WORLD BREASTFEEDING CONFERENCE
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"Provision of complementary feeding based on local foods in Indonesia"

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OUTLINE

- Nutritional status of children in Indonesia
- Complementary feeding based on local foods in Indonesia
- Conclusion

INDONESIA


Aceh
Sumatera Utara
Kep. Riau
Riau
Kalimantan Barat
Kalimantan Timur
Gorontalo
Sulawesi Utara
Maluku Utara
0
0
Sumatera Barat
Jambi
Kep. Bangka Belitung
Kalimantan Tengah
Sulawesi Barat
Sulawesi Tengah
Papua Barat
Sumatera Selatan
Kalimantan Selatan
Bengkulu
Lampung
Sulawesi Selatan
Sulawesi Tenggara
Maluku
Papua
DKI Jakarta
Banten
Jawa Barat
Jawa Tengah
Jawa Timur
Bali
DI Yogyakarta
Nusa Tenggara Timur
Nusa Tenggara Barat

INDONESIA	
Provinces	33
Districts	399
Municipalities	98
Sub-districts	6,694
Villages	77,465

Source: Ministry of Internal Affairs

POPULATION IN 2011

No	Kelompok Umur	Laki-Laki	Perempuan	Laki-Laki dan Perempuan
(1)	(2)	(3)	(4)	(5)
1	0 - 4	12.086.387	11.425.945	23.512.851
2	5 - 9	12.409.963	11.731.840	24.142.336
3	10 - 14	12.087.627	11.427.117	23.515.263
4	15 - 19	10.846.995	10.552.946	21.400.095
5	20 - 24	9.905.359	10.026.204	19.931.296
6	25 - 29	10.704.691	10.726.933	21.431.449
7	30 - 34	10.067.869	9.988.901	20.056.710
8	35 - 39	9.495.536	9.328.693	18.824.269
9	40 - 44	8.422.579	8.356.515	16.779.044
10	45 - 49	7.082.249	7.096.966	14.179.100
11	50 - 54	5.993.781	5.831.296	11.825.162
12	55 - 59	4.621.571	4.248.785	8.870.681
13	60 - 64	2.840.910	3.061.039	5.901.728
14	65 - 69	2.122.754	2.363.517	4.485.989
15	70 - 74	1.370.646	1.716.867	3.087.132
16	75+	1.354.497	1.885.154	3.239.077
	Jumlah	**121.413.414**	**119.768.768**	**241.182.182**

Sumber: Diolah Pusdatin, Kemenkes RI (dengan bimbingan Badan Pusat Statistik) berdasarkan hasil SP 2010

NUTRITIONAL STATUS OF CHILDREN IN 2010 (WEIGHT FOR AGE)

No	Provinsi	Status Gizi Menurut BB/U				
		Gizi Buruk (%)	Gizi Kurang (%)	Gizi Baik (%)	Gizi Lebih (%)	Jumlah (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Aceh	7,1	16,6	72,1	4,2	100,0
2	Sumatera Utara	7,8	13,5	71,1	7,5	100,0
3	Sumatera Barat	2,8	14,4	81,3	1,6	100,0
4	Riau	4,8	11,4	75,2	8,6	100,0
5	Jambi	5,4	14,3	76,3	4,1	100,0
6	Sumatera Selatan	5,5	14,4	74,5	5,6	100,0
7	Bengkulu	4,3	11,0	73,7	10,9	100,0
8	Lampung	3,5	10,0	79,8	6,8	100,0
9	Kepulauan Bangka Belitung	3,2	11,7	80,6	4,5	100,0
10	Kepulauan Riau	4,3	9,8	81,3	4,6	100,0
11	DKI Jakarta	2,6	8,7	77,7	11,1	100,0
12	Jawa Barat	3,1	9,9	81,6	5,4	100,0
13	Jawa Tengah	3,3	12,4	78,1	6,2	100,0
14	DI Yogyakarta	1,4	9,9	81,5	7,3	100,0
15	Jawa Timur	4,8	12,3	75,3	7,6	100,0
16	Banten	4,8	13,7	77,5	4,0	100,0
17	Bali	1,7	9,2	81,0	8,0	100,0
18	Nusa Tenggara Barat	10,6	19,9	66,9	2,6	100,0
19	Nusa Tenggara Timur	9,0	20,4	67,5	3,1	100,0
20	Kalimantan Barat	9,5	19,7	67,0	3,9	100,0
21	Kalimantan Tengah	5,3	22,3	69,4	2,9	100,0
22	Kalimantan Selatan	6,0	16,8	73,1	4,0	100,0
23	Kalimantan Timur	4,4	12,7	75,9	7,0	100,0
24	Sulawesi Utara	3,8	6,8	84,3	5,1	100,0
25	Sulawesi Tengah	7,9	18,6	69,1	4,4	100,0
26	Sulawesi Selatan	6,4	18,6	72,2	2,8	100,0
27	Sulawesi Tenggara	6,5	16,3	66,9	10,2	100,0
28	Gorontalo	11,2	15,3	69,4	4,1	100,0
29	Sulawesi Barat	7,6	12,9	74,9	4,7	100,0
30	Maluku	8,4	17,8	70,5	3,4	100,0
31	Maluku Utara	5,7	17,9	73,2	3,2	100,0
32	Papua Barat	9,1	17,4	67,3	6,2	100,0
33	Papua	6,3	10,0	78,4	5,3	100,0
	Indonesia	4,9	13,0	75,2	5,8	100,0

