

Qandil 2007
A Swedish Humanitarian Aid Organization



Cost-effect analysis of Mobile Medical Teams (Aug 2006-April 2007)



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Qandil has started its health activities in Iraq through mobile health teams since 1992, in the northern part of the country. Throughout 90s till the beginning of 2003, several health teams were operative in the governorates of Erbil, Suleimaniya, and Dohuk. They had moved progressively from health care delivery and vaccination campaigns, to health education and managerial issues. In the spring 2003 mobile teams in the north (Kurdistan) were halted, while five teams were activated below the former green line to operate in the governorates of Mosul, Kirkuk, and later Saladin (Tikrit). By mid 2004 there were ten mobile medical teams on average operating in the above areas, mostly dealing with IDP and with population in areas where the health system had been disrupted by the war.

The following table shows the start and end dates of the mobile health teams during 2003-2007 (some teams are still operative as shown in the table):

Table number (1) showing start and end dates of health teams

Team No.	Governorate	Start Date	End Date	
T. 7, 8, 9, 10	Saladin	1.6.2004	30.12.2004	4
T. 5	Mosul	1.8.2003	30.12.2004	1
T. 6	Kirkuk	1.5.2003	30.09.2006	1
T. 13	Hawija District	1.2.2005	30.09.2006	1
T. 12	Hawija District	1.11.2004	30.09.2006	1
T. 14	Hawija District	1.03.2005	Still operative	1
T. 15	Hawija District	1.04.2005	Still operative	1
T. 4,11	Kirkuk	1.5.2003	Still operative	2
T. 16	Mosul (Fayda)	1.4.2005	Still operative	1
T. 1, 2	Erbil-Mosul	1.1.2004	30.5.2004	2
T. 3	Dohuk_Mosul	1.4.2003	30.1.2007	1

The following table shows the number of the mobile health teams and their corresponding areas of activity during the period between "2006 – 2007":

Table number (2) showing the number of teams and areas of activity

Team Number	Area of Activity
T 3	Sheikhan district (terminated on 31 January 2007)
T16	Fayda IDPs Camp (between Dohuk and Mosul)
T4	Kirkuk City and Kirkuk district
T6	Laylan District (Kirkuk Governorate)(terminated on 31 September 2006)
T11	Baba Gurgur IDPs Camp (Kirkuk Governorate)
T12, 13	Hawija Dstrct-1(Kirkuk Governorate)(terminated on 30 September 2006)
T14,15	Hawija District-2(Kirkuk Governorate)

Qandil mobile medical teams are presently in support of PHC activities in the areas described all south of the former green line. It is to be remembered that they were instituted as emergency support. They were used as a tool to give medical assistance of primary level to displaced people or to community deprived of assistance in relation to the alterations caused by the war. This motivation of the teams' continuous existence is still there, though it needs to be continuously checked. Specific data are available for the all three years since the beginning of the activities. **A first data collection was published in 2004. A second data collection was published in September 2006. The present data collection regards the 9 months period from August 2006-April 2007 and this will be analyzed:**

- 1- *Fayida former military base*: It is on the road between Dohuk and Mosul. This had become a squatting area for some 900 families by 2006. It is presently having an IDP population of 1800 families in the old NCOs Officers and soldiers barracks (called nowadays Azadi) and some 986 families in the Officers houses (called nowadays Rezgary). Presently there are 2700 families. .These data are updated as for April 15 2007. Of the total up to December 2006 some 300 families had arrived after February 2006. These are IDP's from various areas and various reasons, including Christians, Kurds, Yazidis and Sunnis Arab families, a few Turkman as well. Qandil (SIDA funding) has done the water procurement for the community. It is presently extending it with IOM funding. Qandil (SIDA funding) has built a Health Center in 2005 and is presently enlarging it. We support the personnel (one Doctor and two Medical Assistants) and we provide drugs, which are distributed for free. Nearest other Health Centers in Fayda

village (5 Km). However in the Rezgary section of the base (there is one other name for it, Domize (from the name of the French construction company which built it), there is a small private clinic. (The IDPs squatting in the Officer's quarters were the first and appear to be wealthy). Referral hospital in Dohuk (15 KM).

