



# Evaluating the Midwifery Programme in Indonesia

# Midwifery Programme in Indonesia

## *(One village one midwife)*

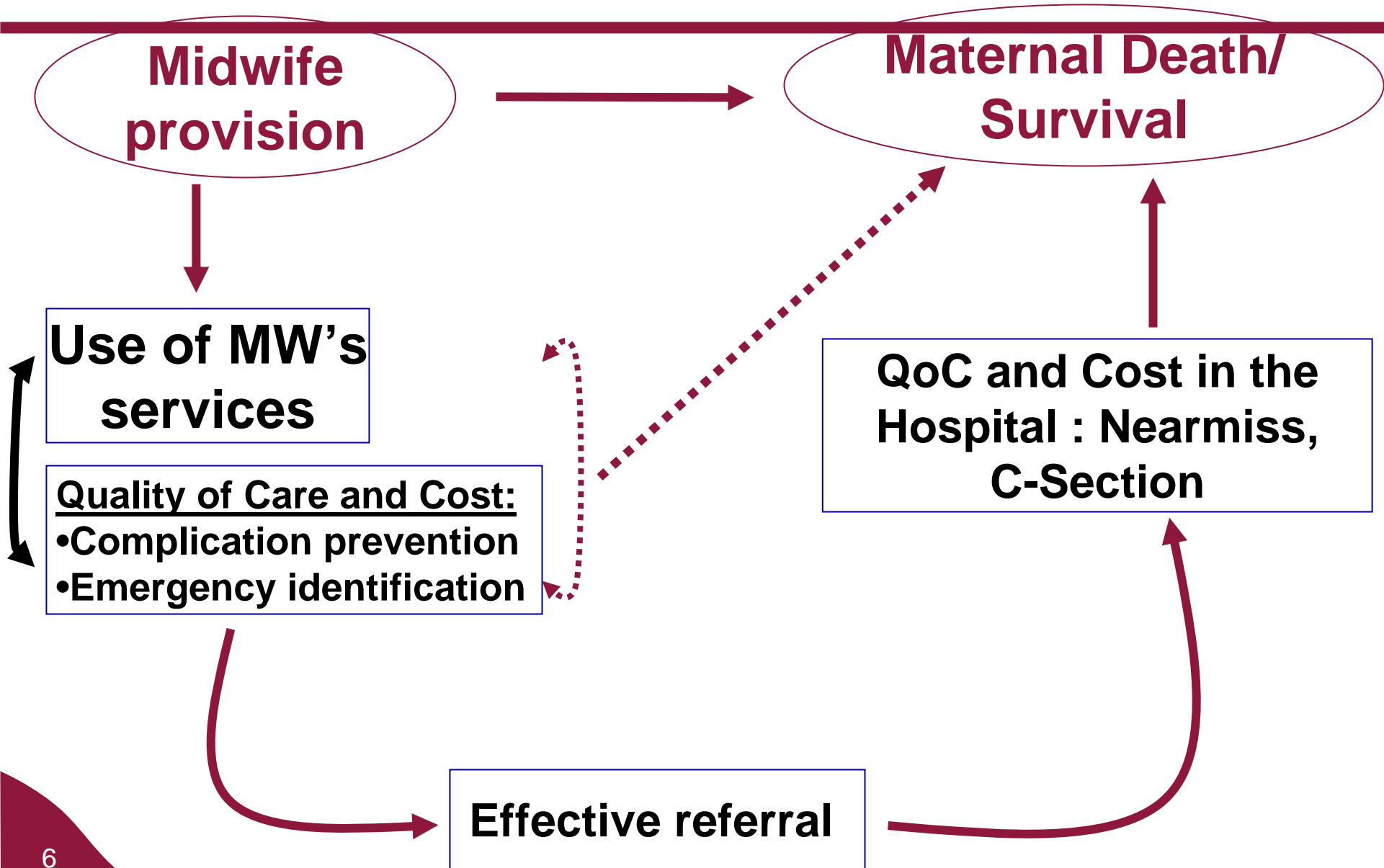


- Back ground:
  - High MMR : 450/100,000 livebirths (National Household Survey,1985)
  - Deliveries by Health Professional was low
  - To respond to the Safemotherhood Initiative (Nairobi 1987)
- The Programme:
  - Launched in 1989, to increase births with health professionals in rural areas
  - Training more than 54.000 midwives: finished junior high school, 3 years nursing and 1 year midwifery
  - By mid 90s almost each village in the country had one midwife assigned
  - It was not programmed as a free service

- Midwives were very young and in-experienced while traditional birth attendants (TBAs) have established “high status” in the community
- “Crash program”: the skills of the midwives was questionable
- By the end of 3 year contract, the midwives still can not sustain financially in the village
- Midwife is the only health provider at village level → demand from community and government for “multi-purpose” function

- Hospital has to raise their own revenue → barrier to the continuous care from community to referral hospital
- Economic crises in 1997-1998: decreased the capacity of community to pay for health services
- Government's respond to the crises: implemented Social Safety Network Program, providing free health services for the poor
- ASKESKIN was introduced in 2005 : a health insurance scheme managed by the MOH health insurance company

- to contribute to a better understanding of the effectiveness and the cost of posting midwives in villages on improving health outcomes in relation to pregnancy and childbirth, in particular maternal death



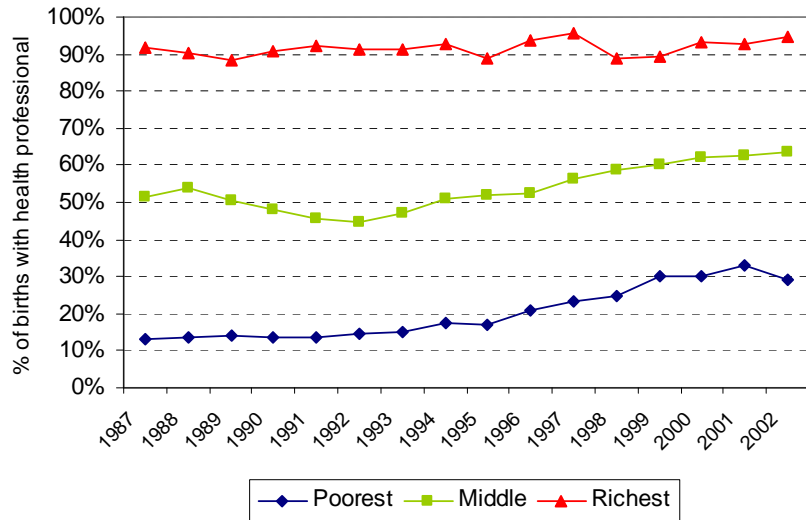
1. Analysis of 4 National Demographic Health Surveys: trend of deliveries by health professionals and C-section rates
2. Intensive data collection in Serang and Pandeglang between 2004 - 2006

The sources of data from Serang and Pandeglang:

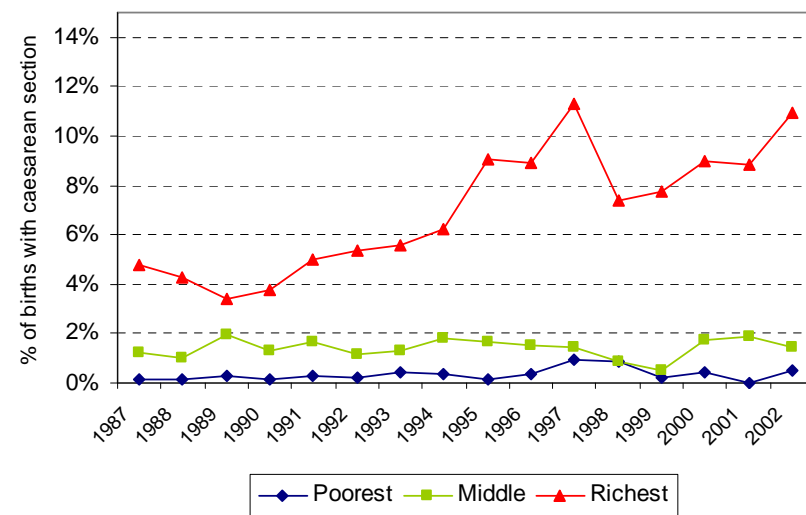
1. A census of all midwives
2. A population-based survey of women who had delivered over the past 2 years, including cost of obstetric care
3. A census of all caesarean sections and nearmiss in all four hospitals
4. A census of all pregnancy-related deaths

5. Costing of Midwifery Programme from interview of 231 midwives (30% of all midwives)
6. Interview of 372 near miss, 98 C-section and 170 deliveries in hospitals to estimate cost of care to the household
7. Qualitative studies on Perception of Quality of Care and Referral
8. Review of interviews with health providers, family and community members involved in the management on /referral of obstetric care of 14 near miss and maternal death cases provided by midwives at community level

# Success of midwifery programme at national level



Narrowing poor-rich gap in births with midwife, but poorest still have low access



Widening poor-rich gap in births with caesarean, and poorest have huge unmet need for life-saving care

# Results from Serang and Pandeglang districts

# Map of Indonesia



**Banten Province**

## Serang:

- About 1.5 hour from Jakarta
- 1.8 million population
- 1 public and 2 private Hospitals
- Close to 2 other hospitals in 2 neighbouring districts
- 36 Subdistrict health centers (Puskemas)
- 10 Puskesmas with beds

## Pandeglang :

- 2 hours from Jakarta, or about 40 minutes from Serang
- 1.1 million population
- 1 public Hospital
- 30 Puskesmas
- 2 Puskemas with beds

- Pandeglang and Serang: 2.41
  - Urban 5.12
  - Rural 1.62
- Malaysia: 3.4
- Sri Lanka: 1.6

Problem in distribution?

# Midwife Density per 10000 population



SUNDA STRAIT

CILEGON DISTRICT

P. KUBUR

TANGERANG DISTRICT

P. PANAITAN

P. PEUCANG

Midwives are clustered around hospitals and Health Centers

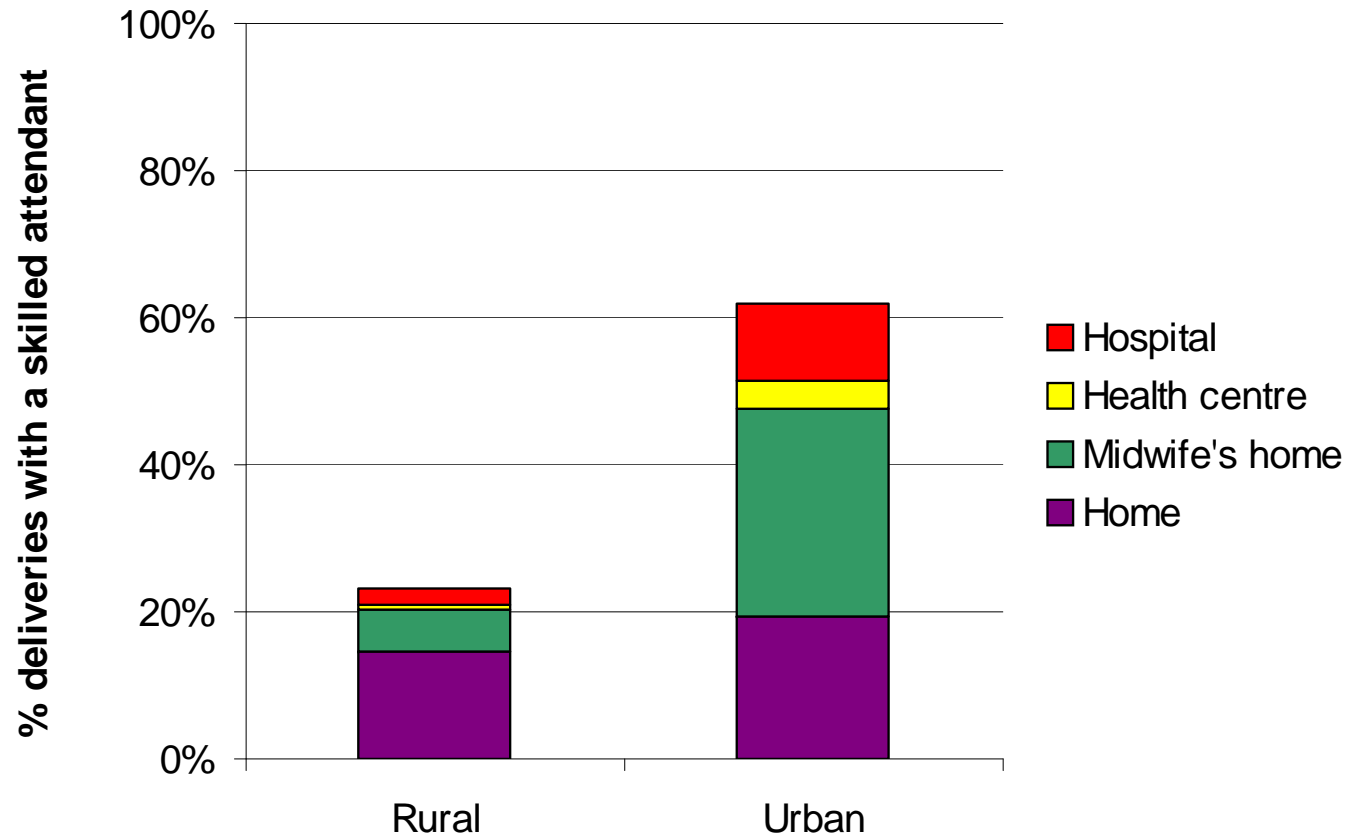
Data source :  
1. Midwife density information : IMMPACT (Midquest study)  
2. Health facility : IMMPACT (GIS)  
3. Village boundary : BAKOSURTANAL  
Created by: Eko S Pambudi, S Bayuaji

