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**INCREASED USE OF TRAINED
ATTENDANTS IN THE THREE DISTRICTS
COVERED BY THE MOTHERCARE
PROGRAM**

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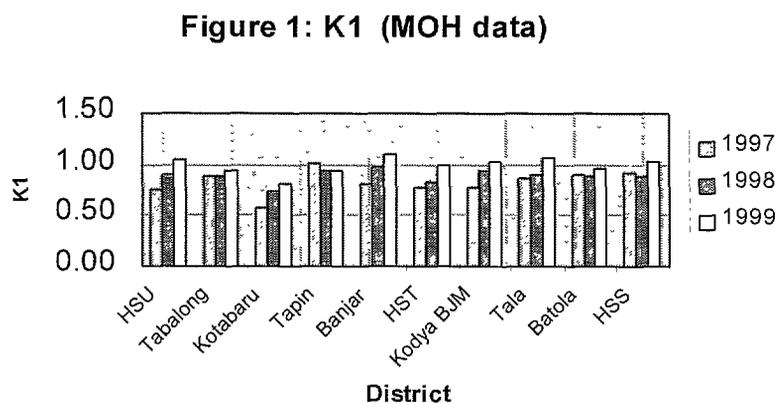
The MotherCare interventions aimed at increasing the appropriate use of maternal health services in a number of ways. All components of the MotherCare programme supported the Government's effort to increase the use of skilled attendants at the village level and timely and appropriate referral of maternal and neonatal complications to higher levels of care. The programme particularly encouraged village midwives to work side-by-side with traditional birth attendants to provide services for mothers that do not compete with those provided by the traditional birth attendant. The training for Bidan di desa also included an emphasis on postpartum care as part of an experimental postpartum home visit program.

This report documents trends in the use of trained attendants for antenatal, delivery, and postpartum care in the three districts covered by the MotherCare programme in South Kalimantan, Indonesia. Where possible, we report trends in all the 10 districts of the province to assess whether the districts covered by the MotherCare programme are comparable to those solely covered by Government services. When more than one source of data is available we present the findings from multiple sources.

A. Use of antenatal care

There is one source of data for studying trends in antenatal care coverage: the routine data collected by the Ministry of Health (MOH) between 1997 and 1999. The trends in the use of antenatal care (K1 and K4) for all the districts of South Kalimantan between 1997 and 1999 are shown in figures 1 and 2.

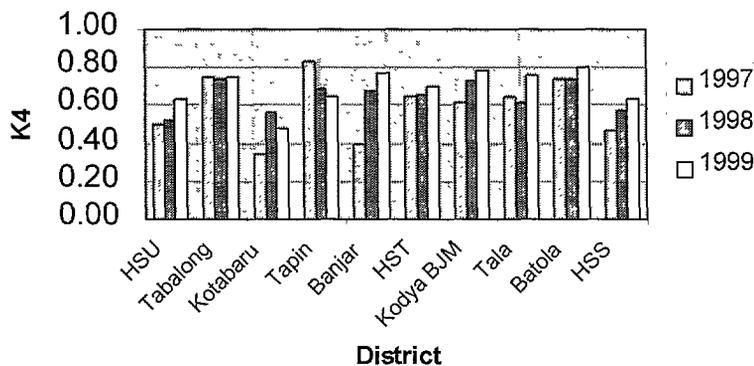
Overall, K1 went up from 78% in 1997 to 98% in 1999 (Figure 1). The trends in K1 in the three MotherCare districts are similar to those in other districts in the province. In Banjar K1 rose from 81% in 1997 to 111% in 1999¹. Corresponding figures for Batola and HSS are 91% (1997) to 96% (1999) and 92% (1997) to 102% (1999) respectively.



¹ The percentages can exceed 100 because the denominators (births) are estimates rather than exact counts

Over the three-year period, K4 increased from 54% to 68% in the province (figure 2). In Banjar, K4 increased from 40% in 1997 to 77% in 1999. In Batola the corresponding figures were 74% (1997) and 80% (1999) and in HSS 47% (1997) and 64% (1999).

Figure 2: K4 (MOH data)



B. Use of delivery care

There are four sources of data for studying trends in delivery care coverage:

1. the routine data collected by the MOH between 1997 and 1999
2. the data from the two population-based surveys conducted in 1996 and 1999
3. the data from the two Bidan di desa surveys conducted in 1997 and 1999
4. the data from the 7 hospitals providing delivery care between November 1996 and November 1999

The first two sources provide information on the proportion of births that were attended by a trained attendant. The population-based survey also provides a breakdown by type of trained attendant and by place of delivery. The Bidan di desa survey gives the pattern of activities by Bidan di desa only and the hospital data allow us to study trends in hospital admissions over time.

1. Routine data collected by the MOH

The trends in deliveries with trained health providers between 1997 and 1999 in the 10 districts of South Kalimantan are shown in figure 3. Trained attendance is defined as a birth in the presence of doctors, midwives and Bidan di desa. Overall in the province, the proportion of births attended by a trained person increased from 52% in 1997 to 67% in 1999. There are small differences between districts, but overall, the three MotherCare districts are similar to the other districts in the province.

