.

Then by searching Quintiles' HTA Watch Database^[17] reports published from 2001 to 2012 were identified which described the HTA of one or more treatments of Alzheimer's disease.^[18-27] The information about people who took part in an assessment, decisions made, reasons for making such decisions, drug's manufacturers, organizations involved in an assessment was extracted from the reports and added to the database.

Data analysis and visualization

To be able to analyze who are the most important people for HTA and reimbursement decisions in the UK regarding drugs for Alzheimer's disease we needed to define and calculate the overall importance (or influence) of each particular person on such decisions. We identified three ways through which a person indirectly can influence a reimbursement decision-making process. We also defined the overall influence of a person on reimbursement decisions based on the following categories (Figure 2):

- 1) the person's impact on an agency,
- 2) the person's impact on HTA reports, and
- 3) the person's organizational affiliations.

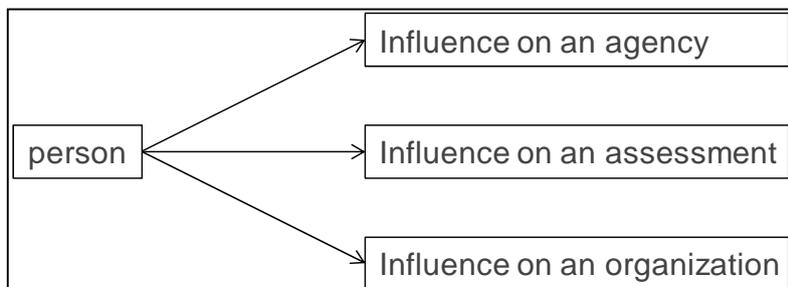


Figure 2. Three ways through which a person can indirectly influence reimbursement decisions.

To calculate the weights of the components in the overall influence, a scoring system was developed and 1, 2 or 3 points for low, medium or high weight of influence were assigned. These weights of influence were defined based on a person's formal role in an agency, organization and assessment (Annex 3). Below the calculation of the components is explained.

Influence of a person on a national HTA agency

Influence of a person on reimbursement decisions through his/her influence on an agency was described via 1) the formal role in the agency, 2) the relative importance of the agency, and 3) the date when a person was an active member of an agency. First we gave 1, 2 or 3 points depending on a person's formal role within the agency. Then we differentiated the agencies by their relative importance for reimbursement decisions and incorporate this relative importance in calculations of the influence of a person on an agency. The relative agency importance was defined and calculated based on a number of reports published by the agency in 2011. Thus, NICE published 110 reports, SMC – 99, AWMSG – 25. We took the number of reports published by NICE as 100% and based on it we calculated relative importance for SMC and AWMSG (it was 90% and 23% respectively). Then, because not all the people in our database were current members of the agency, based on a discussion of the group of four experienced researchers (members of Quintiles Consulting team) we decided to apply a 5% discount rate for each year when a person was inactive. We believed that although past membership is less important than current membership for estimating influence on reimbursement decision, the fact that a person was a member of the agency should still be taken into account. Thus finally, we calculated influence of a person on reimbursement decisions through his/her influence on an agency as a formal role in the agency (applying a 5% annual discount rate) multiplied by the relative importance of the agency.

Influence of a person on an assessment

Influence of a person on reimbursement decisions through his/her influence on an assessment was described via 1) the formal role in an assessment 2) the type of an assessment and 3) the date an assessment took place. We gave 1, 2 or 3 points depending on a person's formal role in an assessment. Then, assuming that different types of reports had different importance for decision-makers, we differentiated the reports and gave each report different weights based on the type of assessment. In collaboration with four researchers we believed that the reasonable estimation was to give 100% for a clinical guideline, original submission and resubmission; 70% for an extension of indication; 60 % for a review and review in progress. Due to a timeframe of more than 10 years (2001 to 2012) when the assessments were published, we decided to apply a 5% annual discount rate assuming that a person's involvement in recent reports is more important for estimating his/her current influence on reimbursement decisions. Finally, we calculated the influence of a person on reimbursement decisions through his/her influence on an agency as a formal role in an assessment (applying a 5% annual discount rate) multiplied by the relative importance of an assessment. If a person was involved in more than one assessment, we sum points for each involvement.

Influence of a person on an organization

Influence of a person on reimbursement decisions through his/her influence on an organization was described via a person's formal role within organization(s) and the date when a person was

an active member of an organization. We applied a 5% annual discount rate for the same reasons and under the same assumptions as we did for influence of a person on a national HTA agency. If a person was a member of more than one organization, we summed points for each affiliation.

Overall influence of a person on reimbursement decisions

When we had all the necessary data, we calculated the overall influence on reimbursement decisions for each person. In consultation with four experienced researchers, we assigned different weights for each of three components of overall influence assuming that a person's direct involvement in an assessment is the main component of the influence on reimbursement decisions, the second most important factor is an influence on a HTA agency, and an influence on other organizations is the least important. We have chosen to use the following arbitrary weights: 25%, 60% and 15% for influence on an agency, an assessment and an organization respectively (Figure 3). Application of these weights made it possible to calculate the overall individual's influence on reimbursement decisions. As a result we had the list of people involved in HTA and reimbursement of drugs for Alzheimer's disease in the UK from 2001 to 2012, and each person's overall importance on HTA and reimbursement decisions. It allowed us to identify the most influential people and analyze those people with regards to the professional group they belong to.

