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Achieving Coverage and Compliance of Antenatal Calcium Supplementation for Prevention of Pre-eclampsia/Eclampsia – Findings from Nepal

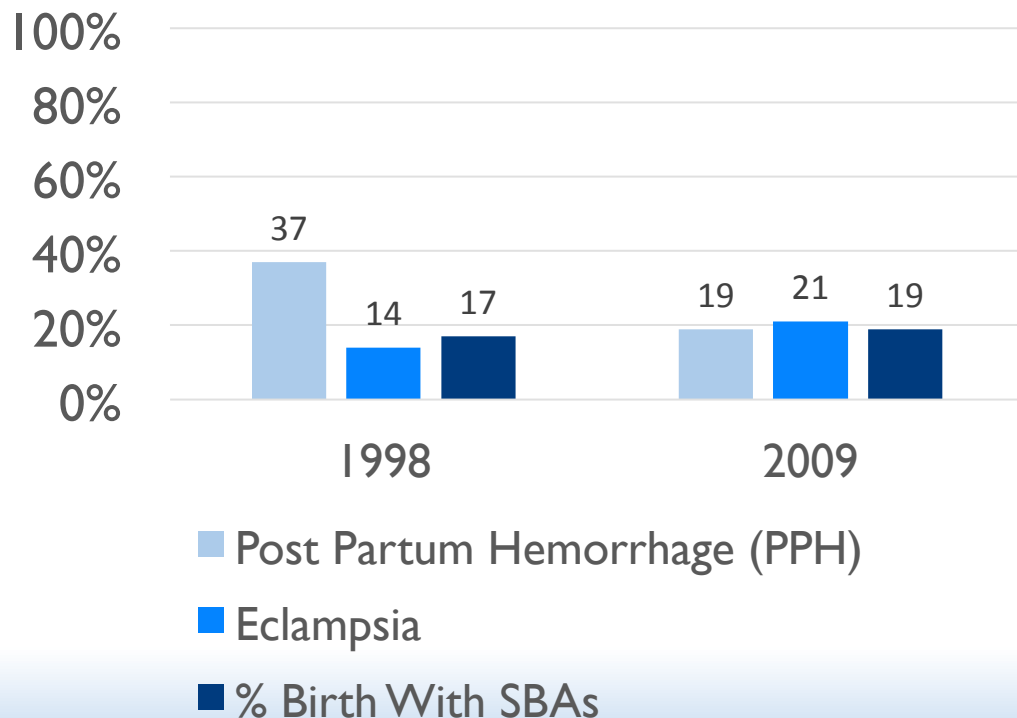
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Brief Background

MMR is declining, though still high: 229/100,000 (MMS, 2008/9)



Eclampsia is the leading cause of maternal mortality in Nepal

- 21% of total maternal deaths
- 29.8% of hospital maternal deaths

Nepal Maternal Mortality and morbidity Study,
Family Health Division, 2008/9

Calcium supplementation among low calcium intake women: WHO randomized trial

Villar J, Abdel-Aleem H, Merialdi M, Mathai M, Ali M, Zavaleta N, Purwar M, Hofmeyr GJ, thi Nhu Ngoc N, Campódonico L, Landoulsi S, Carroli G, Lindheimer M et al. *Am J Obstet Gynecol* 2006;194: 639-649



Revised Systematic Review:

Hofmeyr GJ, Lawrie TA,
Atallah ÁN, Duley L.

*Cochrane Database of
Syst Reviews 2010*



Calcium and pre-eclampsia

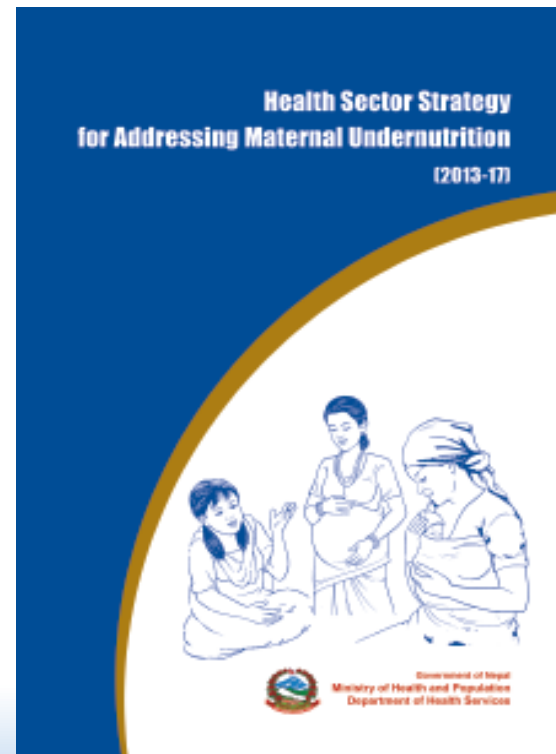
- Epidemiological association of dietary calcium deficiency with pre-eclampsia / eclampsia
- Calcium supplementation reduces:
 - Pre-eclampsia by 64%
 - Severe morbidity by 20%
 - Preterm birth by 10% (borderline significance)
- Increases HELLP syndrome

