REPORT ON BIRTH ORDER DISTRIBUTION AS A FAMILY PLANNING PROGRAMME EVALUATION INDICATOR

PHASE II

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Pramote Prasartkul
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INTRODUCTION

Two phases of study have been conducted for development of simple indicator from birth order distributions for family planning evaluation. The first phase assessed the availability of birth order data nationally and practically of tabulating birth order data in Bangkok. The second phase will investigate the systematic tabulation of these data at provincial and district levels. This report assumed that the reader is familiar with the Phase I report.

A newborn's birth order is simply number of live births that preceeded him(her) plus one. As fertility declines in a population, the percent of births in a year that are low order (e.g. first or second births) should incerase. Eventually, when replacement fertility is achieved with a total fertility of about two live births per couple, the percent of all births that are first or second births should approach 100%.*

While the crude birth rate and the total fertility rate are common measures of the demographic impact of family planning programs they have the disadvantage of requiring complete data for a large segment of the population to be accurate. By contrast, birth order distributions can be calculated for small subgroups of the population with reasonable accuracy provided that underregistration is more or less equal across orders. In addition, birth order data are available and tabulated on a monthly basis throughout Thailand.

The minimum data required for quality birth order analysis are live birth order of the birth, date of birth, residence of the mother and age of the mother.

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* A small percentage would be still third and higher order births but these are compensated for by sterile and one-child couples in replacement fertility society.

The first phase of this multi-phase study found that the collection and compilation of birth orders is widespread. Yet there are irregularities in how the data are stored and compiled from agency to agency. Figure A readily shows that birth order data at the central level have obvious deficiencies. While the Ministry of Interior (MOI) data in Bangkok are complete and have the greatest coverage, they are stored on microfilm by individual birth certificate and thus are totally impractical for periodic assessment among administrative areas. The central MOI data also lag behind by one to two years because of processing bottlenecks.

Chart A

Birth Order Data in Thailand

Source	Agency	Birth Order	Date of Birth	Residence of Mother	Age of Mother	Stored on	Aggregated to What Level	Coverage	Latest Date Available (as of December 1987)
M.of Interior	Vital Registration Division	yes	yes	yes	yes	microfilm	individual (i.e.not aggregated)	all delivery sites	December,1986
M.of Public Health	Health Statistics Division	yes	yes	yes	yes	computer	province	MOPH outlets only	June, 1986
M.of Public Health	Provincial Chief Medical Office	yes	no[1]	no[2]	yes[3]	paper file	province, district	MOPH outlets only	current month
M.of Public Health	Provincial Chief Medical Office	yes	yes	yes	yes	paper file	individual	MOPH outlets only	current month
M. of Public Health	District Health Office	yes	yes	yes	yes	paper file	individual	all delivery sites	current month
M. of Interior	District Registrar	yes	yes	yes	yes	paper file	individual	all delivery sites	current month

[1] Data are tabulated by the date the birth is reported
[2] Data are tabulated by the area in which the delivery takes place
[3] Age is grouped in five-year categories

Despite the fact that the central registration office of the MOI computerized an individual birth certificate since 1984, information on birth order are not included yet.

While the Ministry of Public Health (MOPH) Bangkok data are computerized and are aggregated by province, they only represent deliveries at MOPH hospitals and health centers and thus, bias against socio-economic extremes. Furthermore, the data cannot be disaggregated by district without modifications to the data processing software.

At the provincial level the planning and evaluation section of the Provincial Chief Medical Office produces a monthly hand tabulation of district births by order and age group of mother. These data however refer to the site of the delivery and the date refers to when the birth report was made. In addition, individual birth certificates are available but may only represent MOPH outlet deliveries, thereby missing private outlets and home deliveries.

The conclusion of the first phase is that the only routinely accessible, up-to-date, quality birth order data are in provinces and must be tabulated locally.

The FSB, the proportion of first and second order births to total registered births, is recommended as a model indicator, primarily at the provincial and national level.

The FSB indicator is an ideal measure for managers. It is simple to analyze and understand, it can be obtained wherever there is a birth certificate and it is highly correlated with the contraceptive prevalence rate (CPR), crude birth rate (CBR) and the total fertility rate (TFR). At the national level, the FSB indicator could be adopted for future use to evaluate family planning performance by province, or additionally to

validate the reported contraceptive prevalence. Furthermore, the recommended indicator could identify particular administrative areas requiring additional inputs to accelerate family planning performance and to assess the achievement of the two-child family norms.

If the FSB indicator is to be used as an indicator of family planning achievement at the provincial level, briths by place of residence need to be considered.

At the district level, birth certificates from both sources, ie., the District Administration Office and the District Health Office, are equally accessible. The FSB indicator can be calculated simply and updated for any period of time, provided that not many births to resident's mother are delivered outside the district and vice versa.

Phase II tested a system for processing birth order data at the district level in five southern Muslim provinces of Thailand, namely Yala, Pattani, Narathiwas, Satun and Songkhla. The reason Muslim areas of Thailand were selected is that the National Family Planning Program (NFPP) needs more careful assessment for these areas. This is because the Muslim subgroups of the population resist the modern methods offered in the NFPP outlets yet may effectively practice traditional methods of birth spacing and limitation, such as breastfeeding, folk treatments and withdrawal which are outside the health statistics system. Project interventions at the district level that promote these methods should be able to be evaluated by birth order analysis over time (allowing of course for an appropriate time lag).

Evaluation systems at both the provincial and district levels have been tested. To be viable, the system of FSB analysis must meet the following conditions:

(1) The raw data are based on birth certificates, not on aggregated tabulation unless aggregated tabulations are not greatly biased.