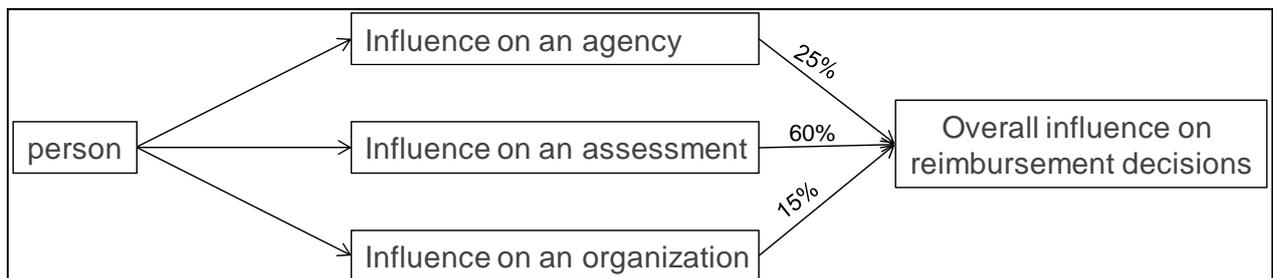


Figure 3. Person's overall influence on reimbursement decision

Data visualization

To visualize the data from our database and to see and analyze connections between objects (people, agencies, organizations and assessments) we applied Ni3 visual analysis software.^[28] The excel document was downloaded in Ni3 and we were given an access to the Ni3 web-based platform where our database was loaded.

Correlation and sensitivity analysis

We conducted a correlation analysis to see if there are any relationships between influence of a person on an agency, an assessment and an organization. We also performed a sensitivity analysis to see how different values of variables (annual discount rate, assessment type, an agency importance for reimbursement decisions and weights for influence of a person on an agency, an organization and an assessment) influence the results (particularly the overall influence of a

person on HTA and reimbursement decisions). For the sensitivity analysis we decided to focus on the top 10% of the most influential individuals to see how the list would change if we changed variables. First, an annual discount rate was varied to 0%, 10% and 15%. Second, weights of assessment type and an agency importance were varied to 100%. Third, the weight for influence of a person on an assessment was varied in five scenarios. Assuming that person's involvement in an assessment was the main component of the overall influence of a person on HTA and reimbursement decisions, we arbitrary decided that it should not had a weight less than 50%. Therefore we decided to vary it from 50% to 100%.

Results

General results

As a result of the research of the UK HTA network at the people's level within a therapeutic area of Alzheimer's disease we collected and analyzed two types of data: objects and objects' connections. The objects used for the analysis were agencies (n 3), people (n 291), organizations (n 110, annex 4), and assessments (n 10). When focusing on the list of 291 people who were directly or indirectly involved in the HTA process and reimbursement of drugs for Alzheimer's disease, we observed that majority of the people were clinicians (61%), whereas only 11% and 16% had economic and policy background respectively (for 12% of people no relevant information was found). When we only focused at 30 people with the highest overall influence we could see that the trend was the same as for all the people – people with clinical specializations were in majority. However, only 8% (14 individuals) of the clinicians (n 178) were psychiatrists.

Table 1 summarizes the information about relationships between people's specialization categories (clinical, economic and policy) and scores received for each of three components of the overall influence and for the overall influence itself. Thus, the scores for the person's overall influence on reimbursement decisions ranged from the minimum 0,1 to the maximum 6,3 with the average value of 1,8. Furthermore, we observed that each specialization category had the highest average score for different components of the overall influence. That is, the economic specialization category had the highest average score for the influence on an assessment, while clinical and policy specialization categories had the highest average scores for the influence on an organization and an agency respectively. The standard deviation was big and ranged from 0,8 to 1,8.

Components of the overall influence		People's specialization category		
		clinical	economic	policy
scores for influence on an assessment	average	1,9	2,2	1,3
	min	0,0	0,0	0,0
	max	9,9	6,6	5,9
	SD	1,8	1,8	1,5
scores for influence on an agency	average	1,4	1,3	1,6
	min	0,0	0,0	0,0
	max	3,1	3,0	3,0
	SD	0,8	0,8	0,9
scores for influence on an organization	average	1,9	1,8	1,5
	min	0,0	0,0	0,0
	max	9,0	5,0	8,0
	SD	1,7	1,4	2,2
scores for the overall influence on reimbursement decisions	average	1,8	1,9	1,4
	min	0,1	0,1	0,2
	max	6,3	4,5	4,4
	SD	1,2	1,2	0,9

Table 1. Individual's specialization categories and scores obtained by each category for each component of the overall influence.

Visualization of interconnections

Use of the Ni3 visualization tool made it possible to observe interconnections between individuals and organizations they were affiliated with. Thus, for example, 11 out of the 40 most influential people were also affiliated with the NHS. This can be explained by the fact that the majority of people involved in HTA had a clinical background and they were physicians working for the NHS. The NHS, University of Southampton, University of Glasgow, and NIHR HTA were identified as key organizations indirectly involved in HTAs through their members' connections (Figure 4). Also, one individual was identified as connected to three key HTA agencies (Figure 5).

