

Misuse of uterotonics in low- resource settings

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Objectives:

- Describe the policy barriers and facilitators to expanded use of uterotonics for PPH prevention
 - Summarize what the literature tells us about the misuse of uterotonics in low resource settings
 - Describing some measurement issues regarding misuse of uterotonics
 - What can misoprostol learn from the experience of oxytocin?
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Background

- Decisions re: how to expand availability/use of uterotonics vary by context:
 - Location of birth
 - Qualification of the provider present at birth
 - Existing government policies
 - Oxytocin: Which health care cadres are/are not allowed to administer injections; can oxytocin in uniject be exempted - not considered an injection?
 - Misoprostol or Oxytocin in Uniject: Willingness to officially collaborate/work with TBA's or other home-based birth attendants
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Background - *continued*

- Existing government policies
 - Past history/anecdotes re: expansion of uterotonics leading to inappropriate use, defined as:
 - Oxytocin: induction or augmentation (particularly at non-surgical facilities and at home-based births)
 - Misoprostol:
 - Sensitivities re: the potential use of misoprostol for induced abortion
 - Incorrect use before birth
 - Is it a matter of time before inappropriate ind/aug is a concern
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Background - *continued*

- What do **NOT** seem to affect decisions re: whether/how to expand use of uterotonics for PPH prevention:
 - (anecdotal or documented) evidence of non-medically indicated induction/augmentation in higher level health facilities OR
 - Evidence of poorly administered induction/augmentation (insufficient monitoring, lack of regulatory pumps)
 - With or without data on associated adverse outcomes
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A few words re: terminology

- The terms cervical ripening, induction and augmentation are sometimes used interchangeably despite important differences
 - Cervical ripening often precedes spontaneous onset of labor – and is then referred to as induction
 - Cervical ripening followed by augmentation is often referred to as induction
 - Oxytocin induction is often accompanied by artificial rupture of membranes – though this non-pharm method may or may not be mentioned
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Rates, trends, adverse effects of the use of induction and augmentation in low resource settings

- Conducted 2 structured/comprehensive literature reviews
 1. Focused on the medical databases
 - ❑ Resulted in data primarily from hospitals
 - ❑ Small n of references identified re: home-based births
 - ❑ Dissimilar studies, designs
 - ❑ Lovold, A et al. 2008. International Journal of Gyn/Ob
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Hospital specific rates of induction in LRS from the literature.

Author/year	Country	Data collection year	Rate of induced labor (in %)	Denominator
Loto O, Fadahunsi A, et al., 2004	Nigeria	2002-3	18	All deliveries
Behague D, et al., 2002	Brazil	1993	31.2	All deliveries
Chigbu C, Exeome I, et al., 2007	Nigeria	2003-06	16.3	All deliveries
Saunders D and Makutu S, 2001	Fiji	1986-96	14	All deliveries

