

Non-pneumatic anti-shock garment

Country of origin | United States of America

Health problem addressed

Postpartum hemorrhage (PPH) in developing countries continues to be the single most common cause of maternal morbidity and mortality, accounting for approximately 25 percent of maternal deaths globally. Over 90 percent of these deaths occur in developing countries.

Product description

For women suffering from uncontrollable PPH, a method to control the bleeding, reverse the shock, and stabilize the patient for safe transport to a comprehensive obstetric care facility could be lifesaving. One method to manage PPH is the use of a non-pneumatic anti-shock garment (NASG).

Product functionality

The NASG is a lightweight neoprene garment that is made up of five segments that close tightly with Velcro. The NASG applies pressure to the lower body and abdomen, thereby stabilizing vital signs and resolving hypovolemic shock. When fitted correctly, the reusable NASG forces blood to the essential organs - heart, lungs, and brain.

Developer's claims of product benefits

This garment provides an improvement over existing products in that it is a validated, low-cost, high-quality garment. This is achieved by providing direct access to qualified manufacturers who can supply the garment at the price of US\$54 (purchaser is responsible for freight forward from China and import regulations, minimum order is 1,000 units).

Operating steps

1. Place NASG under woman; 2. close segments 1 tightly around the ankles; 3. close segments 2 tightly around each calf; 3. close segments 3 tightly around each thigh, leave knees free; 4. close segment 4 around pelvis; close segment 5 with pressure ball over the umbilicus; 6. Finish closing the NASG using segment 6. Segments 1, 2, 3 can be applied by two persons simultaneously, segments 4, 5, 6 should only be applied by one.

Development stage

Clinical trials led by Suellen Miller at the University of California, San Francisco are on-going. Currently, the large-size device is cleared by the US Food and Drug Administration and has been tested in low-income settings. The device is ready for manufacturing and sale in China.

Future work and challenges

NASG Sizes: The NASG is not a one-size-fits-all PPH tool. Three sizes (small, medium, and large) of NASG have been developed to accommodate the significant population-dependent anthropomorphic variations around the world. In our interviews in Nigeria, it was also clear that an extra-large-size NASG was desired to accommodate larger women in that region. Only the large-size NASG has been qualified with manufacturers.

Cleaning of the NASG: Cleaning is another challenge. There is no established method of accurately tracking the number of uses and cleanings, thus it is difficult to identify when sufficient degradation has occurred to retire the NASG and replace it with a new one.

User and environment

User: Family member, nurse, midwife, physician, technician

Training: Pathfinder International has developed course curriculum and training materials which vary in length depending on target audience, and whether the intended user is applying or removing the garment.

Maintenance: Hospital orderlies are generally responsible for cleaning.

Environment of use

Setting: At home and in health care facilities in rural or urban settings.

Requirements: Water and bleach for cleaning.

Product specifications

Life time: Approx. 40 uses

Other features: Portable and reusable

List price (USD): 53.76

Currently sold in: United States of America

