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Short Communication

# Does a novel prefilled injection device make postpartum oxytocin easier to administer? Results from midwives in Vietnam

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**Abstract**
*Objective:* to assess the acceptability of the Uniject prefilled injection device for delivery of oxytocin in the third stage of labour, and the effect of the device on overall willingness to perform active management of the third stage of labour (AMTSL).
*Design:* descriptive study that used baseline and post-intervention questionnaires.
*Setting:* three districts in northern Vietnam. The study population consisted of 52 midwives from two districts where AMTSL was already practiced, and 35 midwives from a district where AMTSL was introduced as part of the study.
*Measurements and findings:* the majority of midwives reported that the Uniject device was easier to use and preferable compared with ampoules and standard syringes. They found the training materials easy to understand.
*Key conclusions:* the use of a prefilled injection device overcame many of the barriers cited by midwives with regard to the use of oxytocin in ampoules, such as trying to break ampoules and fill syringes in a hurry. This device enabled midwives to deliver the correct dose of oxytocin in the third stage of labour in a safe and timely way, while attending to the other needs of the mother and her newborn baby.
*Implications for practice:* use of a prefilled injection device for oxytocin may increase the acceptability and practice of AMTSL in primary level facilities, thus reducing maternal mortality due to postpartum haemorrhage.


**Keywords** Active management of the third stage of labour; Oxytocin; Uniject; Prefilled injection device; Midwives

## Introduction

Active management of the third stage of labour (AMTSL) is now widely accepted as an effective measure to reduce postpartum haemorrhage (WHO, 2000). International bodies of midwives and gynaecologists issued a joint statement in 2003 calling for global adoption of AMTSL (FIGO, ICM, 2004). However, midwives practising in small health-care facilities or home settings where there is little

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or no assistance during the delivery may experience difficulty preparing an injectable uterotonic drug like oxytocin if it involves breaking ampoules and filling syringes at the time of delivery (or even beforehand).

In Vietnam, where AMTSL was not official national policy in 2004, midwives participated in a pilot study in Thanh Hoa province to introduce AMTSL on a limited basis. There were anecdotal reports of resistance among the midwives to the use of AMTSL because of the challenges noted above. To address these concerns, a study of the acceptability of an alternative prefilled injection device was carried out as part of a larger study that also looked at the effectiveness of AMTSL (Tsu et al., 2006) and the relative costs of AMTSL compared with no third-stage intervention. Local effectiveness data and estimates of likely costs were considered critical to help the government consider changes in its policy. The Uniject prefilled, single-use injection device (BD Pharmaceutical Systems, NJ, USA) has been shown to be highly acceptable to hospital midwives in Angola (Strand et al., 2005) and to village midwives doing home deliveries in Indonesia (Tsu et al., 2003).

## Methods

Midwives in two districts of Thanh Hoa province, about 150 km south of Hanoi, who had experience of providing AMTSL to women delivering in commune health centres (CHCs), the district hospital and (occasionally) home settings were invited to participate in the study. Midwives in a third district who were just learning AMTSL only completed part of the study. All CHC and district hospital midwives who had attended at least 20 deliveries (facility or home-based) in the preceding six months and expected to attend at least 20 in the study period (estimated at 40–45 midwives) were eligible to participate.

This descriptive study used baseline and post-intervention questionnaires. The primary outcomes of interest were midwives' perceptions of acceptability and ease of use in three areas: Uniject devices compared with standard syringes and ampoules; the practice of AMTSL; and the training materials. Midwives with AMTSL experience attended a half-day training session that included an orientation to the study, explanation and demonstration of the Uniject device, explanation of the data forms and informed consent process, role play of the consent process, and practice activating and injecting two or three Uniject devices. These midwives completed a self-administered questionnaire in Vietnamese during a regular monthly meeting at the district centre at the start of the study. The baseline questionnaire collected information on: knowledge of participating midwives about AMTSL; use of oxytocin (timing and dose); use or re-use of syringes or needles; sterilisation of re-used syringes; experience with ampoules and standard syringes; participation in home deliveries; and background information on age, midwifery training and years of midwifery experience. Midwives with no prior experience with AMTSL did not complete a baseline assessment, but they did complete training on all the above items as well as how to perform AMTSL.

After training, the midwives were provided with supplies of oxytocin-filled Uniject devices sufficient for the expected number of deliveries in the following month, plus some extras for use in treating any cases of postpartum haemorrhage (PPH). They were asked to record the number of doses they used and were given a new supply for the second month. In addition, the midwives who started using AMTSL during the study were asked about acceptability issues after 10 weeks of experience with Uniject.

The post-intervention questionnaires had several common questions for everyone, with different modules for midwives who had AMTSL experience and midwives with no prior experience of using AMTSL. All midwives in the effectiveness study answered questions about: any difficulties recognising PPH; participation in home deliveries; whether syringes are ever re-used; and background information on age, midwifery training and years of midwifery experience. Midwives with AMTSL experience were also asked questions about: ease of use of the device compared with other syringes; problems with AMTSL; functional problems with Uniject; and the instruction sheet.

Data were entered using Epi Info 6.04 (US Centers for Disease Control and Prevention, Atlanta, USA) and were analysed using Statistical Package for the Social Sciences Version 12.0 (SPSS Inc., Chicago, USA). Closed-ended questions were analysed with simple frequencies and bivariate analysis. Open-ended questions were reviewed by two researchers familiar with the issues, to determine appropriate categories and coding for analysis. Typical comments were noted and have been included as illustrative quotations.

The study protocol was approved by the Scientific Committee of the Ministry of Health in Vietnam, the Columbia University Institutional Review Board, and PATH's Human Subjects Protection Committee. Midwife participation was voluntary, and names and