

Technical Bulletin Non-pneumatic Anti-shock Garment (NASG)

September 2020

Background

- Non-pneumatic Anti-shock Garment, or NASG, is a low-technology first aid medical device used to stabilize critical condition of mothers suffering from postpartum Hemorrhage. Postpartum hemorrhage (PPH), commonly defined as a blood loss of 500 ml or more within 24 hours after birth, is the leading direct cause of maternal mortality. PPH affects about 5% of all women giving birth around the world and kills more than 130,000 women each year¹. Most of these deaths occur in low-resource settings where bleeding women may be hours away from comprehensive obstetric care. Extreme drop in blood volume leads to the onset of hypovolemic shock; Blood accumulates in the lower abdomen and legs, depriving vital organs, such as heart, lungs and brain with oxygen.
- The Non-Pneumatic Anti-Shock Garment (NASG) is a lightweight, washable and reusable neoprene compression device that reduces bleeding and reverses hypovolemic shock by returning blood to the vital organs. This restores woman's consciousness, pulse and blood pressure, stabilizes critical condition and gives valuable extra hours to reaching the hospital for further care.
- WHO recommends “the use of non-pneumatic anti-shock garments as a temporizing measure until appropriate care is available”². In addition, the use of NASG is recommended as a “best practice” by The International Federation of Gynecology and Obstetrics, FIGO (2012) and the Global Library of Women’s Medicine (2012).
- Improving PPH prevention and care is a necessary step towards achieving the health targets of the Sustainable Development Goal (SDG 3), particularly target 3.1: reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030. Ending preventable maternal, newborn and child deaths is also an overarching goal in the UNICEF health strategy for 2016-2030.

Objective

This document provides technical guidance for governments, UN Agencies, NGOs and other entities that are planning to procure non-pneumatic anti-shock garments.

Product Description

The Non-Pneumatic Anti-Shock Garment (NASG) is a lightweight, washable and reusable first aid compression device made of jersey covered neoprene and hook-and-loop fasteners. NASG compresses the lower body with six segments that are closed tightly around the legs, pelvis,

¹ WHO recommendations: uterotonics for the prevention of postpartum haemorrhage. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

² WHO (2012). WHO recommendations for the prevention and treatment of postpartum haemorrhage. ISBN 978 92 4 154850 2.

and abdomen (Figure 1). The foam ball in segment 5 (Figure 2) increases the compression to the uterus and abdomen area.

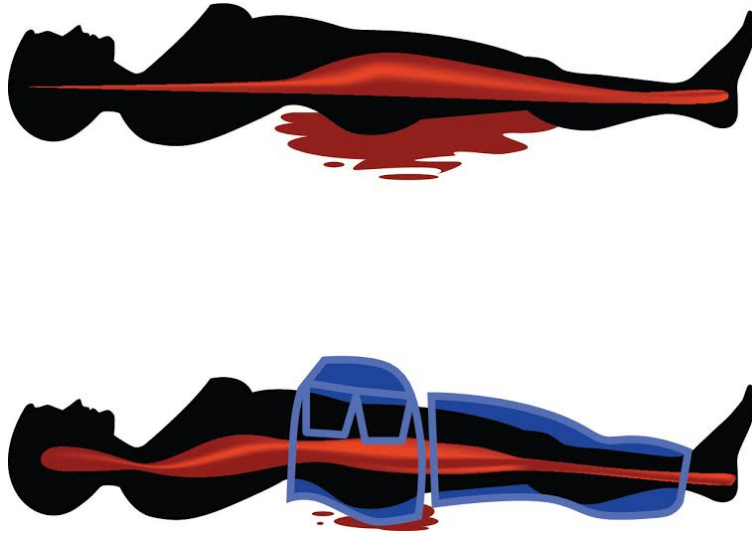


Figure 1. The NASG pushes blood from lower body towards heart and lungs.