The personnel of Qandil Health Center goes daily to the place with a car rented by Qandil (still 550 \$ per month). This assistance with incentives and drugs will continue as long as the community keeps on increasing and the administrative repartition is defined, being Fayda sub-district also of mixed responsibility between Mosul and Dohuk. It is clear the assistance will have to continue for the years to come.

- 2- *Kirkuk Province*: There is one fixed team in the IDP's camp of Baba Gurgur. There are two teams in Haweija district. There is one team allocated to DoH Kirkuk, working in Kirkuk district. The Kirkuk team is the oldest team operating since it is active from June 2003. Haweija, grossly 20% of the population of Kirkuk governorate, is run health-wise by a semi autonomous DoH, distinct from the DoH Kirkuk. It appears to have been underprivileged in the reconstruction effort of the post war period. The Tall Ali water project was assessed by us in summer 2003 was completed (SIDA funding) in January 2007.

IDPs continue to be a burden for the Kirkuk Governorate, many are still squatting in the Kirkuk stadium, and many are spread in the rural communities of Leylan (Kurds) and Haweija (Arabs). Over the last several months many Arab families have displaced themselves from Baquba and Baghdad to Haweija district. (Both Sunnis and Shiites).

Cost-effect analysis

Precise costs expenditures for the 9 months period August 2006 - April 2007 have been analyzed. They have been adjusted for reference to 5 (five) mobile teams, each one with rented car, each one with one doctor plus two medical assistants. Data are adjusted in term of cost per month/per team, or in term of cost per patient/per year. Corrections were made for a sixth team operative only six months, and for the three teams terminated in September (in August there were 9 teams operative, in October there were six teams operative, in February only five were left). **Therefore underwritten costs are only average cost.**

The total expenditure in the 9 months was of **98516 \$**. This refer only to cost of transport (rented car, including driver, gasoline, oil, maintenance), incentives (salaries) and drugs (acquired on the local market through licensed pharmacies, including transport and packing). The beneficiaries -patients seen- in the same time were **38,978 patients**. **Adjusting for one year, the cost of the present program (August 2006 to April 2007) would be 3, 36 \$ per patient/per year.** This is to be compared with the previous cost

effect analysis of 14 months period (June 2005 - July 2006) which was of \$1.56 per patient/per year.

The voice salary (incentives): **the incentives to the teams' members have been increased by an amount of \$ 25 each from February 1st 2007. Consequently the voice salary it is presently \$ 425 per team/per month, (however the cost per month was 350 before February 2007). Presently incentives are \$175 to the doctor and \$125 to each medical assistant (each team composed of one doctor and two medical assistants; incentive-\$50- for a cleaner to Babagur health post should be added to the total cost of this voice), and is added to the regular pay the medicals receive from the Ministry of Health. These incentives are standard and were agreed upon years ago with the local health authorities. All the medicals are in fact employed by the Iraqi Ministry of Health. In the present analysis the cost of this item was of 48.805 \$ for the 9 months periods. Adjusted for a per month basis this corresponds to \$ **453 per month/per team. There is a \$28 increase** from the previous cost analysis (June 2005 - July 2006).**

The voice transport is of **28.261 \$** for the 9 months period. This is the cost of renting (presently) five four-wheel drive vehicles (number of transport vehicles were nine before September 2006, and were six before February 2007), each one with his driver, cost including fuel, engine oil, and maintenance (all to be paid by the car owner). Cars are rented on the private markets after evaluation by our transport supervisor. The average cost was **of 325 \$ per month/per car**. The average cost as for the month of September 2006 was 419 \$. The car price presently varies from 250 \$ to 550 \$ per month. The present average is 406 \$ per month per car.

This cost could be compare with the previous cost effect analysis (June 2005 - July 2006), on the average only. However no changes have been made in the administration & managing renting cars.

The voice drugs have remained remarkably unchanged over the last three years. The total expenditure for drugs was of 21.450 \$ per the 9 months period. This amounts to **\$0.66 for each patient/per year. The cost per patient per year of the previous cost analysis (June 2005 - July 2006) was of 0.48 \$**. Opposite to that the average cost per month per team appeared increased from \$298 (2006) to \$360(2007). Part of the increase is due to increase number of patients seen by each team, part is due to increase in the price of drugs (there is generally speaking inflation in Kurdistan where the drugs are bought).

