

Analysis of Leprosy Control Programme in Pakistan

Pages with reference to book, From 160 To 185

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Question A:

Is Leprosy a disease present in the country because of autochthonous transmission or imported from abroad or both?

Answer A:

Leprosy is an indigenous as well as a migration problem in Pakistan.

Indigenous Leprosy is found in all Provinces of Pakistan, however in strictly focal pattern, areas of high prevalence being interspersed with areas where Leprosy is unknown, or at best scattered cases are found. District Prevalence ranges from 2% to 0.003%; in certain smaller units (Union-Councils) reaching as high as 12%, others being entirely free.

Leprosy imported by migration:

Migration is playing a major part in the epidemiological pattern of Leprosy. Affected population groups have migrated from all neighbouring countries: Iran, Afghanistan, India, the latter one contributing the largest portion of migrated patients, well 1/3 of the total Leprosy problem in Pakistan. Indian refugees have settled mainly in urban areas. Of late Bihari refugees from Bangla Desh have brought a new wave of Leprosy into Pakistan; often into hitherto unaffected areas. Surveys of Bihari Camps gave a constant prevalence of +/- 17 %, against an average of +/- 1.5% in Leprosy affected areas of Pakistan. Each Province has its own peculiar migration problems, caused by permanent migration as well as seasonal migration:

In Baluchistan:

38 cases (9%) of the total case load is constituted by patients not originating from Baluchistan, 2% hailing from other Provinces of Pakistan:

NWFP, Gilgit, Punjab, 7 % from neighbouring countries:

Indian (12 cases), Afghans (Hazara Jat
-11 cases and Iran 6 cases)

In Azad Kaslunir,

only 1 patient is originating from Pakistan, while
87 are immigrants from occupied Kashmir total
88 of 1532 patients (6%) are not Azad Kashmiri
origin.

In Northern Area,

Migration does not play any significant role, apart from occasional migrations from Afghanistan (4 patients = 2%).

In NWFP,

Most of the immigrants are from India (especially Bihari Refugees), as well as from Afghanistan. Precise figures have not been supplied.

In Punjab:

Indigenous Leprosy is only found in Dera Ghazi Khan, an underdeveloped district adjacent to Baluchistan. The remaining patients are either originating from India, or from Leprosy affected areas of the country. Detailed statistics are not available, except for 281 patients registered at the Leprosy Cell at Mayo .Hospital Lahore. The composition of the patients mirrors the Leprosy situation in Pakistan: 158(56%) Patients are originating from India (having migrated to Pakistan either directly, or via Bangla Desh)

1 from Afghanistan

1 from Burma

160 (57%) originating from outside of Pakistan

24 patients from NWFP

13 from Azad Kashmir

4 from Northern Area

2 from Baluchistan

43(15%) from Leprosy affected Provinces of Pakistan while only 78 patients (28%) are originating from Punjab.

Question B:

Can you give the number of localities (either villages, urban centres or provinces) from where cases are originating and in particular the number of localities of origin of registered cases.

Answer B

1. Known Prevalence

i) Distribution of Leprosy in Pakistan:

The Leprosy affected areas of Pakistan are by now well known; with the exception of certain tribal areas in NWFP (Mohammand, Khyber, Waziristan) and Skardu District of Northern Area, the Leprosy team has been visiting all parts of the country, even though detailed surveys have not been carried out everywhere. Of the 4 Provinces and 2 special areas of Pakistan. Azad Kashmir, Northern Area, NWFP and Baluchistan are leprosy endemic, while Punjab, the province with the largest population and highest standard of living, is practically free, Sind, having numerically the largest Leprosy problem, has its cases nearly exclusively imported from either abroad (mainly India) or from Leprosy affected areas of the country, and has a nearly exclusively urban problem.

Highly infected areas in the different Provinces are:-

Azad Kashmir: Distts. Muzaffarabad and

Poonch

NWFP: Malakand Division

Northern Area: Diarner District

Punjab: Dera Ghazi Khan

Sind: Dadu District (Tehsil

Mahal Kohistan), Karachi

Baluchistan: Pasni and Gwadar Distts in Makran Division

Leprosy in Pakistan occurs in focal pattern,

affected population groups being either

- population of a certain area, or

- a certain affected tribe, even if this tribe is living in different parts of the Province

- in an affected tribe, Leprosy again is concentrated in certain joint families.

Areas of low living standard are more frequently affected than better developed regions (Table I).

Table I

Prevalence Rates Province-wise

a) Baluchistan: 31.12.78			
Name	Population	Patients	Prevalence
Gwadar District	50,955	75	1.47 ‰
Gwadar	30,595	51	1.67 ‰
Jevani	20,360	24	1.18 ‰
Pasni District	36,711	58	1.58 ‰
Pasni	26,820	40	1.49 ‰
Ormara	9,891	18	1.82 ‰
Panjgur District	55,978	28	0.50 ‰
Turbat District	1,68,167	233	1.39 ‰
Turbat	58,915	115	1.95 ‰
Tump	26,951	52	1.93 ‰
Mand	13,160	16	1.22 ‰
Hoshab	28,447	8	0.28 ‰
Buleda	22,085	29	1.31 ‰
Dasht	18,609	13	0.70 ‰
Bela District	84,735	12	0.14 ‰
Bela	32,705	7	0.21 ‰
Uthal	19,146	1	0.05 ‰
Hub Chowki	17,495	2	0.11 ‰
Duraji	15,389	2	0.13 ‰
Pishin District	1,87,616	26	0.14 ‰
Pishin Gulistan	1,85,113	25	0.14 ‰
Harnai	2,503	1	0.40 ‰
Lorelai District	1,26,002	31	0.25 ‰
Moosakhel	38,547	18	0.47 ‰
Ducki	42,751	7	0.16 ‰
Barkan	44,704	6	0.13 ‰
Khuzdar District	1,76,186	74	0.42 ‰

b) Gilgit: 31.12.79

Ghizr District	55,398	54	1 ‰
Tehsil Gupis	14,251	25	1.8 ‰
Tehsil Singul	16,937	6	0.4 ‰
Tehsil Yaseen	15,549	6	0.4 ‰
Tehsil Chattorkand	8,661	17	2 ‰
Diamer District	89,921	155	1.7 ‰
Tehsil Astore	35,883	45	1.3 ‰
Tehsil Tangir	10,870	40	3.7 ‰
Tehsil Chilas	29,146	51	1.7 ‰
Tehsil Gumari	14,075	19	1.3 ‰
Gilgit District	51,083	18	0.4 ‰
Gilgit Urban	17,936	15	0.8 ‰
Gilgit Rural	33,147	3	0.1 ‰
Hunza	26,282	2	0.1 ‰
Nagar	25,639	2	0.1 ‰
Skardu	89,859	9	0.1 ‰
Ghanche	77,806	1	0.1 ‰

c) Azad Kashmir: 31.12.78

	Population	Patients	Prevalence
Muzaffarbad	2,56,195	383	1.5 ‰
Athmugam	60,000	164	2.73 ‰
Hattian	72,000	130	1.8 ‰
Muzaffarabad District	3,88,195	977	1.74 ‰
Rawalakot	1,77,498	150	0.8 ‰
Bagh	1,71,000	142	0.8
Pallandri	1,14,107	14	0.1
Kahota	78,593	268	4.7 ‰
Poonch District	5,41,196	674	1.2 ‰
Mirpur	2,31,096	30	0.1
Bhimber	1,49,470	15	0.1
Dodyll		1	
Mirpur District	3,80,566	46	0.1 ‰
Kotli	2,02,377	35	0.2 ‰
Nakyal	44,180	22	0.5 ‰
Sensa	44,624	10	0.2 ‰

d) Prevalence Rates of NWFP: 31-12-77

Complete figures are not available for this Province, as existing informations have not been reported/compiled systematically as yet.

