

<b>School/Department:</b>	<b>Erasmus School of Health Policy &amp; Management (ESHPM) at Erasmus University Rotterdam (EUR)</b> In collaboration with <b>Research Center for Public Health at Tsinghua University Beijing</b>
<b>Project Title:</b>	<b>HOSPITAL-LEVEL DECISION MAKING: THE ROLE OF COST-EFFECTIVENESS ANALYSIS OF CORONARY STENTS TO ENHANCE LOCAL POLICYMAKING</b>
<b>Abstract:</b>	<p><b>Background</b>          Coronary stents are widely used in the treatment of coronary artery disease (CAD). Stents have improved health outcomes in this area and countless patients now undergo revascularization with a stent every year. However, different types of stents have entered the market over the years, which means that hospitals and clinicians have to carefully consider which stent is best for their patients. For example, while second-generation drug-eluting stents (DES) are the treatment of choice for patients in many regions of the world, bare metal stents (BMS) are considered appropriate for certain patients, such as patients unable to complete the recommended duration of dual antiplatelet therapy (DAPT). Another factor that plays a critical role is the costs of the stents and other materials.</p> <p><b>How are hospital-level decisions about the use of coronary stents currently being made?</b>          Relatively little is known about how hospitals make decisions about tests and treatments. What is known is that local practice can deviate widely from national guidelines. This knowledge gap needs to be addressed in the effort to improve the quality of local policymaking. Are local policymakers unable or unwilling to make the necessary changes? To what extent can their decisions and general policymaking be improved through knowledge support and tools?</p> <p><b>Consequences and opportunities</b>          The consequence of different stents to treat patients is that hospitals and doctors have to decide which ones are best for their patients. Poor choices will mean health loss, efficiency loss, or both. Since it is impossible that hospitals currently make only perfect choices, there is a valuable opportunity to improve the quality of decision-making in the use of stents. This will mean better health outcomes, greater healthcare efficiency or both.</p>

	<p><b>RESEARCH QUESTIONS</b></p> <p><u>Phase 1: Establish the rules used in local policymaking.</u> Which factors influence policies regarding stent use? How do hospitals currently decide which stents they use? Information about stent policies at different levels (e.g., local, regional, national) will be gathered through surveys and interviews.</p> <p><u>Phase 2: Collection of relevant data and information.</u> The aim here will be to collect any information that can be used to improve the quality of local stent policymaking based on what is learned during Phase 1. Regardless of what emerges from Phase 1, one factor that should be included in local policymaking is cost-effectiveness (or efficiency). After understanding the care pathways, we will conduct an inventory of data sources in China on clinical events, resource use, and unit costs. The strategy for this inventory will take into account that practice variation within China might influence the need for collecting data in various jurisdictions (Drummond et al, 2009; Burgers et al, 2016a). We will also perform a systematic review of published cost-effectiveness analyses of coronary stents (updated from a previous review (Burgers et al., 2016b).</p> <p>Phase 3: This final phase will include the development of a computer model to perform cost-effectiveness analyses. The model will be based upon existing models as published in the literature but these will be carefully screened regarding their transferability toward the Chinese decision-making context using the methods developed by Van Haalen et al. (2014). Various sensitivity and scenario analyses will be performed to help policymakers understand how much different factors (like the risk of stent thrombosis) can affect health outcomes and costs. The added value of precision medicine strategies, where knowledge about an individual patient's characteristics is used to make tailor-made choices for that patient, will also be investigated. One version of the model could be a user-friendly Excel one to enable local policymakers to perform their own analyses using confidential data regarding e.g. stent prices. This would promote better internal policymaking.</p>
<p><b>Requirements of candidate:</b></p>	<p><b>Background:</b> We are looking for a PhD candidate who is interested in finding ways to improve the quality of policymaking in the hospital setting and has the following expertise and experience:</p> <ul style="list-style-type: none"> <li>• <b>Master degree:</b> You have a master degree in a relevant field, such as Health Sciences, Medicine, Psychology, and Economics, from a leading university in China or overseas.</li> <li>• <b>English:</b> You have good speaking as well as good writing</li> </ul>