(2) The collection of birth certificates for a given year are not specific to any delivery site and do not systematically exclude subgroups of local population.

(3) The birth certificates that are missed by the system are proportionally distributed across birth orders.

(4) The four data items required for quality birth order analysis are complete on the birth certificates.

(5) The raw data are easy to locate and tabulate by district area by an official from the local office which keeps the certificates.

While it may not be possible to always meet all these conditions they are a goal to be strived for to be consistent with the project's objectives as stated below. the research team also hold discussions with local officials of both the Ministry of Health and Interior to see how easily the concept of birth order as a family planning indicator is understood.

OBJECTIVES

The outcome of Phase II is a time series family planning evaluation system that is independent of formal participation in the NFPP and independent of the age structure of the population.

Thus the specific objectives of the Phase II Study are the following:

1. To test a system for processing the FSB indicator at district level in five southernmost provinces of Thailand.

2. To compare the FSB indicator with 1980 Census fertility and contraceptive prevalence data.

3. To assess the feasibility of time-series analysis of FSB indicator for evaluation of family planning program inputs.

METHODOLOGY

Data collection

To fulfill the first objective of the study, the investigators examined the existence and completeness of the birth certificates (part III which contains the birth order data) filed at the Provincial Chief Medical Offices (PCMO) of the study provinces (see Appendix). Variations of document filing at each province are observed. Yala is the only province where the individual birth certificates are being kept in a satisfactory condition since 1980. The data are available and complete for all districts. Thus Yala Province is selected as a case for time-series analysis of FSB indicator.

The birth orders for 1984 and 1986 of the five study provinces are available in the form of microfilm filed at the Central Registration Office of the MOI in Bangkok. For comparative purposes the required birth order data at district level for 1986, were tabulated and linked with 1984 data already obtained in the phase I of the project.

The study variables from the birth certificate includes :

- Province/district of registration (where birth is reported)
- Birth Order
- Birth date (in month/year)
- Age of mother
- Date of registration (in month/year)
- Mother's residence (district, province)

Assessment of data quality

In this phase of the study, raw data are drawn from the individual birth certificates. A transfer of birth order information for Yala Province was carried out at the Provincial Chief Medical Office (PCMO) where the third part of the individual birth certificates are filed in original forms. The filings are already grouped by district and by year of registration.

For the other four provinces, namely Pattani, Satun, Narathiwas and Songkhla, the data for 1986 are on microfilm and available at the Central Registration Office of the Ministry of Interior. Birth order data were then transferred into coding forms in Bangkok.

The collection of birth certificates available for this study in a given year are not specific to any delivery site and do not systematically exclude subgroups of local population, provided that the liveborn babies were reported to the local registrar.

In addition, it was found that close to 95 percent of the birth certificates examined in this study completedly retained the four data items required for quality birth order analysis. (live-birth order of births, date of birth, residence of mother and age of mother).

The current phase of data assessment takes into consideration the birth date and date of registration, the unknown or blank entry on birth order and the place of mother's residence.

Flow of the analysis

Chart B indicates the flow of the analysis.

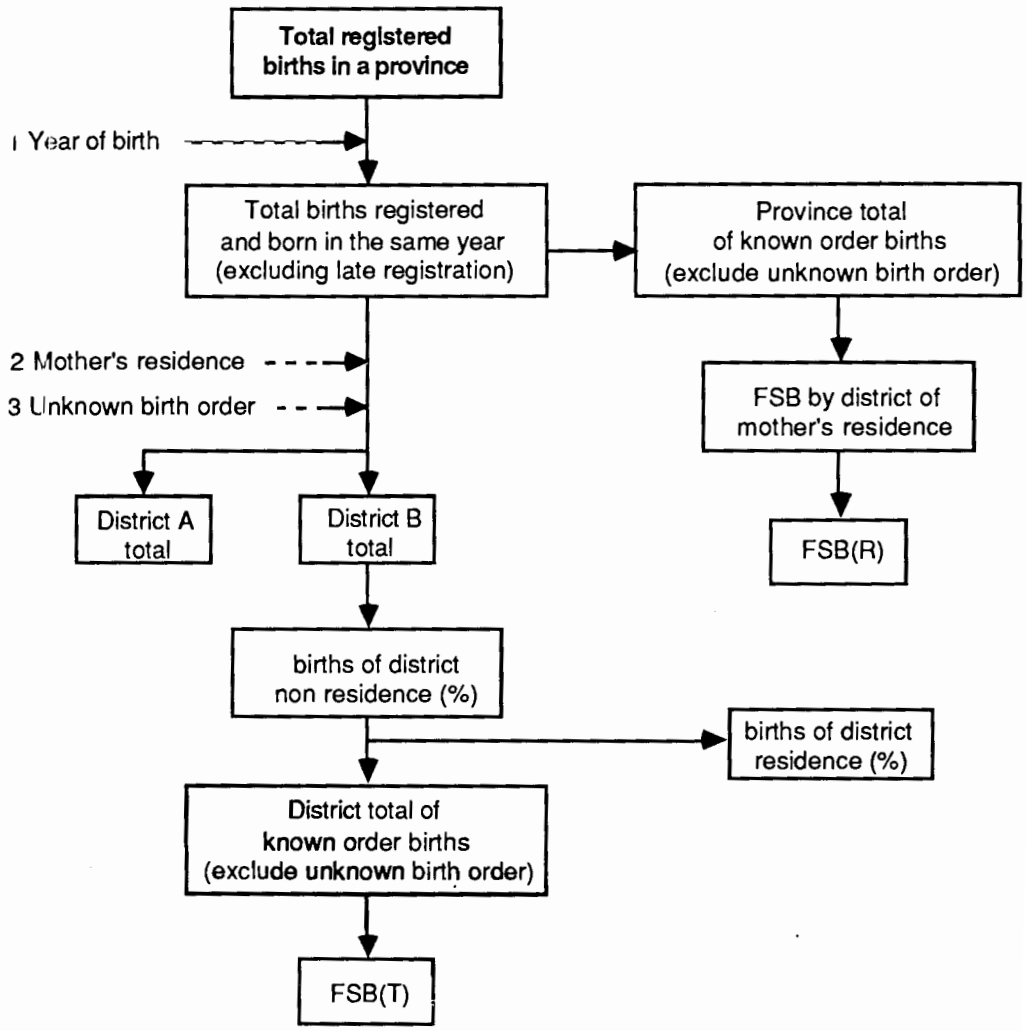
a) From total registered births in a province for a given year, the year of birth and year of registration are compared to identify the distribution of late registration, then exclude the late registered births from the data of the given year.

