

Non-Pneumatic Anti-Shock Garment (NASG) for Treatment of Hypovolemic Shock During PPH: A Ugandan Perspective.



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PPH Champion

NASMEC PPH Sub-committee

FIGO Committee on Childbirth and PPH 2025-2027



Trends in maternal mortality estimates 2000 to 2023

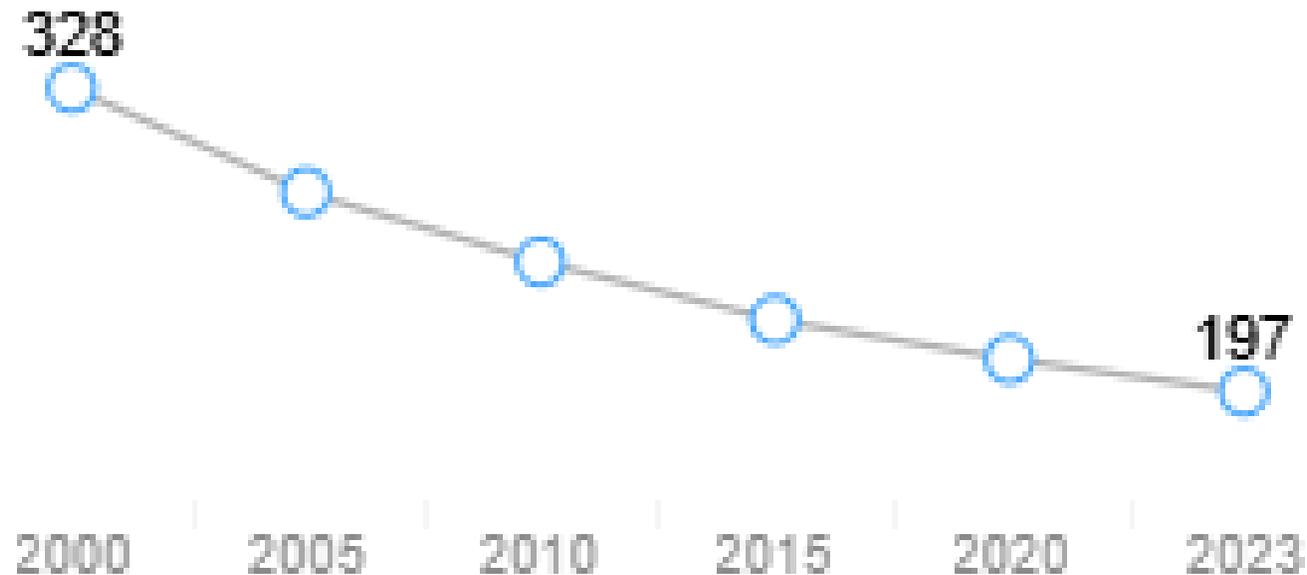


Global MMR Trend

Maternal mortality ratio

197 deaths per 100,000 live births in 2023

▼ **-40%** (2000-2023)



Regional maternal mortality estimates 2000 to 2023



Region	MMR 2000	Trends	MMR 2023	Overall change %	Number of maternal deaths in 2023	Lifetime risk of maternal death in 2023
Australia/New Zealand	7		3	▼ -57%	11	1 in 21,248
Europe and Northern America	17		11	▼ -35%	1,100	1 in 7,410
Eastern and South-Eastern Asia	119		65	▼ -45%	13,000	1 in 1,384
Latin America and the Caribbean	92		77	▼ -16%	7,200	1 in 789
Northern Africa and Western Asia	161		78	▼ -52%	9,100	1 in 509
Central and Southern Asia	395		112	▼ -72%	44,000	1 in 410
Oceania (excluding Australia and New Zealand)	274		173	▼ -37%	550	1 in 196
Sub-Saharan Africa	748		454	▼ -39%	182,000	1 in 55