	<p>skills in English <i>and</i> Chinese.</p> <ul style="list-style-type: none"> <li>• <b>Research skills:</b> You have good skills and experience with doing empirical research, preferably in health care.</li> <li>• Training in R, SAS, Stata or similar software applications is desired.</li> <li>• You are motivated to conduct research in the healthcare field.</li> </ul> <p><b>EUR requirement:</b> IELTS: 7.0, or TOEFL: 100</p>
<b>Supervisor information:</b>	<p><b>Prof. Hans Severens</b>          Professor of Evaluation in Health Care; Dean of Erasmus School of Health Policy &amp; Management, Erasmus University Rotterdam          Email address: <a href="mailto:severens@eshpm.eur.nl">severens@eshpm.eur.nl</a>          Personal website: <a href="https://www.linkedin.com/in/jl-hans-severens-45a6239/">https://www.linkedin.com/in/jl-hans-severens-45a6239/</a>  <a href="https://www.researchgate.net/profile/Hans_Severens">https://www.researchgate.net/profile/Hans_Severens</a></p> <p><b>Dr. Ken Redekop</b>          Associate professor of Health Technology Assessment; Erasmus School of Health Policy &amp; Management, Erasmus University Rotterdam          Email address: <a href="mailto:redekop@eshpm.eur.nl">redekop@eshpm.eur.nl</a>          Personal website: <a href="https://www.linkedin.com/in/redekop/">https://www.linkedin.com/in/redekop/</a>  <a href="https://www.researchgate.net/profile/Ken_Redekop">https://www.researchgate.net/profile/Ken_Redekop</a></p> <p><b>Prof. Jing Jun</b>          Professor of Social Anthropology; Director of Public Health Research Center Research Center for Public Health, Tsinghua University Beijing          Email address: <a href="mailto:jingjun@tsinghua.edu.cn">jingjun@tsinghua.edu.cn</a>          Personal website: <a href="https://www.researchgate.net/profile/Jun_Jing">https://www.researchgate.net/profile/Jun_Jing</a></p>

<p><b>Key literature</b></p>	<p>Buisman LR, Rijnsburger AJ, den Hertog HM, van der Lugt A, Redekop WK. Clinical Practice Variation Needs to be Considered in Cost-Effectiveness Analyses: A Case Study of Patients with a Recent Transient Ischemic Attack or Minor Ischemic Stroke. <i>Appl Health Econ Health Policy</i>. 2016 Feb;14(1):67-75.</p> <p>Burgers LT, McClennan EA, Hoefer IE, Pasterkamp G, Jukema JW, Horsman S, Pijls NHJ, Walterberger J, Hillaert MA, Stubbs AS, Severens JL, Redekop WK. Treatment variation in stent choice in patients with stable or unstable coronary artery disease. <i>Neth Heart J</i> 2016; 24 (2): 110-9.</p> <p>Burgers LT, van de Wetering FT, Severens JL, Redekop WK. Using meta-regression analyses in addition to conventional systematic review methods to examine the variation in cost-effectiveness results - a case study. <i>BMC Health Serv Res</i> 2016; 16: 23.</p> <p>Drummond M, Barbieri M, Cook J, Glick HA, Lis J, Malik F, Reed SD, Rutten F, Sculpher M, Severens J. Transferability of economic evaluations across jurisdictions: ISPOR good research practices task force report. <i>Value Health</i> 2009; 12 (4): 409-418.</p> <p>Van Haalen HGM, Severens JL, Tran-Duy A, Boonen A. How to select the right cost-effectiveness model? A systematic review and stepwise approach for selecting a transferable health economic model for rheumatoid arthritis. <i>Pharmacoeconomics</i> 2014; 32 (5): 429-442.</p>
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