b) The births of unknown birth order by province and district are classified. A high proportion of unknown birth orders would reflect the insufficiency of data for use as FSB indicator.

c) It was concluded in the first phase of the study that if the FSB indicator is to be used as an indicator of family planning achievement for any period of time there should not be many births delivered outside the district.

The following sections present the results of the Phase II data collection and analysis and provides recommendations to the NFPP on the use of birth order ratios as a management aid to evaluation.

Chart B
Flow of Data Analysis



RESULTS

Table 1 presents the number of registered births by year and district for Yala Province based on birth certificates which tabulates births by district of birth place. Registration improved markedly in Muang Yala district and Betong in 1984 following intensified management improvement in these districts. A small portion of the increase in registered births is attributable to the increasing number of births taking place.

Table 2 summarizes the number of registered births by district in 1986 for the other four study provinces of Pattani, Satun, Naratiwas and Songkhla. In each province except Songkhla the Muang or capital district account for the largest number of births because of its larger population and larger hospitals.

Table 1 Number of registered births by district, Yala Province, 1980, 1982, 1984 and 1986.

District	1980	1982	1984	1986
Muang Yala	1594	1317	4733*	4819*
Bannangsta	603	656	696	745
Betong	245	255	924*	976*
Yaha	933	909	911	1152
Tanto	228	151	170	222
Raman	1395	1355	1279	1507
Total	4998	4643	8713	9421

* including births registered within municipal areas.

Table 2 Number of registered births by province, district, 1986

Province/District	Number	District	Number
Pattani			
1) Muang*	2,429	2) Khok pho	1,011
3) Panare	665	4) Yarang	1,409
5) Yaring	1,503	6) Saiburi*	1,276
7) Nong chik	1,000	8) G.Tungyangdaeng	464
9) G.Maikaen	172	10) Mayoh**	949
11) Kapoh**	235		
	Total	11,113	
Satun			
1) Muang*	2,033	2) Khuan Kalong	739
3) Thung wa	310	4) La-ngu	1,050
5) G.Khuan don	338	6) G.Tha phae	404
	Total	4,874	
Narathiwas			
1) Muang*	2,279	2) Tak bai	983
3) Bacho	758	4) Yi-ngo	645
5) Ra-ngae	1,857	6) Rusoa	977
7) Waeng	782	8) Si sakhon	299
9) Su-ngai padi	832	10) Su-ngai kolok*	1,185
11) G.Sukirin	185	12) G.Ja-nae**	538
	Total	11,320	
Songkhla			
1) Muang*	4,771	2) Chana	1,130
3) Thepa	909	4) Ranod	1,097
5) Rattaphum	1,155	6) Sathingpra	638
7) Sadao*	1,273	8) Saba yoi	829
9) Haad Yai*	7,888	10) Na-thawi	798
11) G.Na mom	76	12) G.Krasae sin	188
13) G.Khuan neang**	468	14) G.Bang-klum**	283
	Total	21,503	

* Retained municipality
** Recently established as subdistrict

Births by lateness of registration

Table 3.1 and 3.2 then examine late registration. Late registration will adversely affect the FSB indicator if it happens irregularly or if late registration occurs unevenly among women of different parity. The results for Yala show that late registration never accounts for more than eight percent of all births. It is also found that the trend in percent late registration is constant. For the other four provinces in 1986, late registration ranges from as low as six percent to nine percent of all births. That the vast majority of births are registered in the year of occurence suggests that the timeliness of the FSB indicator is not impaired due to tardy registration behavior.

Table 3.1 Percentage distribution of registered births by years of birth, Yala Province

Years of birth	1980	1982	1984	1986
Registered at the same years	91.2	91.4	92.8	92.3
Born 1-5 yrs earlier	2.1	2.0	2.8	5.2
6-10 yrs	1.2	1.3	1.6	0.7
11-15 yrs	1.7	1.5	1.3	0.7
16-20 yrs	2.7	2.2	1.0	0.6
21-25 yrs	0.3	0.6	0.2	0.5
Percent of late registration	8.0	7.6	6.9	7.7
Unknown	0.8	-	-	-

Table 3.2 Percentage distribution of births registered in 1986 by years of birth

	Pattani	Narathiwas	Satun	Songkhla
Born in 1986	91.4	90.1	92.0	93.6
Born 1-5 yrs earlier	2.3	4.6	2.9	2.9
6-10 yrs	1.9	2.0	1.6	0.9
11-15 yrs	1.3	1.4	1.6	0.8
16-20 yrs	1.6	0.9	1.0	0.8
21-25 yrs	1.3	0.5	0.5	0.9
Percent of late registration	8.4	9.4	7.6	6.3
Unknown	0.2	0.5	0.4	0.1