40 Kilometers

# Use of maternity care

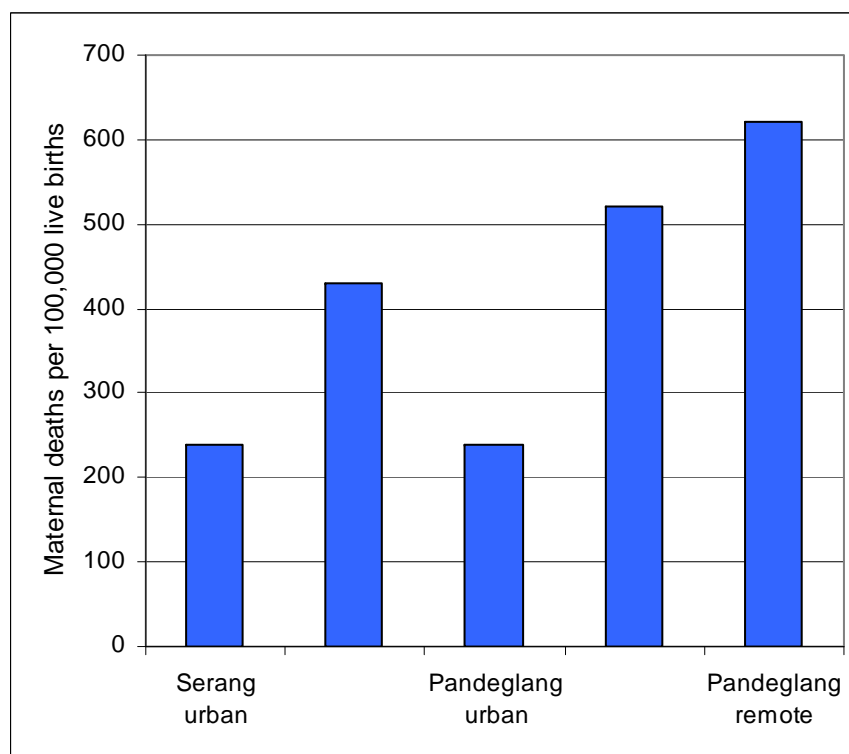
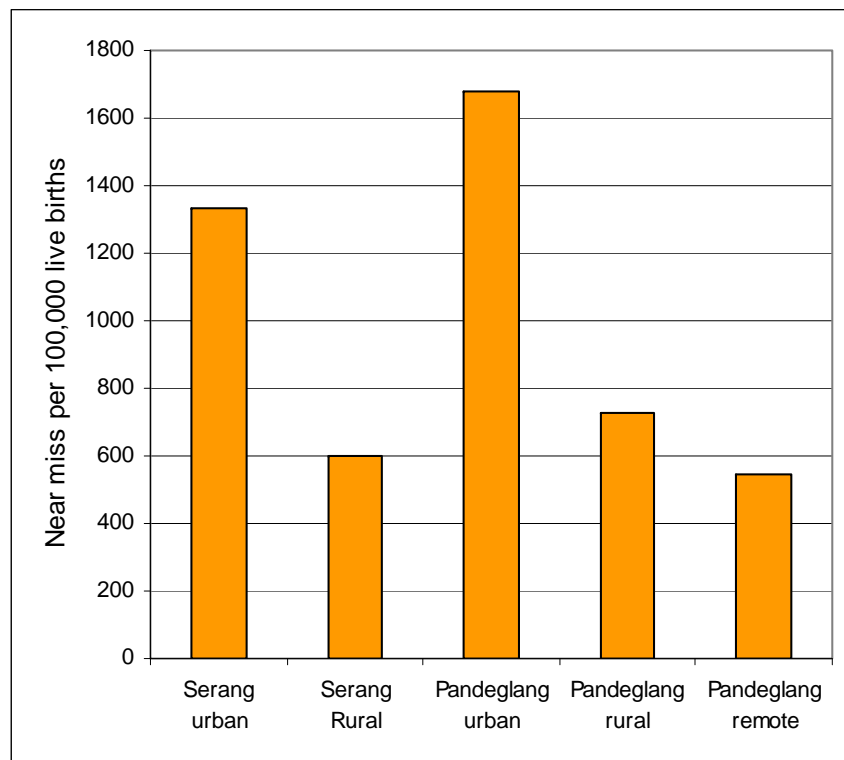
	Serang and Pandeglang 2004-06		Indonesia DHS (1998-2002)	
	% delivery with a professional attendant	% Caesarean sections	% delivery with a professional attendant	% Caesarean sections
All	33%	1.1%	66%	4.5%
Urban	62%	2.9%	78%	6.6%
Rural	23%	0.5%	54%	1.9%

**Extremely low use of midwifery care and caesarean sections**



Deliveries with health professional is much higher in urban  
In urban most of the deliveries happened in facilities.

# Population-based incidence of near miss and maternal mortality (Indonesia)



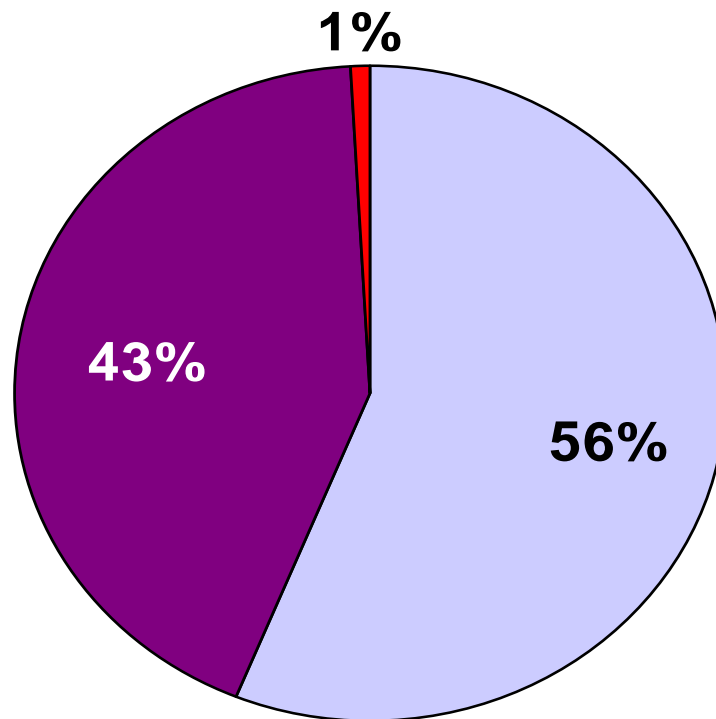
High incidence of near miss reflects low maternal mortality

## ***Pregnancy Related Death (PRD) estimates***

	<b>PRD/MMR</b>
<b>Serang &amp; Pandeglang</b>	429 (372,494)
• Serang	381 (319,452)
• Pandeglang	511 (421,616)
<b>Indonesia (DHS 2003) (MMR)</b>	307

# Causes of death

Direct-Indirect causes of death, by population source  
2004-2005 (N=474)



High indirect causes  
(Cardiovascular  
diseases)

□ Direct ■ Indirect ■ Suicide-injury □ Unknown

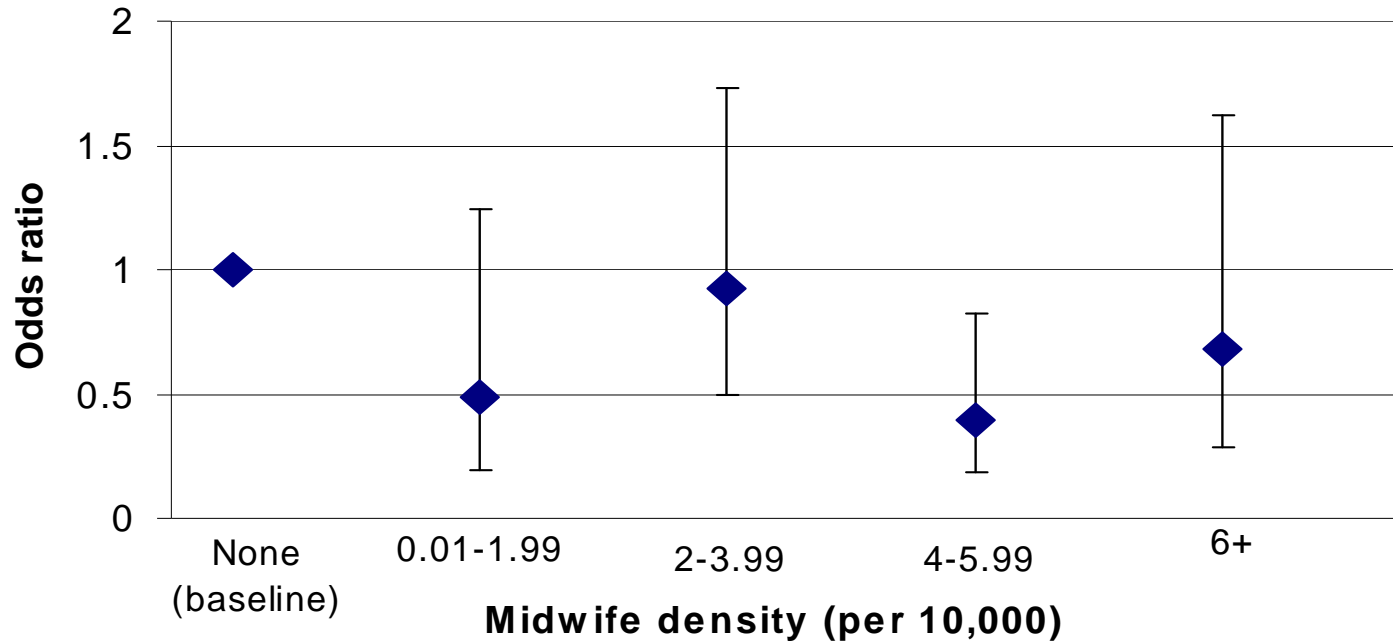
- 57% of death did not see health providers at birth
- 29.3% died in a hospital
- 54.2% died at home
- 33% died in health facilities

