A systematic review of Health Technology Assessment tools in resource-limited settings: how much do we know about the assessment of medical devices in Sub-Saharan Africa?

Christine Kriz1, BA (Hons), MSc; Jill Hanass-Hancock2, PhD; Emmanuel Ankrak Odame3, MBCB, MPH; Nicola Deghaye2, MSc; Rashid Aman4, BPharm, PhD; Philip Wahlster1, PharmD; Peter Kolominsky-Rabas1, MD, PhD

1 Interdisciplinary Centre for Health Technology Assessment (HTA) and Public Health (IZPH), University of Erlangen-Nuremberg, Erlangen, Germany
2 Health Economics and HIV/AIDS Research Division (HEARD), University of KwaZulu-Natal, South Africa
3 Ghana College of Physicians and Surgeons, Accra, Ghana
4 Centre for Research in Therapeutic Sciences (CREATES), Strathmore University, Nairobi, Kenya

Background
Health Technology Assessment (HTA) is mostly used in the context of high-and middle-income countries. Several tools exist for resource-constrained settings but widespread use of HTA in most Sub-Saharan African (SSA) countries is still limited. Some HTA aspects do not fit into these settings and methodologies need to be adapted appropriately according to specific needs.

Objectives
This research study aims to provide an overview of HTA tools used in resource constrained settings, with a specific focus on the assessment of medical devices in SSA.

Methods
An international systematic review in line with PRISMA guidelines was conducted for studies detailing HTA tools that are applicable for resource-limited settings. The following databases were searched for studies between 2006-2012: PubMed (Medline), ScienceDirect (EMBASE), Academic Search Elite (EbscoH) and EconLit.

Results
The systematic literature search identified 7496 articles. One more study was identified in addition through other sources. The final analysis included 24 articles (Fig.1).

HTAs often focus on pharmaceuticals, and the assessment of medical devices is limited, especially in resource-constrained settings and SSA in particular. From 24 identified research studies, two appropriate tools have been identified that are applicable in resource-limited settings, and cover methodological robustness and ease of use.

Results (cont.)
The KNOW ESSENTIALS and Mini-HTA tool fulfil these criteria, but have not been applied in a low-income SSA setting yet. For the KNOW ESSENTIALS tool, thirteen elements were combined (Fig 1). The first three elements, KNOW are focused on health care problems, the other ten “ESSENTIALS” are focused on a specific health technology and organizational issues connected to a local healthcare system. Each element is given a colour code for scaling. The mini-HTA Tool is a rapid decision tool and is mostly focused on supporting the approval of new technologies.

In addition, Multi-Criteria Decision Analysis shows value in assessing evidence and has a strong potential to be used as a complementary tool with HTAs (Fig 2).

Conclusion
Many resource poor settings, which often have the greatest need for critical assessment to make appropriate and affordable investments in health technology, have a limited basis for making evidence-based choices. This can lead to inappropriate use of technologies, which do not address health needs, and inefficient use of resources. A better overview and related analysis of the HTA tools used is required for resource-constrained settings and especially SSA, specifically concerning a knowledge gap related to a robust assessment of medical devices.

Funding
The research is supported by the German Federal Ministry of Education and Research (BMBF), project grant No. 01EX1013B as part of the Centre of Excellence for Medical Technology.

References: