ASSPRO CEE 2007
Collaborative Focused Research Project
FP7-SSH-2007 Grant Agreement No.: 217431

European Commission

Project funded under the Socio-economic Sciences and Humanities theme

PROJECT POLICY BRIEF

Project No.: 217431

Assessment of patient payment policies and projection of their efficiency, equity and quality effects:

The case of Central and Eastern Europe

BRIEF NO. PB-4/2009

Title: Macro-level projection of patient payment policies

Authors: Milena Pavlova [a], Godefridus G. van Merode [a], Petra Baji [b] and Wim Groot [a,c]

Affiliations:

[a] Department of Health Organisation, Policy and Economics
CAPHRI; Maastricht University Medical Center
Faculty of HMLS; Maastricht University
P.O. Box 616, 6200 MD Maastricht; The Netherlands

[b] Center for Public Affairs Studies Foundation
Budapesti Corvinus Egyetem
Fovam Ter 8; Budapest 1093; Hungary

[c] Topinstitute Evidence-Based Education Research (TIER)
Maastricht University
P.O. Box 616, 6200 MD Maastricht; The Netherlands

Date: November 2009

Macro-level projection of patient payment policies

Milena Pavlova, Godefridus G. van Merode, Petra Baji and Wim Groot

SUMMARY

Questions concerning the use of evidence in policy-making increasingly attract the interest of both policy-makers and researchers. It is widely recognised that the development of integrated evidence-based policy frameworks can be facilitated by the use of quantitative analytical methods, such as system modelling, computer simulation, trend analysis, and scenario analysis. Although policy projections cannot provide direct solutions to policy problems, they enable an adequate design of current policy actions and allow incorporating a long-term vision in policy-making. They can also serve as background for minimising the risks and undesirable effects of a strategic choice.

Project ASSPRO CEE 2007 attempts to develop a tool for projecting macro-level effects of patient payment policies. In particular, the project explores the usefulness of quantitative analytical methods, such as system modelling, computer simulation, trend analysis, and scenario analysis, for the development of the projection tool. The overall objective of the policy projections is to generate evidence relevant to the analysis and assessment of patient payment policies.

For the purposes of policy projections, this project relies on theoretical and empirical models of the effects of patient payments (incl. efficiency, equity, quality and health effects) described in the literature, but it also makes use of models developed within the project. The projection tool will be applied to the analysis of the macro-level effects of patient payments in six Central and Eastern European countries included in the project – Bulgaria, Hungary, Lithuania, Poland, Romania and Ukraine.

The use of evidence in health policy-making

Questions concerned with the use of evidence in policy-making increasingly attract the interest of both policy-makers and researchers. There is a growing body of literature on policy analysis and policy assessment that outlines the social benefits of an evidence-based policy-making. However, there are also concerns about the straightforward applicability of evidence in policy processes. Evidence provided by researchers could inform policy-makers but actual policy decision should remain context specific integrating not only scientific information but also local knowledge and values into policy processes.

In principle, three approaches can be followed when trying to incorporate evidence into policy decisions:

- The first approach is based on the idea that research should come before the actual policy implementation or policy change. By providing evidence on the potential impact of alternative policy designs, the most optimal policy option can be identified. The application of this approach however, excludes the possibility to look at actual policy outcomes and additional policy options that emerge during the policy implementation.
- In contrast, in the second approach, research takes place after the policy is implemented. According to this approach, evidence on the actual policy impact should be collected and analysed in order to improve policy design. The major problem with this approach is the lack of an opportunity to avoid disadvantageous situations that might result from the implementation of inadequate policy designs.
- The third approach considers that research should continuously provide evidence to policy-making during all policy phases: before, during and after policy is implemented.

There are recent attempts to combine some of these approaches for the development of advanced frameworks for policy analysis and assessment, also with regards to the evaluation of patient payment mechanisms. However, their complete integration, particularly in the field of health care, is still lacking.

Quantitative analytical methods and health policy analysis

In is broadly recognised that the development of integrated evidence-based policy frameworks can be facilitated by the use of quantitative analytical methods, such as system modelling, computer simulation, trend analysis, and scenario analysis. These analytical methods are often applied in business organisations to advise decision-makers on future business strategies as well as in some government sectors (e.g. energy, environment, education) but mainly as planning tools. They have not yet found a wide application in policy-making, especially in health policy.

The main reasons for this can be found in the extensive data requirements, complexity of these methods, their requirements for specialised statistics knowledge and/or the need of their further development. Nevertheless, quantitative analytical methods are considered relevant to policy because of their potential to explore the policy futures and to project policy outcomes.

Although policy projections cannot provide direct solutions to policy problems, they can enable an adequate design of current policy actions and can allow the incorporation of a long-term vision in policy-making. They can also serve as a background for minimising the risks and undesirable effects of a strategic choice. Information about the potential of alternative policy options can be also used to influence the opinion of the public and other interest groups, and thus, to pursue certain course of policy actions.

The analysis of policy features and projection of policy outcomes become especially relevant when natural experiments with policy implementation or policy changes are not possible, either because they are considered unethical or because available resources are scarce to cover policy mistakes. In this case, policy-making can be facilitated by hypothetical models that permit policy experiments without the risk of actual policy interventions.