→ Use of professional attendants is very low

→ MMR remains high

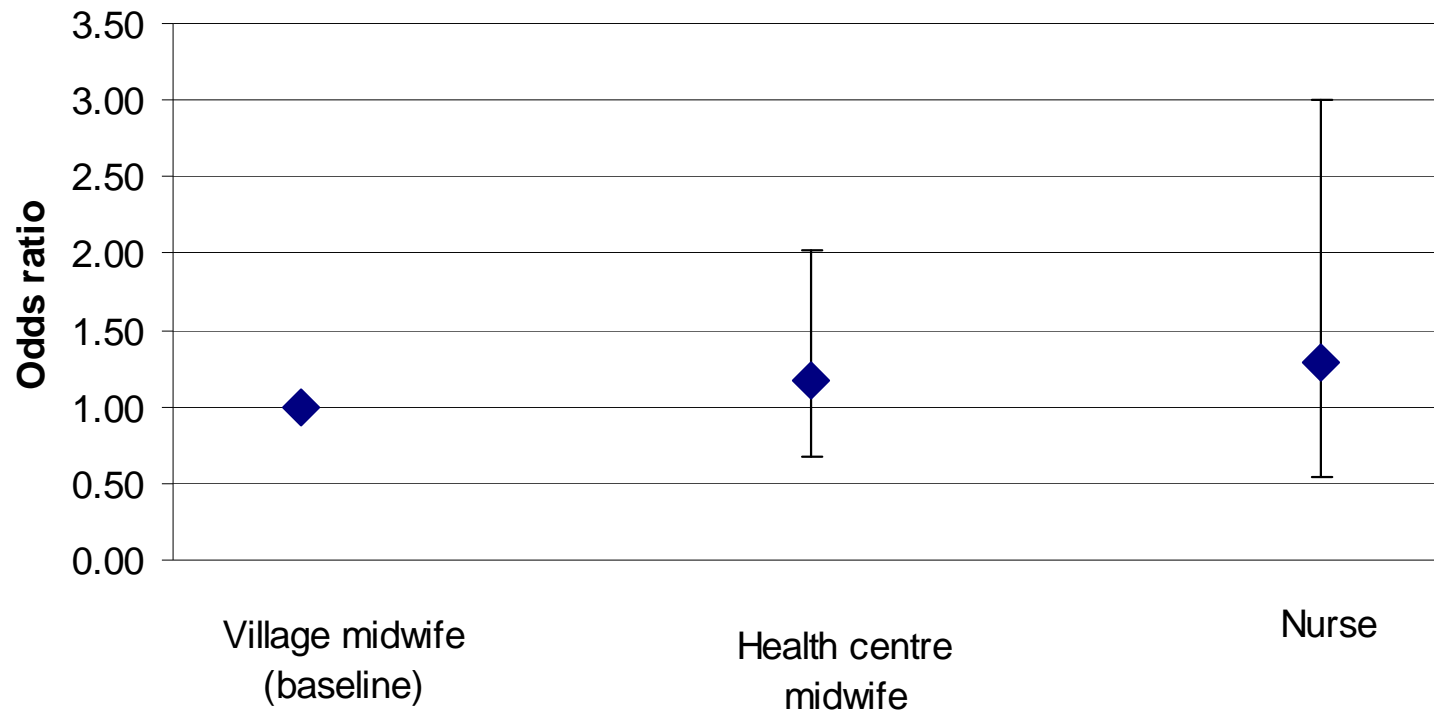
1. Is midwifery provision at the village level associated with maternal mortality reduction?
  - Density of resident midwives per 10,000 population
  - Assigned midwife's status in her village
  - Years assigned midwife has been working in village
  
2. How are the contextual factor (distance to hospital) and socio-demographic characteristics of households associated with maternal mortality?

### MMR by Resident Midwife density per 10,000 population



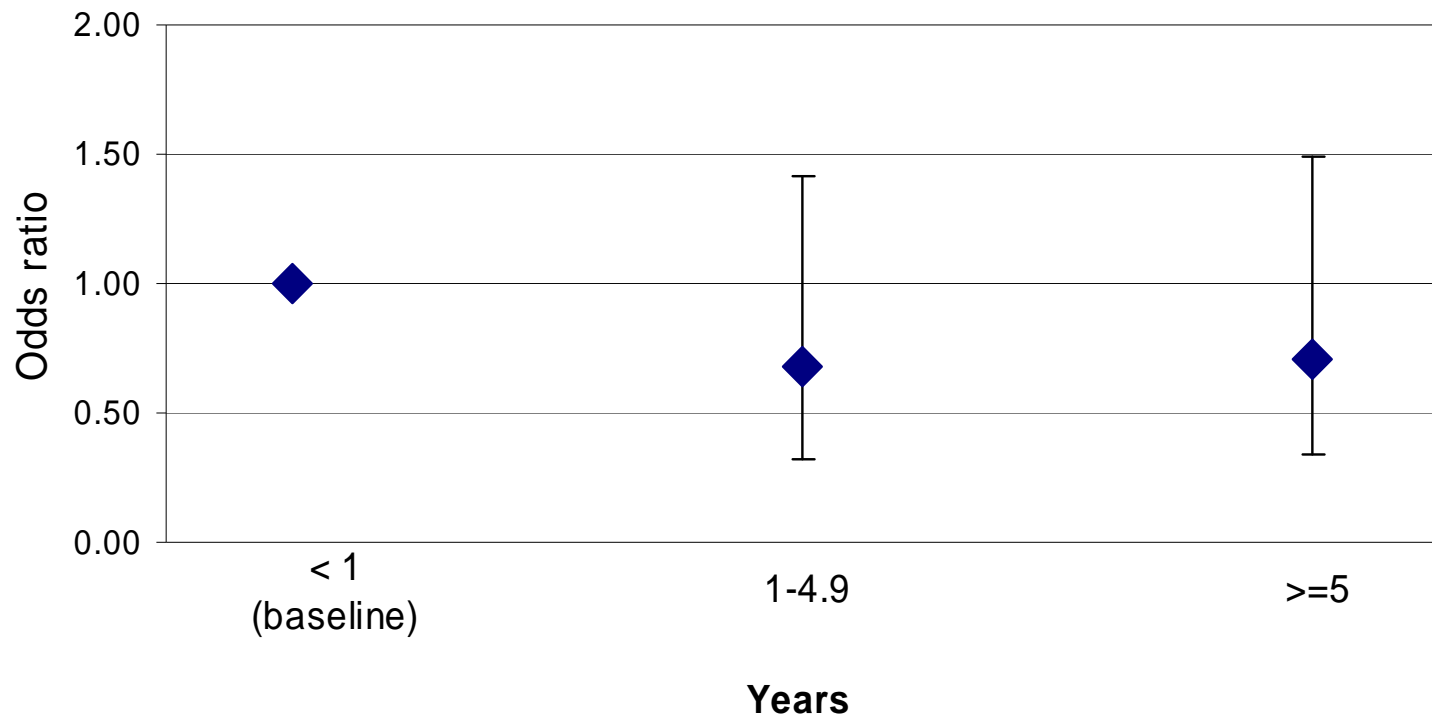
Having at least one midwives resident in the village is associated with lower maternal mortality (adjusted OR: 0.66 (95% CI: 0.4, 1.1))

## Assigned midwife's status in village



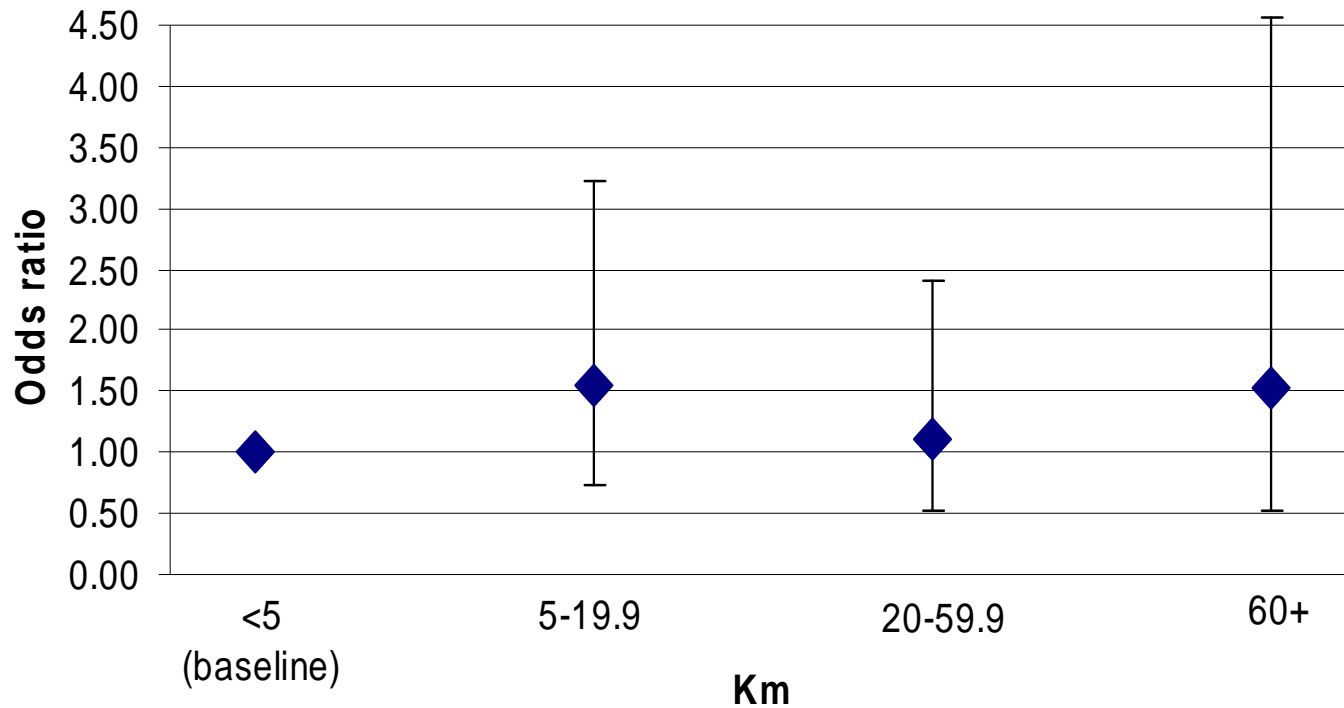
No association between the status of the assigned midwife in her village and Maternal mortality