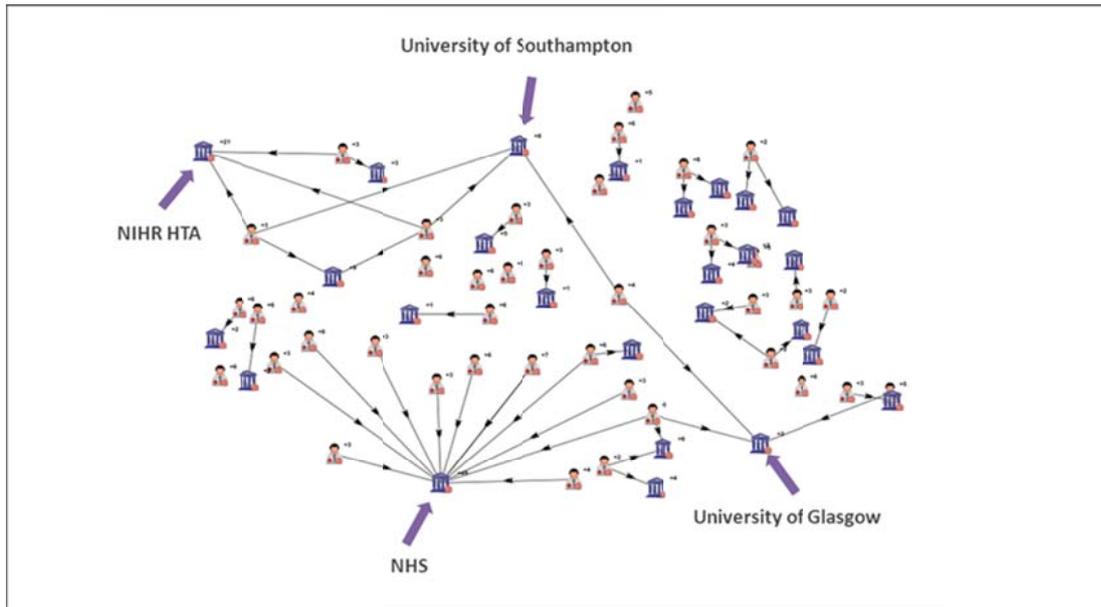


Figure 4. Organizational affiliations of the 40 people with the highest overall weight of influence on reimbursement decisions (the screenshot from Ni3)

While visualizing interconnections between HTA agencies, assessments and people involved in assessments, we observed that the SMC had much higher cross-involvement of the same people in multiple assessments with the 70% people involved in two assessments and more (with maximum of 5). In contrast, at NICE, only 13% of people were involved across multiple HTAs (with maximum of 2). Additionally, there was no cross-border collaboration observed, with only one individual listed as a contributor in both SMC and NICE assessments (Figure 5). Table 2 provides the numbers for figure 5.

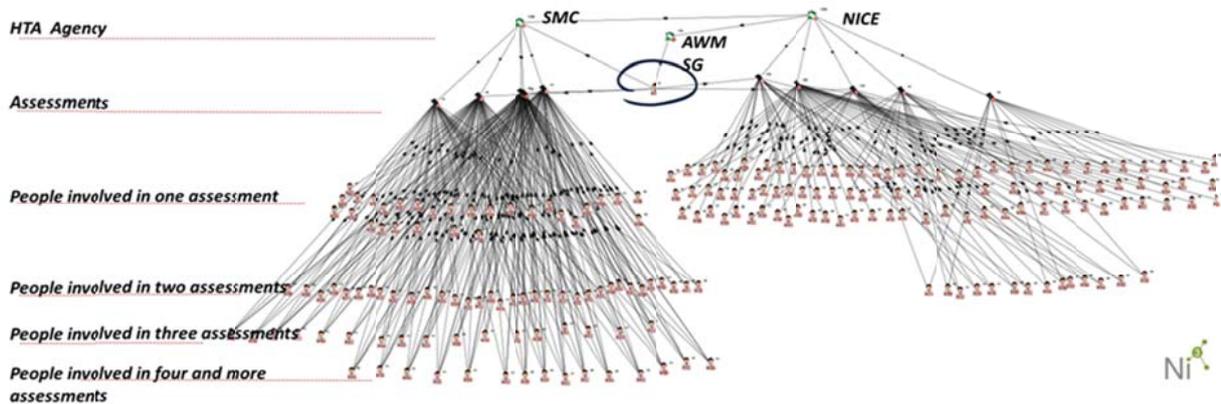


Figure 5 Visual map of individuals involved in multiple assessments of drugs for Alzheimer's disease in the UK (the screenshot from Ni3)

Number of assessments in which the same person was involved	Number of people involved in assessments	
	SMC	NICE
4+	18 (18.8%)	-
3	15 (15.6%)	-
2	34 (35.4%)	14 (12.7%)
1	29 (30.2%)	96 (87.3%)
Total number of people involved	96	110

Table 2 Cross-involvement of people in multiply HTAs: SMC vs NICE

Correlation analysis

A correlation analysis revealed that relationships between a person's influence on an agency, an assessment and an organization were small. Specifically we found the following correlation coefficients:

- between a person's influence on an agency and an assessment 0.08
- between a person's influence on an agency and an organization 0.18
- between a person's influence on an assessment and an organization 0.01

Low correlation coefficients mean that influences of a person on an agency/an assessment/an organization cannot be predicted from each other. For instance, if a person has a high influence on an agency, we cannot say with certainty if he/she has high or low influence on an organization or an assessment.

Sensitivity analysis

For sensitivity analysis we decided to focus on the 30 most influential individuals (top 10%) to see how much the list would change if we change the variables. The first analyzed variable was an annual discount rate. For our base case we applied a 5% annual discount rate. When applying a 0%, 10%, 15% annual discount rate, the top 30 list changed by 16.7%, 23.3% and 50% respectively in comparison with the base case (Table 3). We also observed that top 5 people were the same in all cases, only their order changed.

The second parameter we analyzed was the type of assessment. In the base case we gave different weights for different assessment types. During the sensitivity analysis we gave the same weight (100%) for each assessment type and our top 30 list changed by 6.7%. The third analyzed variable was agency importance for reimbursement decisions. In the base case we differentiated

agencies based on the number of reports published in 2011. To conduct a sensitivity analysis we gave the same importance (100%) for each agency and as a result our base case changed by 3.3% (Table 3).