Uganda MMR Trend



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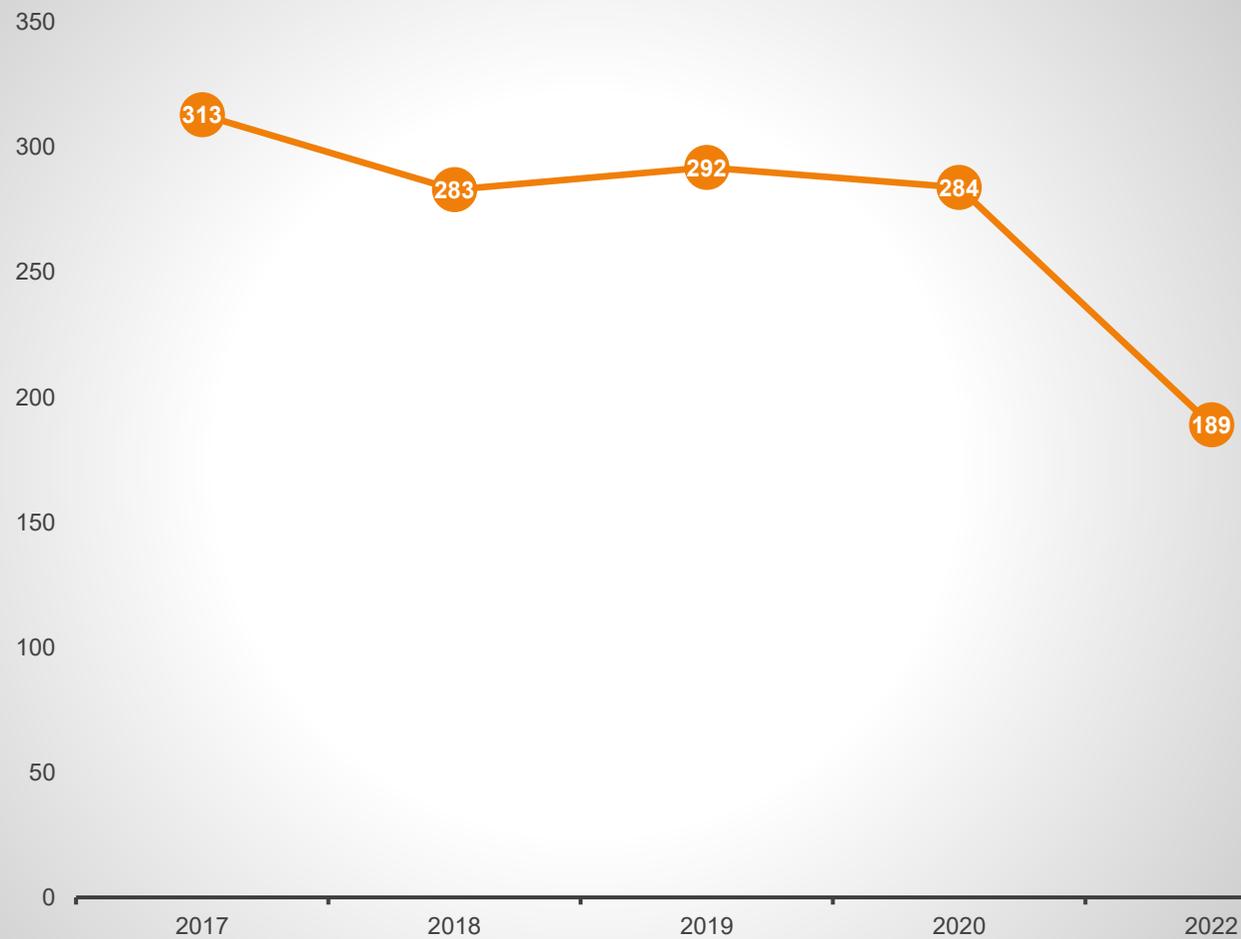
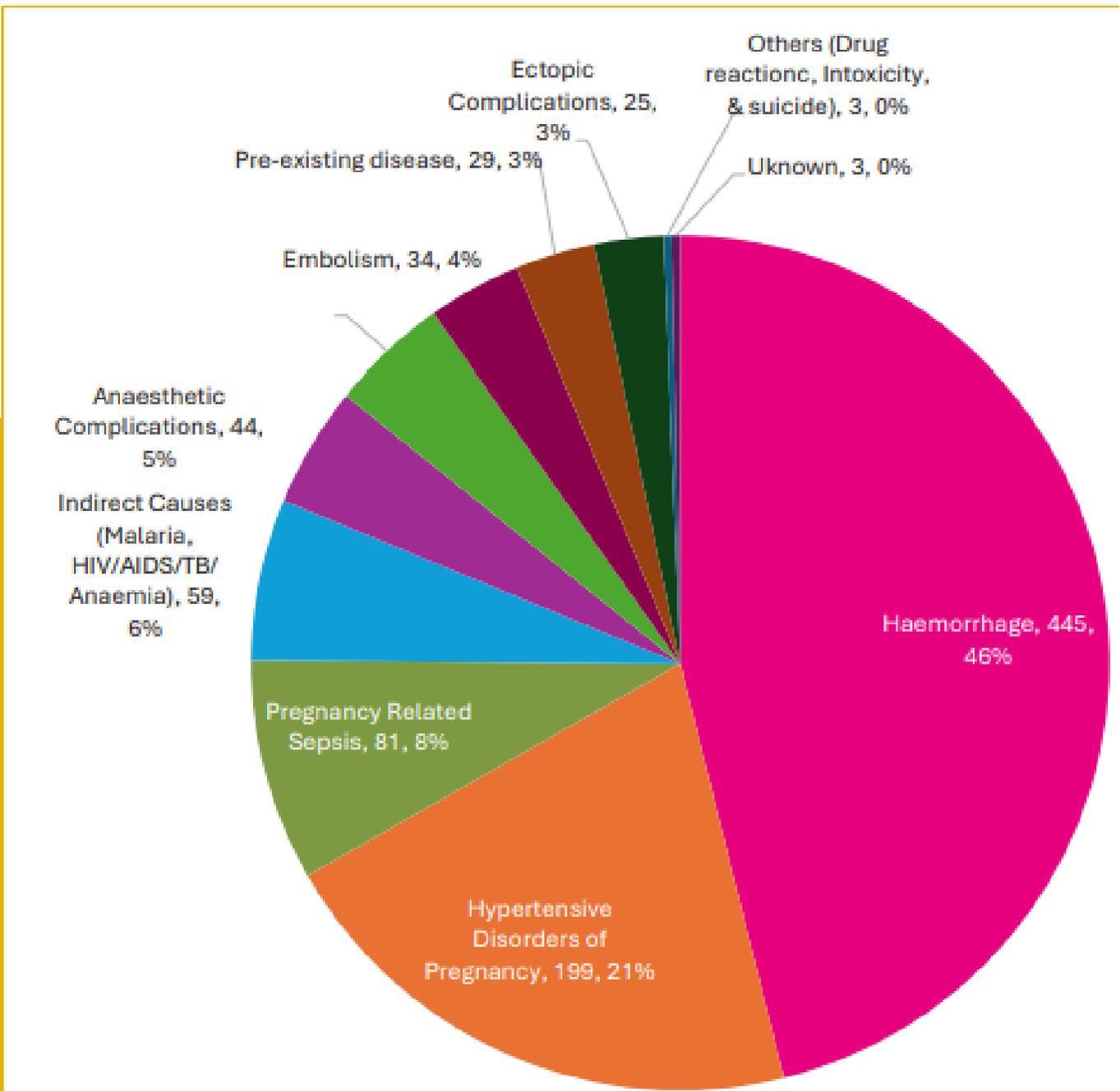