Sumber: Badan Litbangkes, Kemenkes RI, Riskesdas 2010

INFANTS MORTALITY RATE AND UNDERFIVE MORTALITY RATE 2007

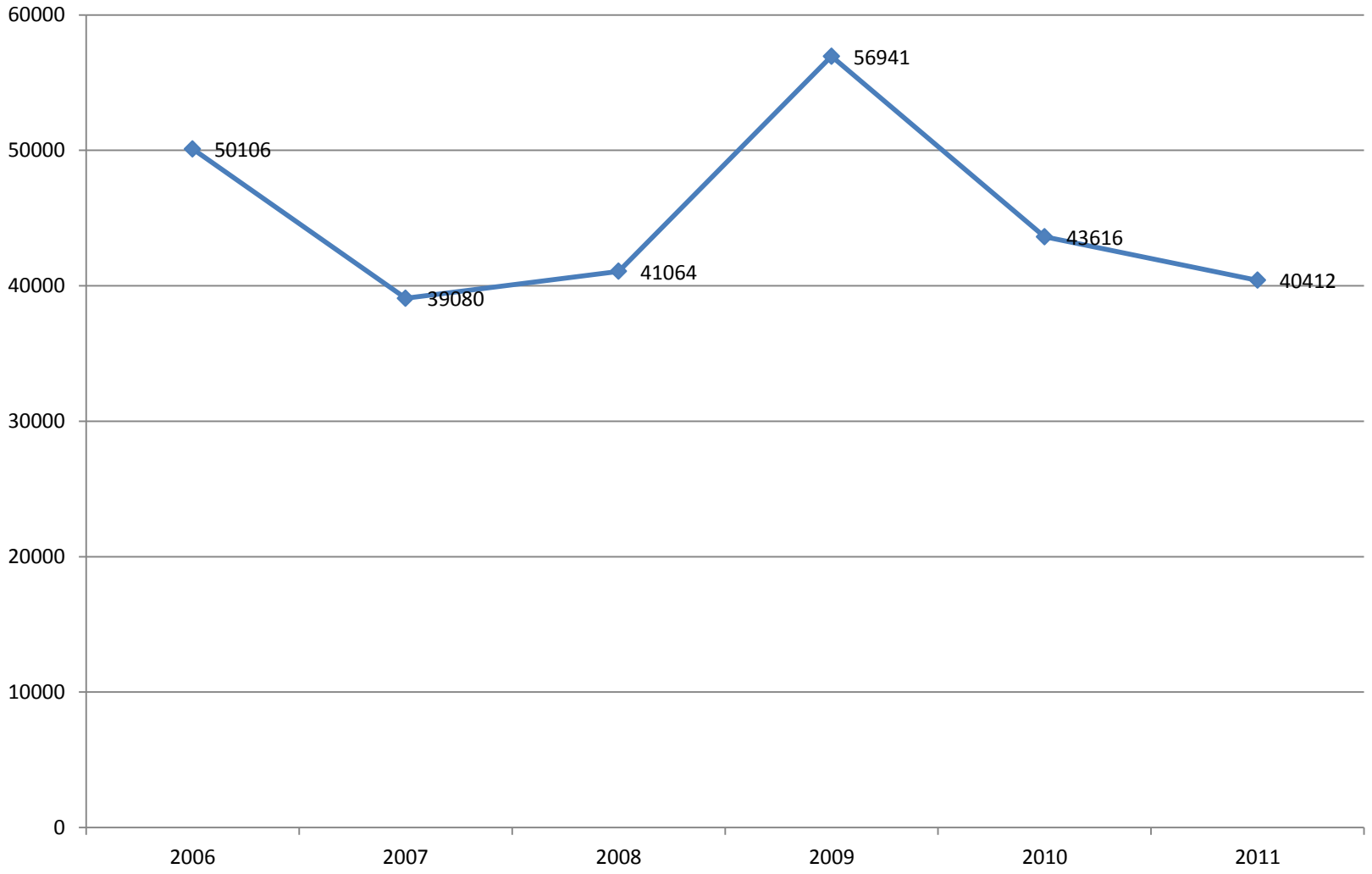
No	Provinsi	Estimasi	
		Angka Kematian Bayi* (IMR)	Angka Kematian Balita* (AKABA)
(1)	(2)	(3)	(4)
1	Aceh	25	45
2	Sumatera Utara	46	67
3	Sumatera Barat	47	62
4	Riau	37	47
5	Jambi	39	47
6	Sumatera Selatan	42	52
7	Bengkulu	46	65
8	Lampung	43	55
9	Kepulauan Bangka Belitung	39	46
10	Kepulauan Riau	43	58
11	DKI Jakarta	28	36
12	Jawa Barat	39	49
13	Jawa Tengah	26	32
14	DI Yogyakarta	19	22
15	Jawa Timur	35	45
16	Banten	46	58
17	Bali	34	38
18	Nusa Tenggara Barat	72	92
19	Nusa Tenggara Timur	57	80
20	Kalimantan Barat	46	59
21	Kalimantan Tengah	30	34
22	Kalimantan Selatan	58	75
23	Kalimantan Timur	26	38
24	Sulawesi Utara	35	43
25	Sulawesi Tengah	60	69
26	Sulawesi Selatan	41	53
27	Sulawesi Tenggara	41	62
28	Gorontalo	52	69
29	Sulawesi Barat	74	96
30	Maluku	59	93
31	Maluku Utara	51	74
32	Papua Barat	41	62
33	Papua	36	64
Indonesia		34	44

