Annex 1. Evidence search strategies and results

For Guideline on Use of Devices for Male Circumcision for HIV Prevention, October 2013

Literature search

General procedures

- The following electronic databases were searched:
  
  A. General databases
  - PubMed
  - POPLINE
  - Web of Science/Web of Knowledge
  - Cochrane Central Database of Systematic Reviews
  - WHO regional databases
    - AFRO
    - AMRO/PAHO
    - EMRO (not accessible)
    - EURO
    - SEARO
    - WPRO
  - EMBASE
  
  B. Clinical trials databases
  - Clinicaltrials.gov
  - Controlled-trials.com
  - Who.int/trialsearch
  - IFPMA Clinical Trials Portal: ifpma.org/clinicaltrials.html

- Medical subject headings (MeSH) were used in addition to key words to maximize sensitivity and specificity of searches.

- Secondary reference searching was also conducted on all articles included in the review as well as in past systematic reviews and meta-analyses.

- Conferences searched included:
  - International AIDS Society, International AIDS Conference
  - International AIDS Society Conference on HIV Pathogenesis, Treatment, and Prevention
  - European AIDS Society Conference
  - US National HIV Prevention Conference
  - British HIV/AIDS Association (BHIVA)

- Articles and citations were downloaded, organized, and reviewed.

Inclusion criteria

To be included in the systematic review and GRADE process, an article had to meet the following criteria:

1) published in a peer-reviewed journal or presented as a peer-reviewed abstract at a scientific meeting.
2) include information that is pertinent to the PICO question.
3) published since 01 January 2001 (date limited as devices that might have been considered in the context of the purpose of HIV prevention were the priority; the potential of male circumcision as a HIV prevention intervention became a global priority for study after a meeting held in late 2000).

Screening abstracts
Two reviewers independently screened the titles and abstracts of citations identified through the search strategy for potential eligibility. Full-text articles were obtained for all abstracts considered likely to be eligible. Two reviewers independently reviewed each such article to determine whether it met the inclusion criteria. Differences between the two reviewers were discussed and resolved through consensus or by a neutral arbiter.

**Data extraction and management**

Two reviewers extracted data using standardized data extraction spreadsheets. Differences in data extraction were resolved through consensus or in discussion with a neutral arbiter. The following information was gathered from each included study:

- Study identification; author(s); type of citation; year of publication
- Study description: location, setting and target group; years (period of study); description of the intervention; comparison groups; study design; sample size; age range, gender; random or non-random allocation of participants; length of follow-up (all if applicable)
- Outcomes and results: outcome measures; effect sizes; confidence intervals; significance levels
- Other information: limitations; references for follow-up; secondary effects/adverse effects.

**Search terms and results**

1) PubMed searched on 14 June 2012, limited to publications since 1 January 2001, using the following search terms:

```

2) EMBASE was searched on 17 July 2012, limited to publications since 1 January 2001, using the following search terms:

```
‘gomco’ OR ‘prepex’ OR ‘accucirc’ OR ‘accu-circ’ OR ‘mogen’ OR ‘ismail’ OR (“smart” AND “klamp”) OR “smartklamp” OR “TaraKlamp” OR (“Tara” AND “klamp”) OR “kirve” OR “sunathrone” OR “plasticbell” OR “zhengxi” OR (“ali’s” AND “clamp”) OR (“ali” AND “clamps”) OR (“ali” AND “clamp”) OR (“shang” AND “ring”) OR (“shangring” OR “circ-ring” OR “shenghuan disposable minimally invasive” OR “winkelmann” OR “ross ring” OR “clip-and-wear” OR (“clip” AND “wear”) OR “smartcircumcision” OR “circclamp”)```
3) Overall results of the PubMed and EMBASE searches:

PubMed search results:
- Total records: 426
- Records excluded: 416
- Full text articles obtained: 10 (including 3 translated from Chinese)
- Studies included in review: 9

EMBASE search results:
- Total records: 230
- Duplicates removed: 41
- Records screened: 189
- Records excluded: 166
- Full-text articles obtained: 27 (including 2 translated from Chinese and 1 from Korean)
- Studies included in review: 4

Total studies included in review: 9 + 4 = 13, as follows:


4) Conferences searched in December 2012 provided the following additional results:


Reports of ongoing or completed but unpublished studies

In addition, investigators known to be studying the use of MC devices in African countries were contacted. The investigators made confidential final reports from completed studies and interim reports from ongoing studies available to WHO for review by the TAG. Clarifications were sought from the study investigators where necessary. The following interim and final reports were included in the review:


3. Sokal DC et al. Randomized controlled trial of a minimally invasive circumcision device, the Shang Ring, versus conventional surgical techniques for adult male circumcision: safety and acceptability [Submitted for publication 2013].

4. FHI 360. Comparison of the Shang Ring with conventional surgical methods: A Randomized controlled trial (RCT10220) [Confidential statistical report and tables]. Durham, NC, FHI 360, July 2012.


7. Kigozi G et al. The acceptability and safety of the Shang Ring for adult male circumcision in Rakai, Uganda. [Submitted for publication 2013].

8. Mutabazi V et al. One arm, open label, prospective, cohort field study to assess the safety and efficacy of the PrePex device for scale-up of non-surgical circumcision when performed by nurses in resource-limited settings for HIV prevention (TUAC0405). XIX International AIDS Conference; 22–27 July 2012; Washington, DC.

9. Mutabazi V et al. One-arm, open-label, prospective, cohort field study to assess the safety and efficacy of the PrePex device for scale-up of nonsurgical circumcision when performed by nurses in resource-limited settings for HIV prevention. [Submitted for publication 2013].

10. Mutabazi V et al. One arm, open label, prospective, cohort field study to assess the safety and efficacy of the PrePex™ device for scale up of non-surgical circumcision when performed by nurses in resource limited settings for hiv prevention (Protocol RMC-03). 10 January 2012.


