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HONDURAS EVALUATION: Epidemiology
By Oscar Morazan

A. Morbidity and Mortality Information

In general, the available morbidity and mortality information does not permit valid comparisons to be made over a 25-year period. Rather than reflecting the effect of sectoral or multisectoral actions, it reflects the variable quality of the MISPAS health information system. Under these circumstances it is of course difficult to distinguish long-term trends from specific impacts or effects.

The problems that most affect available information are:

(a) Under-recording on morbidity and mortality. Morbidity is more under-recorded, but mortality has a higher rate of erroneous diagnoses.

(b) Erroneous diagnosis, especially with reference to mortality.

Since under-recording rates are not uniform, comparisons based on lethality (mortality x 100/morbidity) are difficult; notoriously so in the cases of polio and diphtheria.

B. Trends in Morbidity

Notwithstanding the above observations, certain trends towards improvement of the morbidity rates have been observed, particularly with respect to poliomyelitis, diphtheria, and whooping cough. However, these changes are not necessarily associated with the levels of vaccination coverage for those diseases.

Other diseases exist for which no substantial improvement can be said to have occurred in the last 25 years, such as measles, malaria, and influenza. It is quite probable that recording has improved significantly, but its magnitude is not identifiable.

Improved recording does explain the rise in the rates of diarrheic illness, hepatitis, influenza, and possibly syphilis, although in the case of the last two the real increase is rather questionable.

C. Trends in Lethality

In this case lethality is expressed as follows:

$$\frac{\text{Mortality rate} \times 100{,}000}{\text{Morbidity rate} \times 100{,}000} \times 100$$

Significant improvements have occurred in the lethality rates of several diseases: measles, diarrheic illness, typhoid fever, influenza, hepatitis, amebiasis. Others, such as whooping cough and bacillary dysentery, do not seem to have improved substantially in the same period.

The observed improvements are more pronounced in the period 1974-1978.

