PNS254

Inclusion of Productivity Losses in HTA Evaluations in Function of Who Bears Productivity Losses in the Real World – A Qualitative Assessment

Contente M[1], Singh P[2], van Dijk BCP[3], Dardouri M[4], Bey E[4], François C[5]

[1] Bristol-Myers Squibb Pharmaceuticals Ltd, United Kingdom; [2] Bristol-Myers Squibb, Princeton (NJ), United States; [3] Creativ-Ceutical, Rotterdam, the Netherlands; [4] Creativ-Ceutical, Tunis, Tunisia; [5] Creativ-Ceutical, Paris, France

Background

- Sick pay schemes are key social protection instruments to replace the loss of income during periods of illness and are implemented in many countries around the world to address health deterioration, including loss of productivity[1]
- The nature of sick pay schemes varies widely among different countries and depends on payment arrangements between the employee, employer and the social security system. Three different archetypes can be identified when categorising systems: an employee-borne system, an employer-borne system and a system where the state carries the vast majority of the burden
- The nature of sick pay schemes and who bears productivity losses in the real world may be linked to how strong the incentive is for the employee to return to work after illness. Similarly, the inclusion of productivity losses in national Health Technology Assessments (HTAs) is likely to affect the incremental cost-effectiveness ratio (ICER), since not returning to work during or after treatment, leads to a financial loss[2]
- There is an expanding discussion about using the societal perspective in HTA and economic evaluations. Work productivity losses and absenteeism are the key drivers of the costs within the societal perspective.[3] Indirect costs are particularly relevant in oncology as many people diagnosed with cancer are working at the time of diagnosis and thus likely to take time out of the workforce for treatment, recuperation and rehabilitation[4]

Objective

- To map statutory sick leave policies for countries in focus and to survey expert opinion on the extent to which the likelihood of productivity loss (PL) being considered in Health Technology Assessments (HTA) correlates with:
  - the identity of the loss bearer (state, employer, or employee) and
  - the influence of sick leave insurance

Methods

Overview of statutory sick leave policies for countries in focus

- Sick leave management paths in North America (United States, Canada) and Europe (UK, France, Germany, Sweden, Norway, Netherlands) were reviewed through an unconstrained Google-based search of national government and non-government websites and institutional reports. Information on statutory/state policies relating to short and long-term disability and payment was recorded per country

Interviews with experts

- In all countries within scope semi-structured interviews were held with recognized experts in the field of HTA and productivity measurement. Interviews were held between August and October 2018
- Based on the experts' answers and public government information, countries were categorised into state-, employer-, or employee-borne systems and ranked comparatively by the nature of their insurance system (public vs private) and by the consideration of productivity loss in HTA or economic evaluations

Results

Identifying policies related to indirect costs in the assessment of how work productivity is currently included in HTAs or economic evaluations. For all countries within the scope, an attempt was made to map the policies that exist in and around the topic of how work productivity is currently included in HTAs or economic evaluations **(Table 1**)

Table 1. Consideration of productivity loss in HTA per country

Country	Productivity loss inclusion in HTA	Comments
Canada[5,6]	CADTH: Yes (SA only)	• For CADTH, the perspective should be that of the publicly funded health care system • If the societal perspective is of interest to the decision-maker, an additional non-reference case analysis can be included as a non-reference case
	INESSS: Yes (Base case)	• In Quebec, pharmaco-economic analyses by the Institut National D'excellence En Santé Et Services Sociaux (INESSS) by default adopt the societal perspective
Sweden[7]	Yes (SA only)	• Indirect costs are excluded in the base case, but can be added as a sensitivity analysis. • Productivity loss can be considered in sensitivity analyses if its inclusion can be justified
NL[8]	Yes (Base case)	• Economic evaluations are conducted from the societal perspective, including productivity loss
UK (Eng)[9]	No*	• Productivity costs are not included in either the reference case or non-reference case analyses
Germany[10]	No*	• In the German HTA process (G-BA early benefit evaluation), only directs costs are considered
France[11]	Yes (SA only)	• Only direct costs are taken into account by the HAS in the reference case analysis (incl. ICER) • If considered relevant, indirect costs can be presented in an additional analysis
Norway[12]	No	• Norway decided to move from a societal to an extended healthcare perspective, which led to the exclusion of the consideration of productivity loss costs in HTA
USA[13]	No	• The United States does not have a formal federal HTA process. Individual payers (e.g., insurers) perform their own economic evaluations. Medicare and Medicaid do not assess productivity loss

*Although wider societal benefits including productivity loss and indirect cost may be included in a separate analysis.
Abbreviations: CADTH, Canadian Agency for Drugs and Technologies in Health; HTA, health technology assessments; SA, sensitivity analyses.