Parameter change		Base case changes			
		Number of people in the base case's list	Number of people remained in the base case's list after a parameter's change	Change of the base case	
				Number of people	%
Annual discount rate	0%	30	25	5	17%
	10%	30	23	7	23%
	15%	30	15	15	50%
No difference between types of assessments		30	28	2	7%
No difference between agencies importance		30	29	1	3%

Table 3. Results of a sensitivity analysis of changes in an annual discount rate, types of assessments, and agencies' importance.

The next step was to analyze how sensitive the list of top 30 people to changes in weighting of each component of the overall person's influence on reimbursement decisions. In the base case we gave 15% for organizational influence, 25 % for agency influence and 60% for an assessment influence and for sensitivity analysis we applied five scenarios of different weights for the components (Table 4).

	Weights to estimate a person's influence on reimbursement decisions			Changes in list of top 30 persons			
	Organizational influence	Agency influence	Assessment influence	Number of people in the base case list	Number of people remained from the base case list after applying the scenario	Change in list	
						Number of people	%
Base case	15%	25%	60%	30	30	-	-
scenario 1	20%	30%	50%	30	29	1	3%
scenario 2	12%	18%	70%	30	28	2	7%
scenario 3	8%	12%	80%	30	28	2	7%
scenario 4	4%	6%	90%	30	27	3	10%
scenario 5	0%	0%	100%	30	25	5	17%

Table 4. Results of sensitivity analysis of weights for agency, organizational and assessment importance

Thus, the results were sensitive to change in the annual discount rate. The effects of changes in other parameters, such as assessment type, an agency importance for reimbursement decisions and weights for an agency, an organizational and an assessment importance, were less significant.

Discussion

Who has the most influence on HTA and reimbursement in the UK? Due to growing importance of cost-effectiveness studies for decision-making⁶, we expected to see many health economists acting as people with a high influence on reimbursement decisions. Instead, the results presented in this study showed that the clinicians predominated among people involved in HTA of drugs for Alzheimer's disease in the UK. Interestingly, those clinicians were mostly specialists from other therapeutic areas and not from psychiatry. Not much studies had been published which compare how familiar doctors are with therapeutic areas which differ from the area of their specialization and how it influences the quality of care.^[29] However, for us it was to a large extent obvious that although any doctor has knowledge from all areas of medicine, awareness of a doctor with specialization in psychiatry about psychiatric patients is incomparably higher than the awareness of for example a general practitioner about same patients. It means that in the UK the interests of patients with Alzheimer's disease were not well presented despite the fact that the decisions about drugs reimbursement very much depended on doctors' opinions.

The second part of the research question was 'how do people involved in HTA and reimbursement interconnect within HTA network?' As expected, we identified the key organizations involved in HTA through their members' connections, although we had expected to see more cross-involvements. Additionally, we expected to find interconnections between people involved in NICE and SMC assessments, but in fact our results showed that there were no cross-border collaborations through the agencies' members, which implies that NICE and SMC did not have a close cooperation when working on Alzheimer's disease drug assessments. The fact that people from the SMC were mostly involved in multiple assessments can be explained by the limited number of specialists in Scotland because of the relatively small size of the country. Moreover, as stated in the NICE's internal regulations, the TAC members are elected for a 3-years term^[30] while the SMC does not have such limitations.

The research had some limitations related to the methods and the scoring algorithm. The development of the methodology was challenging and it was one of the main parts of the study. Not much had been published in the area of stakeholder influences on HTA and reimbursement decisions, therefore the methodology was developed mostly based on opinions of involved researchers. Their practical experience helped to build a set of reliable assumptions as we have seen during the sensitivity analysis, however the subjective component of the assumptions needs to be worked on in the future to minimize it. The study limitations were determined by the following key assumptions. First, we assumed that the overall importance of a person on reimbursement decisions consists of three components: a person's influence on an agency, an assessment, and an organizational. Second, a person's weight of influence within an agency, an

organization or for an assessment was estimated based on a person's formal role and using a 3 points scoring system. The evaluation was performed by four researchers (members of Quintiles Consulting team) based on their opinion and experience. In order to validate our methodology and to check if the obtained results corresponded to the facts, we shared them with the SMC advisor (health economist) and asked about his opinion. In general, he agreed with the results and showed a lot of interest in the methodology. One of his comments was that some people who, according to our findings, have the high influence on reimbursement decisions are not current members of the SMC, but he admitted that they indeed were influential in the past. Also he mentioned that their current importance is determined by knowledge and experience in HTA and reimbursement process which can be used for instance by pharmaceutical companies when asking about a new product coming to the market. So, to have more up-to-date results we can apply the higher annual discount rate in future studies, and our sensitivity analysis showed that the results were sensitive to this variable.

What are the implications of the research's findings? HTA reports are primarily prepared by people. Zooming into the HTA system at the level of individuals enabled us to better understand who these people are, and how they are interconnected and contribute to reimbursement decision making process. What is more, identifying the most influential people can be used in market access projects where clients (e.g. pharmaceutical companies) are interested in knowing about the right people to talk to (e.g. key opinion leaders) when it comes to a new product introduction. Some similar studies about mapping of stakeholders' influence have been published.^[31,32] The high value of such studies for the purposes of strategic management was recognized, however no HTA field related studies had been found. Therefore, the further research of influence of different on HTA and reimbursement decisions will contribute additional value to understanding of healthcare reimbursement decisions making process.

This study was initially designed as a pilot study with the aim to test the developed methodology and to examine the importance of people involved in HTA and reimbursement decisions of drugs for Alzheimer's disease in the UK. The study was a starting point for other challenging projects and there are many areas for future research. First, we plan to investigate other therapeutic areas and other countries with the aim to find and analyze differences and similarities with the current research. Second, we wish to improve and further develop the methodology and make it more objective by including other criteria for estimating the overall person's importance. For example, the additional criteria such as number of scientific publications and a number of references to a person can be included in a scoring algorithm. Also we want to validate the methodology and results further by conducting interviews with HTA experts in the UK as we did with the SMC advisor.