Births by residence of mother and place of registration

To answer the question as to what proportion of deliveries takes place in the province of mother's residence Table 4 crosstabulates provincial birth place with provincial residence of the mother. If out-of-province birth registration by women of lower or higher parity is unequal among provinces; then this will bias the FSB indicator to either artificially high or low values depending the direction of flow to delivery sites. Table 4 shows that for four of the study provinces in 1986 (Pattani, Naratiwas, Satun and Songkhla) approximately 90% of mothers delivered in their home province. Because Yala Province contains a large MCH hospital that is especially designed for regional delivery services it attracts women from negihboring provinces such as Pattani, Songkhla and Naratiwas. This exposes a weakness of the FSB indicator as collected from the MOPH summary form for provinces with large MCH hospitals. This bias is not found for the neighboring provinces and suggests that the unadjusted birth

registration data from the MOPH forms can be used for assessing the levels of FSB of women in those provinces.

Table 4 Percentage distribution of births at reported provinces by province of mother's residence among the 5 study provinces in 1986.

Place of mother's residence	Place of registration				
	Pattani	Yala	Narathiwas	Satun	Songkhla
Pattani	88.2	18.2	3.5	0.2	1.8
Yala	3.2	69.5	1.4	0.1	0.5
Narathiwas	2.2	3.3	91.2	0.0	0.5
Satun	0.0	0.2	0.0	89.8	1.2
Songkhla	2.9	4.6	0.8	2.7	85.6
Provinces in the South	1.6	2.1	1.0	5.4	7.3
Provinces outside southern region	1.8	2.1	2.2	1.8	3.0
Total	100	100	100	100	100
N	10,052	8,535	10,123	4,440	19,805

One of the potentially strong advantages of the FSB statistic for family planning management is that the data are routinely tabulated by district level. Thus, provincial managers have a fertility and family planning indicator or achievement available on a monthly basis by which to evaluate their programs and as a guide for planning and allocation of resources.

Table 5 examines time series data for births by district of registration, district of mother's residence for 1980, 1982, 1984 and 1986 in Yala. Before 1983 in Yala birth certificates from metropolitan areas were not included in reports and approximately 90% of mothers whose births were registered and tabulated also delivered in the districts where they lived. This pattern changed dramatically in 1984 after the birth certificates for deliveries in municipalities leading to a four-fold increase in tabulated births. In 1984, district of registration matched district of residence for only 56% of births in Muang Yala District but was as high as 88% for Betong District on the Malaysian border. Inter-district migration to deliver seemed to increase in 1986 during which only 45% of births in Muang Yala District were delivered in the home district and the comparable figure for Betong decreased to 83%. All other districts in Yala also show a decrease in home district delivery.

Table 5 Percentage of births by mother's residence and district where births are registered; Yala Province, 1980-1986.

District of Mother's residence	District of registration						
1980	Muang	Bannangsta	Betong	Yaha	Tanto	Raman	Province Total
1. Muang Yala	93.5						
2. Bannangsta		95.8					
3. Betong			98.3				
4. Yaha				82.0			
5. Tanto					93.9		
6. Raman						91.4	
No. of registered births	1084	545	234	861	196	1262	4182

1982	Muang	Bannangsta	Betong	Yaha	Tanto	Raman	Province Total
1. Muang Yala	90.5						
2. Bannangsta		89.4					
3. Betong			99.6				
4. Yaha				78.0			
5. Tanto					93.2		
6. Raman						94.4	
No. of registered births	1046	605	240	829	132	1235	4087

(Cont.)

Table 5 (Cont.)

1984	Muang	Bannangsta	Betong	Yaha	Tanto	Raman	Province Total
1. Muang Yala	56.3						
2. Bannangsta		69.2					
3. Betong			88.4				
4. Yaha				72.4			
5. Tanto					77.9		
6. Raman						82.3	
No. of registered births	4343	676	878	801	154	1119	7971

1986	Muang	Bannangsta	Betong	Yaha	Tanto	Raman	Province Total
1. Muang Yala	45.2						
2. Bannangsta		62.1					
3. Betong			83.1				
4. Yaha				68.5			
5. Tanto					71.3		
6. Raman						79.8	
No. of registered births	4519	697	895	980	195	1249	8535

Note: Births registered in Muang Yala and Betong in 1984 and 1986 include births reported to municipal authorities.

The other provinces show slightly higher levels of home district delivery approaching an average of 80% for all except the capital, Muang District (Table 6). Satun has the highest percent of home delivery of registered births with district-level values ranging from 74% to 86%.

Table 6 Percentage of births by mother's residence and district where births are registered, Pattani Province

District of mother's residence	District of registration											Province total
	1	2	3	4	5	6	7	8	9	10	11	
1	57.7											
2		72.1										
3			86.1									
4				79.1								
5					80.4							
6						77.9						
7							79.1					
8								77.0				
9									81.6			
10										77.9		
11											78.5	
No.of registered birth	2205	905	620	1258	1385	1163	953	309	147	901	205	10051

Note :1) Muang
2) Khokpho
3) Panare
4) Yarang
5) Yaring
6) Saiburi
7) Nong chik
8) G.Tungyangdaeng
9) G.Maikaen
10) Mayoh
11) Kapoh

(Cont.)