## Years assigned midwife has been working in assigned village



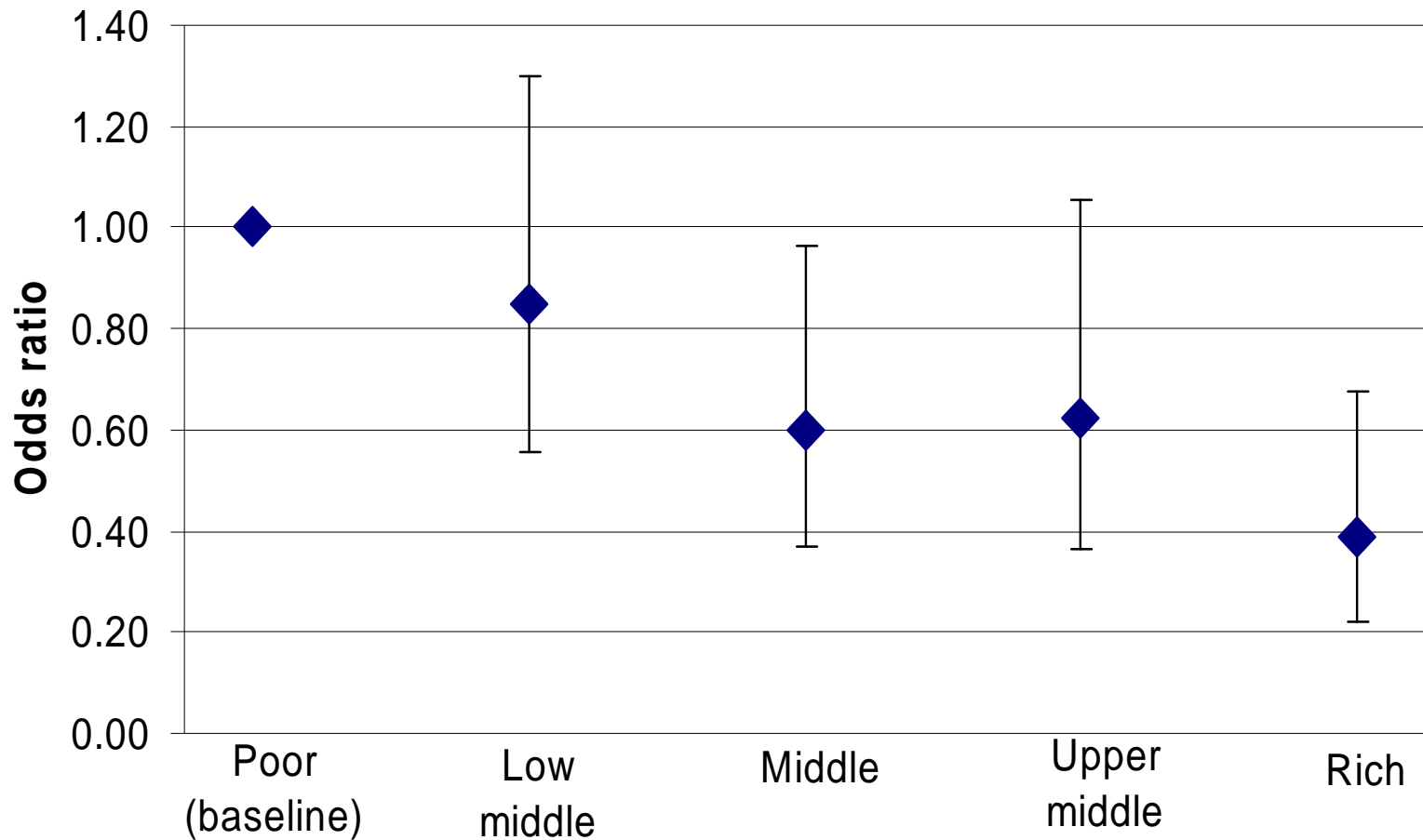
# Distance to nearest hospital is NOT associated with maternal death

## Distance to nearest hospital (km)

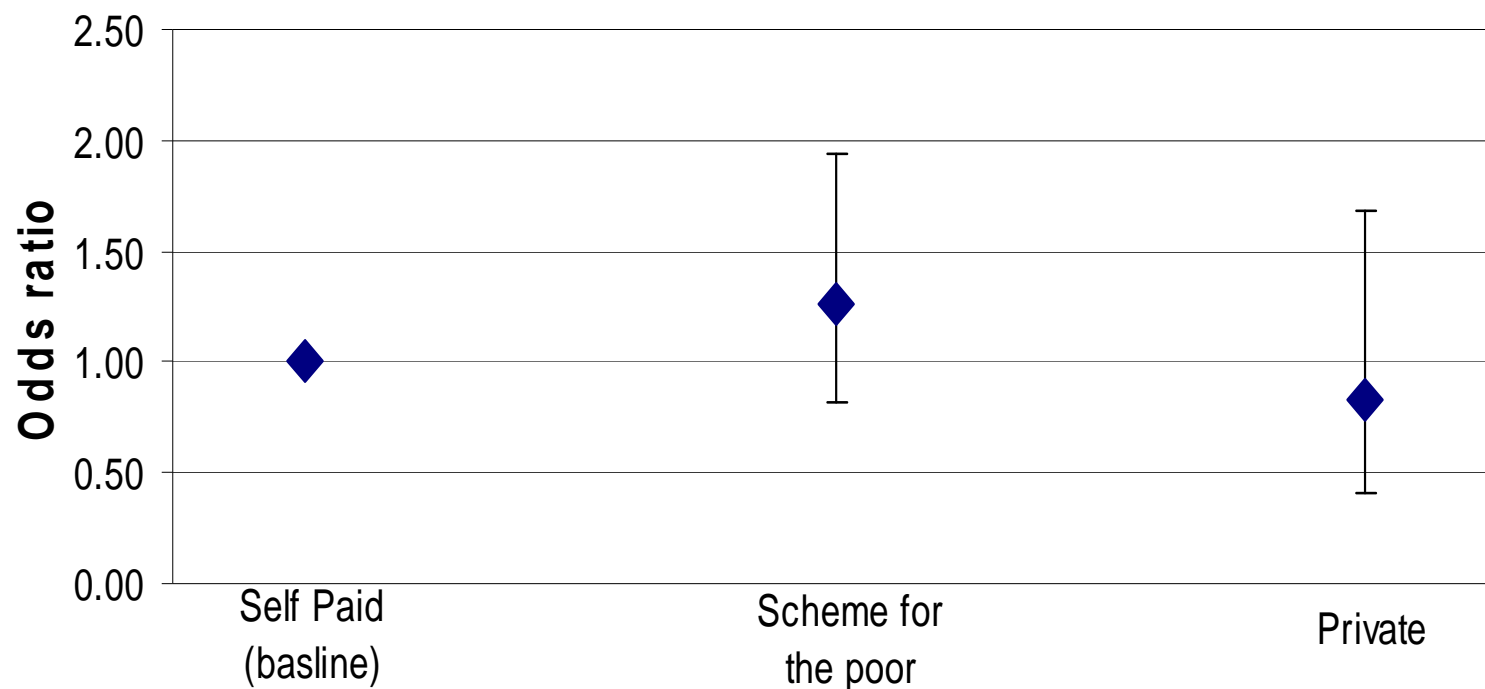


Adjusted OR for every 5km increase: 1.0 (95% CI: 0.9, 1.1)

## Asset Index



## Type of medical scheme

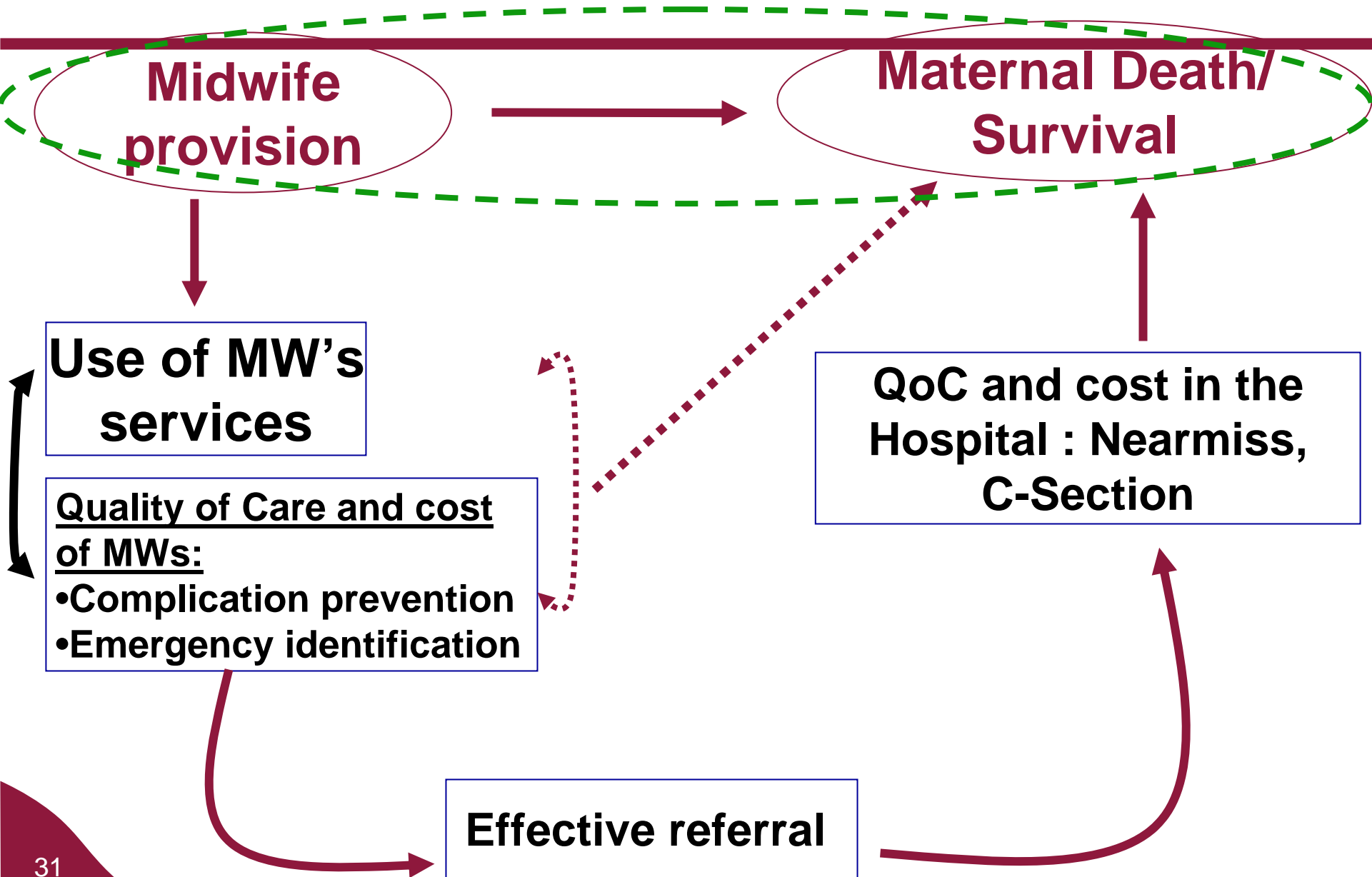


Being on the insurance scheme for the poor is not associated with reducing maternal mortality

- Midwife density is not associated with maternal mortality
- The poor-rich gap in maternal mortality is substantial

WHY .. ???