**Figure 3: Deliveries with health providers
(MOH data)**

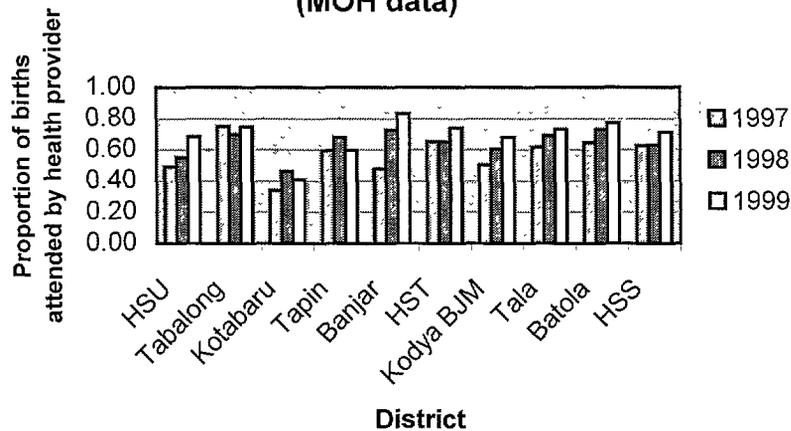
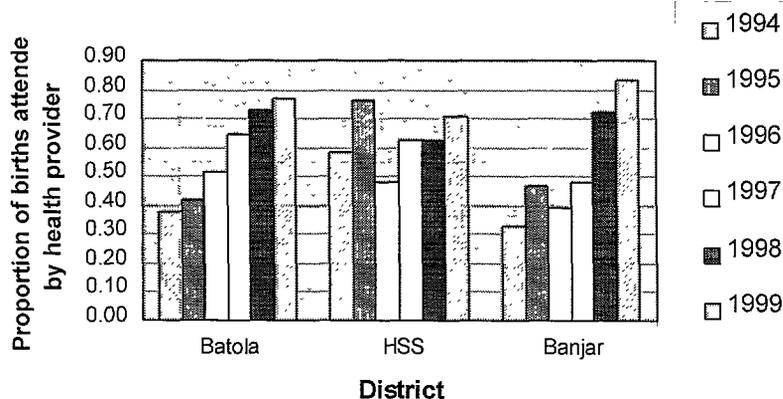


Figure 4 shows the proportion of births attended by a trained attendant in Batola, HSS and Banjar between 1994 and 1999. In Batola, trained attendance at delivery increased steadily from 38% in 1994 to 77% in 1999. The picture in Banjar is similar (33% in 1994 and 83% in 1999). In HSS, on the other hand, trained attendance appeared to be high and remained steady throughout the period 1994-1999 (from 58% in 1994 to 71% in 1999). There is no indication that the last two years of the program have seen a significant increase in the proportion of births attended by a trained attendant.

**Figure 4: Deliveries with health providers
(MOH data)**



2. Data from the two population-based surveys conducted in 1996 and 1999

The results from the baseline survey are shown in table 1. Since the first survey recalled births over the three years preceding the survey, the estimates for 1996 have to be interpreted as representing an average for 1993-1996. The estimates for 1999 represent averages for 1998-1999. In concordance with the MOH data, all three districts have experienced sharp rises in the proportions of births attended by a trained attendant over the period studied. The absolute magnitude of the proportions of births attended by a trained attendant is smaller than that reported by the MOH, possibly reflecting differences in definitions, denominators and time periods. The proportions of births attended by a Bidan di desa rose from 8% to 26% in all three districts combined. Hospital deliveries increased slightly in HSS and Banjar, but declined in Batola.

Table 1: Attendant at delivery and place of delivery (Baseline survey 1996 and 1999)

	Batola		HSS		Banjar		Total	
	1996	1999	1996	1999	1996	1999	1996	1999
Number of births	335	225	327	191	538	417	1203	833
Professional attendance at delivery								
Any trained attendant	40.9	55.1	31.5	64.9	37.7	57.6	37.3	58.4
Medical Doctor	14.0	3.1	13.1	0.8	11.9	0.7	12.8	6.1
Bidan	20.0	27.6	16.5	31.4	23.3	41.4	21.1	35.7
Bidan di desa	9.6	31.1	6.4	44.0	8.1	17.2	8.1	26.4
TBA	45.7	58.2	61.2	61.8	39.6	53.8	45.6	56.6
Relative	2.1	7.1	4.9	13.6	9.4	15.5	6.4	12.9
Place of delivery								
Hospital or puskesmas	5.7	4.9	7.0	9.4	9.2	14.3	7.9	10.8
Private clinic	1.2	0.0	0.3	0.0	3.9	2.4	2.4	1.3
Own or relative's home	87.8	94.7	91.1	90.1	86.0	81.9	87.4	87.0
Other	5.4	0.4	1.5	0.5	0.8	1.3	2.2	0.9

Figures are percentage of births. The attendant at delivery refers to the person present at delivery

Since attendance by Bidan di desa may be more relevant for home deliveries, we also studied trends in attendance at home deliveries (table 2). Overall in the three districts, the proportion of home births that were attended by a Bidan di desa rose from 8.5% in 1996 to 29.2% in 1999. The most striking changes, however, are seen in the proportion of births where both the bidan di desa and the traditional birth attendants were present. Overall, this proportion rose from 0.2% to 12.5%. and the effect appears to be most pronounced in HSS (from 0.3% to 21.4%).