Cost of maintaining the teams

The average cost of one team for one month (Total cost/9/5) is now **of \$1393. However this is an historical average only**. The last monthly average cost of cars rented is 406 \$, while the incentives are \$425 per team per month. The average drugs cost is 360 \$ per month per team. Consequently the average cost is higher than the last month (April) cost, which is 1,191 US \$. These variations are due to the repeated in time decrease in team's total number, which makes averaging difficult, as well as the fact we buy drugs every four months.

But we have now to see the essential part of the cost benefit analysis, i.e. the number of patients seen by the whole program. In 9 months we have seen **38,978** patients. **This** corresponds to 721 patients per team per month on the average. However again this is an historical average. During the month of April 2007 the teams have seen on the average 795 patients.

In the previous cost analysis (June 2005 - July 2006), we were seeing 529 patients per team per month on the average. So the number of patients seen by each teams has on the average substantially increased. This is what we wanted to achieve with the reduction in teams number.

In the previous cost analysis we said “.....still mobile teams should see at least 750 patients per month, averaging from 30 to 40 or more patients per day. Any lesser number makes a team work redundant and questionable”. We feel we have achieved our goal over last year period

Number of patients seen by each health team in 9 months

Team 3 (Shekhan district)	4322 pts total	480 pts/per month	Terminated February 2007
Team 4 (Kirkuk district)	8092 pts total	900 pts/per month	
Team 6 (Leylan district)	725 pts total	363 pts/per month	Terminated Sept 2006
Team 11 (Baba Gurgur)	10154 pts total	1128 pts/per month	
Team 12 (Hawija district)	646 pts total	323 pts/per month	Terminated Sept 2006
Team 13 (Hawija district)	700 pts total	350 pts/per month	Terminated Sept 2006
Team 14 (Hawija district)	2893 pts total	321 pts/per month	
Team 15 (Hawija district)	3488 pts total	388 pts/per month	
Team 16 (Fayda)	7968 pts total	885 pts/per month	

Mortality and Morbidity Data

Although mortality data is important as an indicator to the health status of population, but our teams do not collect mortality data. This has to be done by the local health authorities in the corresponding health districts where the teams are operative. However it is difficult to get mortality data in the non-fixed team for various reasons.

There is no evidence of relevant epidemics. Most of the conditions are mild and non-life threatening. There is certainly seasonal variation in most of the regions with acute respiratory infections, common cold and sore throat being most common in winter season and early spring; and watery and other infective diarrheal diseases most common in

summer. This is relevant in the morbidity summary. Musculoskeletal pain and backache are the fourth most common disease entity diagnosed by the doctors of the mobile teams.

Typhoid fever and brucellosis are endemic in some regions of Iraq due to lack of clean water, inadequate sanitation system, lack of health awareness, and improper handling of dairy products. Diagnosis of these illnesses are usually made on clinical grounds and serological tests made by patients elsewhere in health districts.

Six cases of cutaneous leishmaniasis have been reported in April 2007 as is shown in the morbidity summary. The diagnosis of measles, suspected meningitis and visceral leishmaniasis are nil during the nine months period, and malaria and pediculosis being the least diagnostic entities made by the doctors, each one case per nine months.

Drug Consumption

Again analgesics in form of tablets are the most widely prescribed medicine by the teams, followed by antibiotics in various forms and strengths. So there are no changes in the way medicines are prescribed and consumed in comparison with the previous cost-effect analyses. Analysis of drug consumption data is still going on a monthly basis. As noted the increase in the cost/per patients is due to inflation (increase of the cost of drugs on the local market in Erbil where the procurement is done) rather than increase prescription. Amount of drugs prescribed is unchanged over the last four years.

Data concerning drug consumption is shown in the drug consumption record.

Final Conclusion

As it is clear from the analysis above, the average number of patients seen (the beneficiaries) has increased during the last the last nine months. The fixed teams of Baba Gurgur and Fayda IDP camps (former military bases) have seen the largest number of patients (10154 and 7968 patients respectively)

Despite decreased the number of teams; the average number of patients seen during the last nine months is increased in comparison to the previous fourteen months cost-effect analysis. This reflects a better use of the teams rather than an increased demand.