Sumber: BPS, Hasil Survei Demografi dan Kesehatan Indonesia 2007

* : Periode lima tahunan sebelum survei.

AHH : BPS, Indeks Pembangunan Manusia 2009

MALNUTRITION CHILDREN 2006-2011



Source: Indonesia Health Profile 2011

COMPLEMENTARY FEEDING

- The first 24 months of a child's life are a critical window
- Foundations for healthy growth and development
- Infant and young child feeding is a core dimension of care in this period.
- Malnutrition is responsible, directly or indirectly, childhood deaths
- Infants and young children are at increased risk of malnutrition from six months of age onwards,
- Complementary feeding needs to be given
- Provision of complemetary feeding (WHO): Timely, Adequate, Safe and Properly fed

DATA

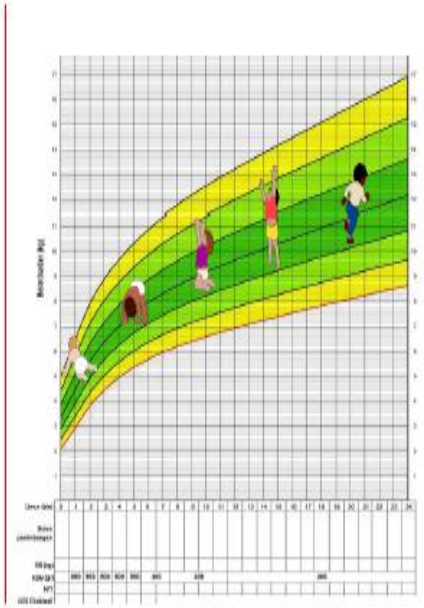
- Previous studies and research in Indonesia regarding counseling, making and provision of complementary feeding on local foods for children.