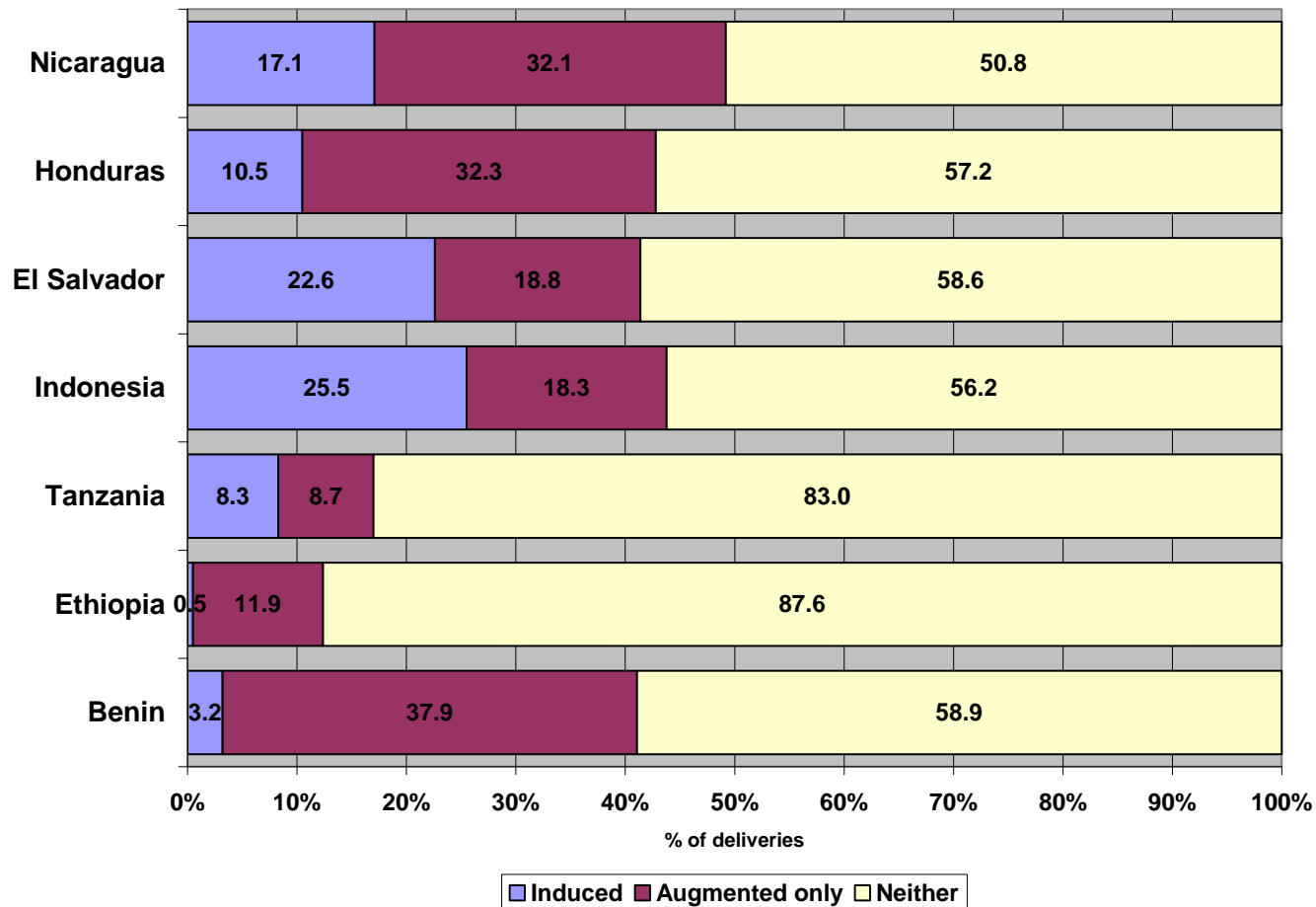
Elective induction as a % of all inductions in hospital studies in LRS

Author	Date of data collection	Country	Rate (in %)
Oboro V, Isawumi A, et al., 2007	2001-2005	Nigeria	13.7
Saunders D and Makutu S, 2001	1986-96	Fiji	30.0
Chigbu C, Ezeome I et al., 2007	2003-2006	Nigeria	7.4

National data on induction/augmentation

- 7 country study to document AMTSL
 - Nationally representative samples of health-facility-based births...
 - Among births in district level facilities or higher
 - Specifically does not tell us about practices at the periphery
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Data on Induction/Augmentation from the 7 country AMSTL study



Oxytocin use during 1st or 2nd stage of labor;

Authors	Facilities in Country	Oxytocin use during 1 st -2 nd stage	N of deliveries
Escoffery et al. 1994	Jamaica	5.6 – 14.9%	10,732
Dujardin et al. 1995	Benin, Congo, Senegal	Ranged from 5.7 – 24.2%	
Bouvier-Colle et al. 1998	5 W. African countries	Ranged from 2.5-32.9%	na
Ellis et al. 2000	Nepal	31.1%	766

Uterine Rupture in LRS

Author	Reference year	Country	% of uterine ruptures associated IOL	Notes from authors
Aboyegi A, Ijaiya M et al., 2001	1992-1999	Nigeria	39	Unskilled use of oxytocin
Ahmed S, 2001	1992-1997	Sudan	10.5	Injudicious use of oxytocin outside of hospital
Al-Jufairi A, 2001	1990-1999	Bahrain	>50	Oxytocin used excessively
Chuni N, 2006	1999-2004	Nepal	44	
Ezechi O, 2004	1991-2000	Nigeria	41	61% of inductions in hospital had wrong dose, route and monitoring
Konje J, Odukoya O, et al., 1990	1975-1986	Nigeria	4.9	

Selected findings:

- 2 of only 3 studies found significant adverse neonatal outcomes associated with use of oxytocin during labor
 - Outcomes:
 - Risk of stillbirth for oxytocin use in normal labors relative to no use (OR: 1.9; 1.1-3.4) in W and Central Africa, (Dujardin et al.)
 - Neonatal resuscitation for oxytocin use in normal labors relative to no use (ORs ranged from 1.9-5.6; all significant) in W. and Central Africa; (Dujardin et al.)
 - 83% of women w/ Intrapartum deaths (SB, 1st day deaths) associated with intrapartum IM oxytocin use among TBAs in Guatemala compared to 54% of women with surviving children surviving the neonatal period ($p < 0.01$) (Bartlett and Bocaletti, 1991)
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Results of literature searches on induction/augmentation in *low level facilities* and at home - Dawn Flandermeyer – work in progress