# Conceptual Framework



# Why very little influence of midwifery provision on maternal mortality?



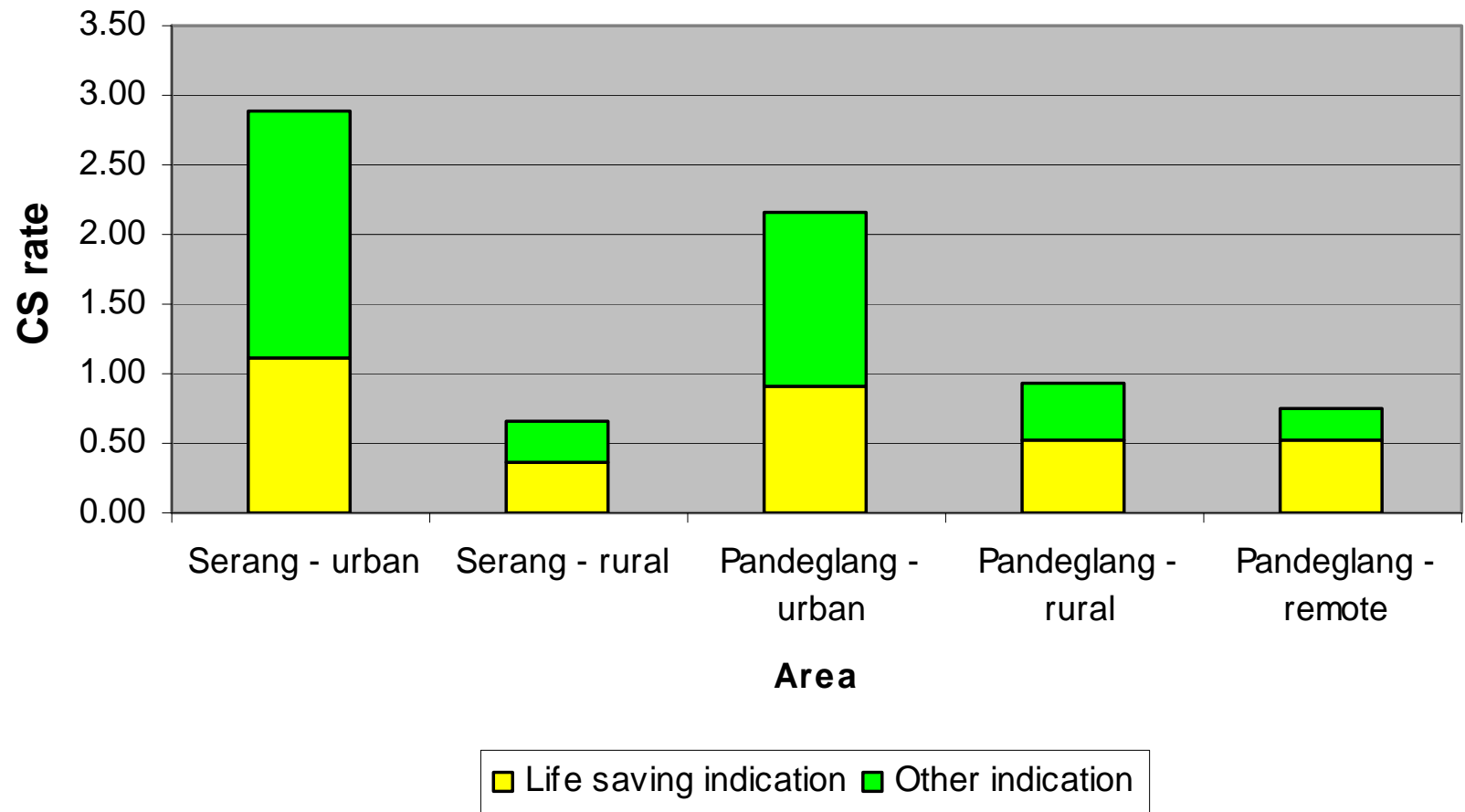
- We examined:
  - links between use of maternity care (% of births with SA and CS) and midwifery provision, contextual factors and socio-economic factors
  - barriers to use of care and referral
  - quality of care offered by midwives
  - costs of obstetric care to households
  - effectiveness of insurance scheme for poor

# Midwifery provision, deliveries by health professional and c-section

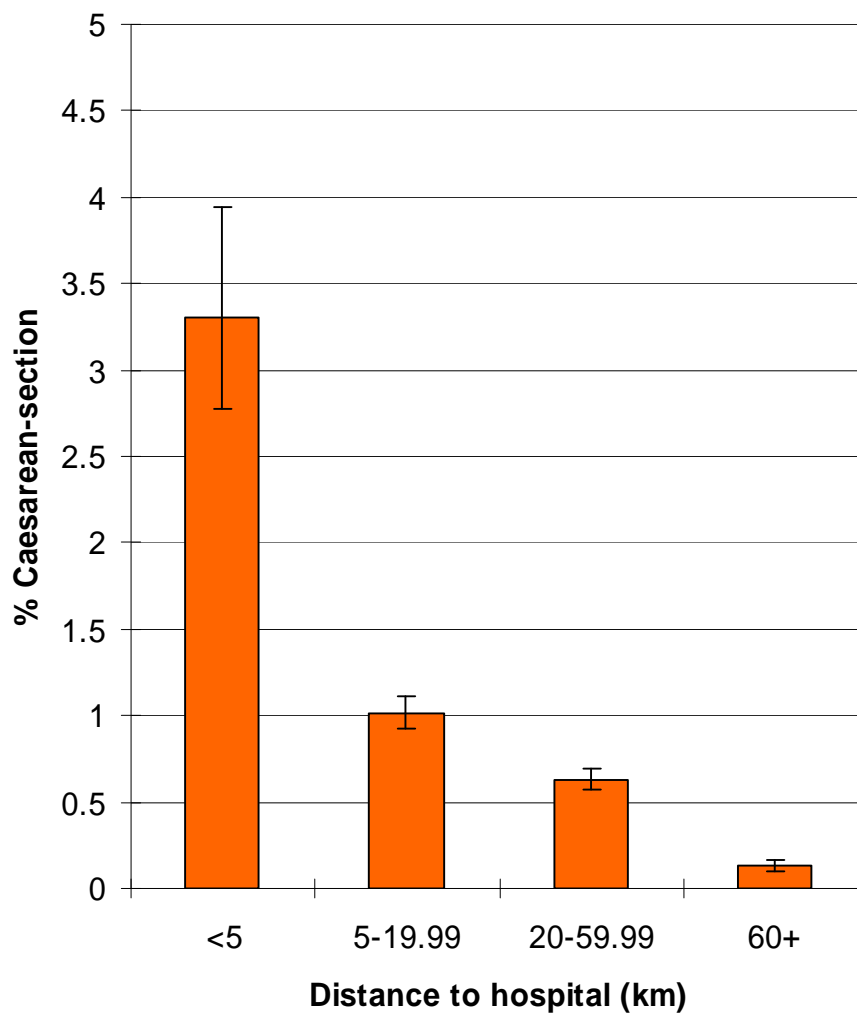
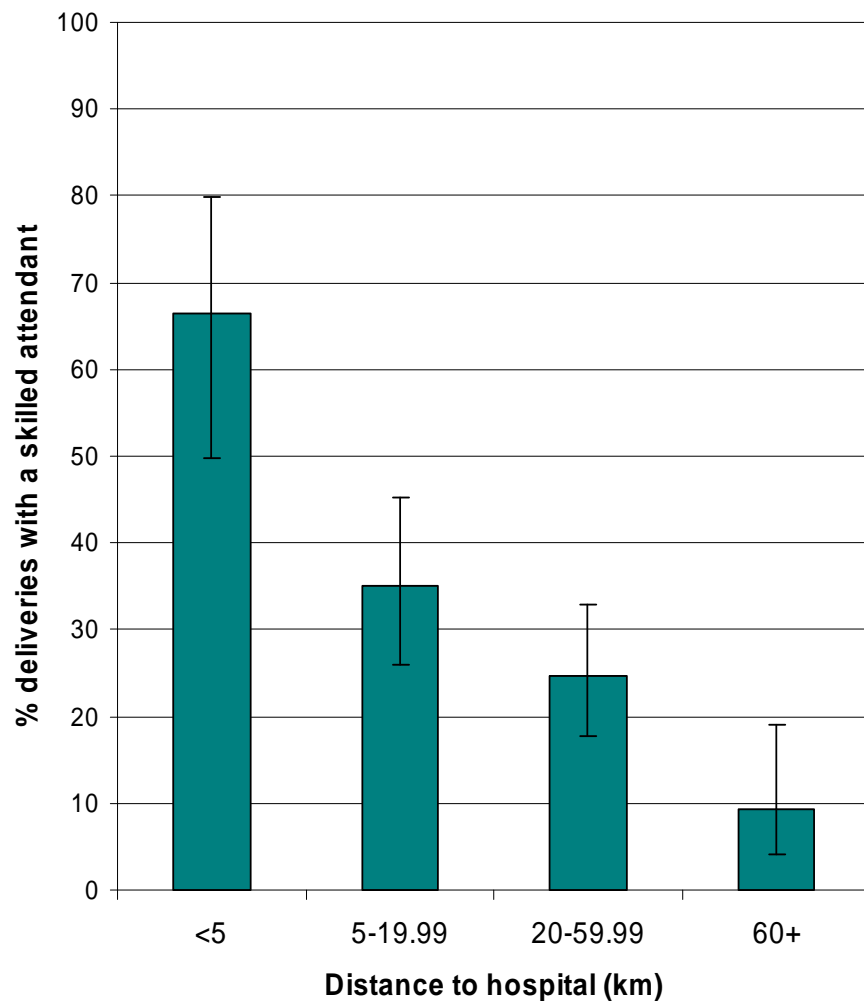
Characteristic	Health Professional		Caesarean section	
	%	OR	%	RR (95% CI)
Midwife density per 10,000 pop				
None	23	1	0.4	1
0.01-1.99	39	3.2 (1.5, 6.7)	0.7	1.5 (1.2, 1.9)
2-3.99	29	1.9 (0.8, 4.3)	1.0	2.0 (1.7, 2.4)
4-5.99	48	1.2 (0.5, 3.1)	1.8	2.9 (2.3, 3.7)
6+	60	1.4 (0.5, 3.8)	3.4	4.1 (3.3, 5.2)
Roles				
“Village” midwife	31	1	1.0	1
Health centre midwife	46	2.3 (1.2, 4.2)	1.5	1.0 (0.8, 1.2)
Nurse	14	0.4 (0.1, 0.9)	0.5	0.7 (0.5, 0.9)
Years working in village				
<1yr	14	1	0.7	1
1-4.9	31	2.1 (0.9, 5.2)	1.0	0.9 (0.8, 1.2)
5+	38	2.5 (1.0, 6.1)	1.2	1.1 (0.9, 1.4)

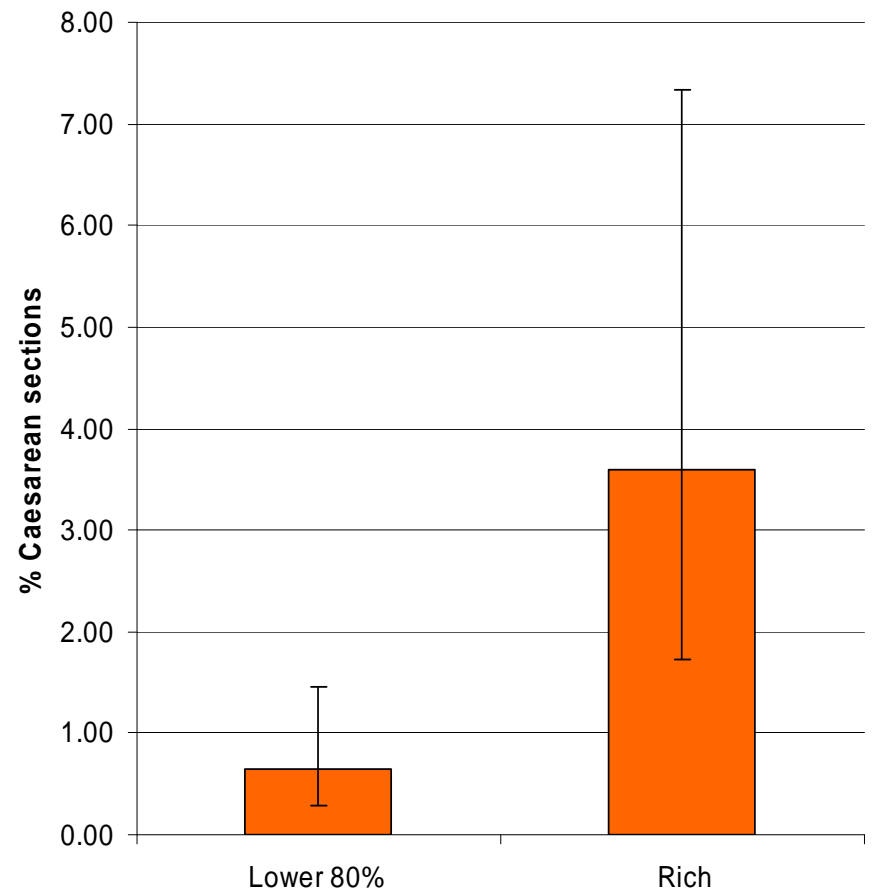
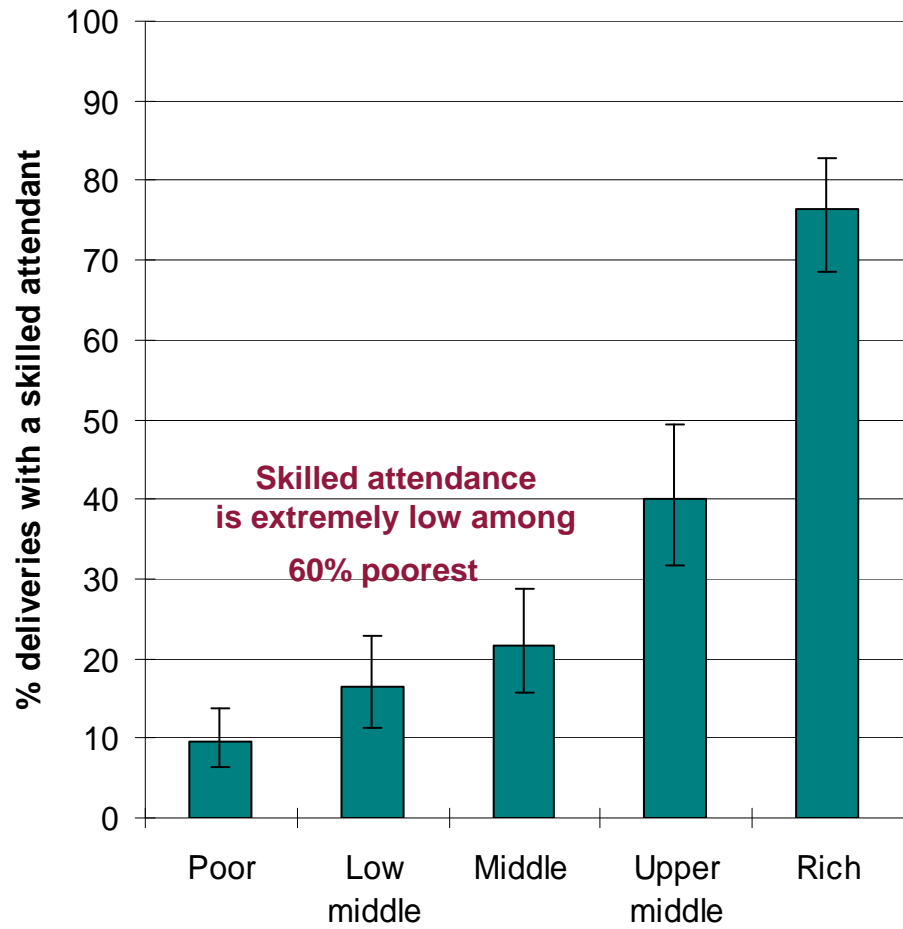
Adjusted for all above and health centre, distance, district, no. TBAs