Lower number of patients in Hawija continues to be due mainly to security issue.

***Drug Consumption Record for
Qandil Mobile Teams
(August 2006 - April 2007)***

No	Name of drug	2006					2007				Total
		Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
1	Paracetamol tablet	943	912,5	690,5	854	752	891,5	601	471	661	6776,5
2	Amoxicillin suspension 500mg	405	371	244	326	210	335	253	273	332	2749
3	Distilled Water Ampoule	0	413	282	509	170	269	147	354	488	2632
4	Procaine Pencillin 400000I.U.	413	488	258	412	210	168	269	148	150	2516
5	Ampicillin capsule 500mg	350	345	218	279	232	280	293	265	218	2480
6	Brufen tablet 200mg	390	270	350	259	156	103	215	166	307	2216
7	Brufen tablet 400mg	390	385	217	327	180	238	116	188	145	2186
8	Gentamycin ampoule 80 mg	278	302	295	227	119	214	138	244	228	2045
9	Amoxicillin suspension 125mg	274	247	188	254	193	205	266	207	159	1993
10	Amoxicillin suspension 250mg	280	233	176	242	179	247	177	197	187	1918
11	Amoxicillin suspension 250mg	280	233	176	242	179	247	177	197	187	1918
12	Multivitamin tablet	356	286,5	255,5	284	164,5	110,5	138	106	162	1863
13	Expectorant syrup	164	227	173	193	198	297	185	188	208	1833
14	Keflex (Cephalexin) capsule 250mg	190	215	145	236	204	228	124	270	212	1824
15	Diclofenac tablet 25mg	289	239	133	125	177	193	189	135	238	1718
16	Keflex(Cephalexin) suspension 125mg	264	189	159	150	116	258	226	125	213	1700
17	Allermine(Diphenhydramine) tablet	250	252,5	267,5	196	129	192	90	109	159,5	1645,5
18	B-complex tablet	227	321	208	192	133	122	111	106	200	1620
19	Aspirin tablet 100mg	0	228	178	230	246	219	227	128	161	1617
20	Erythromycin suspension 125mg	225	246	171	140	119	255	121	150	183	1610
21	Paracetamol syrup	171	251	183	204	144	207	66	239	135	1600
22	Ciproflaxacin.500mg	237	224	175	194	143	204	157	142	123	1599
23	Hyocine tablet 10mg	198	204	138	148,5	105,5	239,5	207	242,5	106,5	1589,5
24	Co-trimoxazole suspension 124mg/5ml	243	236	173	160	166	118	152	138	182	1568
25	Procaine Pencillin 800000I.U.	177	215	210	230	171	160	156	130	114	1563
26	Betamethasone ointment 0.5%	213	201	140	161	140	160	167	203	169	1554
27	Oral Rehydration Solution	292	299	252	199	69	114	44	115	145	1529
28	Co-trimoxazole tablets 480mg	196	200	119	212	174	98	118	133	225	1475
29	Metronidazol tablet 250mg	292	211	186	176	88	105	143	138	96	1435
30	Erythromycin capsule 250mg	125	163	114	109	138	223	182	174	169	1397
31	Anti-acid tablet	194,5	258,5	187	181,5	80,5	129,5	106	86	172	1395,5
32	Coldin Syrup	141	135	123	160	197	163	166	160	145	1390
33	Flu out tablet	227	69	0	0	10	354,5	283	207	236	1386,5
34	B-complex ampoule	237	205	143	135	215	151	94	62	115	1357
35	Diclofenac ampoule 75mg	181	208	117	166	176	163	69	82	166	1328
36	Ferofolic capsule 200/5mg	191	218	113	168	113	208	109	63	115	1298
37	Hydrocortisone vial 100 mg	177	191	158	138	54	182	79	118	142	1239
38	Paracetamol drops	181	149	131	184	124	163	96	84	115	1227
39	Paracetamol suppository 120 mg	164	137	119	159	116	140	51	159	104	1149
40	Vitamin C tablet 250mg	219	186	176	119	103,5	47,5	113	25	81	1070
41	Metronidazole suspension 335mg	162	143	170	99	56	77	70	117	141	1035