Daily intake of calcium per capita in developing/ developed countries (FAO, 1990)

REGION	CALCIUM (mg)
World	472
Developed countries	860
Developing countries	346

Health Sector Strategy for Addressing Maternal Undernutrition (2013-17)

- Study conducted in 2011
 - Recommended further evaluation of interventions for improving maternal nutrition- calcium supplementation during pregnancy
- Nutrition surveillance, monitoring, evaluation and research
 - Explore avenues for calcium supplementation during pregnancy.



Objectives of the Operations Research Study

Post-Intervention Cluster Household Survey

Women who had given birth in the last six months (recently delivered women) in the intervention district.

1. Assess coverage and compliance
2. Assess acceptability and feasibility of antenatal calcium supplementation program in one hill district of Nepal.



Building the System for Implementation

District Level Policy Makers:

- Introduction of a drug not yet on essential drugs list
- Storage and distribution logistics

ANC Providers day long orientation:

- Compliance counselling
- Retrain in PEE management
- Calcium distribution logistics

Female Community Health Volunteers day long orientation:

- Reinforce counselling messages



Distribution and Compliance

Distribution:

- 9246 pregnant women coming for their first ANC visit after the 3rd month gestational age or onwards



Compliance:

- Calcium to be taken every day for 150 days
- One gram daily (2 tablets containing 500 mg each of elemental calcium) taken at once
- Calcium in the morning after meal
- Iron to be taken in the evening



Calcium Related BCC Material

Brochure PW

Signs and Symptoms of PE/E

- Severe headaches
- Blurring of vision
- Swelling of hands and face
- Epigastric pain
- Stiffness of body with convulsion and loss of consciousness

Benefits of Taking Calcium
Regular use of calcium tablets by pregnant women will prevent PE/E.

Use of Calcium Tablets

- Take calcium regularly from 4 months of pregnancy until delivery.
- Take calcium tablets after breakfast or morning meal.
- Take 2 tablets calcium every day.
- Drink plenty of water while taking calcium tablets.
- Take one more tablet after your evening meal.

In these conditions, blood pressure and protein in urine detected.




Flip Chart for FCHV

USE OF CALCIUM TABLETS DURING PREGNANCY TO PREVENT PRE-ECLAMPSIA/ECLAMPSIA

Signs and symptoms of eclampsia during pregnancy are severe headaches, blurring of vision, and face, epigastric pain, stiffness of body with convulsion and loss of consciousness.




Regular use of calcium tablets during pregnancy will prevent PE/E.

Be prevented with the regular use of calcium tablets after the morning meal beginning at 4 months until delivery. Drink plenty of water.

After the evening meal, the health of both mother and fetus, should be received free of cost from health or antenatal care (ANC) checkup.

Store safely in cool, dry place, prevent sunlight. Store it in a place where children cannot reach.

During every antenatal care (ANC) checkup, you should have blood pressure and urine tested for pre-eclampsia.

Flex at health facility

Government of Nepal, Ministry of Health & Population
Department of Health Services, DHQD, Dharan

USE CALCIUM TABLETS TO PREVENT PRE-ECLAMPSIA AND ECLAMPSIA DURING PREGNANCY

Signs and Symptoms of PE/E

- Severe headaches
- Blurring of vision
- Swelling of hands and face
- Epigastric pain
- Stiffness of body with convulsion and loss of consciousness

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During every antenatal care (ANC) checkup, you should have your blood pressure and urine tested to detect it.

Benefits of Taking Calcium
Regular use of calcium tablets by pregnant women will prevent PE/E.

Use of Calcium Tablets

- Take calcium regularly from 4 months of pregnancy until delivery.
- Take 2 tablets calcium every day.
- Take calcium tablets after breakfast or morning meal.
- Drink plenty of water while taking calcium tablets.

Where Do We Get Calcium Tablets
During 1st ANC checkup, calcium tablet is provided free of cost with counseling.

Storage of Calcium Tablets
Calcium should be stored in a place where children cannot reach, dry place, prevent from direct sunlight.

If any pregnant woman develops any danger signs during pregnancy, the woman should visit a health facility immediately.