Table 6 (cont.) Narathiwas Province

District of mother's residence	District of registration												Province total
	1	2	3	4	5	6	7	8	9	10	11	12	
1	65.2												
2		88.1											
3			84.2										
4				84.5									
5					83.2								
6						75.1							
7							81.0						
8								70.8					
9									83.6				
10										58.0			
11											75.4		
12												71.8	
No.of registered birth	2140	910	652	516	1589	887	741	291	721	107	171	423	10123

Note :1) Muang
2) Takbai
3) Bacho
4) Yi-ngo
5) Ra-ngae
6) Rusoa
7) Waeng
8) Si-Sakhon
9) Su-ngaipadi
10) Su-ngaikolok
11) G.Sukirin
12) G.Janae

(Cont.)

Table 6 (cont.) Satun Province

District of mother's residence	District of registration						Province total
	1	2	3	4	5	6	
1. Muang	74.5						
2. Khuan kalong		76.0					
3. Thungwa			78.4				
4. La-ngu				84.4			
5. G.Khuan don					84.5		
6. G.Tha phae						86.4	
No.of registered birth	1824	699	296	904	336	381	4440

(Cont.)

Table 6 (cont.) Songkhla Province

District of mother's residence	District of registration														Province total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1	69.4														
2		87.7													
3			77.2												
4				81.2											
5					73.4										
6						84.4									
7							76.0								
8								72.5							
9									55.5						
10										69.0					
11											88.6				
12												87.7			
13													89.6		
14														87.0	
No. of registered birth	4477	1067	843	1005	1060	585	1115	783	7305	715	70	163	386	231	19805

Note :1) Muang Songkhla
2) Chana
3) Thepa
4) Ranod
5) Rattaphum
6) Sathingpra
7) Sadao
8) Saba yoi
9) Haad yai
10) Na-thawi
11) G.Na mom
12) G.Krasae sin
13) G.Khuan neang
14) G.Bang klum

Home-district delivery is desirable from the standpoint of the Ministry of Public Health because maternal care resources are allocated to each district based on catchment area population. However it is clear from this analysis that crossing district boundaries to deliver is common, unequal and increasing among districts in the five study provinces.

Births of unknown order

If the percent of births of unknown order is high then the FSB indicator will be biased if missing data is disproportionate among birth orders. Table 7 shows that the percent of births of unknown order in Yala is decreasing in four districts and increasing in two (It is suspected that the trends in Bannangsta and Raman are the result of clerical factors). As of 1986 the percent of births with unknown order for Yala as a whole was 8.7% and ranges among districts from a low of 0.7% to 43.4%.

Table 8 shows the corresponding data for the other four provinces for 1986. Percent unknown birth order ranges among provinces from four percent in Satun to eleven percent in Pattani. District level proportions of unknown birth orders range even more widely from 0.3% to 42.5%.

Table 7 Percent distribution of unknown birth order to total registered births by district, Yala Province, 1980-1986.

District	Percent of unknown birth order			
	1980	1982	1984	1986
1. Muang Yala*	28.7	29.5	1.0	0.7
2. Bannangsta	10.8	11.9	4.6	43.4
3. Betong*	4.2	1.7	1.6	4.8
4. Yaha	34.2	31.3	5.3	3.7
5. Tanto	36.4	35.1	3.2	2.5
6. Raman	21.1	22.6	13.4	26.1
Province total	24.5	23.1	3.6	8.7

* Retained municipality

Table 8 Percentage distribution of unknown birth order and number of total registered birth by district Pattani, Narathiwas, Satun and Songkhla in 1986.

Province/District	%unknown birth order	number of registered births
Pattani		
1. Muang*	13.0	2,339
2. Khok pho	8.1	906
3. Panare	5.0	623
4. Yarang	6.8	1,264
5. Yaring	10.9	1,387
6. Saiburi*	5.9	1,167
7. Nong chik	24.2	954
8. G.Tungyangdaeng	20.4	316
9. G.Maikaen	5.4	148
10. Mayoh**	6.1	906
11. Kapoh**	4.4	206
Total	10.6	10,217

* Retained municipality
** Recently established as subdistrict

(Cont.)

Table 8 (cont.)

Province/District	%unknown birth order	number of registered births
Narathiwas		
1. Muang Narathiwas*	16.5	2,148
2. Tak bai	1.0	910
3. Bacho	3.8	654
4. Yi-ngo	1.2	516
5. Ra-ngae	9.0	1,625
6. Rusoa	8.7	888
7. Waeng	2.4	743
8. Si-sakhon	6.2	292
9. Su-ngai padi	6.5	721
10. Su-ngai kolok*	7.2	1,081
11. G.Sukirin	2.9	171
12. G.Ja-nae**	4.6	432
Total	7.9	10,181
Satun		
1. Muang Satun*	4.4	1,831
2. Khuan kalong	8.6	699
3. Thungwa	2.4	296
4. La-ngu	3.1	908
5. G.Khuan don	0.3	336
6. G.Tha phae	0.5	381
Total	4.0	4,451

* Retained municipality
** Recently established as subdistrict.

(Cont.)

Table 8 (cont.)

Province/District	%unknown birth order	number of registered births
Songkhla		
1. Muang Songkhla*	8.6	4,572
2. Chana	4.9	1,068
3. Thepa	6.5	848
4. Ranod	5.7	1,009
5. Rattaphum	10.7	1,067
6. Sathingpra	1.9	585
7. Sadao*	22.7	1,136
8. Sabayoi	4.1	784
9. Haad yai*	8.4	7,437
10. Na-thawi	4.7	721
11. G.Na mom	67.1	70
12. G.Krasae sin	1.8	163
13. G.Khuan neang**	42.5	409
14. G.Bang-klum**	9.5	232
Total	9.3	20,101

* Retained municipality
** Recently established as subdistrict

The FSB indicator

As defined earlier the FSB indicator is the proportion of all births that are first and second order. As contraceptive prevalence increases so should the value of FSB. As fertility declines the value of FSB should increase. Table 9 presents the values of FSB for the five provinces in 1986. According to the data, Naratiwas has the highest fertility with 50% of all births being third of higher order followed by Satun, Pattani and Yala. Songkhla has the lowest fertility as measured by the FSB indicator with nearly two-thirds of all births being first or second order.