Productivity loss inclusion in HTA vs the carrier of the burden of productivity loss (Figure 1 & Table 2)

- Countries were categorised as employer-, employee- or state-borne systems, based on the assessment of interviewees of which party would carry the main burden of productivity loss during an average long-term sick leave episode in their country. An approximation of the relative positioning is provided in **Figure 1**
- In **Table 2**, the categorisation of countries by the carrier of productivity loss burden from Figure 1 is used to present whether productivity loss is included in the HTA evaluation of each country
- Countries that allow productivity loss to be included in the sensitivity analyses of an HTA evaluation fall into either state-borne systems (Sweden, France) or employee-borne systems (Canada). Most employee-borne systems do not allow productivity loss to be included in any form, except for Quebec. The only countries that allow inclusion of productivity loss in the base case of an HTA assessment are Canada (Quebec only), an employee-borne system and the Netherlands, an employer-borne system
- In all countries where indirect cost can be included (either BC or SA) in economic analysis to the national HTA, some part of the burden due to productivity loss falls to the state

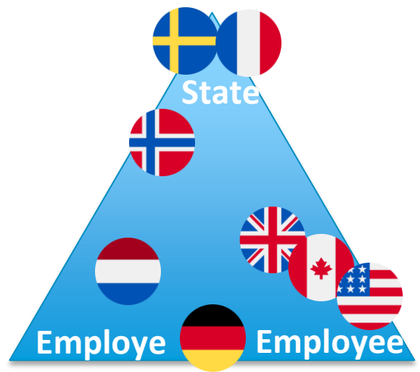
Table 2. Productivity loss inclusion in HTA in function of who carries the burden (Employer/ Employee/ State)

Main carrier productivity loss	Productivity loss included in HTA evaluations (Yes, Base Case (BC) / Yes, Sensitivity Analysis (SA) / No)							
	Canada	Sweden	The Netherlands	UK (Eng)	Germany	France	Norway	USA
Employer			Yes (BC)		No			
Employee	Yes* (SA)			No	No			No
State		Yes (SA)				Yes (SA)	No	

*Productivity loss is included in INESSS as BC and can be included in CADTH as SA

Results (continued)

Figure 1. Classification of countries by who carries the burden of productivity loss (approximation of relative positioning)



Productivity loss inclusion in HTA vs the nature of the insurance system (Table 3)

- Insurance systems were classified by interviewees as *mostly private, more private, mixed, more public or mostly public* **(Table 3)**. Although private insurance exists in all considered markets and sometimes exists alongside public insurance, the insurance system was classified by its real-world level of inclusivity and collectivist funding
- In the countries in which productivity loss can only be included in sensitivity analyses, the insurance systems are seen as mostly public (Sweden) or as more private (Canada). In the only country that allows productivity loss to be considered in the base case HTA analysis, the insurance system is seen as more public
- According to interviewees, private sick leave insurance was perceived to mitigate productivity loss effects on employees, partly absorbing long-term productivity loss, particularly in the USA and Canada (except for Quebec). These countries disregard productivity loss in HTA decision making. However, it is considered in in the overall assessment of the dossier in Quebec and might be considered in UK
- There does not seem to be a clear pattern between the type of insurer and the inclusion of indirect cost in economic analysis. Although again all countries where indirect costs are allowed are considered a more public system for health insurance (full coverage)

Table 3. Productivity loss inclusion in HTA in function of the insurance nature

Insurance system	Productivity loss included in HTA evaluations (Yes, Base Case (BC) / Yes, Sensitivity Analysis (SA) / No)							
	Canada	Sweden	The Netherlands	UK (Eng)	Germany	France	Norway	USA
Mostly private								No
More private	Yes (SA)							
Mixed system					No			
More public			Yes (BC)					
Mostly public		Yes (SA)		No		No	No	

Table 4. Overview of the results (main carrier of productivity loss burden highlighted in bold)