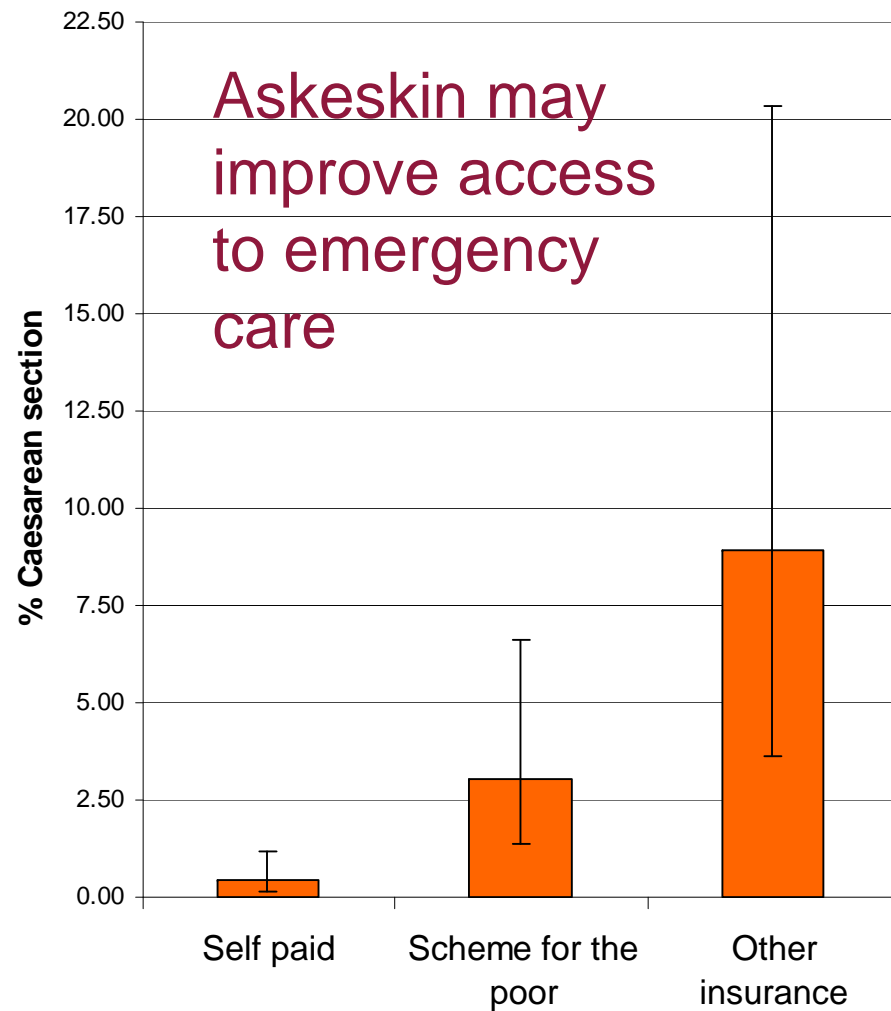
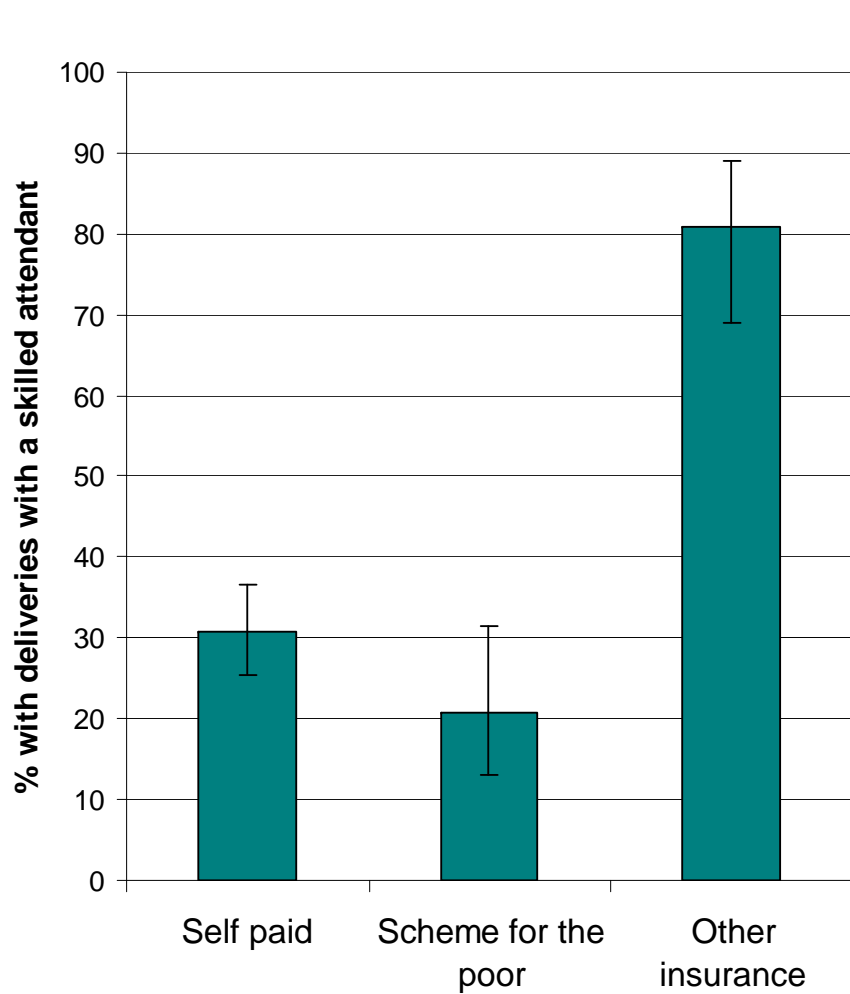
## CS-rate and Life Saving Indication by Area



# Distance to hospital, deliveries by health professional and c-section







# Why Use of Health Professional is Low ?



## Reasons for not using health professional services

- Cost of care
- Traditional practices not provided by midwives
- Services beyond delivery
- Decision maker is not the woman

- ANC is very low
- Reluctance to prepare for adverse delivery event, delivery is considered a “normal” event
- Considerable financial expenditure (ASKESKIN covered most of the hospital cost and small amount for transportation):
  - Transport to the hospital ?
  - Cost of blood test and certain drugs ?
  - Cost of company in the hospital ?
  - Cost of care of the children ?
- Decision making process takes a long time
- Mixed report of the influence of the TBAs
- Relationship with hospital because people who had experience before were resistant to going again
- By reputation hospitals are unfriendly, it’s an alien culture, family relinquish control to professional

- Midwives diagnosed complications, identified emergencies and the need for referral accurately
- However, clinical skills in complication management are lacking and not based on standards

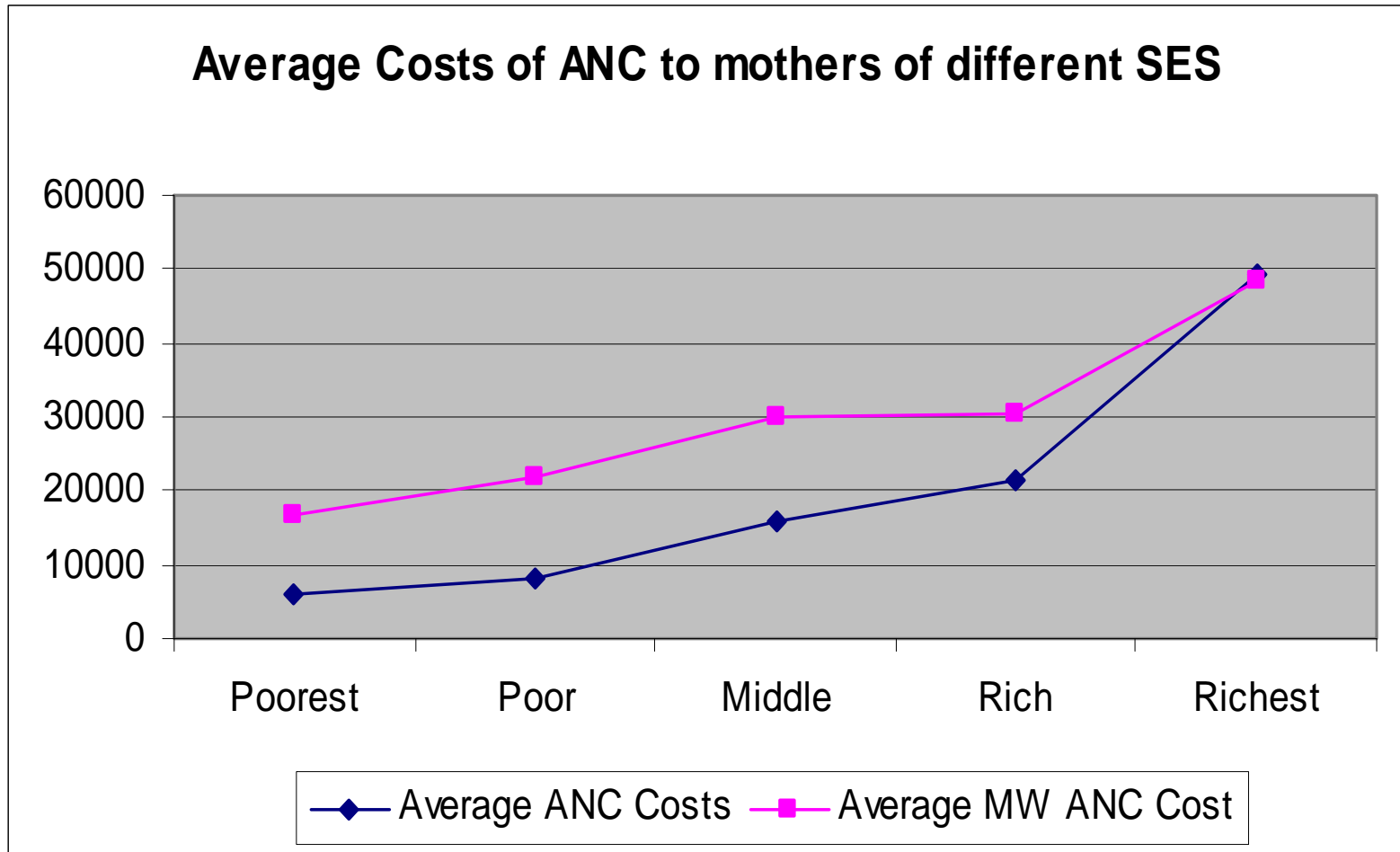
The role of midwives in preventing deaths is through referral and facilitating entry to a facility