	Population	Patients	Prevalence
i) District Dir: (31.12.77)	1,82,518	39	0.21 ‰
Barawal Banda	22,226	21	0.94 ‰
Kohistan	22,580	32	1.42 ‰
Warri	69,336	53	0.76 ‰
Timurgara	36,700	20	0.54 ‰
Lal Qila – Munda	22,952	12	0.52 ‰
Barwa (31.12.79)	69,504	70	1.01 ‰
Dir District	4,25,096	247	0.58 ‰
ii) Bajor: Tehsil (31.12.78)			
Mamund	12,358	78	6.3 ‰
Salarzo	57,737	19	0.3 ‰
Khar	24,048	22	0.9 ‰
Uthmankhel	1,59,907	3	0.02 ‰
Bajor Agency	2,64,050	122	0.5 ‰
iii) Chitral: (31.12.77)			
Lutkhoh	19,135	18	1 ‰
Drosh	29,309	18	0.7 ‰
Chitral	39,170	28	0.7 ‰
Mastuj	27,540	12	0.5 ‰
Torkoh	14,422	1	0.01 ‰
Mulkoh	29,654	3	0.01 ‰
Chitral	1,59,230	80	0.50 ‰
iv) Kohistan: (31.12.79)			
Bar Jalkot	34,403	7	0.2 ‰
Khuz Jalkot	15,392	29	1 ‰

	Harban	30,421	1	0.03 ‰
	Karang	5,409	23	4.3 ‰
	Jachoui	6,130	43	7 ‰
	Sio	4,420	53	12 ‰
	Dasso-Tehsil	96,175	143	1.5 ‰
v)	Shirani: (31.12.79)			
	Hassan Khel		11	
	Obakhel		6	
	Shirani Tehsil		17	
vi)	Mardan: (31.12.78)			
	Swabi	3,10,002	22	0.7 ‰
	Mardan	7,08,046	54	0.08 ‰
	Charsadda	2,88,330	6	0.02 ‰
	Turbat District	13,06,378	82	0.06 ‰
vii)	Swat (31.12.78)	9,35,444	1720	1.84 ‰
viii)	Khyber Agency (31.12.77) (never surveyed)	3,78,032	47	0.1 ‰
ix)	Kohat (31.12.77) (some notification done, never systematically surveyed)	5,81,390	22	0.04 ‰
x)	Peshawar (31.12.77)	17,30,923	502	0.3 ‰
xi)	Kurram Agency (31.12.77) (limited contact surveys done)	2,79,998	23	0.1 ‰
xii)	Malakand Agency (31.12.77)	3,82,922	9	0.02 ‰
(xiii)	Malakand Agency (31.12.77)	4,13,827	6	0.02 ‰
xiv)	Abbottabad (31.12.78)		48	
xv)	Mansohra (31.12.78)		742	

xvi)	DIK (31.12.79)	3,82,786	24	0.06 %
xvii	Bannu (31.12.77)	4,28,061	0	
xviii)	Waziristan (31.12.77) (South & North)	39,49,124	0	

Known Prevalence Rate of Sind-31.12.1979

	Name of the Areas	Total Population	Patients Known	Patients/1000	
1.	Hyderabad	4,22,066	496	1.18	
	Kotri	19,628	33	1.69	
	Tando Ahmed	15,962	4	0.25	
	Tando Mohammed Khan	3,431	7	2.04	
	Tando Jam	8,214	4	0.49	
	Tando Bago	4,230	1	0.24	
	Badin (Telhar)	5,352	7	1.31	
	Total District Hyderabad	4,78,883	553	1.16	
	2.	Mirpurkhas	35,500	125	3.53
Jamsabad		1,500	2	1.34	
Digri		2,500	5	2.0	
Somaro		17,000	2	1.18	
Umer Kot		17,500	8	0.46	
Sangher (Khadro)		3,508	15	4.20	
Shadad Pur		1,91,908	13	0.07	
Khipro		3,210	6	1.87	
Tando Adam		34,342	9	0.27	
Tando Allah Yar		17,994	12	0.67	
Total District Mirpurkhas		3,24,962	197	0.61	
3.		Tatta District (covered by MALC)	6,95,861	23	0.03

4.	Sukkur	1,06,926	56	0.53
	Rohri	19,964	6	0.3
	Jacobabad	49,278	24	0.49
	Kandh Kot	1,07,160	55	0.5
	Nawabshah	45,651	25	0.55
	Khairpur	48,299	12	0.25
	Total District Sukkur	3,77,278	178	0.47
5.	Larkana	71,893	50	0.7
	Dokri	4,539	5	1.11
	Kamber	1,39,327	17	0.13
	Nasirabad	7,766	8	1.03
	Shahdadpur	24,323	6	0.25
	Thanabullah Khan (Rani Kot)	5,000	35	7.0
	Johi (Tore)	3,000	4	1.34
	Total District Larkana	2,55,848	125	4.12
	Affected areas of Sind	21,32,832	1076	1.98 ‰

Answer C:

	Registered	Under Treatment-31.12.78	Prevalence
Azad Kashmir	1472	1068	0.94 ^o /oo
Northern Area	222	169	0.58 ^o /oo
Baluchistan	619	504	0.39 ^o /oo
Prelim. NWFP *	4147	3616	
Sind Rural (2)	1152	864	0.7 ^o /oo
Karachi + NPR *	11548	8622	1.65 ^o /oo
Prelim. Punjab *	281+(+/-600)	254+(+/-600)	
Total Pakistan	20041	15697	0.31 ^v /oo

Question E: The number of newly registered and annually reported cases from 1970 - 1978

Answer E:

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Azad Kashmir	90	144	72	126	88	151	102	141	117
Baluchistan	0	174	121	45	75	75	62	30	37
Northern Area	9	14	16	19	19	4	43	13	14
NWFP	298	272	282	301	228	164	169	147	114
Punjab	0	0	77	48	42	35	36	23	20
Sind Rural	60	117	86	72	97	139	142	99	99
MPR	255	179	154	220	133	124	133	131	100
Karachi	734	817	753	720	880	734	727	737	771
Total	1446	1717	1561	1551	1562	1426	1414	1321	1272

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Azad Kashmir	81	131	65	113	65	136	90	128	114
Northern Area	7	10	14	16	8	4	38	10	13
Baluchistan	0	156	104	42	64	66	55	24	32
NWFP	266	255	259	273	201	154	152	134	105
Sind Rural	53	97	76	58	89	108	118	82	86
Karachi	646	694	617	634	748	670	618	641	678
MPR	227	161	137	200	121	113	121	119	91
Punjab	0	0	75	44	39	33	34	21	20
Total	1280	1504	1347	1380	1335	1284	1226	1159	1139

Children

Azad Kashmir	9	11	7	13	23	16	10	13	3
Northern Area	2	4	2	3	1	0	4	2	1
Baluchistan	0	18	17	3	11	9	7	6	5
NWFP	32	14	23	28	27	21	5	22	14
Sind Rural	7	20	10	14	8	31	24	17	13
MPR	28	18	15	20	12	11	12	12	9
Karachi	88	123	136	86	132	74	105	96	93
Punjab	0	0	2	4	3	2	2	2	0
Total	166	208	212	171	217	164	169	170	138

11. Estimated Prevalences

Estimates made are guess estimates:

only recently, efforts have been made to collect some informations on which prevalence rates can be based.

In non-surveyed areas, the maximum estimate (4 times the known number of patients) seems applicable, however numbers involved in these areas are small, as mostly far off inaccessible small population groups have SO far not been surveyed.