The development of such models requires a prior identification of relevant policy components, specification of factors that influence these components, and description of dynamic relationships between components and factors. The simulation of policy components, factors and relationships under controlled conditions (e.g. expected trends and scenarios) can help to project the potential consequences of alternative policy options in different circumstances. However, given the complexity of policy models applied, the process of policy simulation becomes virtually impossible without the use of advanced computer technology. Therefore, it is not surprising that the interest in the use of quantitative analytical methods for policy analysis and assessment has been increasing together with the development of computer technology. However, the development of the methods also contributes to their increasing popularity among researchers.

Yet, the usefulness of policy projections is determined by their ability to provide valid and reliable information relevant to policy-making. Therefore, policy projections need first and foremost to rely on comprehensive policy models where policy content, context, process and actors are linked to each other as well as to relevant changes in the external national and international environment. It is also important to fully understand the policy elements and factors that influence these elements, for example, by combining economic, sociology and psychology perspectives, before using quantitative analytical methods to specify the dynamic relations within the policy model. A multidisciplinary approach to policy projections can ensure that all relevant knowledge is integrated into the process of policy analysis and policy assessment. Thus, the principles of policy modelling and the principles of policy analysis can be brought together in a collaborative modelling approach.

Objectives and approach

Project ASSPRO CEE 2007 attempts to develop a tool for the projection of macro-level effects of patient payment policies. In particular, the project explores the usefulness of quantitative analytical methods, such as system modelling, computer simulation, trend analysis, and scenario analysis, for the development of the projection tool. The overall objective of the policy projections is to generate evidence relevant to the analysis and assessment of patient payment policies.

Concept of policy projections

For the purposes of policy projections, this project relies on theoretical and empirical models of the effects of patient payments (incl. efficiency, equity, quality and health effects) described in the literature, but it also makes use of models developed within the project.

The policy projections in this project follow six basic steps:

Step 1. Selection of outputs:

The primary effect of patient payments is to increase the price of health care consumption and to reduce the quantity of health care demanded. However, an additional outcome of patient payments is the generation of revenues for public health care providers, which volume depends on the general willingness and ability of consumers to pay for these services.

Therefore, the primary output of the projections will be the quantity of public health care services demanded in case of patient payment at a macro level and the revenue-generating potential of these payments within a country considering the transaction costs related to their collection. This will also indicate the overall effect of patient payment policy on the sustainability of financing health care services.

The secondary projection output will be the level of efficiency, equity and quality in case of patient payments. These three concepts will be measured through tangible indicators. The primary projection outputs will be used to estimate the value of these indicators and to analyse the impact of patient payment policies.

Step 2. Selection of inputs:

The only framework that we identified as relevant to the selection inputs for the macro-level projections of patient payment policies, is suggested by Rubin and Mendelson in 1996 (source: Rubin RJ and Mendelson DN. A framework for cost-sharing policy analysis. Pharmacoeconomics 1996, 10: 56-67). According to this framework, the effects of patient payments is influenced by four covariating factors:

- demographics: age, gender, socio-economic status, health status;
- type of public health care service: primary health care, hospital services;
- patient payment mechanism: in particular the magnitude of charges;
- methods for paying to providers: in particular, formal/informal payments.

These covariating factors will be the main projection inputs. For each of these factors, a range of relevant values will be identified.

Other relevant factors (related e.g. to the broader social, political economic and cultural context of patient payments) will be selected as inputs for the projections if appear relevant during the development of the projection tool.

Step 3. Development of an algorithm:

The projection algorithm will be derived from the models of consumer demand for health care services under official patient payment policies developed in the project. The demand models will be used to define a macro-level demand function that will relate the model inputs to primary and secondary model outputs. The reliability and validity of the projection algorithm will be established in discussions with experts and based on a comparison with relevant theoretical expectations and empirical evidence.

Step 4. Estimation of parameters:

The parameters of the model will be the external demand factors (such as attitudes, experience and culture), level of informal patient payments and characteristics of health care providers. These factors are determined by the country context, and the organisation of the health care system. The estimation of these factors for each individual in each country can be difficult and rather complicated. Therefore, they will be accepted as country-specific parameters during the projections.

Step 5. Creation of scenarios:

Socio-economic macro indicators will be used for the creation of alternative economic and demographic scenarios. The project will develop demographic scenarios combined with macro-level socio-economic indicators. These scenarios will help to project changes in quantity of health care demanded and the revenue generated by patient payments due to changes in patient payment policies, the broad socio-economic context (e.g. economic growth), and demographic patterns (e.g. ageing, migration).

Step 6. Policy projections:

The projections will rely on sensitivity analysis as an approach to model uncertainty. During the projection, the values of one input variable will be manipulated, while the values of the other variables will be held constant. A range of projections will be produced by varying the inputs. An estimation of the minimum, maximum and the most likely value for input variables will be used to produce three corresponding projections: the pessimistic, the optimistic and the most likely. If a change in the value of input variable results in a significant change in the outputs, it will indicate that this variable is sensitive. The main objective will be to detect how different input variables influence the projection outputs, and thus, the impact of patient payment policies.