Table 2.: Attendant at delivery for home deliveries (Baseline survey 1996 and 1999)

	Batola		HSS		Banjar rural		Banjar urban		All	
	1996	1999	1996	1999	1996	1999	1996	1999	1996	1999
Number of births	312	214	304	173	320	221	122	102	1058	710
Present at birth										
Doctor	10.9	0.0	8.2	1.2	6.9	0.0	6.6	0.0	8.2	0.2
Bidan	16.0	24.7	12.2	25.4	8.4	24.0	36.1	70.6	13.6	28.4
Bidan di desa	10.3	31.8	6.2	46.8	7.2	22.2	14.8	0.8	8.5	29.2
Traditional birth attendant	48.7	60.3	63.8	67.1	48.1	71.0	27.0	32.4	49.8	63.9
Attendance by only one person										
Doctor	10.9	0.0	8.2	0.0	6.9	0.0	6.6	0.0	8.2	0.0
Bidan	15.7	15.4	11.2	8.1	8.4	16.3	35.2	57.8	13.3	17.7
Bidan di desa	9.6	15.0	5.9	13.9	7.2	10.0	14.8	4.9	8.2	11.8
Traditional birth attendant (TBA)	48.4	39.7	62.5	36.4	4.8	54.3	26.2	22.5	49.4	43.7
Attendance by more than one person										
Bidan & Bidan di desa	0.3	1.9	0.0	8.7	0.0	0.9	0.0	3.9	0.1	3.1
Bidan &	0.0	5.6	1.0	6.9	0.0	5.4	0.8	7.8	0.3	6.0
Bidan di desa & TBA	0.3	13.1	0.3	21.4	0.0	10.0	0.0	1.0	0.2	12.5
Bidan & Bidan di desa & TBA	0.0	1.9	0.0	1.7	0.0	1.4	0.0	1.0	0.0	1.6

Figures are percentage of births. Attendant at delivery refers to person present at delivery

3. Data from the two Bidan di desa surveys conducted in 1997 and 1999

In these surveys, Bidan di desa were asked to recount the number of deliveries attended in the last three months. Attendance was divided into two groups: Bidan di desa alone and Bidan di desa with a traditional birth attendant. The results are shown in table 3. Note that the time periods compared here are not the same as those compared in the two population-based surveys.

Table 3: Deliveries attended by Bidan di desa (Bidan di desa surveys April 1997 and March 1999)

	HSS		Batola		Banjar		Total	
	1997	1999	1997	1999	1997	1999	1997	1999
Number of Bdd	145	134	189	174	204	190	538	498
Expected number of deliveries	4718	4718	7097	7097	11977	11977	23792	23792
Mean number of deliveries in the 3 months prior to the survey								
All	3.4	4.1	4.2	5.0	5.8	6.7	4.6	5.4
Alone	2.4	2.2	3.0	3.2	4.0	4.8	3.2	3.5
With TBA	1.0	1.9	1.3	1.8	1.7	1.9	1.4	1.9
Coverage of deliveries by Bdd								
Deliveries with Bdd	1972	2198	3175	3480	4733	5092	9899	10757
% of expected deliveries	42	47	45	49	40	43	42	45

Overall in 1997, Bidan di desa attended an average number of 4.6 deliveries per three months. When represented as a proportion of all expected births, this represents a coverage of 42%. The average number of births per 3-month period increased slightly from 4.6 in 1997 to 5.4 in 1999, and an increasing number of such births were attended by a Bidan di desa with a traditional birth attendant rather than by a Bidan di desa alone (mean number increased from 1.4 in 1997 to 1.9 in 1999). The overall coverage of births by Bidan di desa, however, only increased marginally (to 45% in 1999). This is in sharp contrast with the findings from the baseline survey which suggested that attendance at births by Bidan di desa rose substantially between 1993-96 and 1999 (see above). Since the population-based survey asked direct questions to women, information on service use and coverage at population level is probably more reliable than that obtained from the Bidan di desa survey.

There are no striking differences between districts, except that Banjar seems to have the highest reported mean number of deliveries attended by Bidan di desa (an average of 6.7 in the 3 months prior to the survey in 1999). Coverage was very similar between districts.