Calcium Bag for PW

Storage of Calcium Tablets
Calcium should be stored safely in cool, dry place, prevent exposing to direct sunlight. Store in a place where children cannot reach easily.

Where Do We Get Calcium Tablets
During 1st ANC checkup, calcium tablets are provided free of cost with counseling.

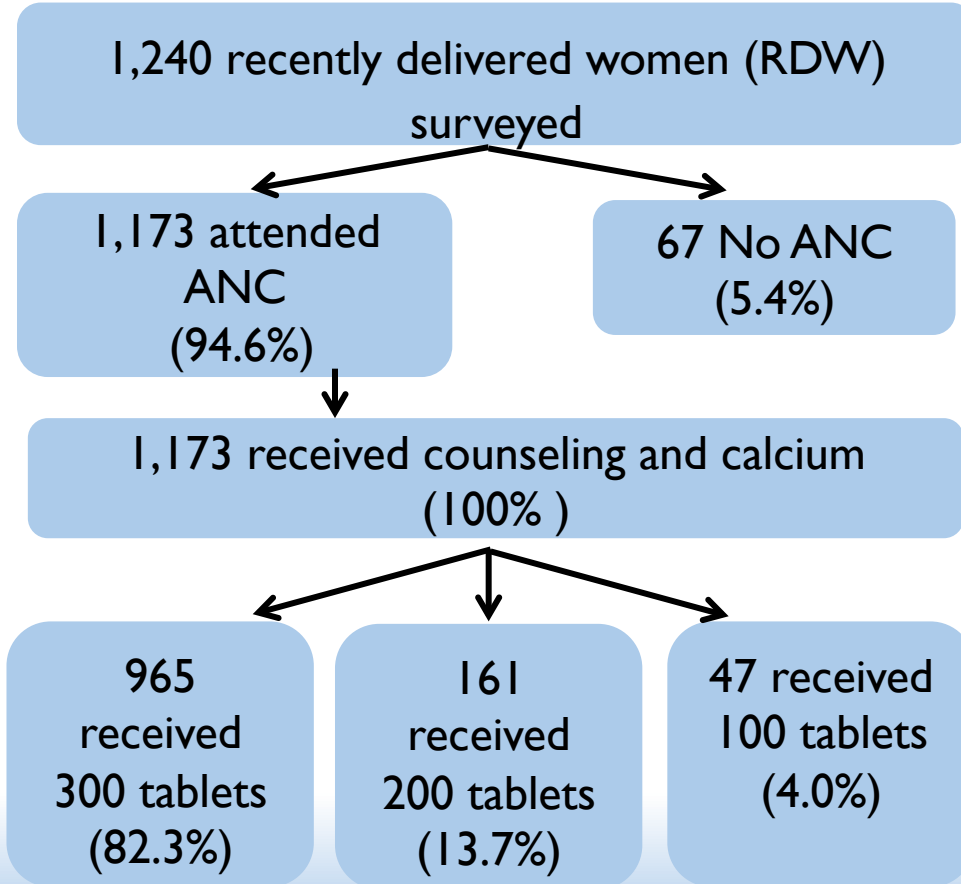
Use CALCIUM TABLETS TO PREVENT PEE DURING PREGNANCY

Notes: If any pregnant woman develops any danger signs during pregnancy, the woman should visit a health facility immediately.





Survey Results



*Calcium coverage =
94.6% of RDW surveyed*

Missed 5% : who never came for ANC
SOLUTION = limited distribution through FCHVs

*Received full course =
82.3% (300 tablets)*

Missed 17.7%: came to ANC too late
SOLUTION = Encourage early ANC

Calcium Compliance Results

*Consumed full course = **67.3%***
(150 days or 300 tablets)

Significant predictors of completing a full course:

- gestational age at first ANC visit
 - number of ANC visits during their most recent pregnancy ($p < 0.01$).
-
- **99.2%** of women reported compliance with respect to dose, timing and frequency.
 - **99.8%** reported taking calcium and iron at separate times of the day.



Calcium Supplementation Feasibility

- 100% of clients making ANC visit were provided calcium tablets
- Screening services were regularly provided at ANC visit
- Women reported no problem with storing calcium
- 97.5% would recommend taking calcium to other pregnant women
- FCHVs and health workers played their roles well.



Implementation Challenges

- Cost of commodity per woman: \$2.87-\$4.86 (approx. 2-4 times that of iron)
- Continuing concerns of GON regarding the sustainability to cover cost for nation-wide scale up
- Require large storage space: calcium is bulky
- Size of the tablet
- Ongoing debate regarding dosage as WHO most recent recommendation is for 1.5-2 gm.



THANK YOU!