Conclusions

The HTA network is a complex system with many different stakeholders. Zooming into this system at the people's level allowed deeper understandings who these people are, how they are

interconnected and contribute to reimbursement decision making process. This pilot study provides some insight into the UK HTA and reimbursement process at the individuals' level within a specific therapeutic area (drugs for Alzheimer's disease) and shows that clinicians have the most influence on HTA and reimbursement in the UK. More criteria for estimating a person's importance for HTA and reimbursement decisions can be included in future studies.

References

1. World Health Organization (WHO). Available from URL: <http://www.who.int/countries/en/> [Accessed July 3, 2012]
2. Van Nooten F, Holmstrom S, Green J et al. Health economics and outcomes research within drug development: Challenges and opportunities for reimbursement and market access within biopharma research. *Drug Discovery Today* 2012; 17 (11-12): 615-622
3. The Centre for Innovation in Regulatory Science (CIRS). Understanding HTA and coverage decision-making process: The key to facilitating transparent access to medicines. Available from URL: http://www.cirsci.org/system/files/private/CIRS%20Workshop_Enabling%20Process%20Transparency%20-%20final.pdf [Accessed July 3, 2012]
4. The European Network for Health Technology Assessment (EUnetHTA). Available from URL: http://www.eunethta.eu/Public/About_EUnetHTA/HTA/ [Accessed July 3, 2012]
5. Shad M, John J. Towards a social discount rate for the economic evaluation of health technologies in Germany: an exploratory analysis. *Eur J Health Econ* 2012;13:127-144.
6. Wilsdon T, Serota M. A comparative analysis of the role and impact of Health Technology Assessment. London: Charles River Associates 2011. Available from URL: http://www.phrma.org/sites/default/files/1661/hta_final_comparison_report_13_may_2011_stc1.pdf [Accessed July 3, 2012]
7. Blank RH, Burau V, Setting Priorities and Allocating Recourses. In: Blank RH, Burau V, Comparative health policy. 2nd ed. Basingstroke: Palgrave Macmillan, 2007.
8. International Society for Pharmacoeconomics and Outcomes Research (ISPOR). Available from URL: http://www.ispor.org/awards/14euro/HT3_ISPOR_Madrid2011.pdf [Accessed July 3, 2012]
9. The National Institute for Health and Clinical Excellence (NICE). Available from URL: http://www.nice.org.uk/aboutnice/whoweare/who_we_are.jsp [Accessed July 3, 2012]
10. International Society for Pharmacoeconomics and Outcomes Research (ISPOR). Available from URL: <http://www.ispor.org/HTARoadMaps/UK.asp> [Accessed July 3, 2012]
11. O'Donnell J C, Pham S V, Pashos C L, et al. Health Technology Assessment: Lessons Learned from Around the World—An Overview. *Value in Health* 2009; 12: S1–S5
12. Bending M, Hutton J, McGrath C. A comparison of pharmaceutical reimbursement agencies' processes and methods in France and Scotland. *Int J Technol Assess Health Care* 2012; 28 (2): 187-194
13. Brooking, Trevor. "RE: question regarding AWMSG appraisals." Personal communication. May 3, 2012. E-mail.

14. Marchant, J. Trends in Health Technology Assessment. Country-specific analyses of the evolving HTA environment affecting pharmaceutical and medtech reimbursement. Business Insights 2011.
15. The National Institute for Health and Clinical Excellence (NICE). Available from URL: http://www.nice.org.uk/aboutnice/howwework/devnicetech/developing_nice_technology_appraisals.jsp [Accessed July 3, 2012]
16. Tolley K. Pharmaceutical market access and the challenges of health technology assessment in the United Kingdom. *Drug Development Research* 2010; (71) 8: 478-484, Wiley Subscription Services, Inc., A Wiley Company
17. Quintiles HTA Watch. Available from URL: <http://www.quintiles.com/information-library/brochures/hta-watch-integrated-solutions-maximize-product-potential/> [Accessed July 3, 2012]
18. The National Institute for Health and Clinical Excellence (NICE). Donepezil, galantamine, rivastigmine and memantine for the treatment of Alzheimer's disease. Technology appraisals, TA217 - Issued: March 2011. This guidance replaces NICE technology appraisal guidance 111 issued in November 2006 (amended September 2007, August 2009). Available from URL: <http://guidance.nice.org.uk/TA217> [Accessed July 3, 2012]
19. The Scottish Medicines Consortium (SMC). Reminyl XL® Available from URL: http://www.scottishmedicines.org.uk/SMC_Advice/Advice/Reminyl_XL__174___for_the_treatment_of_dementia_in_Alzheimer_s_disease/Reminyl_XL_ [Accessed July 3, 2012]
20. The Scottish Medicines Consortium (SMC). Memantine (Ebixa) Available from URL: Original Submission Web-link: <http://www.scottishmedicines.org.uk/files/Memantine.pdf> [Accessed July 3, 2012]
21. The Scottish Medicines Consortium (SMC). Memantine (Ebixa): Resubmission Available from URL: [http://www.scottishmedicines.org.uk/files/Memantine Ebixa Resubmission.pdf](http://www.scottishmedicines.org.uk/files/Memantine_Ebixa_Resubmission.pdf) [Accessed July 3, 2012]
22. The Scottish Medicines Consortium (SMC). Rivastigmine 4.6mg/24h and 9.5mg/24h transdermal Patch (Exelon®) Available from URL: http://www.scottishmedicines.org.uk/files/41407_rivastigmine_Exelon_Abbreviated_Nov_07.pdf [Accessed July 3, 2012]
23. The Scottish Medicines Consortium (SMC). Donepezil 5mg and 10mg orodispersible tablets (Aricept® Evess) Available from URL: http://www.scottishmedicines.org.uk/files/donepezil_orodispersibletablets_Aricept_AbrA ug.pdf [Accessed July 3, 2012]
24. The National Institute for Health Research Health Technology Assessment programme (NIHR HTA). Clinical and cost effectiveness of donepezil, rivastigmine and galantamine