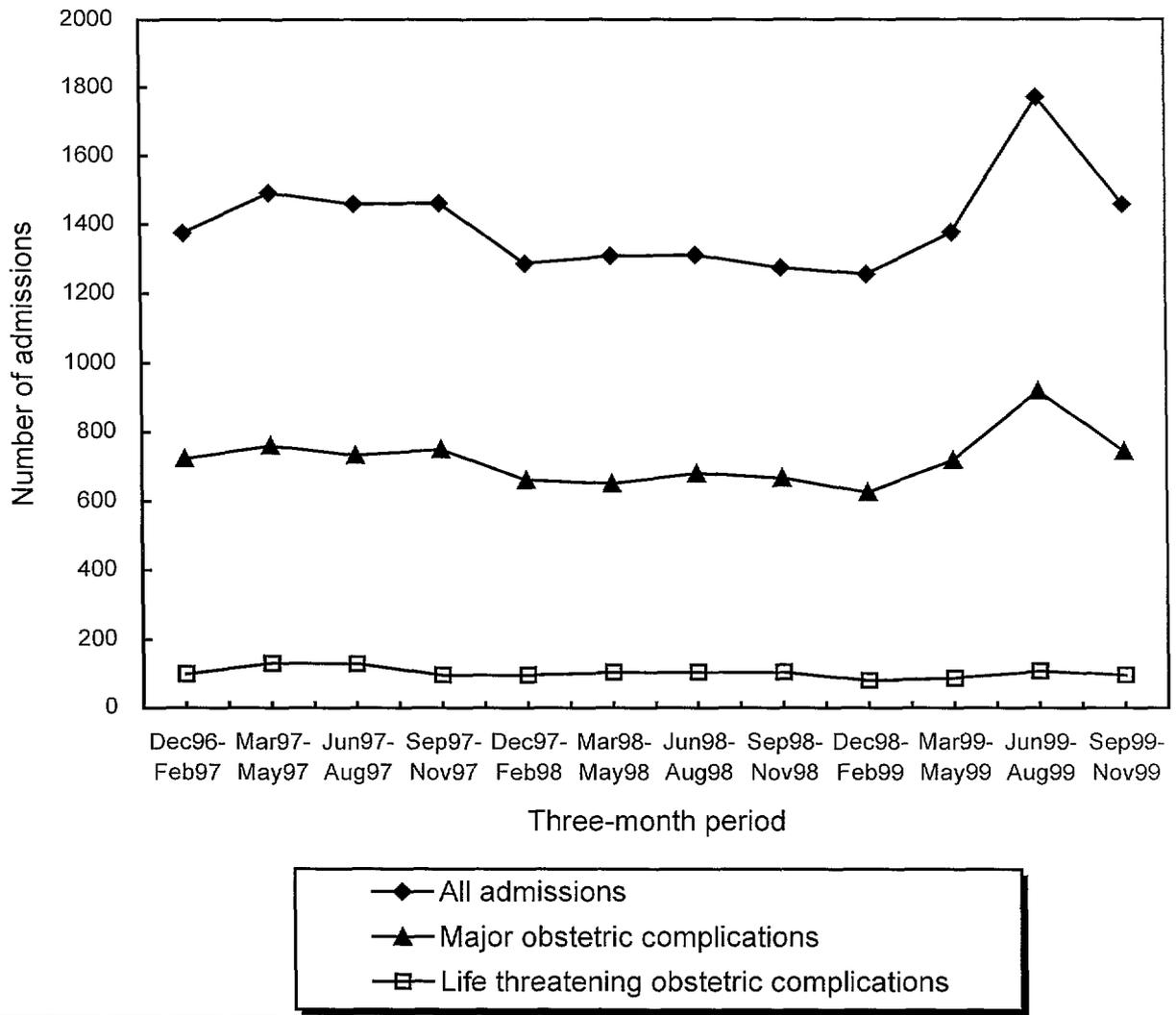
4. Data from the 7 hospitals between November 1996 and November 1999

We obtained information from the 7 hospitals serving the three MotherCare districts between December 1996 and November 1999 (a 3-year period). We studied trends in hospital admissions (all causes); admissions for major obstetric complications² and admissions for life threatening complications³. This distinction is important since the safe motherhood strategies put into place did not encourage hospital deliveries for all women but rather endorsed referral to higher levels only for women with severe complications. The trends in hospital admissions are shown in figure 5. Each point on the graph represents a three-month period. The trends in hospital admissions, major obstetric complications and life threatening obstetric complications remained remarkably stable over time. There was a slight increase in overall admissions between June and August 1999, but this rise did not persist over time.

² Major obstetric complications include complications of abortions, dystocia, haemorrhage, hypertensive diseases of pregnancy, sepsis and ectopic pregnancy

³ Life threatening complications include all complications for which a major intervention was performed to save the life of the woman (absolute maternal indication (AMI)), and all cases of eclampsia. AMI consist of severe antepartum haemorrhage, placenta praevia, abruptio placentae, severe postpartum haemorrhage, foetopelvic disproportion (including ruptured uterus), brow presentation or transverse lie.

Figure 5: Trends in admissions in 7 hospitals
(Dec 96 - Nov 99)



The trends by district of residence of the women are shown in figures 6 to 8. In Banjar, numbers of admissions were stable over time, regardless of the type of admission. In Batola and HSS there are larger fluctuations because of smaller numbers, but the trends are essentially stable.

Figure 6: Trends in admissions among women from Banjar (Dec 96 - Nov 99)