Table 9 Proportion of first and second order birth of all birth for five provinces in 1986.

Provinces	FSB	Unknown birth order	Total registered birth
Yala	60.0	8.7	9,421
Narathiwas	51.1	7.9	10,181
Pattani	54.3	10.6	10,217
Satun	52.8	4.0	4,451
Songkhla	65.1	9.3	20,101

Because the above review of the district pattern of birth registration showed a significant level of cross-border delivery and registration it is important to examine the FSB measure for all registered births in a district compared with the FSB for births to mothers living in the district of delivery. Table 10 presents these data for districts in the five provinces in 1986. The far right column of the table shows the absolute percentage point difference between the two FSB ratios. It is found that the difference between the in-resident FSB and the FSB for all births never exceeds ten percentage

points. Indeed, the provincial average difference between the values of the FSB range from only two to four percentage points.

Table 10 FSB indicators by district, comparison between data by place of registration and by place of mother's residence, 1986.

Province/District	FSB(T)	FSB(R)	Difference
Narathiwas			
1. Muang	57.6	49.7	7.9*
2. Takbai	41.0	42.3	-1.3
3. Bacho	50.9	50.3	0.6
4. Yi-ngo	48.8	50.0	-1.2
5. Ra-ngae	51.7	52.8	-1.1
6. Rusoa	46.6	48.1	-2.6
7. Waeng	50.3	49.3	1.0
8. Si sakhon	50.3	50.7	-0.4
9. Su-ngaipadi	45.6	49.1	-3.5
10. Su-ngai kolok	57.3	48.7	8.6*
11. Ging Sukirin	51.8	52.4	-3.8
12. Ging Janae	51.4	49.5	-1.0
Total	51.1	49.5	1.6
Satun			
1. Maung	55.8	50.9	4.9
2. Khuon kalong	54.1	53.4	0.7
3. Thung wa	50.8	51.4	-0.6
4. La-ngu	49.2	48.5	0.7
5. Ging Khuan don	49.8	52.7	-2.9
6. Ging Thaphae	48.3	48.3	0.0
Total	52.7	50.7	2.0

(Cont.)

Table 10 (cont.)

Province/district	FSB(T)	FSB(R)	difference
Yala			
1. Muang Yala	65.3	59.2	6.1
2. Bannangsta	47.4	54.4	-7.0
3. Betong	58.6	57.0	1.6
4. Yaha	52.9	54.8	-1.9
5. Tanto	42.1	47.1	-5.0
6. Raman	52.5	52.6	-0.1
Total	60.0	56.1	3.9
Pattani			
1. Muang Pattani	57.1	48.7	8.4
2. Khok pho	56.1	56.2	-0.1
3. Panare	55.2	53.8	1.4
4. Yarang	48.9	48.9	0.0
5. Yaring	52.6	52.3	0.3
6. Sai buri	57.1	54.3	2.8
7. Nong chik	48.3	49.8	-1.5
8. G.Tungyangdaeng	55.2	53.1	2.1
9. Ging Mai kaen	55.8	55.7	0.1
10. Mayoh	55.7	55.8	-0.1
11. Ging Kapoh	56.8	55.2	1.6
Total	54.3	52.2	2.1

(Cont.)

Table 10 (cont.)

Province/District	FSB(T)	FSB(R)	Difference
Songkhla			
1. Muang Songkhla	68.8	68.9	-0.1
2. Chana	52.7	56.8	-4.1
3. Tepa	53.3	54.9	-1.6
4. Ranod	59.6	56.7	0.1
5. Rattaphum	56.9	56.7	0.2
6. Stingpra	56.6	58.5	-1.9
7. Sadao	54.3	59.8	-5.5
8. Sabayoi	51.9	52.3	-0.4
9. Haad yai	73.2	69.7	3.5
10. Na-thawi	62.6	64.4	-1.8
11. Ging Namom	78.3	76.1	2.2
12. Ging Krasaesin	52.5	60.2	-7.7
13. Ging Khuanneang	47.7	55.1	-7.4
14. Ging Bangklum	48.1	53.8	-5.7
Total	65.1	63.3	1.8

The Muang, or capital district, records the highest discrepancies between in-residence birth orders and all births occuring in the district but the differences do not exceed 8.4 points. The higher FSB for all births in Muang districts suggest that lower parity women are attracted to the provincial capital hospitals. Among non-Muang districts about the same number have positive differences as have negative differences. This suggests that eventhough mothers are delivering outside their home district the pattern is random and does not seriously bias the value of the FSB when mother's residence is not taken into account.

In sum it seems from this analysis that the FSB as derived from all registered births in the district (and especially the province) accurately predict the FSB as derived from the birth order deliveries of resident mothers.

CONCLUSION AND RECOMMENDATIONS

The FSB was conceived as a simple diagnostic tool for provincial managers to assess areas of need and achievement in family planning and fertility. Although it is statistically correlated with the total fertility rate and the contraceptive prevalence rate, the FSB measure should not be used to predict the values of these rates. Instead, the percent first and second births of all births should be used to rank administrative areas as high or low priority for action and for tracking progress toward national contraceptive prevalence and fertility goals.