42	Imferon ampoule	149	202,5	142	112	58	62	51	104	105	985,5
43	Tetracycline capsule 250mg	97	104	66	107	74	68	232	93	139	980
44	B-complex syrup	154	143	102	157	34	65	93	85	120	953
45	Antispasmin drop	0	158	145	147	70	127	74	75	114	910
46	Hydrocortisone skin ointment 1%	163	174	107	131	92	92	32	66	47	904
47	Mycostatin skin cream	123	159	105	154	83	70	46	111	40	891
48	Butadine(Salbutamol) tablet 4mg	127	93	105	243	47	52	84	48,5	73,5	873
49	Loperamide tablet 2mg	189	111	124,5	118	66,5	74	48	52	78	861
50	Clotrimazole skin cream 1%	165	142	86	119	86	35	18	89	64	804
51	Allermine(Diphenhydramine) ampoule	104	139	81	79	134	22	87	49	84	779
52	Chloramphenicol eye drop 1%	120	111	92	121	40	38	82	75	76	755
53	Tetracycline eye ointment 1%	114	125	70	106	79	104	48	41	55	742
54	Hyocine ampoule 20mg	150	101	97	88	52	69	29	19	114	719
55	Metoclopramide tablet 10mg	91	123	96	84	49,5	46,5	35	46	95	666
56	Fersolin syrup	115	119	71	110	30	56	56	35	43	635
57	Fusidic acid cream 1%	67	80	44	39	77	52	29	130	98	616
58	Doxydar(Doxycycline) capsule 200mg	145	126	68	54	60	36	53	11	51	604
59	Butadine(Salbutamol) syrup	86	72	97	108	42	68	50	40	40	603
60	Mebendazole tablet 100 mg	113	94	63	44	30	64	49	44	83	584
61	Folic acid tablet 5mg	13	7	14	82	64	76	66	167	89	578
62	Clotrimazole vaginal tablet	44	55	44	54	31	93	50	113	68	552
63	B6 ampoule	111	119	0	82	57	52	32	23	75	551
64	Cimetidine(Tagamet) tablet 200mg	96	62	32	0	55	89	47	86	62	529
65	Clinidium C tablet 2.5+5mg	183	117	33	11	0	0	59	87	29	519
66	Diclofenac suppository 100mg	101	83	37	86	61	76	15	10	48	517
67	Ranitidine tablet 150mg	162	79	0	0	0	55	66	27	107	496
68	Daonil(Glibenclamide) tablet 5mg	78	71	44	4	4	25	53	44	132	455
69	Flamazine cream 1%	58	67	46	48	42	31	41	40	67	440
70	Aminophyllin tablet 200mg	74	100	56	74	30	25	28	24	27	438
71	Tetracycline skin cream 1%	127	68	46	37	0	16	10	49	84	437
72	Naphazoline eye drop	94	80	46	54	28	69	12	12	28	423
73	Chloramphenicol eye ointment 1%	113	90	37	22	9	24	15	52	44	406
74	Metoclopramide ampoule 10mg	72	93	45	72	20	0	19	23	52	396
75	Cascara tablet	65	58	48	58	41	32	12	24	31	369
76	Mebendazole suspension 325mg/5ml	83	63	27	43	26	23	18	39	43	365
77	Tenormin tablet 100mg	129	53	18	6	0	0	85	30	3	324
78	PTA gurgle	49	62	30	38	18	15	21	41	21	295
79	Lasix(Furosemide) 20mg	60	33	27	24	13	4	11	31	10	213
80	Sodium Bicarbonate Powder	14	9	33	34	13	25	23	35	26	212
81	Sultrin vaginal cream	11	61	25	14	6	3	2	33	28	183
82	Mycostatin vaginal cream	47	55	43	20	6	9	0	0	0	180
83	Myogisik tablet	0	0	0	0	0	20	57	57	42	176
84	Diazepam tablet 5mg	77	38	24	0	0	10	10	0	12	171
85	B12 ampoul	0	0	0	0	0	36	37	15	34	122
86	Tosulet syrup	0	0	0	0	0	20	30	30	25	105
87	Multivitamin syrup	0	0	0	0	0	12	34	21	32	99
88	Diazepam ampoule 10mg	35	43	3	0	0	0	2	4	5	92
89	Finistil drop	0	0	0	0	0	0	0	20	70	90
90	Metronidazole vaginal tablet	35	31	2	0	0	0	10	1	0	79
91	Imferon syrup	0	0	56	0	12	0	10	0	0	78