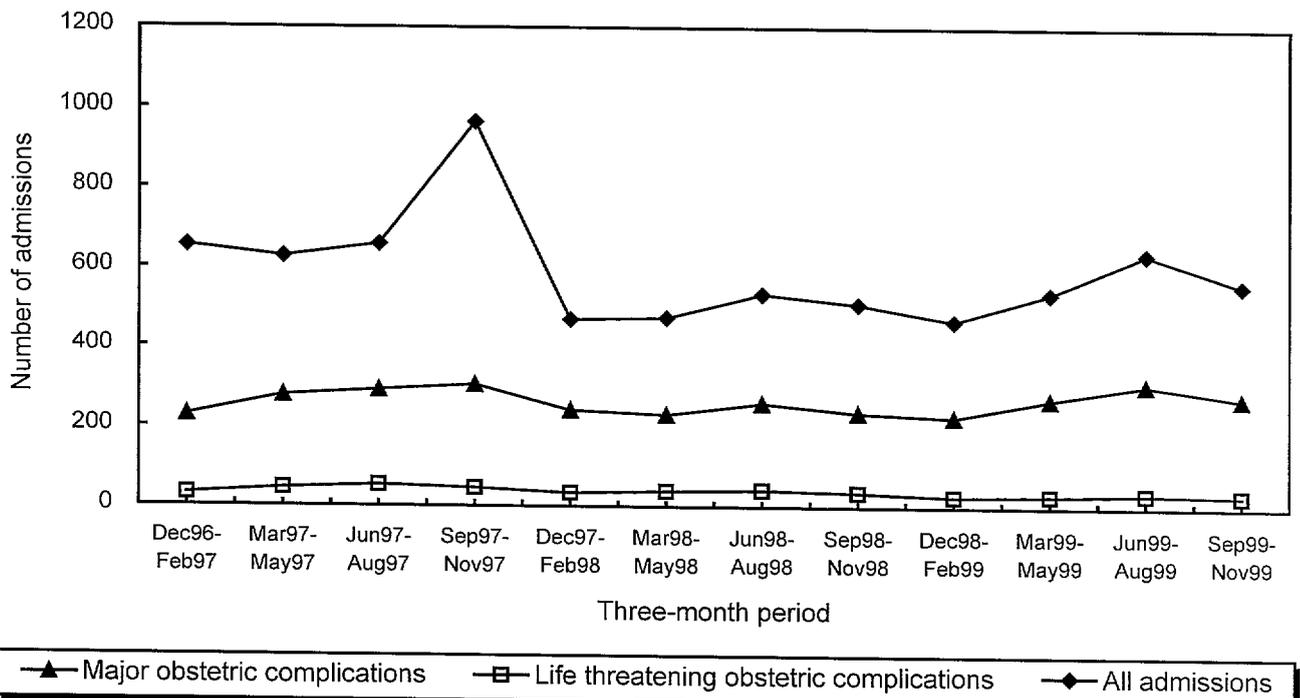
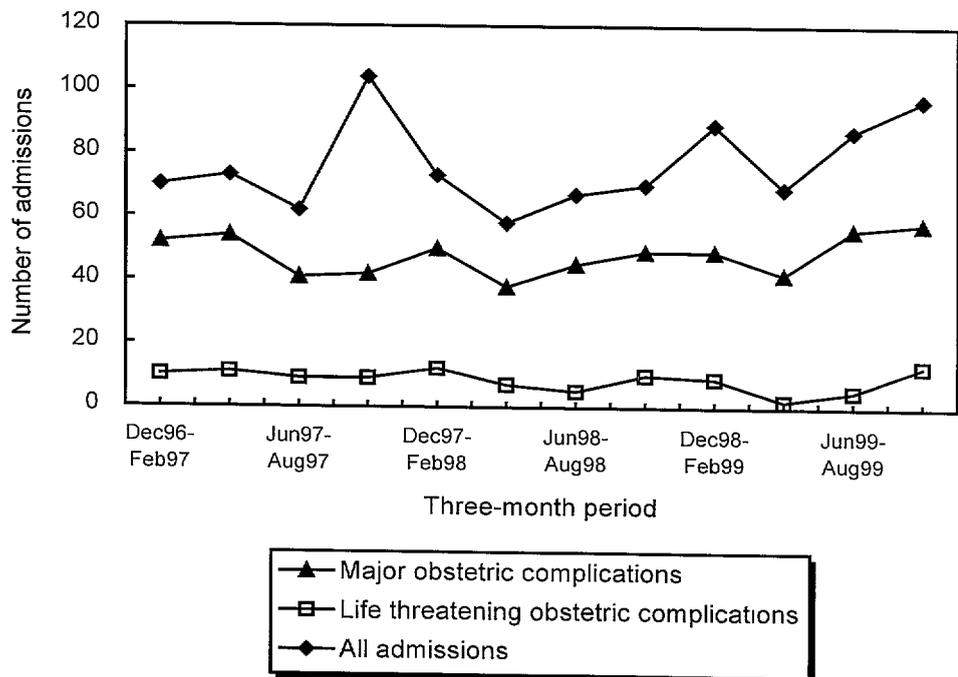
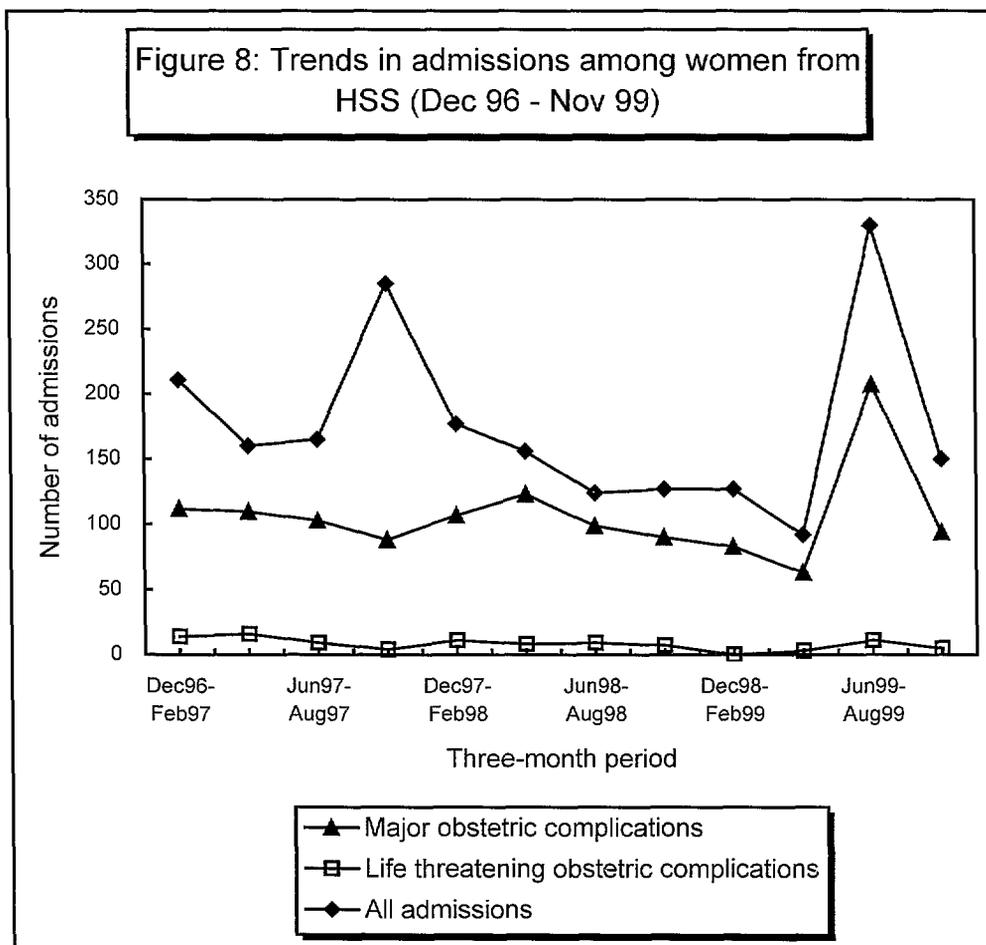


