



USAID
FROM THE AMERICAN PEOPLE

HEALTH CARE
IMPROVEMENT
PROJECT

Cost-effectiveness Analysis of Health Programs:

Maternal and Neonatal Health Improvement Intervention in Niger

Edward Broughton, PhD, MPH
University Research Co, LLC

ebroughton@urc-chs.com
www.hciproject.org

Objectives

- **Outline intervention to improve MNH**
- **What evaluation question we were asking**
- **Results**
- **Limitations**
- **What's next**

Intervention

- Implement active management of 3rd stage of labor
- Implement essential newborn care
- Collaborative improvement among 33 facilities
- MOH partnership
- 2 years 89,000 vaginal deliveries



Pre-intervention evaluation:

- **1 in 7 women die in childbirth (lifetime risk)¹**
- **Post-partum hemorrhage is leading cause of death²**

¹: World Bank 2005

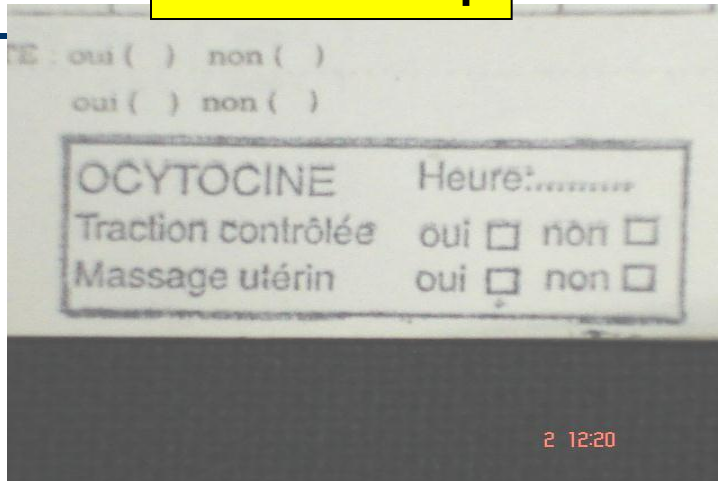
²: WHO, 2006

Intervention Activities



Examples of Changes

AMTSL stamp



Cooler for Ocytocine

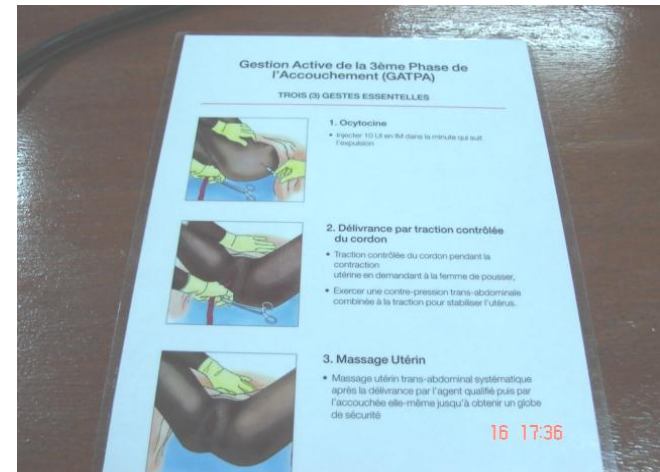


Infection Prevention Materials



Delivery privacy areas

On-site Training



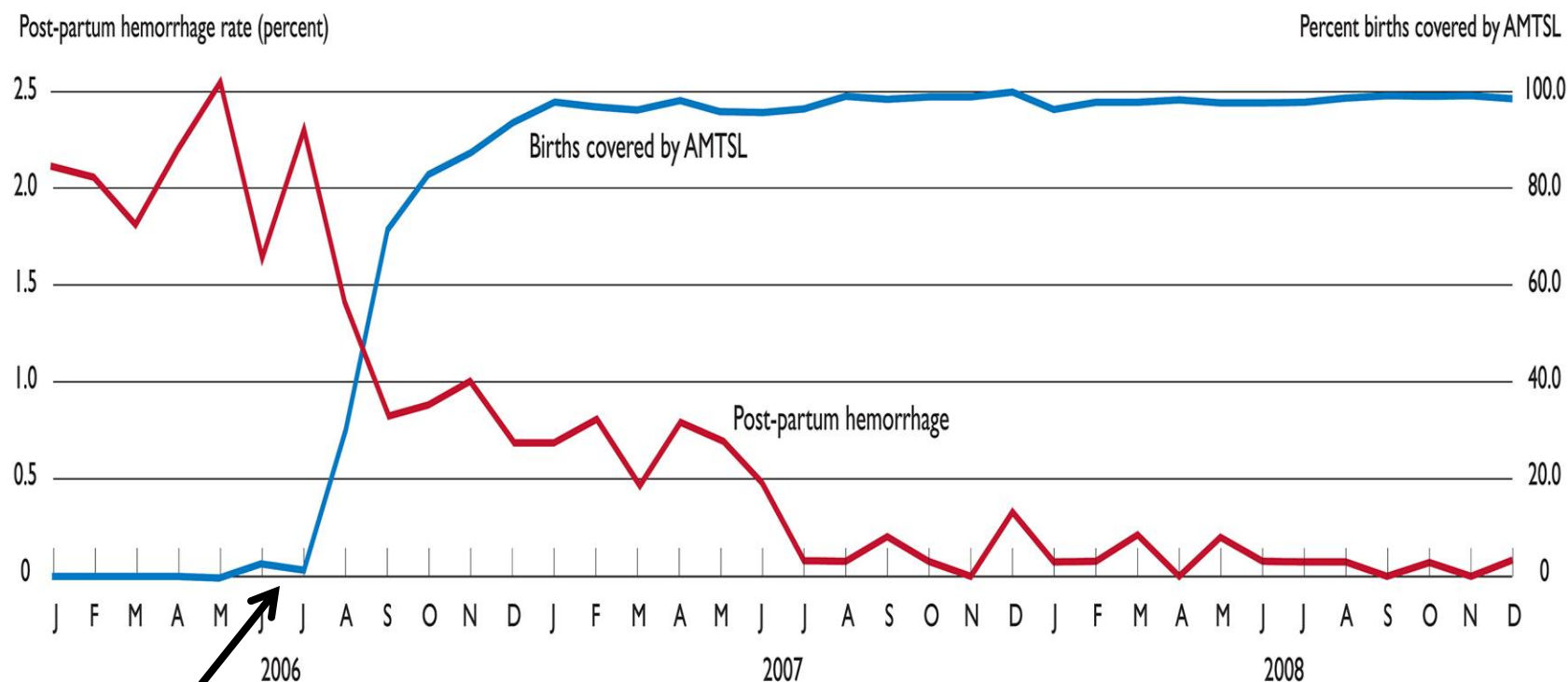
Evaluation Question

- **What was the effect of the program?**
- **How much extra did it cost?**
- **What was its cost-effectiveness compared to doing nothing?**
- **From perspective of:**
 - funders (USAID & MOH)
 - MOH

Changes associated with intervention

AMTSL coverage and post-partum hemorrhage rates in targeted facilities, January 2006 – December 2008

Total births — 2006: 24,785 (28 sites); 2007: 31,073 (33 sites); 2008: 31,085 (33 sites)