Figure 36: Cause of maternal deaths, FY2024/25



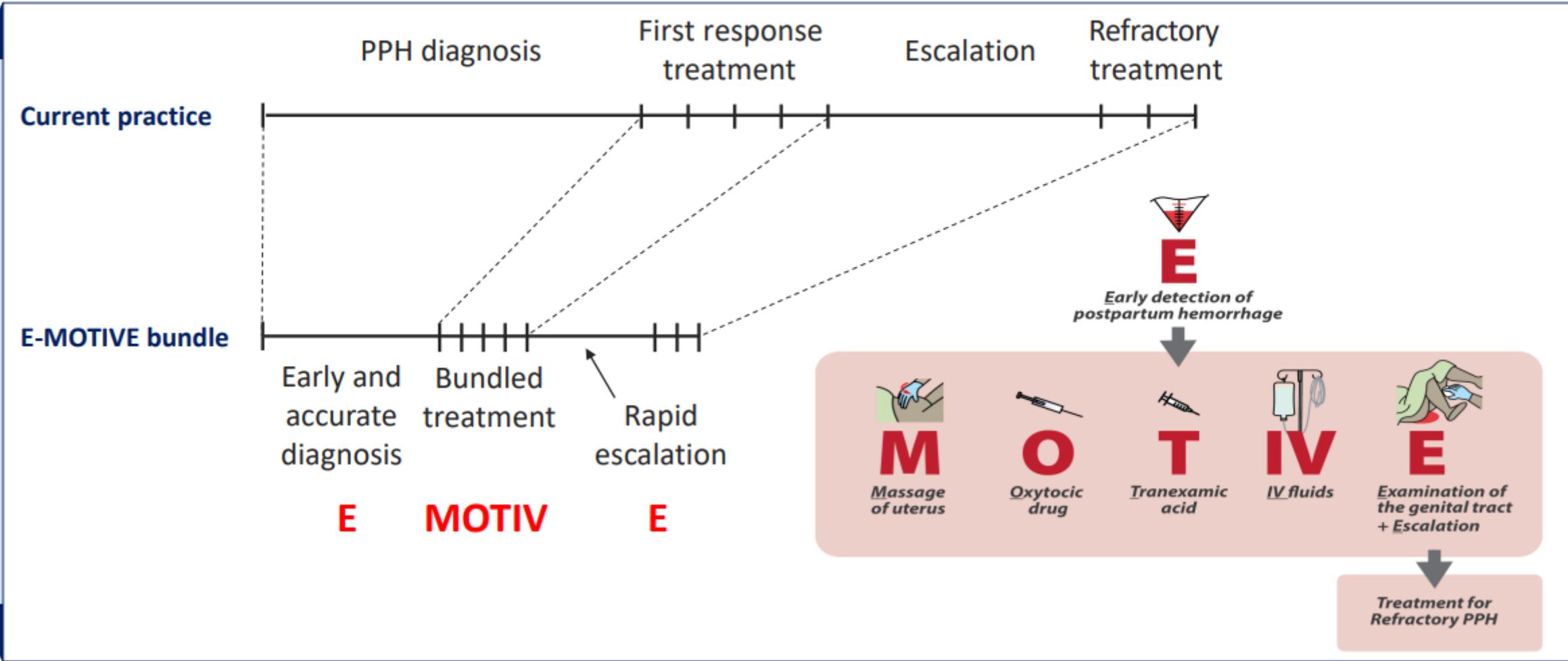
Causes of maternal deaths FY 2024/25



WHY?

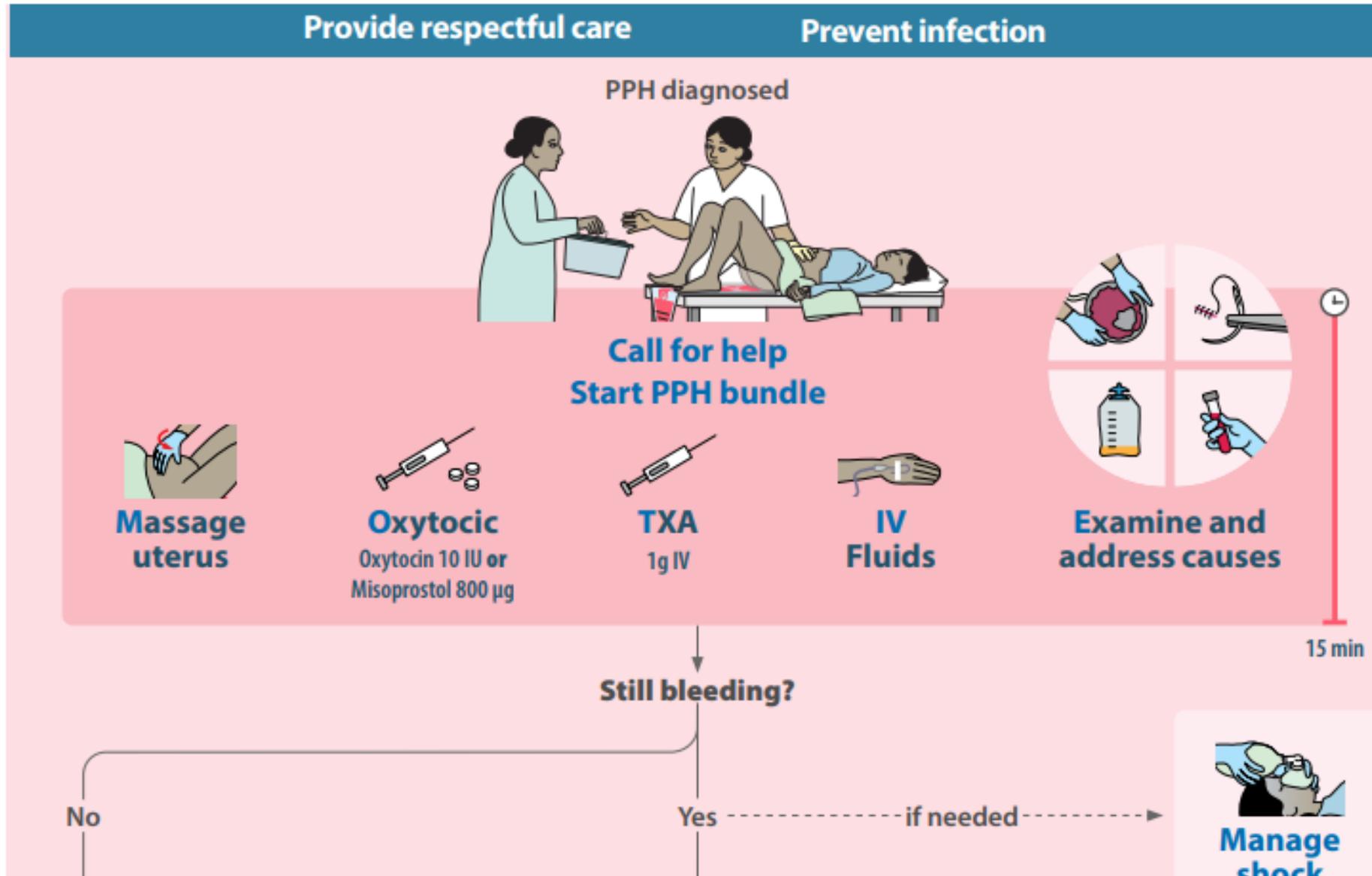
The E-MOTIVE intervention

- Identified through a WHO Technical consultation on PPH bundles in 2018
- A bundle is defined as “Small set of evidence-based interventions that when implemented together, results in significantly better outcomes than when implemented individually” - IHI