In areas where Leprosy control has been in operation for various periods, 1/3 of the cases known has been estimated to still be undetected -an estimate of not much more than guess. value, as it is based on recent investigations involving only a number of patients.

The original WHO estimate (1956) of 80000 is too high for the following reasons:

- infectors behind known cases, or infected persons behind index cases, are frequently not in the country (but rather to be found in India or Afghanistan)
- affected population groups are belonging to provinces with small number of population; Punjab, the most populous Province, is practically free of Leprosy, therefore informations gathered in 3 of the Provinces, cannot be extrapolated for the entire population of Pakistan An estimate of 30-40000 therefore seems to more realistic.

In Pakistan, patients of 15 years of age are still counted as children, however as year of birth is generally not known and only estimated, this error will only be part of the general lack of reliability in age statistics.

Question G:

Are patients cared for by special institutions or communities? Please give a description of such institutions.

a) How many of the registered cases are now institutionalized? Number. (%) of all registered cases.

4 old styled Leprosaria have been in existence in Pakistan, 3 of which have however got active

treatment units constructed during the past 10 years : 2 in Punjab, 1 in NWFP, 1 in Sind ; 1 Unit in Punjab is still serving mainly as shelter for Crippled Patients.

Faisalabad:

Run by the Red Crescent Society with the help of Catholic Church . Permanent Residence for +/- 35 patients and families. Outdoor 137 registration : mostly Bthari Refugees: Patients are receiving subsidy; breeding of fowl is a self invented rehabilitation.

Rawalpindi:

Old styled leprosarium, accommodating +/-50 permanent, crippled indoor patients. Of late, a modern treatment tract with +/- 4Q beds has been added, and the facilities offered to general Skin Patients as well. Managed by Aid to Leprosy Patients - a German Voluntary Agency - in co-operation with a protestant group.

Indoor facilities, orthopaedic shoe workshop, Physiotherapy, OPD with +/- 1000 patients, mostly originating from leprosy affected Northern Provinces.

Detailed information not available.

Balakot:

Government run, and aided by Aid to Leprosy Patients, Old style leprosarium, to which a new treatment tract and indoor admission facilities were added Presently, new colony is being constructed to accommodate the permanent inmates and their families (1- 50 Patients) OPD: +/- 750

Detailed informations not available.

Manghopir:

Municipality-run, co-sponsored by private Agency (Aid to Leprosy Patients Germany) 200 bedded hospital with section for permanent disabled residents, wards for temporary indoor admissions, reconstructive surgery, orthopaedic shoe workshop, rehabffitation workshops.

2102 indoor admissions during the past 11 years, against 1708 new patients registered in the OPD.

Multiple registration not yet excluded.

Maskeen-e-Rahat:

Home for handicapped, accommodating 22 patients. Managed by Marie Adelaide Leprosy Centre, a diocesan (Roman Catholic) Institution. Self administered by the patients accommodated there.

Question of rehabilitation does not arise, as patients admitted there must be too handicapped to still be rehabilitated. Occupational therapy : Making of VIM Powder, growing of pan leaves, post-cards (for institutional use only).

b) What is the number and location of institutions caring for leprosy inpatients?

Number of Institutionalized patients:

Balakot +/- 50 Total Eegistered: +/- 20,041 Rawalpindi +/- 50 Total institution +/- 197

Faisalabad +/- 35 % institutionalised +/-0.98%.

Manghopir +/- 40

Maskeen-e-Rahat 22

Total-197

Exact figures have not been provided except by M.A.L.C. Karachi.

c) Describe services offered by such institutions such as clinical treatment, surgery, rehabilitation, etc.

Number of institutions caring for Leprosy Patients:

8 specialized institutions are existing in Pakistan

Sind: 3: K.M.C. Leprosy Hospital, Manghopir

Karachi

Marie Adelaide Leprosy Centre,

Karachi

Hyderabad Lions Leprosy Control Centre, Hyderabad

The first two Institutions serve as Base Hospitals for Baluchistan as well.

Punjab :2: One Leprosy Hospital (Privately run) at Rawalpindi

One Leprosarium at Faisalabad

(Lyalipur) Red Cross Society. In addition to this, one Leprosy Cell at the Dermatology Department of Mayo Hospital Lahore.

Azad Kashmir: Nil

Rawalpindi Leprosy Hospital or Marie Adelaide Leprosy Centre, Karachi are used as Base/Referral Hospital respectively.

Northern Area: -same as above.-

Indoor admissions are possible into the general wards of the Agency Hospital, Gilgit.

N.W.F.P. Base Hospital, Peshawar with 25 beds. Department of Mission Hospital, Peshawar, managed by Damien Foundation (Belgium).

The Government is planning to construct a Base Hospital in connection with the Khyber Medical College, to which the activities of the present Base Hospital will be shifted. Damien Foundation has offered to contribute towards the construction costs.

Leprosy Hospital at Balakot (situated in a highly infected area of Hazara Division) with +7- 40 beds.

d) Number of ambulatory treated or outpatients in the country, per cent of all registered cases.

Services Offered:

Indoor and outdoor treatment is offered in all the above institutions. Medical Officer(s) are attached to Marie Adelaide Leprosy Centre, Rawalpindi Leprosy Hospital and KMC Manghopir Leprosy Hospital the remaining institutions having consultant services of Medical Officers, not specialised in Leprosy.

Training Facilities:

For Junior Leprosy Technicians training facilities exist at Marie Adelaide Leprosy Centre, Karachi, and KMC Leprosy Hospital Karachi. Government recognized Course of 12 months duration.

For Senior Leprosy Technicians Marie Adelaide Leprosy Centre runs a Course of 4 months duration recognized by the Government. Field Assistants: (In-service training) at Base Hospital in Peshawar, and at the Marie Adelaide Leprosy Centre, Karachi. 3 months duration

Laboratory Assistants: In-service training at Marie Adelaide Leprosy Centre, 3 months duration.

Reconstructive Surgery:

Is being performed at the KMC Leprosy Hospital, Manghopir, Karachi and Marie Adelaide Leprosy Centre, Karachi.

Rehabilitation:

Workshops are existing at Manghopir and Rawalpindi (Shoe making) and at the Marie Adelaide Leprosy Centre (Orangi) Karachi.

Case Work:

It is done by Marie Adelaide Leprosy Centre, Karachi, and Darnien Foundation at Peshawar, assisting individual patients with either vocational training or interest free loans for small business.

The German Leprosy Relief Association's Rehabilitation Fund has been providing loans to individual cases, on recommendation of the Leprosy Technicians in all Provinces.

Question H:

- a) Can you classify the registered cases (inpatients and outpatients) according to the following:
- b) Are you using a different classification? if so, which?

Modified Ridley Classification for the convenience of the Leprosy Technicians:

While Junior Technicians are expected to only classify the main types

L B T I R Ne

R.= Resolving (treated or spontaneously resolved patients: Prim and sec resolving)

Ne= Neuritic (patients with nerve lesions only, no skin manifestations) considered to be of Tb immunity.

Senior Leprosy Technicians, then are adding the second letter to the original classification: LB, or 81.

c) Describe the methodologies used for diagnosis of leprosy, for classification and follow-up of cases.

Diagnosis;

- is based on any of the three cardinal symptoms:
- skin patch with impairment/loss of sensation
- skin smear positive for AFB (4 sites taken - only in NWFP 3 sites)
- enlarged nerve with either tenderness or corresponding sensory/motor impairment.

Patients exhibiting suspicious symptoms, are kept under observation:

- skin smear Is taken; in case of negativity
- patient is reexamined either 6 weeks to 3 months
- in larger units (Karachi) biopsies are taken and sent to Leprosy Research Institute in London.

Classification:

Is based on clinical appearance,

Bl, and

Response to treatment.