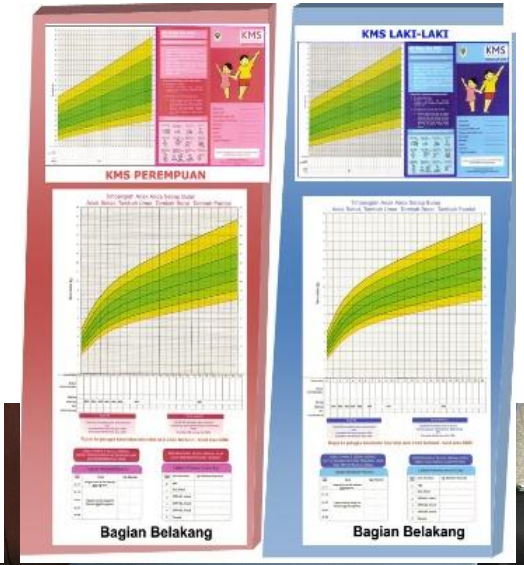
- Counseling and training in making of complementary feeding based on local foods (Cucurbita moschata, fermented soya bean and Pangasius pangasius) in Ogan Ilir district, South Sumatra province near to our university in cooperation with local integrated service post and health center.

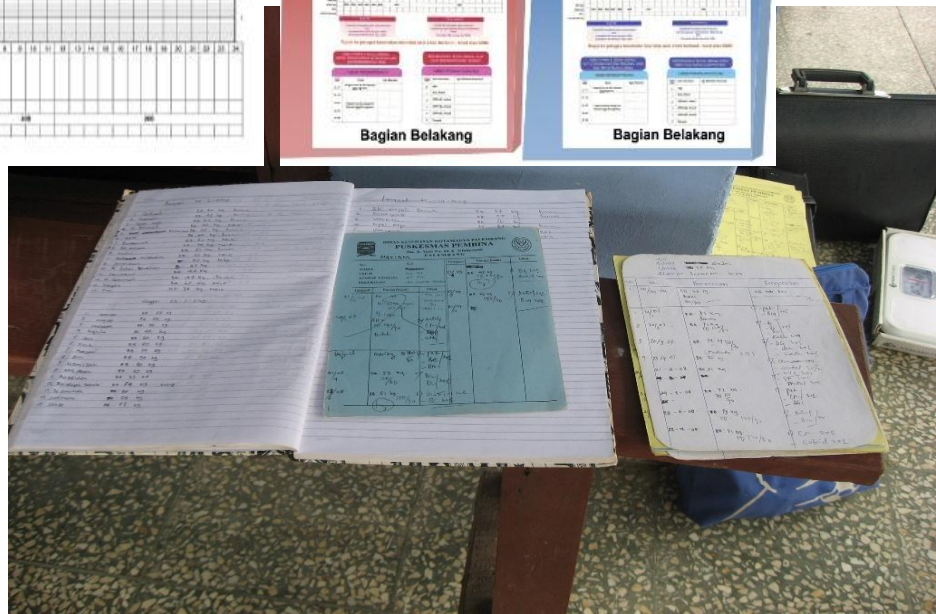
COMPLEMENTARY FEEDING PROGRAM

- 1144/MENKES/PER/VIII/2010: Directorate of Nutrition, Ministry of Health responsible for preparing of policy formulation and implementation and formulation of norms, standards, procedures, and criteria, as well as providing technical guidance and evaluation in the field of nutrition.
- Provision of complementary feeding is based on guideline from the MoH which is prioritized from local foods and regional menu.
- Since 2010, health operational funding (BOK) for preventive and promotive programs specifically on nutrition
- Health offices in province and district level manage this program
- Held by local health centers (Puskesmas) and integrated service post (Posyandu) and village health post (Poskesdes).
- Role of head of health centers, nutritionists/health staffs, villages head, village midwives and volunteers from local community

- Integrated service post (1x per month)
- Village health post (daily)
- Children health card (KMS)
- Local government programs (decentralisation)
- Central government policies







SEVERAL STUDIES REGARDING PROVISION OF COMPLEMENTARY FEEDING IN INDONESIA

- Provision of complementary feeding improve nutritional status of children in Probolinggo since 2006 . (1) Biscuit: tapioca, cornstarch, eggs, milk powder, and green bean flour, (2) Butter cookies: eggs, flour, cornstarch, (3) Nugget: fish, tapioca, soybean, and egg; (4) meatballs: fish, tofu and tapioca. Reducing the number of infant malnutrition by 55%, reducing the number of infants undernutrition by 19%, increasing the number of infant with good nutrition by 69% *(Health office of Probolinggo, East Java)*