This study has shown that the FSB measure is robust enough to serve the needs of national and provincial managers for assessment of family planning achievement. The service statistics reporting system should begin including FSB tabulations for regions, provinces, and districts immediately. Where data are available for past years and months, the FSB indicator should be calculated retrospectively to present a time series to assess trends. The simplest tabulation for a FSB feedback report is the percent first and second order births of all births by month, by district, province, region and the nation.

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APPENDIX

Table A1 Trends of FSB indicator by district in Yala Province : comparison between data by place of registration and by place of mother's residence, 1980-1986.

	1980	1982	1984	1986
Muang				
FSB(T)	52.5	55.1	62.7	65.3
FSB(R)	53.9	55.6	59.9	59.2
difference	-1.4	-0.5	+2.8	+6.1
Bannangsta				
FSB(T)	52.5	52.9	46.7	47.4
FSB(R)	53.2	52.9	45.6	54.4
difference	-0.7	-0.0	+0.1	-7.0
Betong				
FSB(T)	40.9	41.9	57.8	58.6
FSB(R)	40.8	41.9	56.3	57.0
difference	+0.1	0.0	+1.5	1.6
Yaha				
FSB(T)	52.3	53.6	48.4	52.9
FSB(R)	51.1	53.6	52.0	54.8
difference	1.2	0.0	-3.6	-1.9
Tanto				
FSB(T)	46.0	46.0	35.1	42.1
FSB(R)	44.4	46.0	43.4	47.1
difference	1.6	0.0	-8.3	-5.0
Raman				
FSB(T)	56.5	56.0	55.1	52.5
FSB(R)	54.8	56.0	55.7	52.6
difference	1.7	0.0	-0.6	-0.1

Note : FSB(T) = place of registration
FSB(R) = place of mother's residence

Table A2 FSB indicator among nonresidence (different place of mother's residence) by district, Yala Province, 1980-1986

	1980	1982	1984	1986
Muang	64.3	64.9	66.0	70.2
Bannangsta	57.1	55.7	56.9	55.9
Betong	75.0	00.0	65.6	68.5
Yaha	58.5	59.6	55.5	59.3
Tanto	50.0	55.6	52.9	58.9
Raman	76.9	61.1	62.4	62.6
Yala Province	65.6	60.2	64.2	67.8

Table A3 Comparison between FSB(T) indicator in 1986 and Total Fertility Rates (1975-79) by district, Yala, Pattani, Stun Narathwas and Songkhla.

Province/District	FSB(T)(1986)	TFR(1975-79)*
Yala		
Muang	65.3	3.39
Bannangsta	47.4	4.83
Betong	58.6	4.27
Yala	52.9	4.34
Tanto	42.1	4.34
Raman	52.5	3.95
Pattani		
Muang	57.1	4.23
Yarang	48.9	4.83
Nong chik	48.3	5.05
Khok pho	56.1	3.75
Yaring	52.6	4.48
Panare	55.2	4.32
Mayoh	55.7	4.23
Ging Tungyangdang	55.2	4.48
Saiburi	57.1	3.91
Ging Kapoh	56.8	-
Ging Maikaen	55.8	3.97
Satun		
Muang*	55.8	4.42
Khuan kalong	54.1	5.22
Ging Khuan don	49.8	4.57
Ging Tha phae	48.3	5.31
Thung wa	50.8	6.04
La-ngu	49.2	5.05

(Cont.)

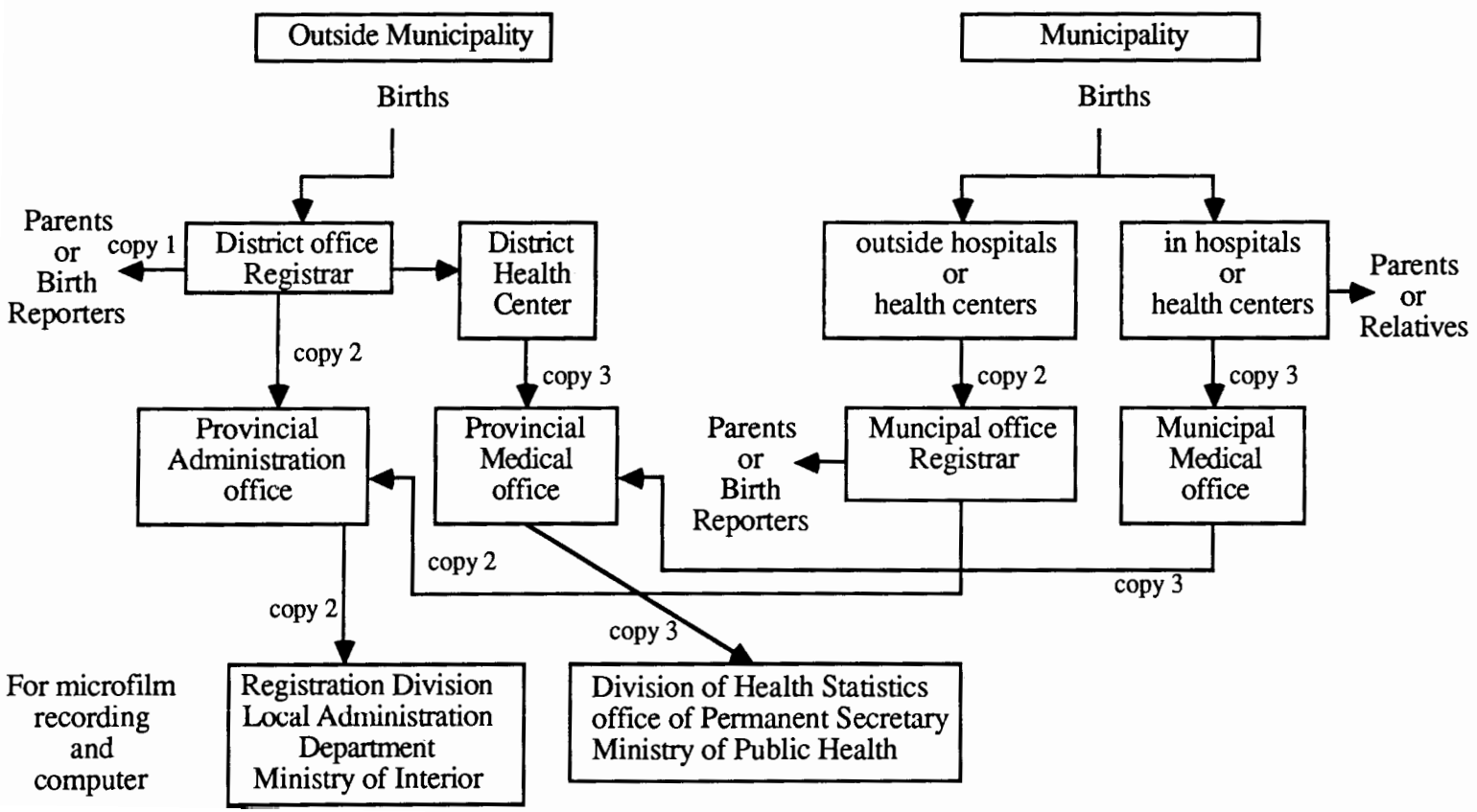
Table A3 (cont.)