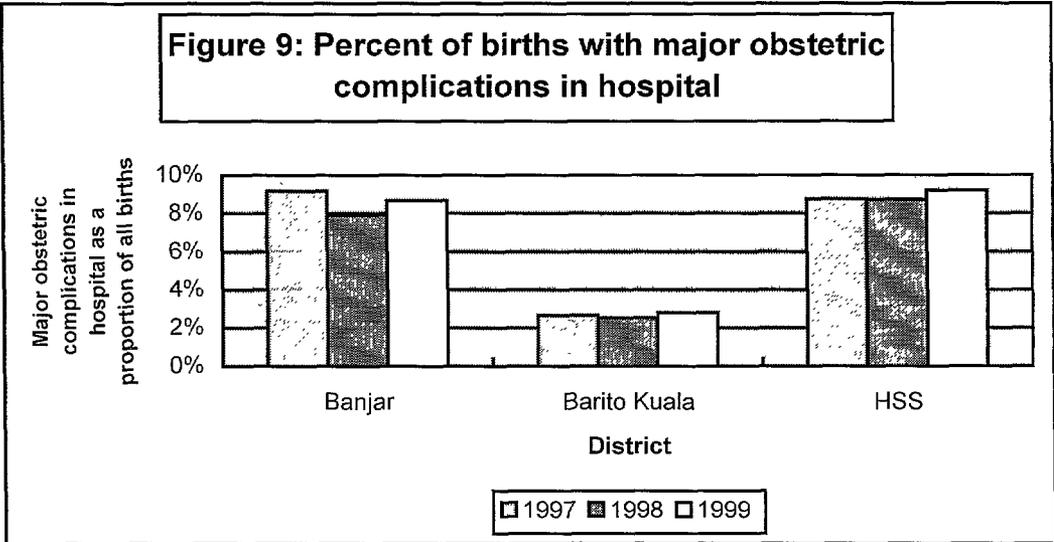
Figure 7: Trends in admissions among women from Batola (Dec 96 - Nov 99)



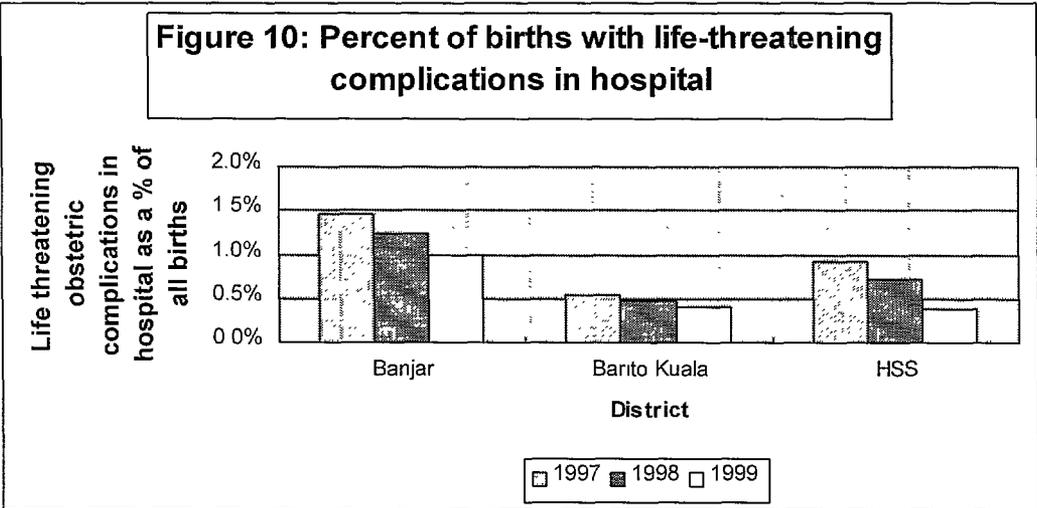


To understand the extent, to which the need for obstetric care is met, we calculated an indicator expressing the number of major obstetric admissions as a proportion of all expected births in the community⁴. Figure 9 shows the ‘major obstetric complications admitted in hospital as a proportion of all births’. The trends over time are stable. In Banjar and HSS, this indicator remained at 8%, in Batola at 3%. The need for obstetric care appears to be much higher for Batola than for the other districts, without any improvements over time.