- This study consisted of 144 six-month old infants (SD±15 days) who was divided into two groups (72 infants each) in a double blinded RCT. One group is allocated to receive tempe formula (FT) and the other group receive non-tempe complementary food (FBT). After five-month intervention, there were 49 infants in FT group and 45 infants in non FT (FBT). The study failed to show the benefical of tempe formula for healthy infants age 6-12 months in the episode and length of diarhea growth and in physical activity but showed significant improvement of ferritin level. *(Arum Atmawikarta, Journal of Gizi Indonesia 2007,30(2):73-97)*

- *Making various traditional snacks (kue bolu, kue pukis, kue talam dan kue lapis) with the substitution of carrot flour 10% and 25%. 1 (one) kg fresh carrot provide 50 grams carrot powder with nutrition content were moisture 6.73%, 13.5% carbohydrate, fat 1.15%, 7.7% protein and beta-carotene 33.74 mg/kg (56.18 SI/100gr). Under two chidren have good acceptable to the both concentrations of carrot flour. Nutrition content of cake for carbohydrate and energy were lower than the traditional cake without substitutes of carrot flour. Snacks with carrot flour substitution is less appropriate for children under five malnutrition. Cake with the substitution of carrot flour can be used for low-calorie diet and a diet high in fiber (Siti Nur Rochimiwati et. al. Media Gizi Pangan, Vol. XI, Edisi 1, 2011)*

- The effect of storage duration on microbiological quality of baby biscuits of pumpklin and patin flour substitution. Quality of biscuits still does not meet SNI standard, the longer the storage the more decreases of quality *(Ibnu Zaki, research report, University of Diponegoro, 2011)*

- The effect of ‘abon ikan’ supplementation on the changes of the nutritional status of underweight children aged 24-59 months. Quasy experimental study included 29 underweight children aged 24-59 months. There was no effect of three weeks ‘abon ikan’ supplementation on the nutritional status of underweight children aged 24-59 month. (*Suriani Rauf, research report, University of Diponegoro, Semarang, 2007)*

- An experimental study. Instant baby porridge substituted with catfish flour and pumpkin flour have met the nutritional requirements, Instant baby porridge with catfish flour and pumpkin flour substitution are high in protein and vitamin A. (*Leyla Elvizahro, research report, University of Diponegoro, Semarang, 2011)*

- The ratio of pumpkin flour and catfish flour substitution on baby biscuits had no effect on levels of fiber and ash, as well as the organoleptic include color, flavor, texture, aroma. Serving size of baby biscuits with pumpkin flour and catfish flour are 60 g. The recommended biscuits to be consumed is a baby biscuits with the ratio of pumpkin flour and catfish flour 1:3. *(Nurhidayati, research report, University of Diponegoro, 2011)*

- Qualitative study of implementation of complementary feeding policies in Solok, West Sumatra. partly accordance with the program management function/technical manual. Should be made a technical manual by health office and health center is expected to create a plan of action for each program. *(Health office of Solok, West Sumatra, 2011)*

- The study was a pre-experiment that used a group pre test-post test design. Subject were underfives of 6-59 months from poor communities that got fortified multi micronutrient. The intervention of fortified multi micronutrient supply was given once a week (1 sachet/day) within 4 months. The supply of fortified multi micronutrient could increase weight, height/length and nutrition status (z-score), index of weight for height/length and index of weight for age and decreased of acute respiratory tract infection and diarrhea disease in underfives of 6-59 months from poor communities *(Mursalim et. al., Jurnal Gizi Klinik Indonesia,Vol. 8, No. 2, Oktober 2011: 69-80, 2011)*

Complementary feeding program in Ogan Ilir Subdistrict, South Sumatra Province, Indonesia

Interview with health staffs/ midwives/ cadres

Health centers

Integrated service post

Source foods from local area of Ogan Ilir district for complementary feeding

CONCLUSIONS

- Mother knowledge regarding pattern of giving children feeding, particularly when the baby can be given complementary foods and appropriate complementary feeding is essential for children
- Adequate information regarding complementary feedings based local foods to mother, local volunteers/cadres and village midwives.
- Need further studies on complementary feeding from local foods

THANK YOU