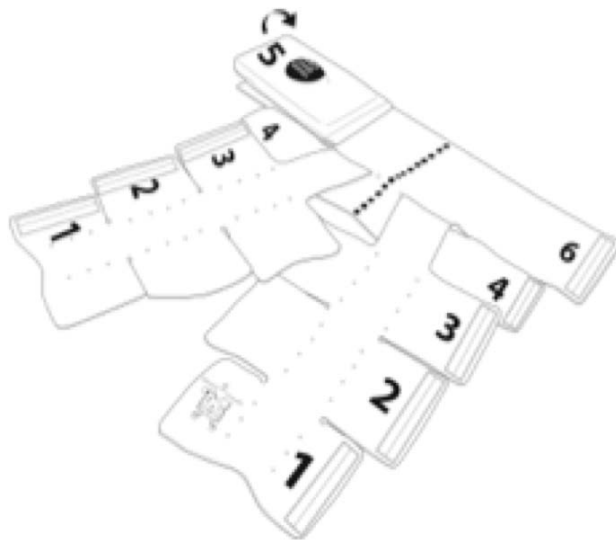
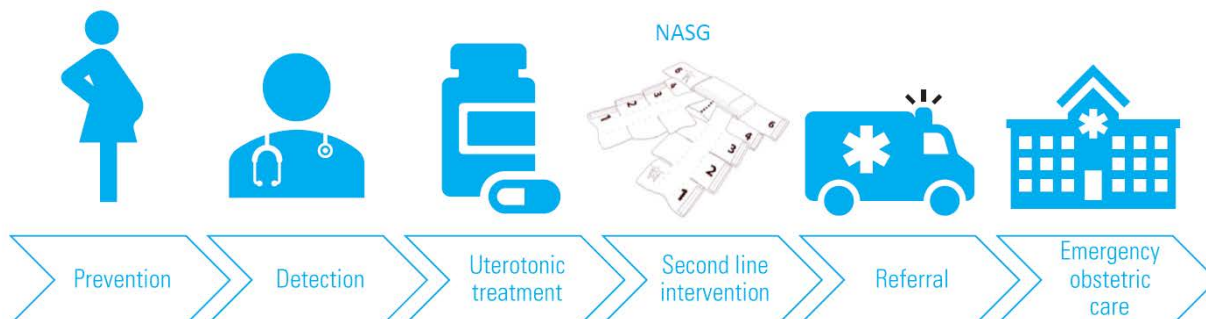


Figure 2. NASG consists of six segments and a foam ball that provide circumferential pressure to the lower body.

NASG is used in combination with uterotonics and other first-response PPH interventions. In conjunction with interventions to increase the availability and usage of Oxytocin and Misoprostol, the introduction and widespread rollout of the NASG represents a core intervention towards a comprehensive Maternal and Neonatal Health (MNH) strategy to avert maternal and newborn deaths in low-resource settings.



Product Selection

UN agencies procure NASG in two sizes: Small and Large. Large garment is recommended as the default option for UNICEF programmes. It can be used also for smaller women by rolling segment 1 on top of segment 2 and using segment 2 for ankles instead (Figure 2). In countries, where adult women generally weigh less than 100 lbs (45 kg) and anthropomorphic variation is low, the small garment is recommended instead.

Table 1. NASG sizing guide

Garment sizing for women	Small	Large
Height	<5' <153 cm	>5' >153 cm
Weight	< 100 lbs < 45 kg	> 100 lbs > 45 kg
Remarks	Can stretch up to 5'5" (165 cm) and up to 150 lbs (68 kg)	Can be used on any height including over 6' (183 cm), and on weights ranging from 100 lbs (45 kg) to 300 lbs (136 kg)

Table 2. NASG technical measures

Technical Measures	Small	Large
Width - Segment 6	110.5 cm	120 cm
Width - Segment 4	97.8 cm	96.5 cm
Total length – orange line	101 cm	123 cm
Garment weight	1.1. kg	1.5 kg

Estimating the order quantity

- For dispensaries/PHCs/Clinics that have less than 1 birth per day and are served by a fairly reliable ambulance service 1 NASG is enough. If there is no reliable ambulance service, having supply of 2 NASGS is recommended, so while one is being used, the second one is still available.
- For ambulances, 2 NASGs are recommended. One could be left at the lower level facility as an exchange when picking up a woman who is wearing a NASG. The ambulance could then get a clean one when they drop off the woman at the referral hospital.
- Facilities with 1-5 deliveries/day should have 2 NASGs, with 1 extra for referrals and for exchange.
- Facilities with >10 deliveries /day (300/month) should have 3 NASGs, with 1 extra for referrals and for exchange.
- Referral hospitals and other facilities with more than 500 deliveries /month should have 5 -10 NASGs with 2-4 extra for referrals and for exchange.

If the region and its facilities have historically had a higher rate of severe PPH cases (for example they are a high risk facility) or as a referral facility they routinely receive women in very poor condition, the numbers of NASGs needed per facility should be increased.

Requirements for use

- User guides & training for practitioners. Accessible at [UNICEF NASG Sharepoint page](#).
- NASG must be cleaned in between uses. Instructions for cleaning available at UNICEF NASG Sharepoint page.
- Logistics plan for returning cleaned garments back to community health centers from the referral hospitals must be available.

UNICEF LTA

Table 2 lists NASGs available for procurement through UNICEF Supply Division.

Material No	Short Description	Price, indicative, US\$
S0519002	Non-pneumatic anti-shock garment, size S	\$62.89
S0519001	Non-pneumatic anti-shock garment, size M/L	\$62.89

UNICEF and UNFPA Supply Catalogues

Please refer to the UNICEF Supply Catalogue or UNFPA product catalogue for updated pricing and detailed technical information for NASGs.

UNICEF Supply Catalogue: <https://supply.unicef.org/catalogsearch/result/?q+=nasg>.

UNFPA Product Catalogue:

<https://www.unfpa procurement.org/products?id=ANTISHOCKGARMENT>

Contact Information

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