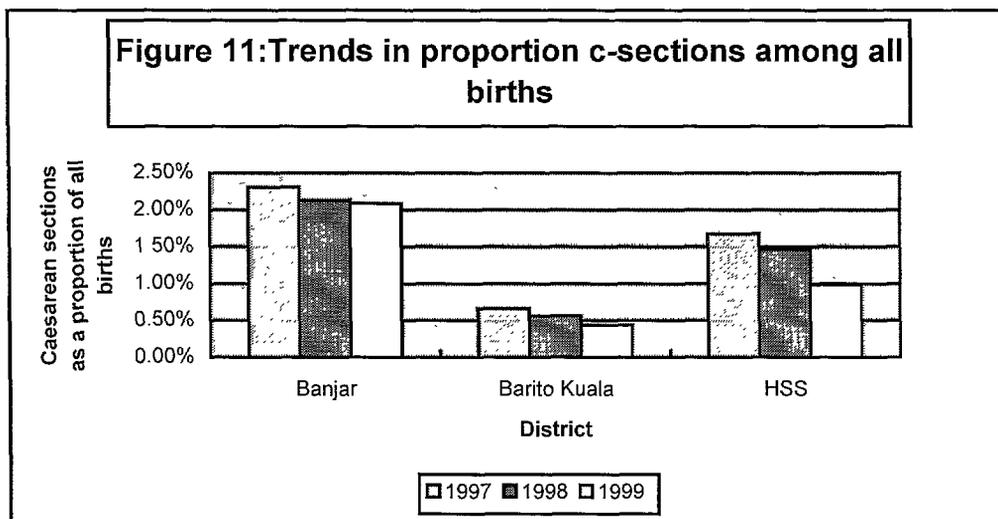
⁴ This indicator is equivalent to the indicator of ‘met need’ for obstetric care suggested by UNICEF, except that the denominator is all live births rather than 15% of live births.



Since major obstetric complications may include complications that are not life threatening, we also calculated the number of life threatening complications as a proportion of all births (figure 10). It is generally believed that this indicator should be at least 1% for a minimum of obstetric need to be met. The picture here is slightly different from that described above, as there appears to be a declining trend over time. In Banjar, the proportion declined from 1.5% in 1997 to 1.0% in 1999 ($p < 0.05$). In Batola the indicator declined from 0.5% to 0.4% ($p = 0.18$) and in HSS from 0.9% to 0.4% ($p < 0.05$). Whether this is due to a real decrease in the use of obstetric care over time, or to changes in the reliability of record keeping is uncertain.



The proportion of caesarean sections among all births also declined over time in all three districts (figure 11). In Banjar, the proportion of c-sections declined from 2.3% in 1997 to 2.1% in 1999 ($p=0.25$). In Batola and HSS, the decline was more pronounced (from 0.7% to 0.4% ($p<0.05$) and from 1.7% to 1.0% ($p<0.05$) respectively).

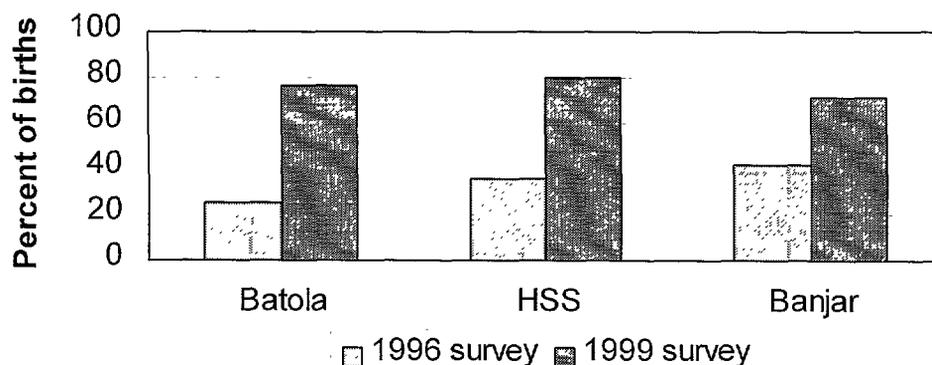


C. Use of postpartum care

There are two sources of data for studying trends in delivery care coverage: (1) the data from the two population-based surveys conducted in 1996 and 1999 and (2) the data from the Bidan di desa register used by trained Bidan di desa between 1997 and 1999.

Postpartum care by the Bidan di desa increased substantially between the two surveys (figure 12). In Banjar, the proportion of all births that received any postpartum visit increased from 25% in 1993-1996 to 77% in 1998-1999. In Batola and HSS, the rise was equally impressive (from 36% to 80% and from 42% to 72% respectively).

Figure 12: Percent of births with postpartum visit



Among the women visited by a trained Bidan di desa, nearly all received postpartum visits, and the majority (83%) of the women were seen by the Bidan di desa within 12 hours after birth (table 4).

