CLEANING PROCEDURE FOR BOTTLES CONTAINING ALCOHOL-BASED HANDRUB SOLUTION

General remarks:

Bring empty bottles (with screw tops) to a central point for reprocessing

Reusable bottles should never be refilled until they have been completely emptied and then washed and disinfected.

Collected reusable screw tops should be fully unscrewed from bottles, washed and disinfected

Before disinfection, bottles and screw tops must be thoroughly washed.

After each cleaning, fill in the bottle cleaning tracking sheet (see p. 3).

1. **Cleaning empty alcohol-based handrub bottles and screw tops recuperated in the care units**

    1.1 Wash the bottles and screw tops thoroughly with detergent and tap water until all residues have been removed.

    a. Soak (fully immerse) the bottle and screw tops in soapy water (**detergent soap**) for **24 hours** (allows the labels and any other impurities attached to the bottles to be removed easily).

    b. Scrub the bottles and screw tops: use a **surgical scrub brush** for the outside and tops, and a **bottle brush** for bottle interiors.

    c. Thoroughly rinse the bottles and screw tops with **tap water (or boiled cold water)** until all soap residues and traces have been removed.

    1.2 Carry out disinfection according to your institution's instructions

2. **Bottle disinfection after cleaning, for re-use**

    2.1 *Thermal disinfection (if heat resistant bottles):*

    a. **Soak** (fully immerse) the cleaned bottles and the screw tops in a container filled with **boiling water for 20 minutes** (counting for the time when the water begins to boil).

    b. Let the bottles and screw tops dry completely, upside-down, if possible on a draining board or bottle rack.

    c. The dry bottles are then closed with a screw top and stored, protected from dust, until their next use.

2.2 *Chemical disinfection:* (wear gloves)

a. **Soak** (fully immerse) bottles and screw tops for **15 to 30 minutes** in a decontamination solution of **available chlorine 0.1%** (or 1000 ppm of freshly prepared chlorine). In cases where contaminated water (non-drinking, impure or unfiltered water) is used for the dilution of chlorine, the highest concentration (0.5%) should be used as most of the chlorine will be inactivated by microscopic biological materials (see table below for the dilution of chlorine-releasing compounds)

b. **Thoroughly rinse** bottles and screw tops with distilled water (if possible), tap water or water that has been boiled (15 to 20 minutes) and cooled off.

c. Let the bottles and screw tops dry completely, upside down, if possible on a draining board or bottle rack.

d. The dry bottles are then closed with a screw top and stored, protected from dust, until their next use.

Note: Whenever possible, thermal disinfection (including autoclaving) should be chosen in preference to chemical disinfection. The latter may increase costs and introduce an extra step to flush out remains of the disinfectant.

Recommanded dilutions for chlorine-releasing compounds

Source: WHO: *guidelines on Sterilization and Disinfection Methods Effictive against Human Immunodeficiency Virus (HIV)*, 2nd ed. Geneva, WHO AIDS Series 2, 1989.

	"Dirty" conditions (for example, spattered blood, soiled material) or dilution prepared with contaminated water	**"Clean" conditions** (for example, cleaned medical equipment)
Available chlorine required	**0.5% (5g/litre, 5000 ppm)**	0.1% (1g/litre, 1000 ppm)
Sodium hypochlorite solution (Bleach)	**100ml/litre if initial available chlorine concentration is equal to 5% or 15 º ****	20ml/litre if initial available chlorine concentration is equal to 5%
Calcium hypochlorite 70% (70% available chlorine)	**7.0g/litre**	1.4g/litre
NaDCC (60% available chlorine)	**8.5g/litre**	1.7g/litre
NaDCC-based tablets (1.5g available chlorine per tablet)	**4 tablets/litre**	1 tablet/litre
Chloramine (25% available chlorine)	**20g/litre***	20g/litre*

* chloramine releases chlorine at a slower rate than do hypochlorites. Therefore, a higher available chlorine concentration is required in chloramine solutions for the same effectiveness. On the other hand, chloramine solutions are not inactivated by biological materials (e.g., protein and blood) to the same extent as hypochlorites. Therefore, a similar concentration (20g/litre - 0.5% of available chlorine) is recommended for both clean and dirty conditions.

**In some countries, sodium hypochlorite solution concentration is expressed in chlorometric degrees (ºchlorine); 1º chlorine is equal to about 0.3% available chlorine.

Sources:

- Guide to Local Production : WHO-recommended Handrub Formulations, 2010

- Guidelines for clinical procedures in family planning: A reference for trainers, Annex 11: Infection prevention in MCH/FP centres. Revised ed., may 1998, INTRAH, http://pdf.usaid.gov/pdf_docs/PNACJ267.pdf

DATE	NUMBER OF CLEANED BOTTLES	NUMBER OF DISINFECTED BOTTLES	NUMBER OF DESTROYED BOTTLES (DEFECTIVE)	NUMBER OF STORED BOTTLES	VISA Operator

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