- for Alzheimer's disease: a rapid and systematic review. Available from URL: <http://www.hta.ac.uk/1190> [Accessed July 3, 2012]
25. The National Institute for Health Research Health Technology Assessment programme (NIHR HTA). The clinical and cost-effectiveness of donepezil, rivastigmine, galantamine and memantine for Alzheimer's disease. Available from URL: <http://www.hta.ac.uk/1398> [Accessed July 3, 2012]
 26. The National Institute for Health and Clinical Excellence (NICE). Guidance on the Use of Donepezil, Rivastigmine and Galantamine for the Treatment of Alzheimer's Disease. (NICE, 2001, replaced by TA111)
 27. The National Institute for Health and Clinical Excellence (NICE). Donepezil, galantamine, rivastigmine (review) and memantine for the treatment of Alzheimer's disease (amended). (NICE, 2006, replaced by TA217)
 28. Ni3 AG. Available from URL: <http://www.ni3.net/> [Accessed July 3, 2012]
 29. Grilli R, Minozzi A, Tinazzi A, et al. Do specialists do it better? The impact of specialization on the process and outcomes of care for cancer patients. *Annals of Oncology*. 1998; 9: 365-374
 30. The National Institute for Health and Clinical Excellence (NICE). Available from URL: http://www.nice.org.uk/aboutnice/howwework/devnicetech/technologyappraisalcommittee/technology_appraisal_committee.jsp [Accessed July 3, 2012]
 31. Walker D, Bourne L, Shelley A. Influence, stakeholder mapping and visualization. *Construction Management and Economics*. 2006;26: 645-658. Available from URL: <http://www.tandfonline.com/doi/abs/10.1080/01446190701882390> [Accessed July 3, 2012]
 32. Walker D, Bourne L. Using a visualizing tool to study stakeholder influence. Two Australian examples. *The Project Management Journal*. 2006; 37: 5-21. Available from URL: http://www.stakeholder-management.com/Papers/P047_Visualising_Influence.pdf [Accessed July 3, 2012]

Annexes

Annex 1. The list of independent academic centers commissioned by NICE to prepare evidence review group's report

NICE commissions an independent academic centre to review the published evidence on the relevant technology when developing technology appraisals guidance. NICE currently works with the following organizations:

- BMJ Technology Assessment Group (BMJ-TAG), BMJ Evidence Centre
- Health Economics Research Unit and Health Services Research Unit, University of Aberdeen
- Kleijnen Systematic Reviews Ltd
- Liverpool Reviews & Implementation Group, University of Liverpool
- NHS Centre for Reviews and Dissemination, University of York
- Peninsula Technology Assessment Group (PenTAG), Peninsula Medical School, Universities of Exeter and Plymouth
- School of Health and Related Research (ScHARR), University of Sheffield
- Southampton Health Technology Assessment Centre (SHTAC), University of Southampton
- Warwick Evidence

Annex 2. Data taxonomy and definitions

The Ni3 software has special requirements for files to be uploaded. The data taxonomy sheet basically took the excel file and defined the attributes, the corresponding values and how the data shall be displayed in Ni3 visualization tool.