Table 4: Timing of postpartum visits by trained Bidan di desa (Bidan di desa register 1997-1999)

Timing of visit	N (%)
6hr, 7-12hr, 3d, 2wk, 6wk	777 (43)
6hr, 3d, 2wk, 6wk	452 (25)
7-12hr, 3d, 2wk, 6wk	271 (15)
3d, 2wk, 6wk	90 (5)
2wk, 6wk	54 (3)
Other	145 (8)
None	19 (1)

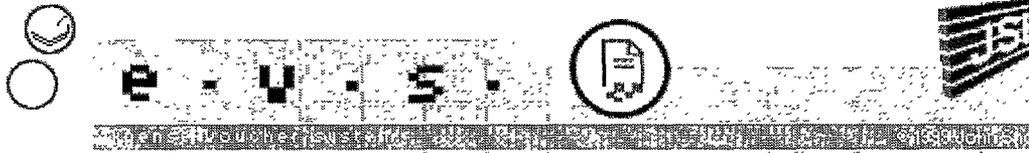
D. Discussion

The overall picture that emerges from this analysis is that the proportion of births attended by a trained attendant has increased substantially throughout the province between 1997 and 1999. Whether or not the MotherCare programme contributed to this increase is difficult to ascertain, as many other interventions coincided with the MotherCare activities. In particular, more Bidan di desa were posted in the villages covered by the programme, and this will by itself increase health care use. The MotherCare programme may have increased the proportion of births that were attended by a traditional birth attendant and a Bidan di desa together rather than by a traditional birth attendant or a Bidan di desa alone.

The rise in professional care at delivery did not coincide with a rise in hospital deliveries. Although hospital deliveries should not be encouraged for all women, there is a sub-group in need of high level professional care that can only be provided in essential obstetric care facilities. If we assume that that sub-group represents at least 1% of pregnant women, there is a clear deficit in the coverage of this need. More time may be required for the programme to affect hospital admissions. However, it is likely that many of the existing barriers to hospital care have not been addressed by the programme, such as the cost of hospital care, lack of transport and the cultural barriers to women using professional medical care. The economic crisis may also have discouraged poorer women from using obstetric care when they needed it.

The change in the coverage of postpartum services is probably largely due to the MotherCare interventions. MotherCare particularly focused on early visits within 12 hours of birth and the programme has clearly been successful in reaching that goal.

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Company Issuing
Payment: JSI

EXPENSE REPORT Number: 2803

Edward B Wilson
6814 Jackson Avenue
Falls Church, VA 22042
United States of America

Employer: JSI
Employee Number: 142

Project/ Activity	Account	Amount
15061.1001.0407	0545-1060	\$226.00
15061.1001.0407	0545-1010	\$61.66
15061.1001.0407	4500-1700	\$31.44
Amount Due	Traveler	\$319.10

Purpose:

Attend Council on Logistics Management Conference as part of FPLM's Logistics Best Practices activities.
NOTE: Lunch was provided on 9/25, 9/26, and 9/27. Dinner was provided on 9/26.

Signature: _____ Date: ____/____/____

Approval: _____ Date: ____/____/____
(JSI Project Administrator or Financial Manager)

ORIGINAL AIRLINE PASSENGER RECEIPT MUST BE ATTACHED

Part I.A. PER DIEM (MEALS & INCIDENTAL EXPENSES)

Rates are Per published State Department Travel Regulations

No.	Arrival Time	Departure Date	Departure Time	Daily Rate	Days	Amount	Location	
		09/24/2000	3:30P	\$0.00	0.00	\$0.00	Fairfax County, Virginia	15061.1001.0407
09/24/2000	6:50P	09/27/2000	5:36P	\$42.00	3.50	\$147.00	New Orleans, Louisiana	15061.1001.0407
09/27/2000	10:00P			\$0.00	0.00	\$0.00	Fairfax County, Virginia	15061.1001.0407
Total:						\$147.00		

Part I. B. PER DIEM (LODGING): A receipt must be attached for every night spent in a hotel.

Lodging Expenses are reimbursed at actual cost, up to the maximum allowed by federal travel regulations.
Rates are Per published State Department Travel Regulations

Date	Location	Rate	Nights	Daily Rate	Days	Allowed Amount	
09/24/2000 - 09/27/2000	Queen & Crescent New Orleans, Louisiana	\$79.00	1.00	\$26.33 (\$88.00)	3	\$79.00	1 15061 1001
Total:						\$79.00	

Part II. OTHER EXPENSES: A receipt must be attached for any item greater than \$24.99 or the expense will be disallowed.

Account	Date	Description	Amount	Exchange	Total	Account
Other Miscellaneous	09/24/2000	Room Tax	10.48	1.00	\$10.48	1 15061 100
Other Miscellaneous	09/25/2000	Room Tax	10.48	1.00	\$10.48	1 15061 100
Other Miscellaneous	09/26/2000	Room Tax	10.48	1.00	\$10.48	1 15061 100
Travel U.S.	09/24/2000	Shuttle from Airport to Hotel	12.00	1.00	\$12.00	15061 100
Travel U.S.	09/27/2000	Shuttle from hotel to airport	12.00	1.00	\$12.00	15061 100
Travel U.S.	09/27/2000	Parking at airport 3 days	24.00	1.00	\$24.00	15061.100
Travel U.S.	09/24/2000	POV 21 miles home to airport	6.83	1.00	\$6.83	15061 100
Travel U.S.	09/27/2000	POV 21 miles airport to home	6.83	1.00	\$6.83	15061 100
Total:					\$93.10	



B