Follow-up is done by:

- personal visits, either by absentee team (urban control programmes) or
- during tour programmes (rural control programmes)
- in most provincial programmes, patients are visited at regular Intervals, and domiciliary treatment given.

d) Are B! (Bacterial Index) and MI (Morpholo. gical Index) and /or Ridley's SFG Index used, or does the service require simple information only on bacteriological positivity/negative?

Bacterial Index (grading 1 to 6) is used in all units, MI only in specialised institutions (Rawalpindi, Manghopir) recently also started in Peshawar.

e) Which of the following diagnostic tests is used and by whom (dermatologist, leprologist, medical assistant, other, etc.)?

Used by Planned for Not planned

Use by for use

Skin Smears

Nasal Smears pauxiliary

Skin Biopsy (doctor

Histamine testj

Sweating Test') Research

Lepromin Test) Institutions.

Question J:

a) What is the standard treatment applied to "lepromatous" and "borderline lepromatous" cases, and "indeterminate" cases?

Treatment:

Specific Treatment in the different types:

LL DDS 10 mg/kg bodyweight for life,

plus B 663 400 mg/week for 6

months

BL/BB initially as above, if no nerve lesions otherwise either B 663 700 mg/week if nerve lesions acute, or B 663 400 mg/week, and DDS gradually introduced (increase by 50 mg/week or 25 mg/week according to condition) in case of sub. acute neuritis.

Indeterminate: DDS 7 mg/kg body weight/ week (in full dose) until 3 years after inactivity

b) What is the usual treatment for erythema nodosum leprosum (ENL) reaction? (Give name of drug, dosage and frequency of administration)

ENL: Continue DDS if no serious complications are present (Iritis, neuritis /or ulcerations).

STOP DDS and give

B 663 in case of complications: 300 mg per day, tapering off by 100 mg per week until stabilising dose is reached.

Introduced DDS according to condition of patients, gradually, or in full dose.

Question K:

Are you prescribing prophylactic treatment to close family contacts? If yes, give name of dosage and frequency and duration of administration.

Answer K:

No.

Question L:

Are epidemiological surveys or special studies being conducted for the detection of early cases of leprosy particularly among children and contacts of lepromatous cases? Describe the epidemiological methodologies and, the screening techniques used for the early detection of infection. Describe methodology of surveillance of cases.

Answer L:

School Surveys are being conducted, though not very systematically. Information about total number of school children examined could not be collected due to shortage of time.

Contact Surveillance:

Stress is laid on contact surveys, which are conducted as "extended contact surveys". The joint family system leads to frequent contact of family members not residing in the same household.

For extended contact survey, the entire family of the oldest known leprosy case (alive or deceased) is listed:

father/mother

husband/wife

brothers/sisters and their children, and childrens' children, sons/daughters and their children, including three generations. Contacts listed are then followed up to their respective houses, and examined.

In addition to the advantage of a considerable number of population being thus screened, this method also brings the team into contact with villagers who by their family history are already leprosy conscious, and thus will therefore more easily notify new cases not yet known to the leprosy team.

Contact Surveillance is continued until 5 years after discharge/death of the patient, for contacts of tuberculoid cases, and 10 years for contacts of lepromatous cases.

Case Surveillance:

Patients are seen once weekly to once yearly, depending on the programme, with an average of once in 3 months in rural control program-flies, once a month in urban control program-mes.

Drugs are given for self-administration.

Question M:

Do you have facilities for routine bacteriological examinations (skin and nasal smears) and which facilities and /or equipment would be required to enable implementation of the techniques intended to be introduced in the Leprosy Control Programme.

Answer M:

Facilities for smear reading do exist in all control programmes: usually smears are taken in the field, and sent to a smear reading Centre. Increase in number of smear reading facilities would improve the quality of work. Provisions of more microscopes and of short term training of paramedical staff in smear reading would be required. Nasal smears are not taken.

Question N:

Do you have technical staff trained in the techniques described above and which training requirements do you have for building up the required know-how, taking into account existing laboratory facilities in the country, e.g. for the bacteriological diagnosis of tuberculosis.

Answer N:

Combination with existing laboratory facilities is not yet feasible in Pakistan, as these facilities are inadequate all over the country. Best experience has so far been made with training of matriculates in 3 months courses only, thus providing trained laboratory staff, capable of meeting field requirements, without creating the danger that they are absorbed into other laboratories.

Question O

Which aspects of the programme require research in the epidemiological field, in the clinical field, in the therapeutic field, in the operational field or in the social-economic rehabilitation field?

Answer:O

Research proposals attached: Point 2 and 4 seems to. be locally of special importance
(Appendix II)

Pakistan should lend itself well for investigation into the possible role of familial predisposition.

Table - II

Table II Annual New Admissions.

New Adm.	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Azad Kashmir	90	144	72	126	88	151	102	141	117	
Northern Area	9	14	16	19	19	4	43	13	14	22
Punjab ⁽²⁾	0	0	77	48	42	35	36	23	20	
N.W.F.P. ⁽²⁾	298	272	282	301	228	164	167	147	114 ⁽¹⁾	
Baluchistan	0	174	121	45	75	75	62	30	37	
(Marie Adelaide Leprosy Centre)	734	917	753	720	880	734	727	737	771	823
)										
(Field Clinic)									
()									
(Rural	)	60	117	86	72	97	139	142	99	99
(Manghopir ⁽²⁾)	255	179	154	220	133	124	133	131	100
										80
										69
	1446	1717	1561	1551	1562	1426	1414	1321	1272	994
Case Load										
Azad Kashmir	495	620	673	780	825	932	972	1069	1068	
Northern Area	74	82	95	111	127	129	151	161	169	
Punjab ⁽²⁾	0	0	77	121	157	185	219	237	254	
N.W.F.P. ⁽²⁾	707	906	1101	1128	1375	1405	1485	1414 ⁽⁵⁾	1264 ⁽⁶⁾	
Baluchistan	0	172	285	320	376	424	462	481	504	
(Marie Adelaide Leprosy Centre)	1941	2220	2471	2652	2886	3195	3295	4312	5703	6914
()									
(Field Clinic)									
)										
(Rural	)	286	398	479	527	623	651	756	774	821
)										
(Manghopir ⁽⁷⁾)	-	-	-	-	-	-	-	-	-
	3503	4398	5181	5639	6369	6751	7339	8448	8962	

(5) Mardan (82 Patients in 1978) only in 1977 included

(6) Minus Mardan, Chitral, Tirah +/- 190 patients

(7) no informations available

The Provincial Leprosy Control Programmes are providing for two separate lines of command: While the administration (____) is entrusted to the General Health Services, the professional command(____4 is exercised by the specialised Leprosy Services.

By this organisation, additional administrative posts have been saved, making the programme more economical, while the professional standard has been guaranteed by specialized cadre, and an attractive

servicó structure of the paramedical staff has been created.

This organisational pattern provides for possible adjustments to different provincial conditions: The functions of the DDHS may be taken over by a provincial Tuberculosis control officer (NWFP), or by the ADHS/P.H. The functions of the DHO may be exercised by the Agency Surgeon or Civil Surgeon where no preventive post has as yet been created.

implemented in Azdd Kashmir and Baluchistan, adopted by the different voluntary agencies in Sind to ensure coordination and uniformity, is under implementation in Northern Area and NWFP, while Punjab, having a different Leprosy problem has not yet adopted any clear organisational pattern.

DHS: Director Health Services, at Provincial level

DDHS: Deputy Director Health Services, with specified functions; frequently, one separate post is created at provincial level for Public Health (ADHS/PH = Additional or Assistant Director Health Services/Public Health).

DHO: District Health Officer, a Medical Officer responsible mainly for the public health measures, and the rural health facilities in the district.