# Cost per delivery and Costing of the Midwifery Programme

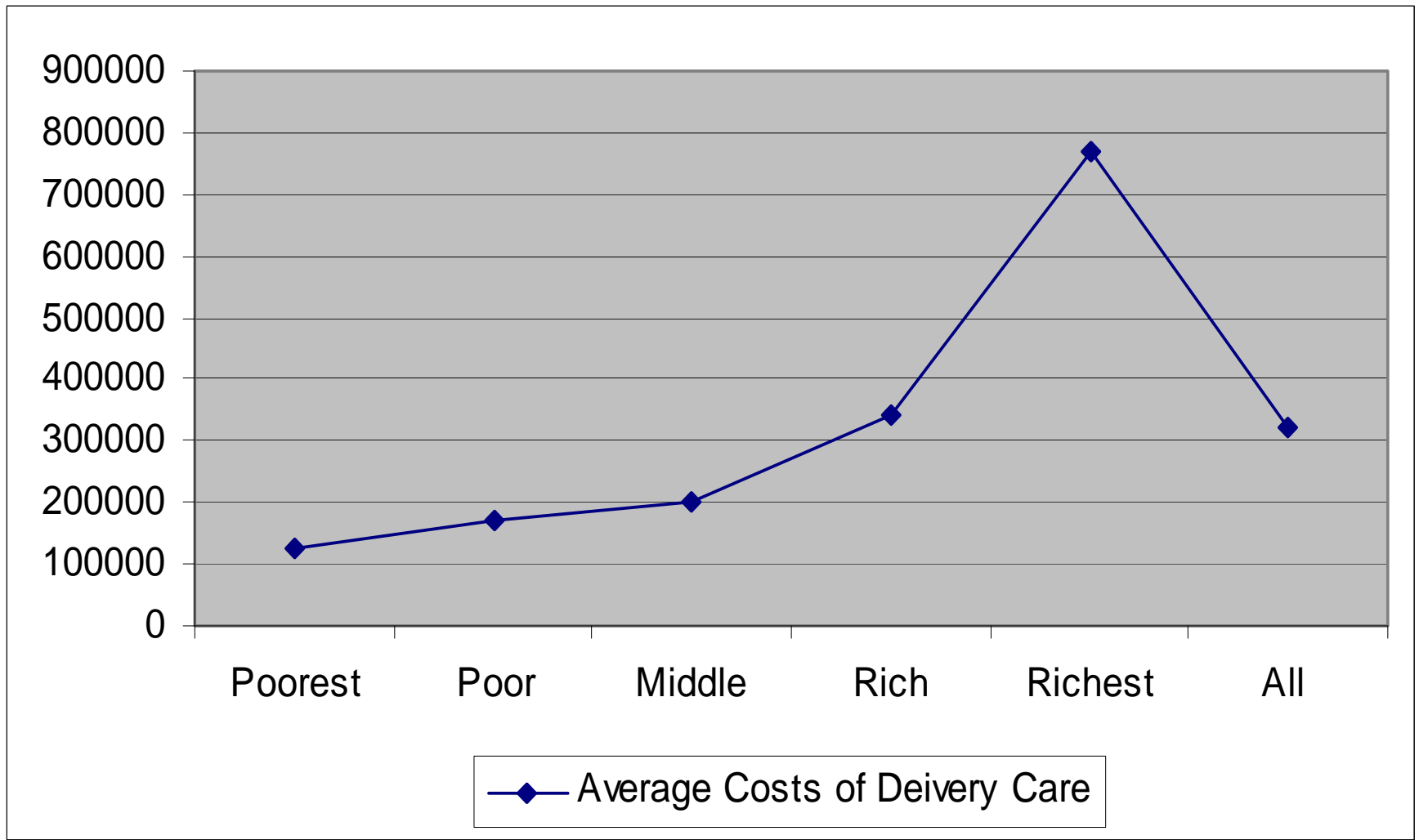
# Cost of delivery care at different places and providers



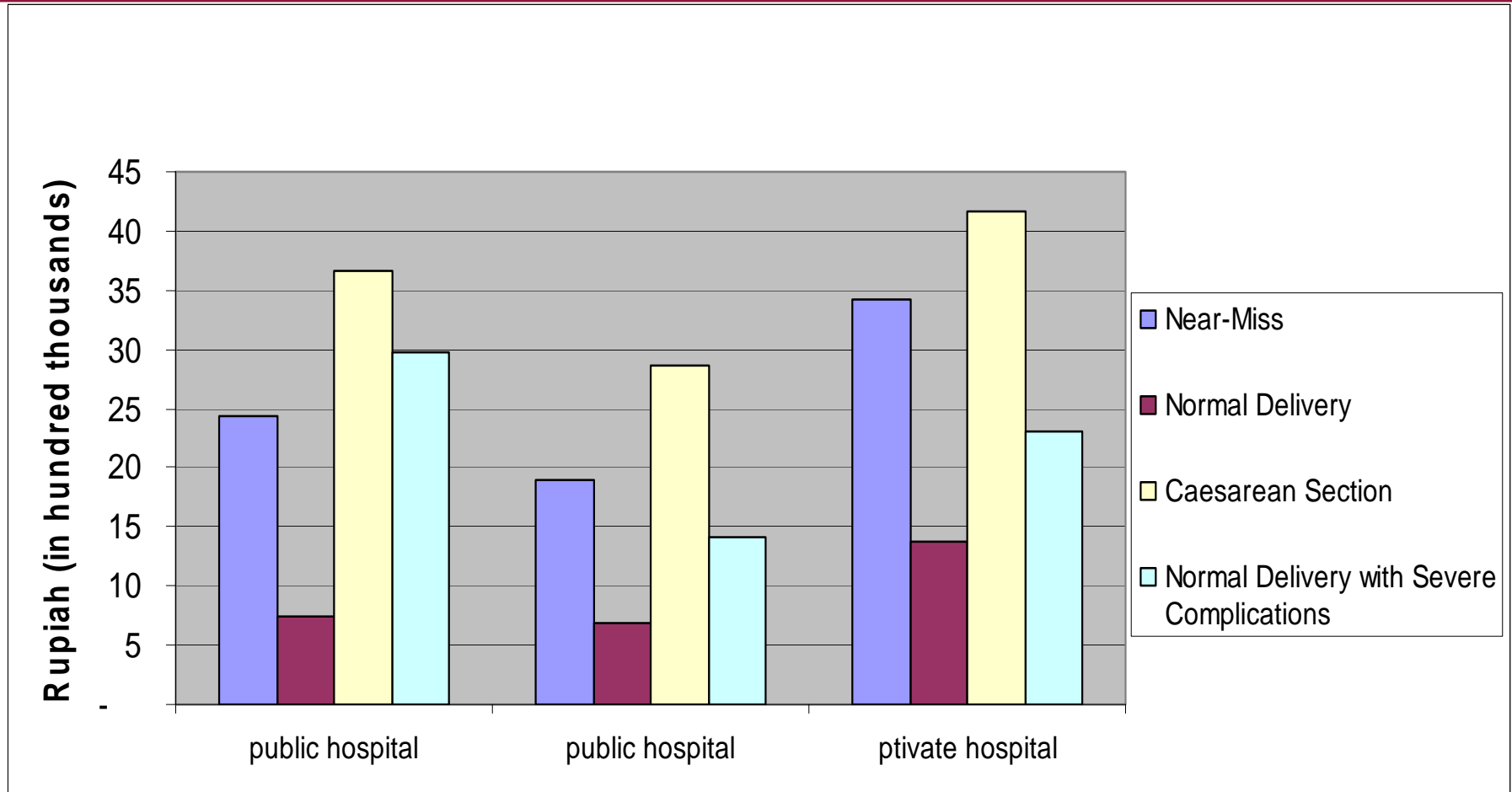
Place of Delivery	Non-professional	Professional
Home: Fees, drugs, etc.	U\$ 7.92	<b>U\$ 35.89</b>
Other	U\$ 4.16	<b>U\$ 5.95</b>
Total	U\$ 12.08	<b>U\$ 41.84</b>
Bidan's Practice: Fees, drugs etc.		<b>U\$ 52.34</b>
Transport		<b>U\$ 0.93</b>
Other		<b>U\$ 0.79</b>
Total		<b>U\$ 54.05</b>
Hospital: Fees, charges etc.		<b>U\$190.38</b>
Transport		<b>U\$ 0.92</b>
Total		<b>U\$ 191.29</b>