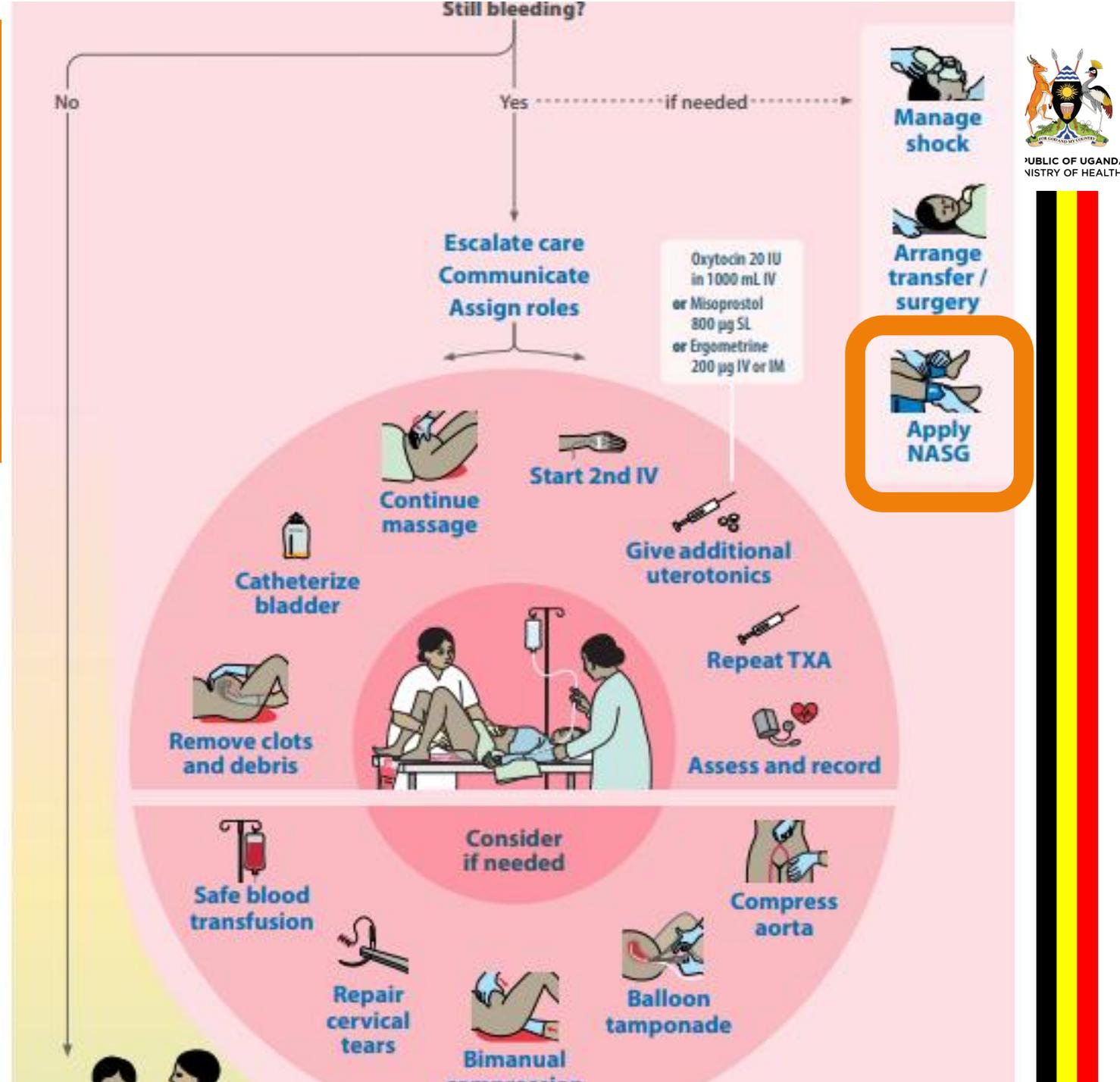
Bleeding after birth

PPH treatment



Management of PPH

- E-MOTIVE: 60% reduction in severe PPH



Update on the Uganda's initiative

- Uganda decided to adopt E-MOTIVE
- Costed implementation plan developed by November 2024, launched in October 2025
- Implementation taking place in a phased manner, year one completed



Capacity Building on the use of NASG (E-MOTIVE) in Uganda



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National dissemination and Adoption of E-MOTIVE PPH care bundle