LFO: Leprosy Field Officer, Senior Paramedical Worker promoted to Officer's grade, responsible for the implementation of the Leprosy control measures in a province.

DLC: District Leprosy Controller, Senior Leprosy Worker, promoted to. district supervisory post. Administratively dependent on the DHO, professionally responsible to the LFO, who is coordinating with the DHO.

SLT: Senior Leprosy Technician, usually in charge of a Leprosy Control Centre/ Control Area. Qualifications: Matric (10 years of school), Junior Leprosy Technician Course of 1 year duration, Senior Leprosy Technician Course of 4 months duration.

JLT: Junior Leprosy Technician, working under SLTs in the Control Units, or are in charge of control units in areas where the training programme has not yet been completed. **Qualifications:** see above, (except for Senior Course).

Uniform pay scale for the Leprosy Technicians is presently being worked out:

LFO:Gazetted post Grade 16

DLC:Present Grade 11 (suggested: Grade 12)

SLT:Present Grade 8 (suggested Grade 10)

JLT:Present Grade 7 (suggested: Grade 8)

Question P:

Are any field studies or research proposals being prepared to solve the present problems? If so, give a brief description of each research proposal.

Answer P:

A National Register of Leprosy Patients is being compiled into which informations of 3 provinces have already been fed; two more still have to be completed.

Question Q: (1)

Is there any special legislation in force either for or against leprosy patients?

If so, please describe the nature or the particular law.

AnswerQ: (1) No.

Question Q: (2)

Is there strong religious or other feeling in the population and/or medical profession against leprosy patients?

If the answer is yes, please outline how you believe the situation can be changed to assure acceptance of leprosy patients by the community and/or the medical profession as a whole.

Answer Q: (2)

General Population:

Different according to the area.

Effective treatment has led to lasting change of attitude; population which has witnessed the cure of leprosy patients, will shed their old prejudices. Non-affected population groups are more difficult to educate, especially educated sections of the society harbour more prejudices against leprosy than the poorer classes

Medical Profession:

Leprosy has not yet been given its proper place in the education of Medical Students. Prejudice among the medical profession is wide spread and deep seated, though less in the younger than in the older generation.

Question R:

Describe the organizational pattern of the leprosy control programme, if any, with description of the channels of communication and authority. Describe also the responsibilities of the staff of the general health service and of the primary health care system (if any) in respect to case detection, domiciliary or ambulatory treatment and follow up, management of reaction cases etc. Describe functions and activities of foreign missions or agencies and their coordination with government bodies.

Answer K:

In Pakistan, being a Federal Republic, Health is defined as one of the Provincial responsibilities.

Leprosy Control Programmes are therefore provincial programmes, with Central Government having only advisory functions.

Inter Provincial Co-ordination is rare, and mainly restricted to salary grades.

With declaration of Martial Law in 1977, the Centre has gained additional powers, it has only been in 1979 that a Leprosy Coordinating Committee has been constituted at Federal level, and a Federal Advisor on Leprosy nominated.

Two main organisational patterns have evolved in Pakistan:

Provincial Control Programmes are:

- either privately organised, or
- Government programmes run with assistance from private agencies.

In Provincial Leprosy Control Programmes established in Azad Kashmir, Baluchistan, in NWFP (under implementation), the Deputy Director Health Services (Public Health) is responsible for the programme,

assisted by a Leprosy Field Officer (Gazetted Post, Paramedical) who is exercising his functions through

District Leprosy Controllers, responsible for supervision and professional guidance of the Leprosy Technicians in charge of the Control Centres/Areas.

Private Agencies are assisting these Government programmes with:

- financial and material grants, technical guidance, and
- female co-workers.

In Provinces with programmes sponsored by private Agencies only, the entire work is carried out by the Voluntary Organizations which are submitting their reports to the respective Provincial Governments (Sind and Punjab)

Contributions of General Health Services:

Administratively to Provincial Leprosy

Control Programmes are integrated programmes, using the administrative structure of the General Health Services, Control Centres usually being accommodated in general health institutions. The personnel of the General Health Service is assisting in case finding.

Professionally however, the programme has a separate line of command from Leprosy Field Officer via District Leprosy Controller to the Leprosy Technicians.

Of the 3 Voluntary Agencies assisting the Leprosy Control Programmes in Pakistan:

Marie Adelaide Leprosy Centre is operating in Sind, Baluchistan, Azad Kashmir and Northern Areas
Aid to Leprosy Patients in Sind, NWFP and Punjab. Damien Foundation in N.W.F.P. for details see

para U.

Question S:

Describe Government inputs separately from external inputs in terms of recurring and capital costs.

Answer S:

In Provinces with Provincial Leprosy Control Programmes salaries

a certain part of drugs, daily allowances, and transport costs

are met by the Government, and

accommodations for the work provided.

Private Agencies usually cover

additional leprosy allowances for the workers, additional transport costs, daily allowances, additional drugs, stationery and training costs.

Question 1:

Outline future plans for the control of leprosy and in particular long term and short term objectives, strategies, approach, management, evaluation, requirements in terms of personnel, equipment supplies, transport and other costs as well as requirements in terms of training with the country or abroad.

Specify the type of training required and categories of staff.

Answer 1:

The main needs. of the Leprosy Control Programme in Pakistan consist of:

better coordination:

Uniform service structure for paramedical staff, and uniform pay scales, as

well as uniform recording system are a prerequisite for a meaningful countrywise control effort.

The co-ordinating committee will play an important role in working out: uniform proposals, and in enlisting cooperation of all agencies working in the same field. It is vital for the progress of the scheme individual differences are overcome, and personal interests sacrificed for the benefit of the work and patients.

Wider dissemination of knowledge about the disease:

is likewise an urgent requirement.

Better coverage of the subject in Medical Colleges

- increased use of mass media (especially radio)

- better exchange of informations among the organisations involved in. Leprosy work, and increased documentation/ publication of their work done, in Pakistan.

Completion of the Leprosy cover of the country:

including the remaining far off areas, (Khyber, Mohammand, Skardu) and the areas of low Leprosy prevalence, will be attended to in the coming three years.

Question U:

Give full names and addresses of all foreign agencies involved in the Leprosy control programme

specifying their functions, attributes and specific contribution made to the programme. If possible,

indicate type of foreign staff employed by the agency such as doctors, nurses, unspecialized volunteers, etc.

Answer U:

Leprosy Control Work in Pakistan has been pioneered by Voluntary and until now, the programme could not be carried out successfully without their help.

Financially, the main contributing agency has been German Leprosy Association assisted by Damien Foundation (Belgium), Amici Lebbrosi (Italy), Misereor (Germany), Oxfam (England), and numerous private donors locally and abroad.

Marie Adelaide Leprosy Centre has initiated the work in Pakistan in all Provinces. Its Medical Officers have worked out the pattern of Leprosy Control in the Leprosy affected Provinces, based on the WHO guidelines, and adapted to local conditions.

Today, it is responsible for the Greater Karachi Leprosy Control Programme, and assisting

the Provincial Programmes in Baluchistan, Sind, Azad Kashmir and Northern Areas.

It has been instrumental in establishing the Leprosy Cell at the National Health Laboratory/ Islamabad, the convocation of the National Coordinating Committee. Today it is managed entirely by Pakistani Staff, and is still the main motivating force on the Leprosy front in Pakistan.

Aid to Leprosy Patients. The Agency has great merit in modernisation and management of the one time Leprosaria who have been converted by them into modern treatment institutions. Training, orthopaedic shoemaking, physiotherapy and reconstructive surgery are further activities which have benefitted the Leprosy Programme.

For Punjab, a Province with Leprosy

problem entirely different from the problem in the smaller provinces, they have worked out their own concept of Leprosy control.