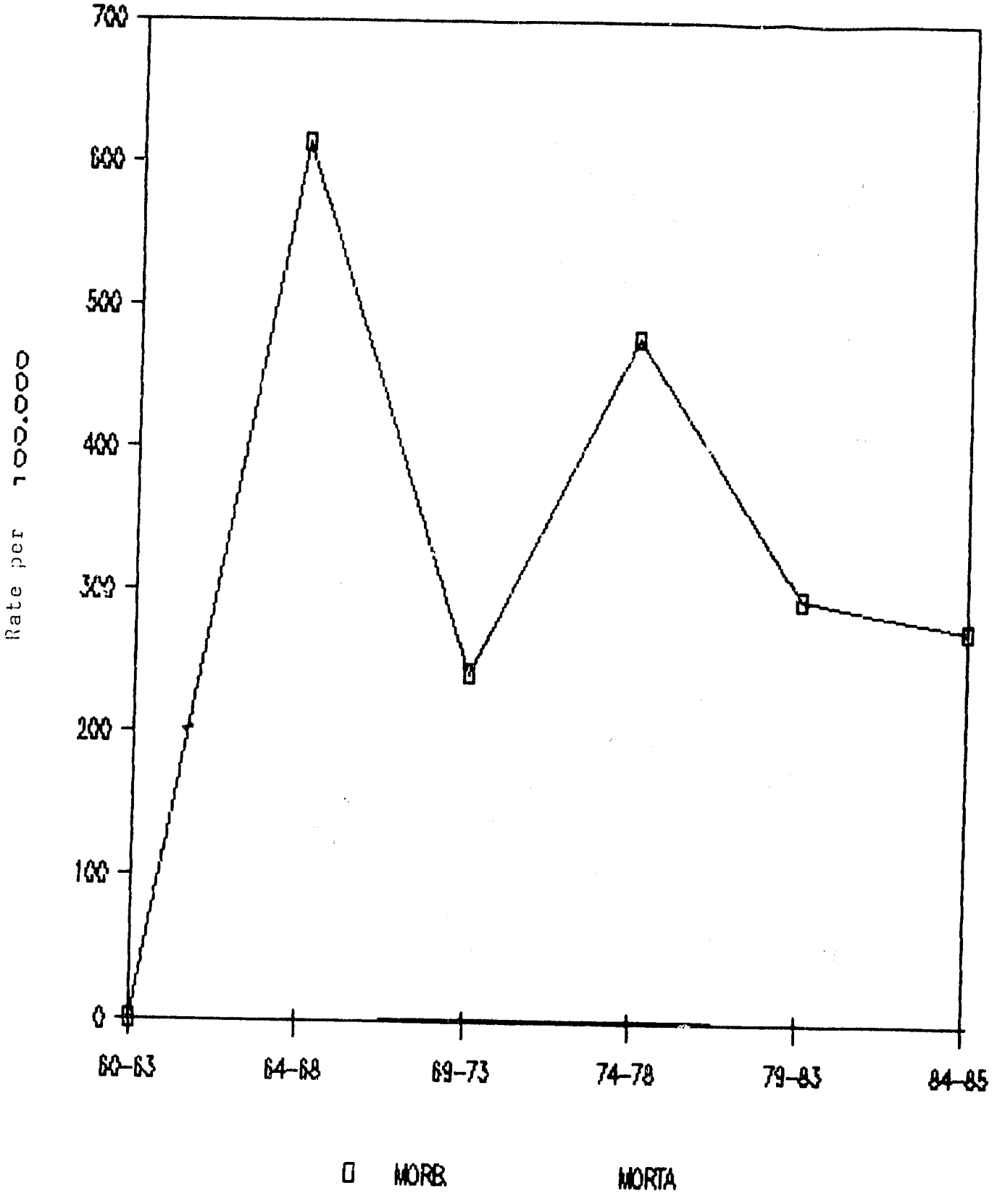
D. Trends in Infant Mortality

Based on analysis of the pertinent documentation, the (graph #1, MSH, Feb. 1986, p. 3) IMR trends are acceptable. The most reliable of the various available estimates have been taken (population census 1974, Edenh-II 1983), as well as the SMI survey of 1984. The peaks shown result from the fact that when indirect estimating techniques are used (Trussell technique: UN Manual X, Indirect Techniques for Demographic Estimations. ST/ESA/SER.A/82, N.Y. 1983), the infant mortality rate associated with women aged 15-19 and 20-24 is much better. This group of women gives rise to higher-than-average rates.

It may be concluded that the IMR has been fairly high: 140-150 per 1,000 at the beginning of the 1960s, down to 90/1,000 in 1980, which amounts to a decline of 40%.

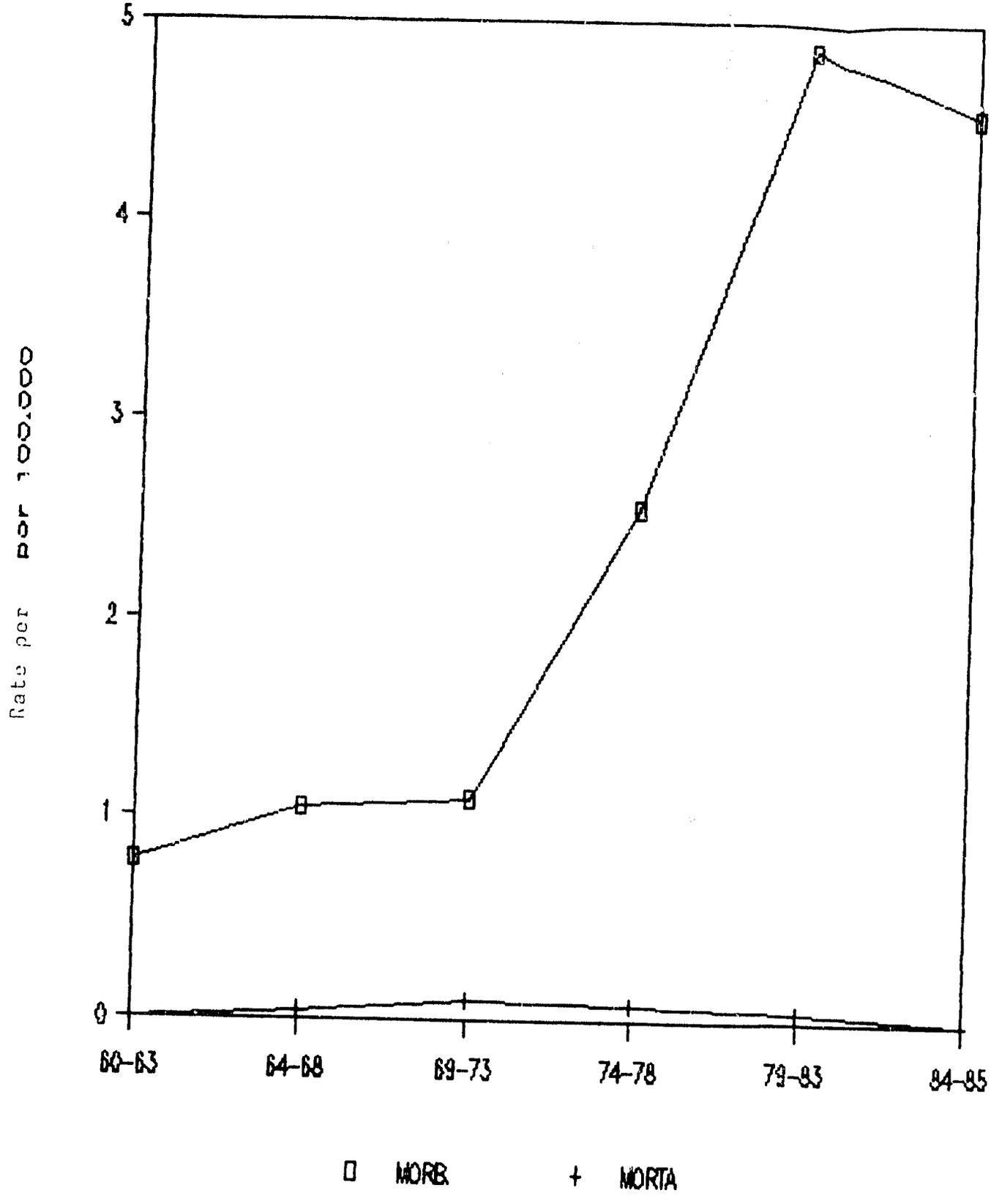
The decline has been sustained in urban areas, but after 1970 the decline in the rural areas also accelerated.