Country	HTA body	Preferred type of analysis	Public/Private	Who carries the main burden	Productivity loss inclusion in HTA
Canada	CADTH [5]	CUA	Public	**Employee**	Yes (SA only)
	INESSS [6]	BIA	Public	**Employee**	Yes (Base case)
	Private insurers [14]	BIA	Private	**Employee**	Yes*
Sweden	TLV[7]	CUA/CEA/CMA/CBA	Public	**State** & Employer	Yes (SA only)
Netherlands	ZiNL[8]	CUA/CEA/CMA	Public	**Employer** & State	Yes (Base case)
UK (Eng)	NICE[9]	CUA	Public	**Employee** & Employer & State	No
Germany	G-BA, IQWiG (assigned by G-BA)[10]	Clinical additional benefit evaluation	Mixed	**State**** & Employer & Employee	No
France	HAS[11]	CUA and CEA	Public	**State** & Employer	Yes (SA only)
Norway	NIPH[12]	CUA/CEA/CMA	Public	**State** & Employer	No
USA	Private insurers[13]	Specific per insurer	Private	**Employee**	No*

* Differences exist between individual insurers. Interviewer's overall assessment for the country as a whole are provided. CADTH, Canadian Agency for Drugs and Technologies in Health; CEA, cost-effectiveness analysis; CMA, cost minimization analysis; CUA, cost-utility analysis; BIA, budget impact analysis; HAS, Haute Autorité de santé; IQWiG, Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen; INESSS, Institut National D'excellence En Santé Et Services Sociaux; NIP, Norwegian Institute Public Health; NICE, National Institute for Health and Care Excellence; SA, sensitivity analysis; TLV, Dental and Pharmaceutical Benefits Agency; ZiNL, Zorginstituut Nederland.
** The National health insurance pays the majority of the salary stating from the 6th week of sick leave. Most of the cancer-related sick leaves often last more than 6 weeks.

Conclusions

- There is inconsistency in the inclusion of productivity loss and indirect costs in economic evaluations between and within North America and Europe. There is also a large variety in who carries the main burden of productivity losses and the impact on insurance systems between the different countries
- While the inclusion of indirect cost is mostly seen in countries where productivity losses have some impact on state costs and publicly available health insurance, there is no clear link
- A wide variability remains between the countries and health insurance systems when it comes to the inclusion of indirect cost and the (lack of a) link with the carrier of the burden of productivity loss
- Productivity loss remains an important concern for patients and caregivers, and should remain an important endpoint for evaluation of patient burden

References

1. Spasova S, et al. *Sick pay and sickness benefit schemes in the European Union*, Background report for the Social Protection Committee's In-depth Review on sickness benefits, ESPN, Brussels, European Commission. 2016;doi 10.2767/531076.
2. Gandjour A. The European Journal of Health Economics. 2014;15:787-790.
3. Kigozi J, et al. Value in Heath. 2017;(20): 496-506.
4. Gol-Montserrat J, et al . Glob Reg Health Technol Assess 2017;4:e104-e113
5. Guidelines for the economic evaluation of health technologies: Canada. 4th ed. Ottawa: CADTH. https://www.cadth.ca/sites/default/files/pdf/guidelines_for_the_economic_evaluation_of_health_technologies_canada_4th_ed.pdf. Published March 2017. Accessed April 2019.
6. Guidance Document for Submitting a Request to INESSS. INESSS. https://www.inesss.qc.ca/en/activities/drug-products/manufacturer-information-centre/registration-application.html. Published 2017. Accessed April 2019.
7. Health economics. TLV. https://www.tlv.se/in-english/medicines/health-economics.html. Published November 2017. Accessed April 2019.
8. Guideline for economic evaluations in healthcare. Zorginstituut Nederland. https://english.zorginstituutnederland.nl/binaries/zinl-eng/documents/reports/2016/06/16/guideline-for-economic-evaluations-in-healthcare/Guideline+for+economic+evaluations+in+healthcare.pdf. Published June 2016. Accessed April 2019.
9. Developing NICE guidelines: the manual. NICE. https://www.nice.org.uk/process/pmg20/chapter/incorporating-economic-evaluation. Published October 2014. Updated October 2018. Accessed April 2019.
10. General Methods, version 5.0. IQWiG. https://www.iqwig.de/download/General-Methods_Version-5-0.pdf. Published July 2017. Accessed April 2019.
11. Choices in Methods for Economic Evaluation. HAS-sante. https://www.has-sante.fr/portail/upload/docs/application/pdf/2012-10/choices_in_methods_for_economic_evaluation.pdf. Published October 2012. Accessed April 2019
12. Ringard Å, et al. Health Systems in Transition. 2013;15:1-162.
13. Neumann PJ, et al. New England Journal of Medicine. 2005;353:1516-22
14. Bonnett C. Report Card on Cancer in Canada. 2009;10:14-18.

Acknowledgements

We would like to thank Roelien Postema for her contributions to the poster and for her continued support and assistance
This study was supported by Bristol-Myers Squibb

Email: marta.contente@bms.com