Object type	Attribute label	Value type	List / example of values	Definition & comments	Display in Ni3
Represents a worksheet in the Ni3 upload xls file	List of attributes displayed horizontally in the object type worksheet	Defines the type of value entered in the cells (pdv= pre-defined values, a list)	Provides an example of data value	Provides a definition of the attribute (especially important for scores) that can be displayed as pop-up labels on the Ni3 Node List Panel	Defines where in Ni3 the attribute shall be displayed
Assessment	ID	number	[free text]		no
Assessment	Name	text	[free text]	Name of the assessment	Tooltip
Assessment	Type of assessment	pdv	clinical guideline / review in progress / extention of indication / original / resubmission / review	Type of assessment describes whether the assessment is a xxx	Tooltip / Filter
Assessment	Date of assessment	date (dd/mm/yyyy)	[free text]	Date of assessment	Tooltip / Filter
Assessment	Remarks	text	[free text]	Remarks on the assessment	Tooltip
Assessment	Web-link	text	[free text]	URL of assessment report	Tooltip
Agency	ID	number	[free text]		no
Agency	Full name	text	[free text]	Full written name of agency	Tooltip
Agency	Name abbreviation	text	[free text]	Established short abbreviation of agency	Tooltip
Agency	Country	pdv	UK	Standardized country abbreviations	Tooltip / Filter
Agency	Website	text	[free text]	URL of agency homepage	Tooltip
Agency	Street	text	[free text]	Street & number	Tooltip
Agency	Postal Code	text	[free text]	Postal code	Tooltip
Agency	City	text	[free text]	Name of the city the agency resides	Tooltip
Agency	Phone	text	(+44)8450037780	Phone number incl. International country code, standard format, no blanks	Tooltip
Agency	Email (general)	text	[free text]	General agency contact email address	Tooltip
Agency	Member of INAHTA	pdv	yes / no	Is the agency member of the INAHTA?	Tooltip
Agency	Member of EUnetHTA	pdv	yes / no	Is the agency member of the EUnetHTA?	Tooltip
Agency	Publications in English	pdv	yes / no	Does the agency publish in English?	Tooltip
Agency	Publications online	pdv	yes / no	Does the agency publish online?	Tooltip
Agency	Drug assessments	pdv	yes / no	Does the agency assess drugs?	Tooltip / Filter
Agency	Device assessments	pdv	yes / no	Does the agency assess devices?	Tooltip / Filter
Agency	Procedure assessments	pdv	yes / no	Does the agency assess procedures?	Tooltip / Filter
Agency	Guideline development	pdv	yes / no	Does the agency develop guidelines?	Tooltip / Filter
Agency	Overall importance of agency	number	[free text]	Overall importance of agency describes the importance of an agency based on the number of published reports	Tooltip
Agency	# of published articles	number	[free text]	# of published articles by the agency	Tooltip / Filter
Agency	Involvement of industrial stakeholders	pdv	yes / no	Involvement of industrial stakeholders describes whether the agency allows the participation of manufacturers in the decision making process	Tooltip
Agency	Involvement of public stakeholders	pdv	yes / no	Involvement of public stakeholders describes whether the agency allows the participation of public stakeholders in the decision making process	Tooltip
Agency	Population	number	[free text]	Population describes the number of inhabitants in the geographic area the agency is taking decisions for	chart
Person	ID	number		1	no
Person	Title	pdv	Mr / Mrs / Ms / Dr / Miss / Professor / Sir / Unknown	Formal personal title	Tooltip
Person	First name	text	[free text]	First name	Tooltip
Person	Last name	text	[free text]	Last name	Tooltip
Person	Specialization	text	[free text]	Professional field of expertise	Tooltip
Person	Specialization category	pdv	Economic / Clinical / Policy	Category of professional field of expertise	Tooltip / Filter
Person	Overall influence	number	[free text]	Overall influence of person on health technology assessment decisions describes the importance of a person on such decision making based on the persons impact on assessments, agencies and organizational affiliations	Tooltip / Filter

Person	Assessment influence	number	[free text]	Assessment influence of person on health technology assessment decisions describes the importance of a person on such decision making based on the formal role in assessments, the type of assessment and the date the assessment took place	Tooltip / Filter
Person	Agency influence	number	[free text]	Agency influence of person on health technology assessment decisions describes the importance of a person on such decision making based on the formal role in the agency and the importance of the agency, and date when person was active member of an agency (date discounting)	Tooltip / Filter
Person	Organizational influence	number	[free text]	Organizational influence of person on health technology assessment decisions describes the importance of a person on such decision making based on the number of organizational affiliations the person has, person's role within organization(s), year when a person was active member of an organization(s)	Tooltip / Filter
Organization	ID	number		1	no
Organization	Name	text	[free text]	Name of the organization	Tooltip
Organization	Abbreviation	text	[free text]	Established short abbreviation of the organization	Tooltip
Organization	Type of institution	pdv	Academic / Clinic / Governmental Institution / Professional Association / Patient Association / Public Payer / Private Payer	Type of organization	Tooltip / Filter
Organization	Website	text	[free text]	URL of organization homepage	Tooltip
Organization	Country	text	[free text]	Standardized country abbreviations (including international)	Tooltip / Filter
Technology	ID	number		1	no
Technology	Scientific name	text	[free text]	Scientific name of the technology	Tooltip
Technology	Type of technology	pdv	Drug / Device / Procedure	Type of technology	Tooltip / Filter
Technology	Brand name	text	[free text]	Brand name of the technology given by manufacturer	Tooltip
Technology	Degree of innovation	pdv	new MOA / new formulation / no new MOA / no new formulation	How is the technology positioned?	Tooltip / Filter
Technology	date of approval by EMA	year	[free text]		Tooltip
Technology	Licensed indication	pdv			Tooltip / Filter
Manufacturer	ID	number		1	
Manufacturer	Name	text	[free text]	Manufacturer name	Tooltip
Manufacturer	Address	text	[free text]	Manufacturer global HQ address	Tooltip
Manufacturer	Phone	text	[free text]	Phone number incl. International country code, standard format, no blanks	Tooltip
Manufacturer	Email	text	[free text]	General manufacturer contact email address	Tooltip
Manufacturer	web-site	text	[free text]	URL of manufacturer homepage	Tooltip

Annex 3. Explanation of weight of influence valuation

We identified a person's weight of influence by applying a theoretical concept that defines influence as a function of a person's engagement in agencies/assessments/organizations. The list of formal people's positions was analyzed by four researchers and the positions were allocated in three groups. Allocation depended on weight of influence on an agency/assessment/organization a person potentially have when he/she has a particular position.

agency name	Weight of influence of a person on an agency		
	low	medium	high
NICE	Assistant Project Manager	Member of TAC	Chairman
		Technical adviser	Non-executive director
		Programme Manager	Deputy Chief Executive
			Director of business planning and resources
			Director of the Centre for Health Technology Evaluation
			Founding director
			Senior adviser
			Director of Centre for Clinical Practice
			Programme director
			Associate director
			Chair of technology appraisal committee
			Vice Chair of technology appraisal committee
			Technical Lead
			Project manager
		Undertake TAR for NICE	
		Evidence reviewer	
SMC	Secretariat	SMC member	Chairman
	Communications Officer	Clinical pharmacology observer	Co-Vice-Chairman
			Executive member
			Member of NDC
			Chair of the New Drugs Committee
			Vice-chair of NDC
		NDC Economic Assessment Team	
AWMSG		Member	Chairman

assessment published by	Weight of influence of a person on an assessment		
	low	medium	high
NICE	Give expert personal view	Member of TAC	Chair of TAC
	Health technology analyst	Project manager	Representing the Guideline Development Group
		Technical adviser	Author of ERG report
		NHS Commissioning expert	Vice chair of TAC
SMC	SMC secretariat	SMC member	Chairman of SMC minutes
			Chair of NDC
			Vice-chair of NDC
			NDC EconomicAssessment Team
			NDC member