Databases searched: PubMed; Embase; CINAHL; Scopus, EMBase, Medical Anthropology, JSTOR, Popline, Proquest Dissertation Database, Soc Abstracts, Global Health, References identified (excluding duplicates): 974

References remaining after review of abstracts: 81

Additional references identified from review of Reference Lists: 43

References remaining after inclusion/
Exclusion criteria (ie, selected for full review): 30

References from RCTs/
Quasi-experimental studies: 9

References examining Effects of education Interventions on uterotonic Use at home: 2

References reporting Prevalence of home use Of uterotonics: 5

References examining Prevalence of low level Facility use of uterotonics: 3

Description of herbal Uterotonics used at home: 2

References with Descriptions of home use of uterotonics: 9

RESEARCH QUESTIONS TO ADDRESS RE: Home-based use:

1. Who uses uterotonics at home-based births (characteristics of women, birth attendants, or pharmacists)?
 2. What drug/s are used?
 3. What is it used for? Postpartum hemorrhage (PPH) prevention? Induction/augmentation (speeding up labor)? Treatment?
 4. How is the drug administered (pill, injection, oral, rectal)?
 5. Where do they get it?
 6. Where did they learn about it?
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RESEARCH QUESTIONS TO ADDRESS:

7. How much does it cost?
 8. How often/common are uterotonics used at home?
 9. Are uterotonic drugs used in combination with other non-pharmaceutical methods?
 10. Are there any perceived health effects (positive or negative)?
 11. Were many means to discourage or prevent home-based use of uterotonics discussed in the paper? Which ones?
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Summary of selected findings:

- Substantial number of studies identified overall, though from dissimilar studies
 - Few data/studies for individual questions of interest
 - Struggling to determine if “low level facilities” are non-surgical
 - It seems misuse of oxytocin at home is more common in South Asia than sub-Saharan Africa
 - OR it has just been more frequently studied in Asia - ?
 - Majority of studies are from India – with documentation of home-based use going back 25 years
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Summary of selected findings:

- Not having searched the Spanish-language literature may be a serious omission
 - Vague data re: educational interventions to improve practices in use of uterotonic drugs
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Examples from qualitative research:

- W Africa: Demi Demi - an observed practice in rural health clinics in Mali of giving 5IU oxytocin IM in each buttock to speed up labor;
 - Oxytocin is requested by the mother to make childbirth more painful, for the purpose of invoking “vali”, a Hindu spiritual cleansing through pain; (Van Hollen, 2003)
 - Bangladesh: nurse negotiates with family and provides “an injection” to avoid the cesarean recommended by the physician; (Parkhurst and Rahaman 2007)
 - Brazil: Women who cannot afford elective CS, choose elective induction, only those who are very poor have no interventions; (Behague 2002)
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References citing home-based use of uterotonics

Author	Reference yr	Country	N of women	Uterotonic Use (%)
Bang	1995; 2000	India	680; 4874	23.1; 21.2 By a dr at time of delivery
Sharan	1999	India	527	23.0 To speed labor
Barnes	2005	India	32	62.5 To speed labor
Fronczak	1994	Bangladesh	1238	1.5 To speed labor
Matthews	1996	India	243	21 (varied by lay person, dai, ANM) To induce

Unpublished data – shared by colleagues

- Urban slums of Dhaka, rural areas of Bangladesh:
 - ~ $\frac{1}{4}$ of home-based births in 6 months prior to interview used an injection to speed labor
 - Rural Nepal:
 - ~ $> \frac{1}{4}$ home-based births reported to have used an injection during labor
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Summary:

- Few data exist re: induction/augmentation in low resource settings
 - Rates of induction/augmentation vary dramatically across settings
 - We cannot identify patterns
 - Very few data on indications and what there is is difficult to interpret
 - We know little from the literature re: elective induction/augmentation, but overall rates are high enough to justify suspicion
 - We do not know what is happening at low level facilities
 - Anecdotes re: overuse abound
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Measurement issues

- We need basic descriptive information
 - Can we assume self-reported use of “injection to speed labor” was oxytocin?
 - If so, was it chemically active?
 - How dangerous is it?
 - Misoprostol: start now re: validating questions re: taking a pill
 - How best to measure availability of uterotonic drugs at health facilities?
 - Anecdotally – “miso is everywhere”
 - None in 7 country study of health facilities –
 - Need for collaboration re: development of a tool kit for questionnaires to capture key practices at/around birth?
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