Intervention began

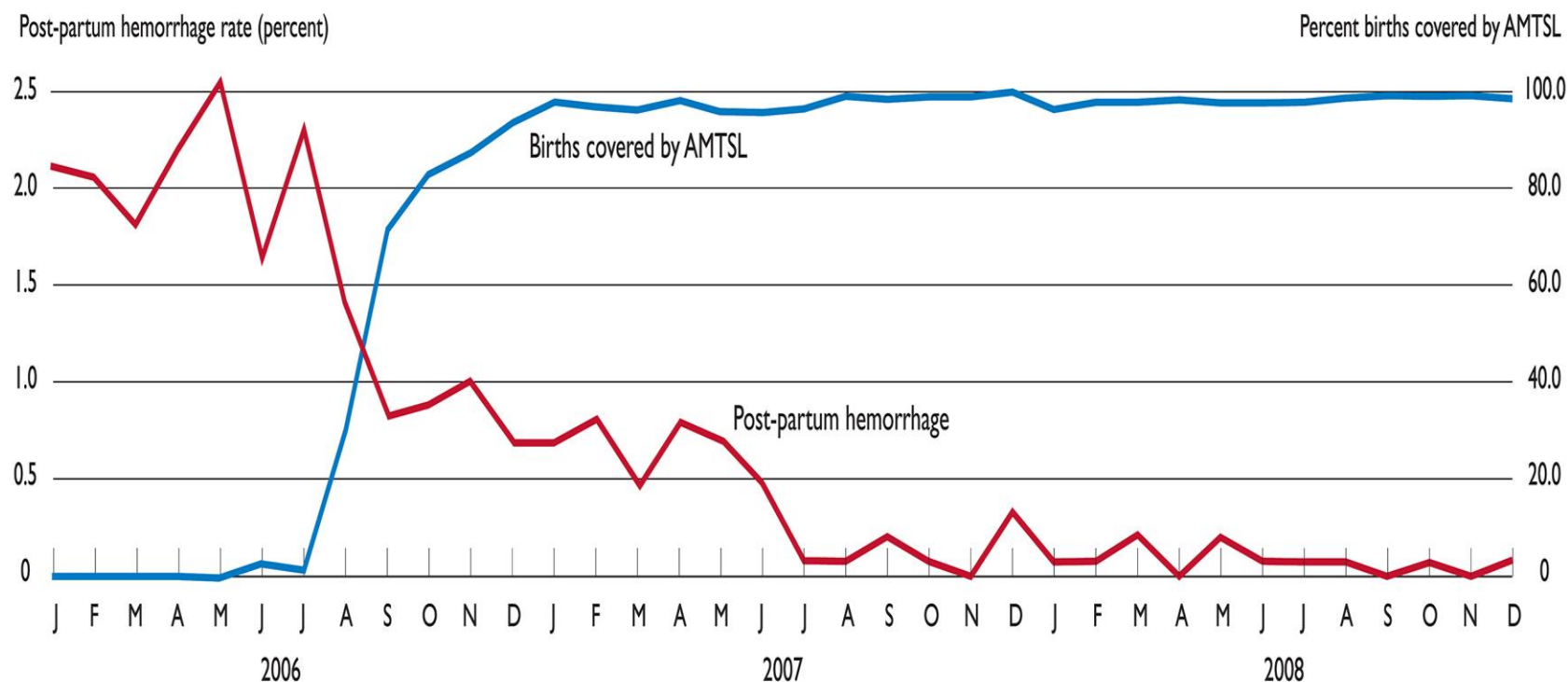


Attributability

Changes associated with intervention

AMTSL coverage and post-partum hemorrhage rates in targeted facilities, January 2006 – December 2008

Total births — 2006: 24,785 (28 sites); 2007: 31,073 (33 sites); 2008: 31,085 (33 sites)



Effects of intervention

- **Effect**

- 1,600 fewer cases of PPH
- 72 fewer maternal deaths
- 765 disability adjusted life years (DALYs) averted



Costs (for USAID)

	Pre-Intervention	Post-intervention
Cost per vaginal delivery	\$ 35	\$ 28

	Development	Implementation
USAID costs	\$ 2.12	\$ 6.53

Total additional cost = \$2.45 per vaginal delivery

Costs (for USAID)

	Pre-Intervention	Post-intervention
Cost per vaginal delivery	\$ 35	\$ 28

	Development	Implementation
MoH costs	\$ 0.81	\$ 4.58

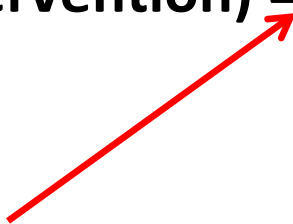
Total additional cost = --\$1.67 per vaginal delivery

Cost-effectiveness Analysis

Incremental cost-effectiveness ratio = $\frac{\text{Added costs}}{\text{Added effects}}$

ICER (HCI intervention) = $\frac{\$2.45}{0.0086}$ = \$286 / DALY

ICER (MOH intervention) = $\frac{-\$1.67}{0.0086}$ = Dominated



Limitations

- **Weak case for attributability**
- **Assuming MOH can do intervention**
- **Didn't include newborn outcomes**
- **Some cost data questionable**

Peer-review publishing (IJHCQA)?