Damien Foundation has concentrated on field work, working in close cooperation with the provincial Government. They have provided the services of female ooworkers to a scheme which, without their help would have been unable to cover the female section of the population as well.

Contributions of the voluntary agencies have mainly been: creating awareness of the Leprosy problem, among public at large and the governments in particular.

- initiating control activities and motivate others to join in it
- providing financial and material assistance and professional guidance.

Difficulties

Experienced in the recent past in uniform data collection and coordination of Policies, have however shown that efforts, to assure the voluntary agencies sufficiently that their contribution is appreciated, have not yet been successful. More efforts in this direction are needed to arrive at full and whole hearted cooperation.

Addresses:

Marie Adelaide Leprosy Centre, A.M. 21 Off Frere Road, Opp. Naveed Clinic Karachi. 3 Aid to Leprosy Patients, Sr. Kathrin Kusche, Leprosy Hospital, Zafar-ul-Haq Road, Rawalpindi. Daniien Foundation, Ms. Rosa Vanderhoydonck, R.N. Tariq Road 5, Peshawar Cantt.

Expatriate Staff:

Marie Adelaide Leprosy Centre, Karachi at present 2 Social Workers (French & Belgian)

1. Registered Nurse (Matron & Sr. Tutor) Belgian

1. Pharmacist (Mexican) are on the staff.

Aid to Leprosy Patients:

1. Physiotherapist (German)

1 Administrator (German)

Damien Foundation:

2 Registered Nurses (Belgium)

Table II. Yearly new Admissions and Case Load. The average number of new cases found is showing a slow decline when 4-years-periods of operation are compared:

1970-75: 1569 average new patients per year

1974-77: 1431 average new patients per year

1978: 1272 average new patients per year

Reduction is mainly achieved in the rural control programmes, while Greater Karachi Control

Programme still shows an increasing number of new patients. However, double registrations have not been entirely eliminated, giving the statistical data an only limited value

Table III and IV; Age and Infectious Rate

Table III	Infectiosity : Not										
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	
Azad Kashmir	89 34: 55	47: 96	30: 42	41: 85	16: 72	58: 94	36: 64	45: 96	34: 83		
Northern Area	9 4: 5	4: 10	6: 10	8: 11	4: 11	4: 0	15: 26	5: 7	4: 10		
N.W.F.P.(3)	296 134: 152	116: 151	141: 133	144: 141	125: 88	74: 85	70: 78	50: 94	45: 69 ⁽⁴⁾		
Punjab (2)	0	0	44: 33	28: 20	24: 18	19: 16	16: 20	16: 7	11: 9		
Baluchistan	0	61: 113	41: 80	13: 32	16: 59	17: 58	15: 47	9: 21	12: 25		
S(Marie Adelaide Centre) ()	176	204:	188:	130:	238:	193:	211:	192:	201:		
I(Field Clinic ()	558	613	565	590	642	551	516	545	570		
N(Rural ()	22: 38	37: 80	33: 53	37: 35	34: 63	24: 115	48: 94	27: 72	31: 68		
D(Manghopir (2) ()	43: 212	30: 149	26: 128	37: 183	23: 110	21: 103	21:110	21:110	15: 85		
Total Pakistan	1443 413:1030	1711 499:1212	1555 509:1046	1535 438:1097	1547 484:1063	1432 410:1022	1387 432:955	1317 365:952	1272 353:919		
Total %	29: 71%	29: 71%	33: 67%	29: 71%	31: 69%	29: 71%	31: 69%	28: 72%	28: 72%		
		1857 + 4385 = 6242 30% : 70%				1691 + 3992 = 5683 30% : 70%					

1) minus Chitral, Tirah, Dir = +/-15 pat. (2) Double entries not eliminated: NWFP: Peshawar, Centre, Balakot, Hazara Division missing = +/- 1000 pat.; Punjab Rural, Faisalabad, Rawalpindi Leprosy Hospital missing = +/-550 pat; Manghopir double entries not eliminated
3) Statistics minus Mardan (total 82 pat. missed), also Peshawar + Balakot, + Hazara Division not included +/-1000 pat. many of whom may be double entries.
1859 + 4385 = 6244 = 30% : 70% 1691 : 3992 = 5683 = 30% : 70%

4) minus Chitral, Tirah, Dir.

Table - IV	Age and Infectiosity Rate.										
	Adult : Children	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Azad Kashmir		81: 9	131: 11	65: 7	113: 13	65: 23	136: 16	90: 10	128: 13	114: 3	
Northern Area		7: 2	10: 4	14: 2	16: 3	8: 1	4: 0	38: 4	10: 2	13: 1	21: 1
N.W.F.P. (2)		266: 32	255: 14	259: 23	273: 28	201: 27	154: 21	152: 5	134: 22	105: 14 ⁽¹⁾	
Punjab (2)		0	0	75: 2	44: 4	39: 3	33: 2	34: 2	21: 2	20: 0	
Baluchistan		0	156: 18	104: 17	42: 3	64: 11	66: 9	55: 7	24: 6	32: 5	
(Marie Adelaide Centre)	464:	694:	617:	634:	748:	670:	618:	641:	678:	741:	
(Field Clinic	88	123	136	86	132	74	105	96	93	82	
(Rural)	53: 7	97: 20	76: 10	58: 14	89: 8	108: 31	118: 24	82: 17	86: 13	65: 15	
(Manghopir (2) ()	227: 28	161: 18	137: 15	200: 20	121: 12	113: 11	121: 12	119: 12	91: 9	63: 6	
Total - Pakistan	1280:166	1504:208	1347:212	1380:171	1335:217	1284:164	1226:169	1159:170	1139:138	890:104 = 994	
Total %	89: 11%	88:12%	86:14%	89:11%	86:14%	89:11%	88:12%	87:13%	89:11%	90: 10%	

Child - and Infectiosity rate have remained stable over the past 9 years, showing how. ever considerable provincial variations.

Further studies to interpret the figures, are under preparation.