Province/District	FSB(T)(1986)	TFR(1975-79)*
Narathiwas		
Muang	57.6	4.51
Takbai	41.	5.01
Bacho	50.9	4.34
Yi-ngo	48.8	4.34
Ra-ngae	51.7	4.83
Rusoa	46.6	4.16
Waeng	50.3	5.01
Su-ngai padi	45.6	4.57
Su-ngai kolok	57.3	4.10
Ging Sukirin	51.8	4.83
Ging Ja-nae	51.4	-
Songkhla		
Munag	68.8	4.62
Chana	52.7	4.36
Tepa	53.3	3.95
Ranod	59.6	4.94
Rattaphum	56.9	4.85
Stingpra	56.6	4.53
Sadoa	54.3	4.05
Sabayoi	51.9	4.68
Haad-yai	73.2	3.64
Na-Thawi	62.6	4.36
Ging Namom	78.3	-
Ging Krasaesin	52.5	4.27
Ging Khuanneang	47.7	-
Ging Bangklum	48.1	-

* Source : ESCAP Report No. 62-A

BIRTH REGISTRATION SYSTEM

72 PROVINCES



The Second Part of Birth Certificate
(in use until 1983)
Brith Certificate
Registration Office

1. New born

1.1 first name..... last name .....

1.2 sex

1.3 nationality .....

1.4 birth date ..... month ..... year .....

time Am...Pm...lunar calendar day..... month....year.....

1.5 birth place address.....tambon.....district.....

country.....

2. Mother

2.1 first name.....maiden name.....

2.2 age.....

2.3 nationality .....

2.4 same address .....place of residence address.....

tambon.....district.....province.....

3. Father

3.1 first name.....last name.....

3.2 age.....

3.3 nationality.....

4. birth informant

4.1 first name.....last name.....

4.2 address of residence.....

4.3 relationship to new born

☐ household father ☐ mother ☐ official

☐ birth attendant ☐ others

4.4 signature of birth reporter.....

5. Date of registration.....day.....month.....year.....

6. Date of name change.....

7. Birth registrar

signature.....

8. Name change registrar

signature.....

Content of Birth Certificate
(in use since 1984 to the present)
Birth Certificate

Registration office identfication no.

1. New born

1.1 first name..... last name.....

1.2 sex

1.3 nationality.....

1.4 birth date.....time.....

calendar date.....month..... year.....

1.5 birth place.....address.....

1.6 birth order.....

1.7 birth attendant / / self-delivery ☐ TBA

☐ nurse ☐ midwife ☐ others

1.8 birth weight.....

1.9 household registration address.....

1.10 address code.....

2. Mother

2.1 first name.....maiden name.....

2.2 I.D. No.....

2.3 age.....

2.4 naionality ☐ Thai ☐ other

2.5 birth place province.....country.....

2.6 address of residence.....country.....

3. Father

3.1 first name.....last name.....

3.2 I.D. No.....

3.3 age.....

3.4 Nationality ☐ Thai ☐ other

3.5 birth place province.....country.....

3.6 address specify address.....country.....

☐ same as mother of new born ☐ other place

4. Birth informant

4.1 first name.....last name.....

4.2 I.D. No.....

4.3 age.....

4.4 address.....

4.5 relationship to new born

☐ hh. head ☐ father ☐ birth attendant

☐ relative ☐ mother ☐ official ☐ other

4.6 document certifying birth ☐ yes ☐ no

4.7 birth notification

4.8 informant signature.....

signature of birth registrar

date of registration

REPORT ON LIVE BIRTH AND STILL BIRTH (Planning unit, PCMO officer)
Ministry of Public Health

LOCALITY ..... MONTH ..... YEAR .....
COMPILER SIGNATURE ..... POSITION .....

Item	Total		Less than 15		15-19		20-24		25-29		30-34		35-39		40-44		45-49		50 and over		don't know	
	Male	Female	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1) Total live births Total																						
birth order 1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
Don't know																						
2) Total still births																						

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