- *14 National trainers of trainers (Jhpiego)-Across the regions*
- *31 Regional ToTs (BAMA foundation)- (Masaka only)*
- *32 Regional ToTs (CHAI) across the country*
- *14 ToT by UNFPA*
- *38 EMOTIVE champions (Baylor Uganda)-Bunyoro*
- *713 Regional Champions trained from 20N/RRHs, 51 GHs and Selected HCIVs (CHAI)*
- *Safe Birth Africa project (Kla metropolitan and Busoga region)*
- *EMOTIVE/ APT Sepsis Integration training by IDI*

Why NASG Matters:

- Life-saving, low-cost intervention in managing obstetric shock.
- A learning session on NASG:

Feasibility and Accessibility of Non-Pneumatic Anti-Shock Garment (NASG) Use

NASMEC – PPH Subcommittee / Makerere SPH

- Demonstrated NASG as a cost-effective life-saving device that stabilizes patients in shock and bridges referral delays.
- Facilities need to integrate NASG into emergency response kits and referral protocols.

Extracted from: The National Annual MNCH and MPDSR Report, FY 2024/2025

NASG- Clinical Use



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Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Rwenzori	Kyegegwa	Kakabara HC III	HCIII	2
		Kazinga HC III	HCIII	2
		Karwenyi HC III	HCIII	2
	Kitagwenda	Kakabara HC III	HCIII	2
		Mahyoro HC III	HCIII	2
		Nyabbani HCIII	HCIII	2
	Bundibujjo	Klcheche HCIII	HCIII	2
		Bubukwanga HCIII	HCIII	2
		Ntandi HC III	HCIII	2
	Kyenjojo	Burondo HCIII	HCIII	2
		Butama HCIII	HCIII	2
		Bufunjo HCIII	HCIII	2
	Kasese	Kataraza HCIII	HCIII	2
		Kigoyera HCIII	HCIII	2
		Buhuhira HC III	HCIII	2
	Kabarole	Kalibu HC III	HCIII	2
		Kitholhu HC III	HCIII	2
		Buhuhira HC III	HCIII	2
	Kabarole	Kasenda	HCIII	2
		Kabende	HCIII	2

Distribution of NASG-CHAI-Uganda



REPUBLIC OF UGANDA
MINISTRY OF HEALTH

Region	District	Health facility	Level of care	NASG quantities
Acholi	PADER DLG	PAJULE HCIV	HCIV	2
		ATANGA HCIII	HCIII	2
		ACHOLI BUR HCIII	HCIII	2
		PURANGA HCIII	HCIII	2
	GULU CITY	AYWEE HCIII	HCIII	2
		BARDEGE HCIII	HCIII	2
		ST MAURIZ HCIII	HCIII	2
	AGAGO DLG	PAIMOL HCIII	HCIII	2
		WOL HCIII	HCIII	2
		LIRA KATO HCIII	HCIII	2
		OMOT HCIII	HCIII	2
	LAMWO DLG	PADIBE HCIV	HCIV	2
		PALABEK KAL HCIV	HCIV	2
		MADIOPEI HCIV	HCIV	2
	GULU DLG	PATIKO HCIII	HCIII	2
		LABWOROMOR HCIII	HCIII	2
		CWERO HCIII	HCIII	2
		ANGAYA HCIII	HCIII	2
	NWOYA DLG	PURONGO HCIII	HCIII	2
		KOCH LII HCIII	HCIII	2
		ALERO HCIII	HCIII	2
	KITGUM DLG	KITGUM GEN HOSPITAL	HOSP	2
		OROM HCIII	HCIII	2
		KITGUM MATIDI HCIII	HCIII	2
		AMURU LACOR HCIII	HCIII	2
	OMORO DLG	BIBIA HACIII	HCIII	2
		ONGAKO HCIII	HCIII	2
LOYAJONGA HCIII		HCIII	2	
ACET HCIII		HCIII	2	
				2



Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Lango.	Apac	Apac hospital	HOSP	2
		Florence Nightingale	HCIII	2
	Kwania	Aduku HC IV	HC IV	2
		Aboke HC IV	HC IV	2
	Kole	Bala HC III	HCIII	2
		Anyeke HC IV	HCIV	2
	Oyam	Aber Hospital	HOSP	2
		Orum HC IV	HCIV	2
	Alebtong	Alebtong HC IV	HCIV	2
		Amolatar HC IV	HCIV	2
	Amolatar	Alangi HC IV	HCIV	2
		Amai Hoispital	HOSP	2
	Dokolo	Dokolo HC IV	HCIV	2
		Agwata HC III	HCIII	2
		Amwoma HC III	HCIII	2
	Lira city	Ober HC IV	HCIV	2
		PAG Mission Hospital	HOSP	2
	Lira district	Lira University	HOSP	2
		Ogur HC IV	HCIV	2
		Amac HC IV	HCIV	2



Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Arua	Pakwach	Pakwach HC IV	HCIV	2
		Wadelai HC III	HCIII	2
		Panyimur HC III	HCIII	2
		Alwi HC II	HCII	2
	Maracha	Maracha HC IV	HCIV	2
		Odupiri HC III	HCIII	2
		Tara HC III	HCIII	2
		Eliofe HC III	HCIII	2
	Arua	Logiri HC III	HCIII	2
		Ajai HC III	HCIII	2
		Opia HC III	HCIII	2
	Adjumani	Mungula HC IV	HCIV	2
		Ayiri HC III	HCIII	2
		Ayilo HC III	HCIII	2
		Bira HC III	HCIII	2
	Moyo	Moyo mission HC IV	HCIV	2
		Moyo General Hospital	HOSP	3
	Zombo	Zumbo HC III	HCIII	2
		Agiermach HC III	HCIII	2
	Arua City	Pajulu HC III	HCIII	2
		Orivu HC III	HCIII	2
		Riki HC III	HCIII	2
		Ario HC III	HCIII	2
		Ayivuni HC III	HCIII	2
	Madi -Okollo	Inde Hc III	HCIII	2
	Obongi	Obongi HC IV	HCIV	2
terege	Uriama HC III	HCIII	2	
	Ocea HC III	HCIII	2	
	Imvepi Zone HC III	HCIII	2	



Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Busoga	Jinja city	BUDONDO HCIV	HCIV	2
	JINJA DISTRICT	MAGAMAGA HCIII	HCIII	2
		BUDIMA	HCIII	2
		LULYAMBUZI HCIII	HCIII	2
	KAMULI	NAMASAGALI HCIII	HCIII	2
		LUUKA	IKUMBYA HCIII	HCIII
	BUGWERI	BUSESA HCIV	HCIV	2
		BUSEMBATIA HCIII	HCIII	2
		LUBILA HCIII	HCIII	2
	BUYENDE	KIDERA HCIV	HCIV	2
		BUGAYA HCIV	HCIV	2
	NAMUTUMBA	NSIZE HCIV	HCIV	2
		MAGADA HCIII	HCIII	2
		NAMUTUMBA HCIII	HCIII	2
	BUGIRI	KITYERERA HCIV	HCIV	2
	NAMAYINGO	NANKOMA HCIV	HCIV	2
		LOLWE HCIII	HCIII	2
NAMAYINGO	BANDA HCIII	HCIII	2	
	SIGULU HCIII	HCIII	2	



Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Kayunga	Luwero	Kalagala HC IV	HCIV	2
		Wabusana HC III	HCIII	2
		Zirobwe HC III	HCIII	2
		Luwero hospital	HOSP	2
	Nakasongola	Nabiswera HC II	HCIII	2
		Nakasongola HC IV	HCIV	2
		Bamugolode HC III	HCIII	2
		Kalungi HC III	HCIII	2
	Buikwe	Kawolo Gen Hospital	HOSP	2
		Buikwe HC III	HCIII	2
		Buwagajjo HC III	HCIII	2
		Njeru HC III	HCIII	2
	Kayunga	Busana HC III	HCIII	2
		Wabwoko HC III	HCIII	2
		Lugasa HC III	HCIII	2
	Buvuma	Buvuma HC III	HCIII	2
		Lukale HC III	HCIII	2
		Lwajje HC III	HCIII	2
	Nakaseke	Ngoma HC IV	HCIV	2
		Semuto HC IV	HCIV	2

Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Elgon	Kapchorwa	Kapchorwa General hospital	HOSP	3
	Kapchorwa	kaserem Health center four	HCIV	2
	Tororo	Tororo General hospital	HOSP	3
	Tororo	Mulanda Health center four	HCIV	2
	Palisa	Pallisa General hospital	HOSP	3
	Palisa	Gogonyo Health center three	HCIV	2
	Kibuku	Kasasira Health center three	HCIII	2
	Kibuku	Nabuli Health center three	HCIII	2
	Bulambuli	Muyembe Health center four	HCIV	2
	Bulambuli	Bumasobo Health center three	HCIII	2
	Manafwa	Bukewa Health center three	HCIII	2
	Butebo	Butebo Health center three	HCIII	2
	Butebo	kabwangasi Health center three	HCIII	2
	Busia	Masafu General hospital	HOSP	3
	Busia	Busia Health center four	HCIV	2
	Butaleja	Butaleja Health center three	HCIII	2
	Butaleja	Busolwe	HOSP	2
	Butaleja	Nabiganda Health center four	HCIV	2
	Bukwo	Bukwo General hospital	HOSP	2
	Mbale city	Namanyonyi Health center three	HCIII	2
Mbale city	Nakaloke Health centre three	HCIII	2	



Distribution of NASG-CHAI-Uganda



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- Total NASGs distributed 649 by CHAI
- Two NASGs per facility
- Regions: Acholi, Elgon, Kayunga, Moroto, Rwenzori



Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities	
Moroto	Moroto	Kakingol HCIII	HCIII	2	
		Kalemugole HCIII	HCIII	2	
		Tapac HCIII	HCIII	2	
	Napak	Napak	Iriiri HCIII	HCIII	2
			Lopei HCIII	HCIII	2
			Lotome HCIII	HCIII	2
	Amudat	Amudat	Loroo HCIII	HCIII	2
			Kosike HCIII	HCIII	2
			Karita HCIV	HCIV	2
	Nakapiripirit	Nakapiripirit	Lemusui HCIII	HCIII	2
			Namalu HCIII	HCIII	2
			Nabulenger HCIII	HCIII	2
			Tokora HCIV	HCIV	2
	Nabilatuk	Nabilatuk	Nabilatuk HCIV	HCIV	2
			Lolachat HCIII	HCIII	2
			Lorengedwat HCIII	HCIII	2
	Abim	Abim	Nyakwae HCIII	HCIII	2
			Alerek HCIII	HCIII	2
			Orwamuge HCIII	HCIII	2
	Kotido	Kotido	Kacheri HCIII	HCIII	2
			Lokitelaebu HCIII	HCIII	2
	Kaabong	Kaabong	Nakapelimoru HCIII	HCIII	2
			Kathile HCIII	HCIII	2
			Kopoth HCIII	HCIII	2
	Karenga	Karenga	Lokolia HCIII	HCIII	2
			Kalapata HCIII	HCIII	2
			Karenga HCIV	HCIV	2
Kalimon HCIII			HCIII	2	
		Kocholo HCIII	HCIII	2	



Distribution of NASG-CHAI-Uganda



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Region	District	Health facility	Level of care	NASG quantities
Teso	Kapelebyong	Kapelebyong	HCIV	2
		Acowa	HCIII	2
		Obalanga	HC III	2
	Amuria	Amuria	General Hospital	2
		Murungatuny	HCIII	2
	Katakwi	Aketa	HCIII	2
		Magoro	HCIII	2
	Bukedea	Kolir	HCIII	2
	Kumi	Kamaca	HCIII	2
		Ngora	HCIV	2
	Serere	Kobwin	HCIV	2
		Pingire	HCIII	2
		Kagwara	HCIII	2
	Kaberamaido	Aarapoo	HCIII	2
		Ocero	HCIII	2
		Aperika	HCIII	2
	Kalaki	Anyara	HCIII	2
		Otuboi	HCIII	2
	Soroti	Tiriri	HCIV	2
		Tubur	HCIII	2



Experience sharing

- Capacity building approach: LDHF approach, top to bottom informed by several factors
- NASG cut by a provider
- NASG has saved the lives of many mothers (No.?)



Challenges & gaps

- Most private health facilities not trained and NASG not distributed to them
- No existing mechanisms of data capture for M & E – Need for electronic tool for data capture
- High dependence on implementing partners for procurement and distribution
- Inadequate onsite mentorship



Barriers and facilitators to the implementation of non-pneumatic anti-shock garments in low- and middle-income countries



A systematic review of 17 studies (Ng et al 2025)

Barriers

- High initial procurement costs
- Inadequate training and knowledge among healthcare providers -low confidence in the proper use of NASG
- Logistical issues, such as inconsistent supply chains and difficulties in maintaining NASG devices
- Under-resourced health infrastructures

Barriers and facilitators to the implementation of non-pneumatic anti-shock garments in low- and middle-income countries



A systematic review of 17 studies (Ng et al 2025)

Facilitators

- Effective training programmes
- Support from health authorities
- Advocacy by local and national champions
- Successful integration into clinical protocols and health systems



Recommendations

- NASG is key to preventing maternal deaths due to severe PPH
- M & E is key to ensure optimization of use



References

- Trends in maternal mortality estimates 2000 to 2023: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. Geneva: World Health Organization; 2025. Licence: CC BY-NC-SA 3.0 IGO.
- Government of Uganda, Ministry of Health. The National FY2024/2025 Annual Maternal, Newborn and Child Health (MNCH) and Maternal and Perinatal Death Surveillance and Response (MPDSR) Report. Kampala: Ministry of Health, 2025.
- Bleeding after birth: course on prevention, diagnosis and treatment of postpartum haemorrhage. Geneva: World Health Organization; 2025. Licence: CC BY-NC-SA 3.0 IGO.
- Ng QX, Yaow CYL, Tan HK, Ong MEH, Kosonen H, Karlström J. Systematic review of the barriers and facilitators to the implementation of non-pneumatic antishock garments in low- and middle-income countries: lessons for global health. *BMJ Glob Health*. 2025 Feb 26;10(2):e017681. doi: 10.1136/bmjgh-2024-017681. PMID: 40010780; PMCID: PMC11865775.





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Thank you