ORGANISATION - CHART

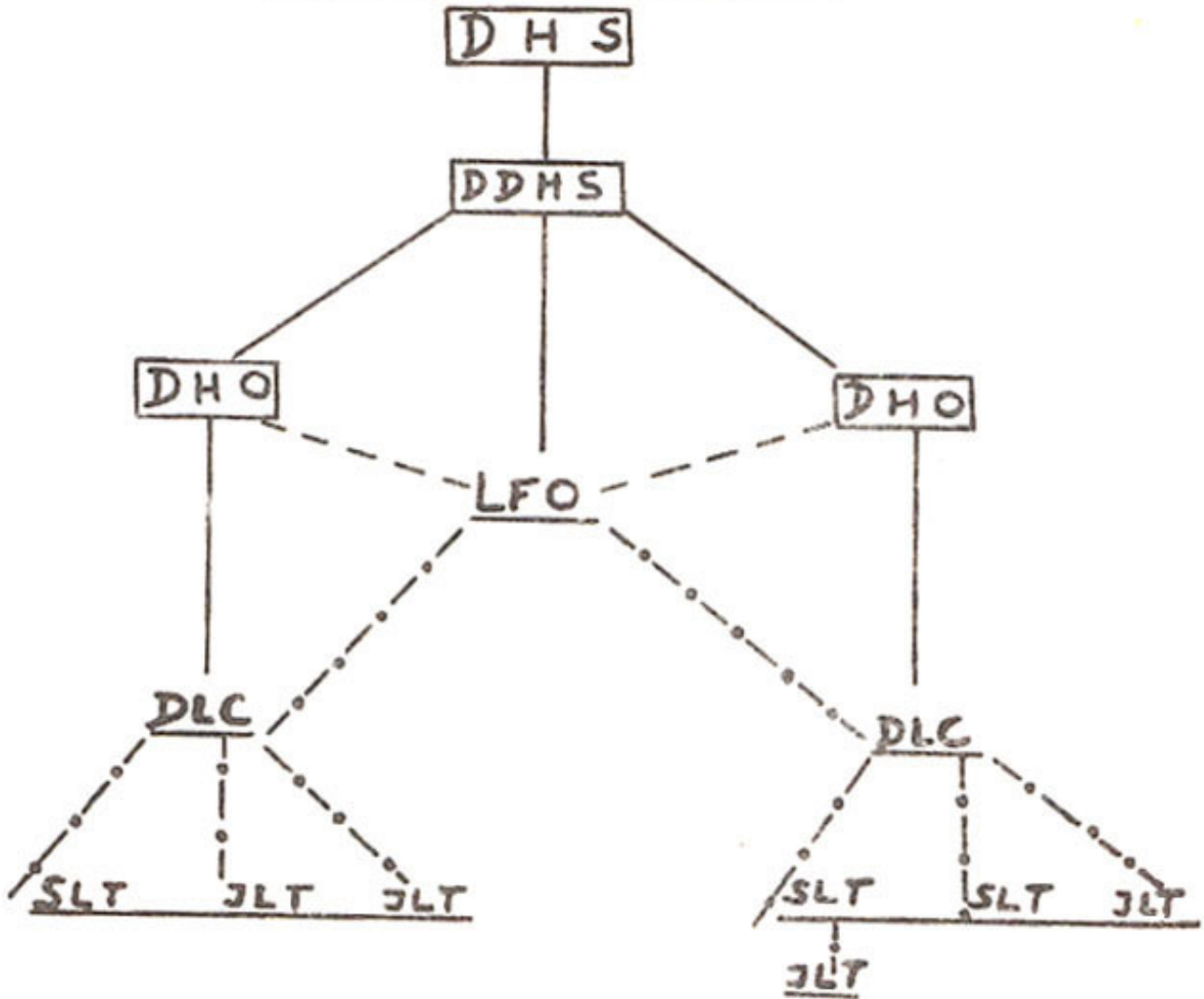


Table V: Case Holding

Table V

Case Holding
Regular-Irregular-Absent

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	
Azad Kashmir	326: 115 : 52	374: 85 : 58	463: 145 : 64	460: 235 : 82	518: 204 : 100	624: 217 : 87	737: 144 : 85	776: 202 : 82	812: 192 : 83	75%	
Northern Area	25: 27 : 27	31: 39 : 11	22: 45 : 23	25: 64 : 19	25: 15 : 27	27: 41 : 61	69: 66 : 16	72: 74 : 15	135: 20 : 14	80%	
N.W.F.P.	478: 166 : 57	489: 254 : 155	407: 455 : 223	458: 380 : 284	621: 284 : 458	864: 285 : 231	868: 334 : 278	860: 246 : 255	681: 265 : 221	58%	
Baluchistan	0	111: 60 : 1	154: 123 : 6	171: 127 : 20	189: 152 : 35	265: 120 : 38	312: 115 : 37	370: 68 : 43	414: 42 : 48	82%	
Punjab	0	0	38: 39 : 0	68: 40 : 13	67: 64 : 26	45: 75 : 65	43: 80 : 96	34: 86 : 117	33: 83 : 138	13%	
Sind Rural	99: 87 : 37	207: 118 : 46	220: 154 : 64	268: 137 : 74	274: 185 : 98	357: 193 : 97	395: 239 : 113	492: 230 : 77	541: 192 : 88	66%	622:92 = 835=75% 121:11%:14%
Mario Adelaide Centre	988:1429 : 298	1234:2987 : 621	1276:3823 : 543	1130:1208 : 489	894:1104 (1) no reliable figures : 888						
Field Clinic	1889: 387 : 40	2493: 730 : 38	736:1488 : 94	894: 944 : 150		1303: 739 : 522	1563: 861 : 375	1872: 610 : 444	2274: 406 : 513	71% 377=73%:19%:89%	
Total Pakistan	3805:2204 : 511	4939:4273 : 930	3315:6262 :1027	3474:3155 :1131	2588:2008 :1632	3485:1670 :1101	3987:1839 :1000	4476:1516 :1033	4890:1200 :1105		
Grand Total	6,520	10,142	10,604	7,740	6,228	6,256	6,826	7,025	7,195		
%	58:34 :8%	49%:42% :9%	31%:59% :10%	45%:40% :15%	42:32:26	56%:27:17	58:27:15	64%:21:15	68%:17% :15%		
	58%	49%	31%	45%	42%	56%	58%	64%	68%		

(1) 1975 Double entries eliminated, +/- 800 pat. not included whose control area has not yet been identified.

Regularity Rates have definitely im. proved in the entire Pakistan. Since the poor results of 1974, case holding has been declared to have top priority, and improved case holding measures developed: better organisation of domiciliary treatment, and increased health education.

Results are apparent, the trend towards improved performance is still continuing. Leprosy prevalence rates and Leprosy cover in Pakistan are shown in Figures 2 and 3.