Application within the project

The projection tool will be applied to project the macro-level effects of patient payments in six Central and Eastern European countries included in the project – Bulgaria, Hungary, Lithuania, Poland, Romania and Ukraine. The overall objective will be to generate evidence relevant to the analysis and assessment of patient payment policies. The applicability of the projection tool to other countries will be explored.

Coordinator

MAASTRICHT UNIVERSITY; The Netherlands
Department of Health Organisation, Policy and Economics (BEOZ)
CAPHRI; Maastricht University Medical Center
Faculty of Health, Medicine and Life Sciences; Maastricht University
Postal address: P.O. Box 616, 6200 MD Maastricht; The Netherlands
Visiting address: Universiteitssingel 40; 6229 ER Maastricht; The Netherlands

Project coordinator:

Dr. Milena Pavlova (assistant professor)
Tel: +31-43-3881705; E-mail: M.Pavlova@BEOZ.unimaas.nl

Scientific coordinators:

Prof.Dr. Wim Groot (professor of health economics)
Tel: +31-43-3881588; E-mail: W.Groot@BEOZ.unimaas.nl

Prof.Dr. Frits van Merode (vice-dean; professor of operations management)
Tel: +31-43-3885962; E-mail: F.vanMerode@FACBURFDGW.unimaas.nl

Consortium

Partner in Bulgaria: MEDICAL UNIVERSITY OF VARNA
Department of Economics and Healthcare Management; Faculty of Public Health
Medical University of Varna; Marin Drinov Str. 55; Varna 9002; Bulgaria
Contact person: Dr. Emanuela Moutafova (head of department; associated professor)
Tel: +359-52-634279; E-mail: dep_hcm@abv.bg

Partner in Hungary: CENTER FOR PUBLIC AFFAIRS STUDIES FOUNDATION
Center for Public Affairs Studies Foundation; Budapesti Corvinus Egyetem
Fovam Ter 8; Budapest 1093; Hungary
Contact person: Dr. Laszlo Gulacsi (research professor, associated professor)
Tel: +36-1-4825147; E-mail: laszlo.gulacsi@uni-corvinus.hu

Partner in Lithuania: PUBLIC ENTERPRISE "MTVC"
MTVC (training, research and development centre);
Antakalnio str. 22B, LT-10305 Vilnius, Lithuania
Contact person: Dr. Liubove Murauskiene (director)
Tel: +370-5-2709250; E-mail: murauskiene@mtvc.lt

Partner in Poland: UNIWERSYTET JAGIELLONSKI COLLEGIUM MEDICUM
Institute of Public Health; Uniwersytet Jagiellonski Collegium Medicum
Grzegórzecka 20; Krakow 31-531; Poland
Contact person: Prof.Dr. Golinowska Stanislawa (head of department; professor)
Tel: +48-12-4241393; E-mail: stellag@onet.pl

Partner in Romania: SCOALA NATIONALA DE SANATATE PUBLICA SI MANAGEMENT SANITAR
Health Services Management Centre
Scoala Nationala de Sanatate Publica si Management Sanitar
Vaselor 31, sector 2; Bucharest 021253; Romania
Contact person: Ms. Constanta Mihaescu Pintia (head of department)
Tel: +40-21-2527834; E-mail: cmpintia@snspms.ro

Partners in Ukraine: SHKOLA OHORONY ZDOROVIA
School of Public Health; 2 Skovoroda Str.; Kyiv 04070; Ukraine
Contact person: Dr. Irena Griga (director)
Tel: +38-44-4256580; E-mail: griga@ukma.kiev.ua

Project title	Assessment of patient payment policies and projection of their efficiency, equity and quality effects: The case of Central and Eastern Europe
Grant agreement	No.: 217431
European commission	Marie-Christine Brichard (DG Research - Directorate L)
Project duration	From 1-03-2008 to 28-02-2013 (60 months)
Funding scheme	Collaborative Project
Project budget	EC contribution up to 1,446,496 Euro
Website	www.assprocee2007.com
Project e-mail	assprocee2007@BEOZ.unimaas.nl
Contact details	Dr. Milena Pavlova (project coordinator) Department of Health Organisation, Policy and Economics (BEOZ) CAPHRI; Maastricht University Medical Center Faculty of Health, Medicine and Life Sciences; Maastricht University Postal address: P.O. Box 616, 6200 MD Maastricht; The Netherlands Telephone: +31-43-3881705; Fax: +31-43-3670960 E-mail: M.Pavlova@BEOZ.unimaas.nl

ASSPRO CEE 2007
Collaborative Focused Research Project
FP7-SSH-2007 Grant Agreement No.: 217431

Maastricht University

European Commission

MEDICAL UNIVERSITY
"PROF. Dr. PARASKEV STOJANOV"
VARNA

MTVC

SEVENTH FRAMEWORK PROGRAMME

SCHOOL OF PUBLIC HEALTH

SNSPMS

Project funded under the Socio-economic Sciences and Humanities theme

Center for Public Affairs Studies Foundation

Uniwersytet Jagiellonski
Collegium Medicum