Monthly Morbidity Summary

(August 2006 - April 2007)

The table below shows the morbidity form from August 2006 to April 2007

Table No. (2)

ICD-9	Disease	2006					2007				Total
		Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
	Acute Respiratory Infection	1322	882	587	749	802	1115	1081	843	906	8287
	Sore Throat	0	452	373	727	642	620	564	323	411	4112
J00	Common cold	386	471	376	632	423	612	239	133	151	3423
F45.4	Musculo-skeletal pain & Backache	431	431	312	372	301	343	366	310	388	3254
A54	Urinary Tract Infection	487	477	327	387	285	331	336	298	314	3242
	Watery Diarrhea	511	476	455	430	163	215	117	117	177	2661
D50	Aneamia	325	312	206	251	133	103	216	166	228	1940
K29	Gastritis	238	270	164	169	118	129	230	185	212	1715
L50	Allergic disorders	203	224	150	115	99	130	160	146	168	1395
A69	Dental Pain & Stomatitis	214	175	118	100	68	87	111	81	94	1048
A60	Other Skin Infections	186	176	99	166	67	52	45	82	85	958
H10	Conjunctivitis	161	122	84	124	61	56	99	116	129	952
D60	Chronic Diseases	166	138	93	52	42	64	134	103	101	893
630-677	Gyn.& Obestetric Disorders	98	103	95	84	20	74	81	107	106	768
B35-B49	Fungal Infection	90	92	51	79	45	27	62	84	82	612
A01	Fever (unknown)	123	139	65	86	39	23	27	40	44	586
	Ear infection	0	71	38	40	45	77	119	66	85	541
E990-E999	Worm Infestation	76	76	29	33	42	45	55	49	80	485
X49	Food Poisoning	32	25	30	29	35	2	26	22	49	250
J01	Sinusitis	33	23	28	15	26	26	26	46	21	244
949	Burn	25	31	33	31	19	11	39	16	28	233
800-999	Minor Injuries	50	37	15	19	22	15	12	10	24	204
A01	Susp. Typhoid	76	63	18	27	3	0	0	4	2	193

B15	Susp. Hepatitis/Jaundice	7	12	123	9	0	0	4	36	0	191
K50-K52	Bloody Diarrhea	52	24	20	8	6	9	7	9	19	154
K58	IBS	38	5	25	5	12	14	9	16	20	144
J21	Brucellosis	31	36	15	7	2	4	0	6	16	117
K59.0	Constipation	2	11	31	7	4	18	1	24	18	116
X29	Animal Bite	12	19	7	2	1	0	0	0	0	41
A60	Herpes Infection	0	11	12	0	0	16	2	0	0	41
B01	Chickenpox	2	7	1	0	0	3	0	15	8	36
Y36	War Injuries	2	19	5	0	0	0	0	4	0	30
B26	Mumps	0	0	0	0	12	0	0	5	0	17
A40	Susp. Pneumonia	0	3	1	2	0	5	0	1	4	16
A00	Susp.Cholera	8	5	0	2	0	0	0	0	0	15
X20-X29	Scorpion Stings	4	3	3	0	0	1	0	0	2	13
X29	Snake bite	2	0	0	0	0	3	0	8	0	13
B86	Scabies	1	7	3	0	0	1	0	0	0	12
	Prescription	0	5	0	3	0	0	0	0	0	8
B55	Cutaneous Leishmaniasis	0	0	0	0	0	0	0	0	6	6
13	Convulsion	0	0	0	0	0	5	0	0	0	5
F54	Psychological Disorders	2	3	0	0	0	0	0	0	0	5
B85	Pediculosis	0	1	0	0	0	0	0	0	0	1
B50	Susp. Malaria	0	0	0	0	0	1	0	0	0	1
B05	Measles	0	0	0	0	0	0	0	0	0	0
A20	Susp. Meningitis	0	0	0	0	0	0	0	0	0	0
B55.0	Visceral Leishmaniasis	0	0	0	0	0	0	0	0	0	0
TOTAL		5396	5437	3992	4762	3537	4237	4168	3471	3978	38978