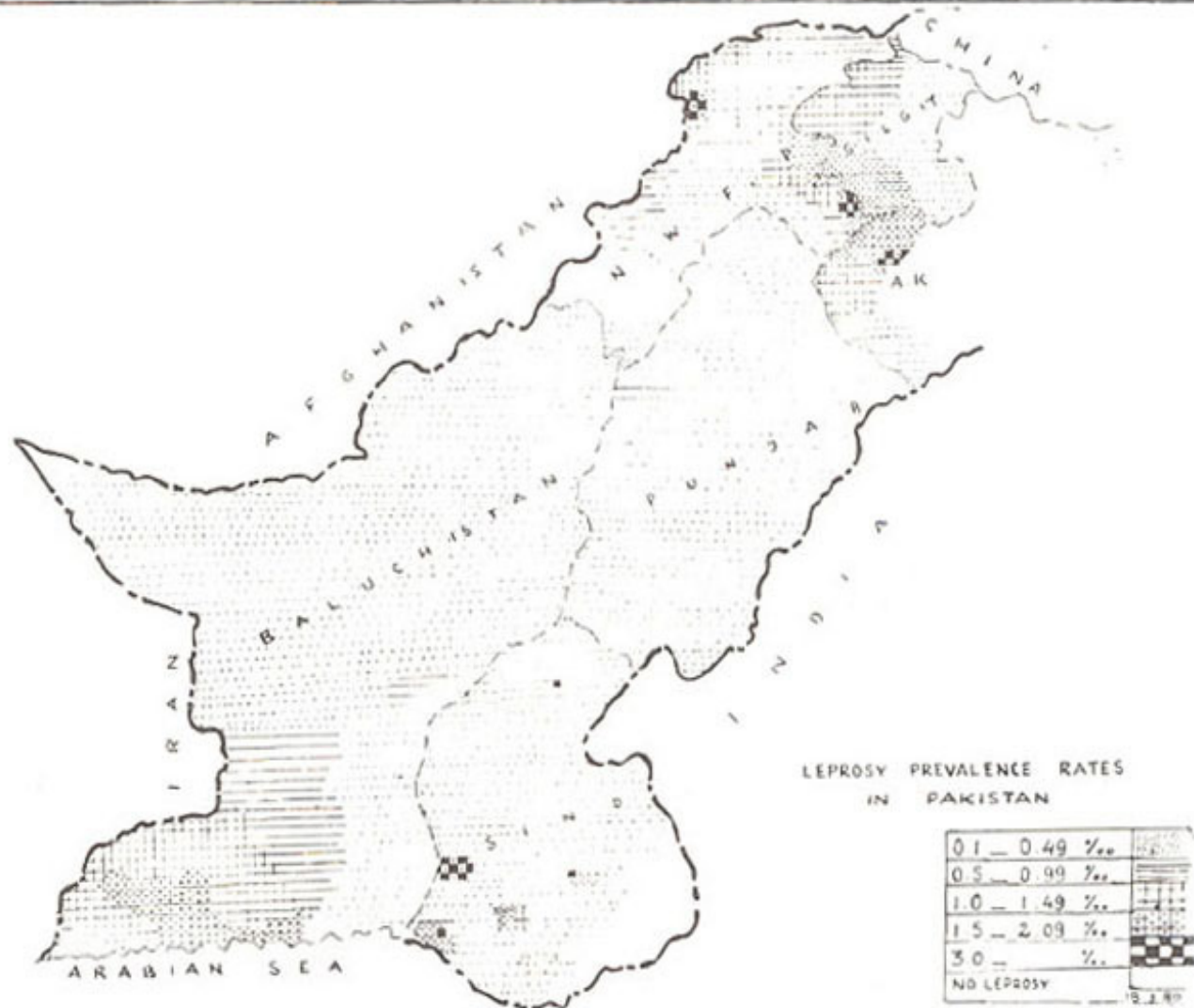
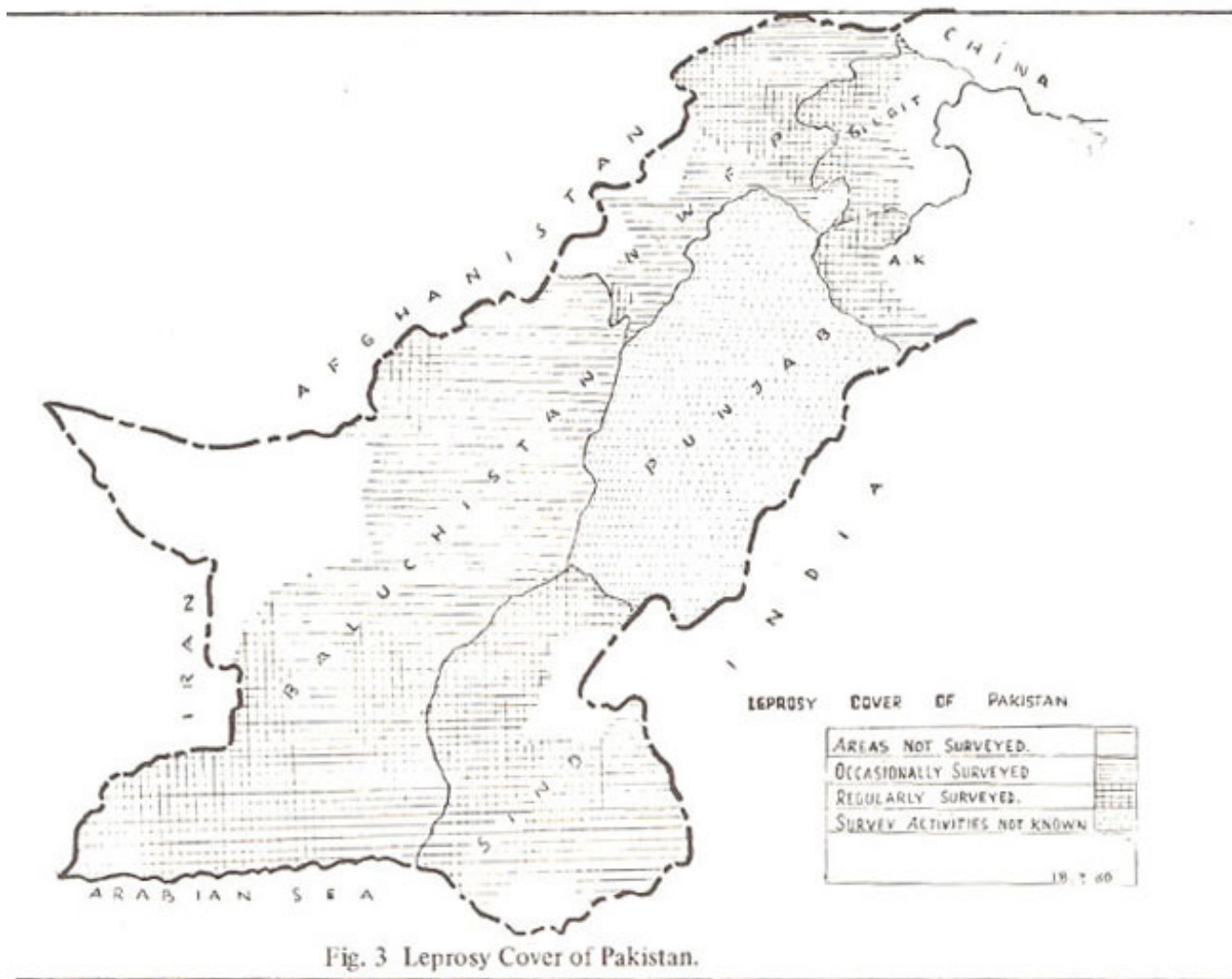


Fig. 2 Leprosy Prevalence Rates in Pakistan



Conclusions

Statistics collected from the past 9 years of Leprosy Control in Pakistan indicated that, considering the entire country, no further progress has been made towards control and final eradication of the disease. However, definite improvement has been achieved in case holding. Interpreting the figures, no operational conclusions can be drawn, as too many variables have entered into the consolidated figures. Further analysis of the data presented are being prepared, and have lead already to certain conclusions: Azad Kashmir, having a fully established Leprosy Control programme, is showing signs of Leprosy Control:

- decrease in infectiosity - and defonnity rate,
 - as well as in annual case detection rate,
- while regularity rate has kept at a very satisfactory level.

Northern Area, having an acute shortage of trained personnel, had to concentrate on case holding, where definite improvement has been achieved while the remaining parameters do not yet show any clear downward trends.

Baluchistan, having initiated their Leprosy programme only in 1971, is showing a healthy trend of all parameters in the politically undisturbed area of Makran division (accounting for 3/4 of all cases),

while the politically disturbed northern part is just recovering, showing dramatically improved case holding, however not yet any decline in the other parameters.

in the hand of small private local organisations who only of late have joined in a coordinated combined efforts, is showing a healthy trend in all parameters, while

Sind, an area where Leprosy control is exclusively

the Greater Karachi Leprosy Control Scheme, though reduction in deformity and infectiosity rates as well as improved case holding are encouraging signs, has still a yearly increase in number of newly detected cases.

For NWFP and Punjab, figures are incomplete, preliminary investigations showing in NWFP a high persisting infectiosity rate, and a low regularity rate, while deformity rate is decreasing, and number of new patients admitted per year seems to be constant.

Acknowledgements

Baluchistan: Leprosy Field Officer - Hamid Shah,

Quetta Azad Kashmir: Leprosy Field Officer

Mohammad Ashraf, Muzaffarabad.

Northern Area: Senior Leprosy Technician Abdullah, Gilgit

NWFP: District Leprosy Controller Sultan Mohd. Pir Baba/District Swat Leprosy Field Officer Jalal Khan, presently Leprosy Research Cell, National Health Laboratories, Islamabad.

District Leprosy Controller Mullah Mohd, Wam/District Dir

Sind: Leprosy Field Officer - Syed Azadar

Hussain, Karachi. Dr. Barlas, Medical

Superintendent, Leprosy Hospital Manghopir, Dr. Zarina Fazelbhoj, Honorary

Medical Officer, Marie Adelaide Leprosy

Centre, Karachi

Dr. Ashfaq All Khan, Medical Officer,

Marie Adelaide Leprosy Centre, Karachi

Punjab: Prof. Ghullam Shabir, Leprosy Cell/ Dermatological Department, Mayo Hospital/Lahore.