Weight of influence of a person on an organization		
low	medium	high
Member	Adviser	Professor
Fellow	Consultant	Head
Lecturer	Epidemiologist	Projects lead
GP	Trustee	Chair
Patient expert	Member of the editorial board	Chief Executive
Pharmacist	Health economist	Co-director
Lay Representative	Senior Lecturer	Honorary Fellow
Manager	Principal Pharmacist	Producing systematic reviews
Specialist	Member of the advisory panel	Director
Clinical pharmacologist	Reader in health economics	Honorary Senior Lecturer
Pharmacist	Lead Pharmacist	Senior medical statistician
Biostatistic	Chief Executive Officer	Vice President
	Senior Fellow	Senior advisor on international policy
	Public Involvement Officer	Senior Lecturer in Health Economics
	Evidence syntheses	honorary consultant
	Comments and Criticisms Editor	Principal Research Fellow in SHTAC
	Review Coordinator	Conduct systematic reviews
	Clinical pharmacologist	
	Representative	
	GP with prescribing lead role	

Annex 4. The list of organizations which are affiliated with HTA agencies (including affiliation through people and assessments)

- 1 The Department of Health
- 2 The Citizens Council (NICE)
- 3 The National Clinical Guideline Centre
- 4 Royal College of Physicians
- 5 Royal College of General Practitioners
- 6 Royal College of Nursing
- 7 Royal College of Surgeons of England
- 8 National Collaborating Centre for Cancer
- 9 National Collaborating Centre for Women and Children's Health
- 10 National Collaborating Centre for Mental Health
- 11 Cardiff University
- 12 The UK Cochrane Centre
- 13 South West Strategic Health Authority
- 14 University of London
- 15 University of Newcastle upon Tyne
- 16 Royal Society for Public Health
- 18 Health and Sustainability Network
- 19 Faculty of Public Health
- 20 Institute of Health Management
- 21 Oxford University
- 22 Queen's University Belfast
- 23 Nottingham Trent University
- 24 University of Ulster
- 25 University College London
- 26 British Occupational Health Research Foundation
- 27 MIND (national association for mental health)
- 28 Mental Health Review Journal
- 29 Durham University
- 30 Wolfson Research Institute
- 31 UKCRC Centre for Translational Research in Public Health
- 32 Royal College of Physicians of Edinburgh
- 33 Health Technology Assessment international
- 34 Cochrane Collaboration
- 35 University of Manchester
- 36 Center for Medical Technology Policy (USA)
- 37 University College Hospital, London
- 38 Alzheimer's Society
- 39 Royal College of Psychiatrists
- 40 British Geriatrics Society

41 Clatterbridge Centre for Oncology
42 University of Sheffield
43 NHS
44 University of Liverpool
45 Countess of Chester
46 University of York
47 Manchester Metropolitan University
48 Keele University
49 Paediatrician Royal Hallamshire Hospital Sheffield
50 Royal College of Paediatrics
51 Manchester Business School
52 University Hospitals Bristol
53 Tramways Medical Centre
54 The National Centre for Mental Health
55 University of Birmingham
56 Rotherham Primary Care Trust
57 Scottish Health Technologies Group
58 Royal Liverpool University Hospital
59 John Radcliffe Hospital
60 Whittington Hospitals
61 Peninsula Technology Assessment Group
62 Brunelcare
63 The Neurological Alliance
64 Association of British Neurologists
66 Welsh Assembly Government
67 NHS Quality Improvement Scotland
68 Institute for Ageing and Health
69 Research Institute for the Care of Older People
70 National Institute for Health Research HTA Programme
71 Scottish Dementia Clinical Research Network
72 Alzheimer Scotland
73 University of Exeter
74 University of Glasgow
75 University of Southampton
76 University of Aberdeen
77 Argyll and Bute Hospital
78 Astma UK
79 Scottish Intercollegiate Guidelines Network
80 University of Edinburgh
81 Boehringer Ingelheim Ltd
82 The Medicines and Healthcare products Regulatory Agency
83 Technical Advisory Group on Resource Allocation (Scotland)
84 Association of the British Pharmaceutical Industry

- 85 Long-term conditions alliance Scotland (LTCAS)
- 86 Novartis Pharmaceuticals
- 87 Lilly UK
- 88 Lancaster University
- 89 University of Cambridge
- 90 Institute of Psychiatry
- 91 Wessex Institute for Health Research and Development
- 92 University of Melbourne
- 93 USC Alzheimer's Disease Research and Clinical Center
- 94 Dundee University
- 95 National Public Health Service for Wales, Cardiff
- 96 Welsh Health Specialised Services Commission
- 97 University of Glamorgan
- 98 Abertawe Bro-Morgannwg University
- 99 Betsi Cadwaladr University
- 100 University Hospital of Wales
- 101 BMJ Technology Assessment Group (BMJ-TAG), BMJ Evidence Centre
- 102 Kleijnen Systematic Reviews Ltd
- 103 University of Warwick
- 104 Alzheimer Europe
- 105 University of Leicester
- 106 Royal London School of Medicine
- 107 Institute of Public Health
- 108 Brunel University London
- 109 Institute for the Health of the Elderly
- 110 University of Bath