The poorest spent U\$ 2.10  
the richest spent U\$ 5.26



The poorest spent U\$ 13.68; the richest spent U\$ 82.11



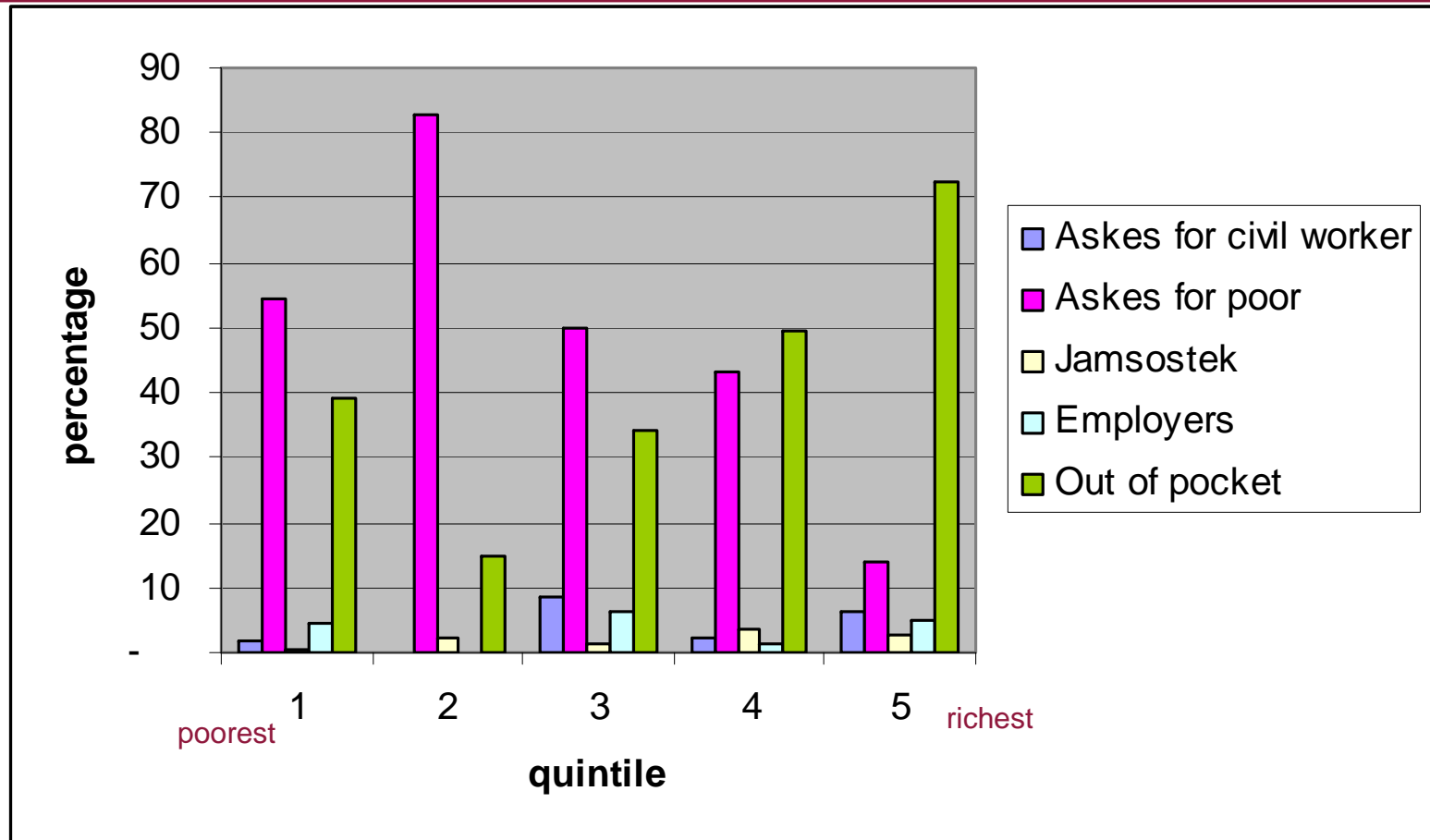
Public hospital: NM \$ 232, CS \$ 337

Private hospital: NM \$ 358, CS \$ 442

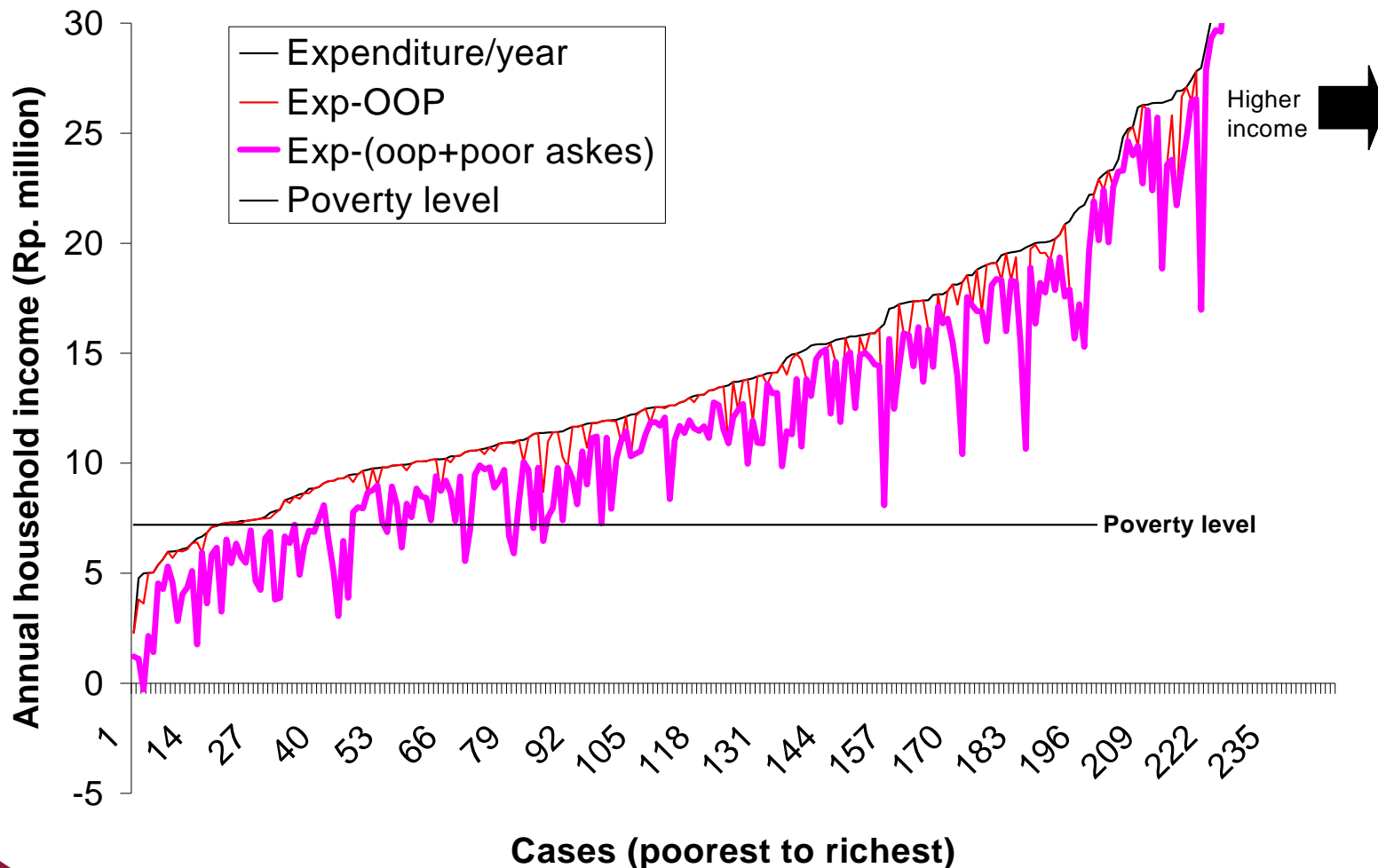
- Cost of Care is high, especially for emergency care
- In general population, only small proportion are covered by Insurance scheme for the poor
- However, 51% in Serang & 73% in Pandeglang insured by ASKESKIN → reflect that somehow system works for referral

**Once at hospital, ASKESKIN appears to be successful at protecting households from the catastrophic payments for maternal health care**

# Sources of payment for obstetric care at hospital by different income quintiles



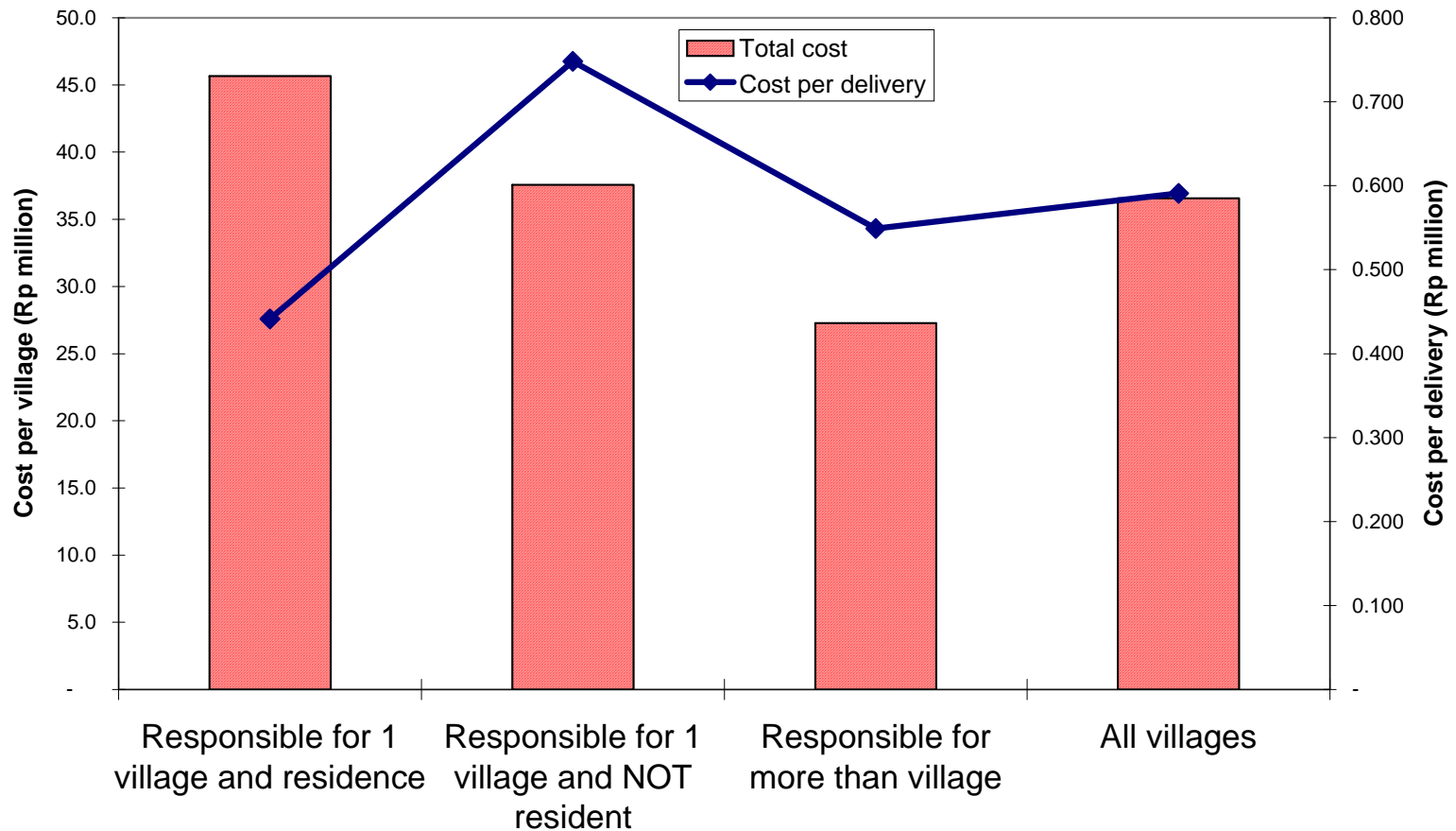
6 % of the sample of near miss and other deliveries in hospital are categorised as poor, 13% would have been 'made poor' if they had not received assistance from ASKESKIN



- Most eligible households did not register for scheme but obtained membership after the onset of the obstetric emergency
  - confusion over eligibility, procedures of use and type of services covered
  - most women anticipate normal deliveries
  - shame over inability to pay
  - mistrust of the system

- Obtaining card after onset of emergency
  - adds stress
  - adds delays
  - is facilitated by well-motivated midwife
- Perception that people using insurance card receive poor care
- People with card still pay for blood and drugs if hospital does not have necessary supplies
- Cover for transportation fee is small

Midwives that are resident in villages appear to be more efficient than those that are non-resident



- The Midwifery Program has been successful in bringing midwives closer to women
- However, maternal mortality ratio remains high particularly among the poor
- The high cost of care is the most barrier to the use of health professional and referral to higher level
- The effort of government to target the poor has facilitated access to emergency care but problems remain

1. Targeting the poor alone is NOT sufficient? :
  - Increase the target not just for the poor?
  - Free obstetric care for all?
  
2. Supply is not a problem: Midwife Density is not a predictor for MMR.
  - Problems of distribution
  - Midwives' capacity to manage complications (alone) is sub-standard
  - home delivery might not be the answer?
  - facility based deliveries?
  - strengthening a team in health center?

## Acknowledgement:

1. Ministry of Health
2. District Health Offices and Hospitals of Serang and Pandeglang and Banten Health province
3. Int'l partner:
  - University of Aberdeen
  - LSHTM, UK
  - ITM, Belgium
  - Johns Hopkins University
4. Noguchi Memorial Institute
5. Centre Muraz
6. Funders: Bill and Melinda Gates foundation, DFID, USAID
7. People of Serang and Pandeglang