AMEBIASIS MORBIDITY TREND 1960-1986



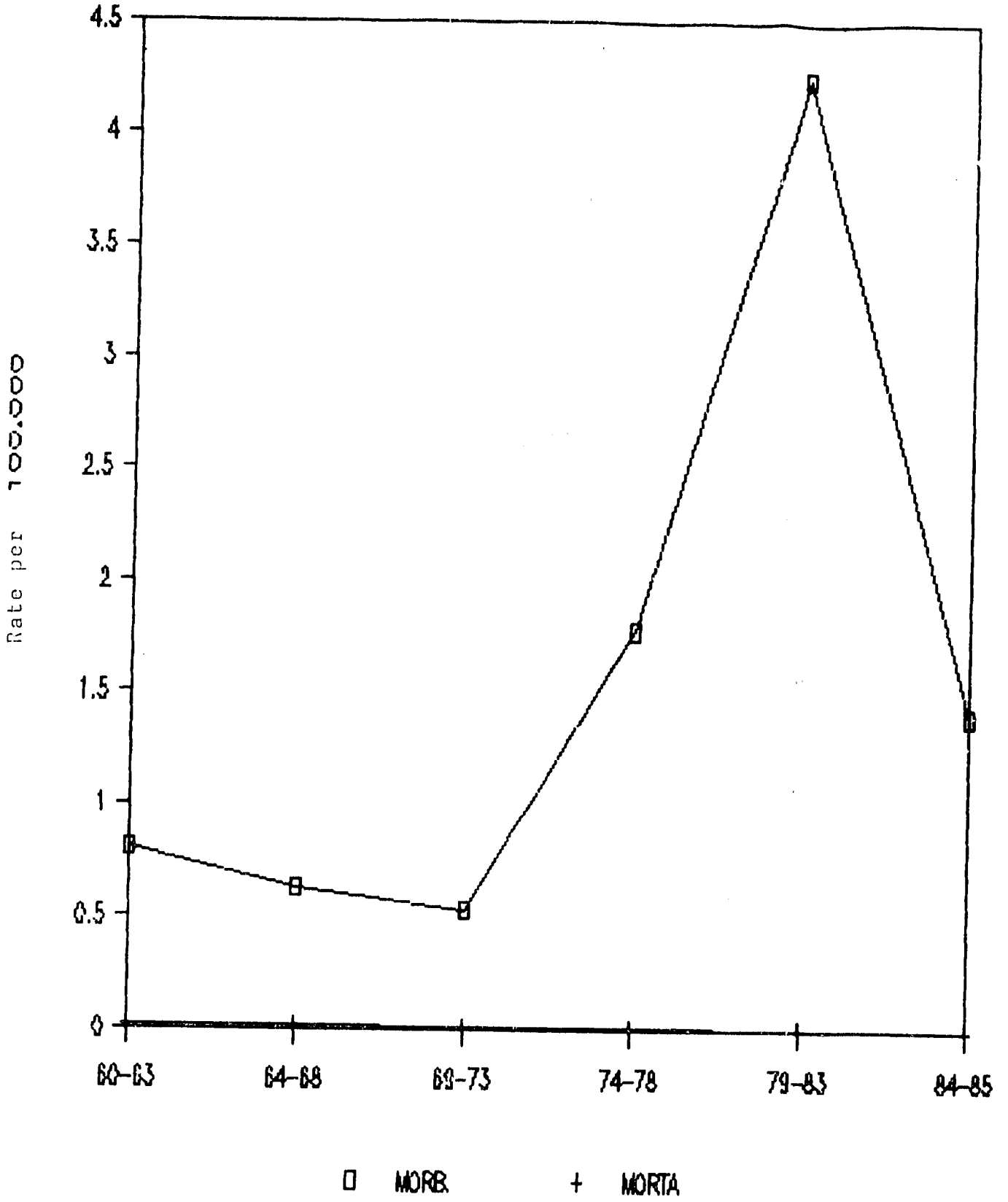
3

DIARRHEIC ILLNESS TREND 1960-1986



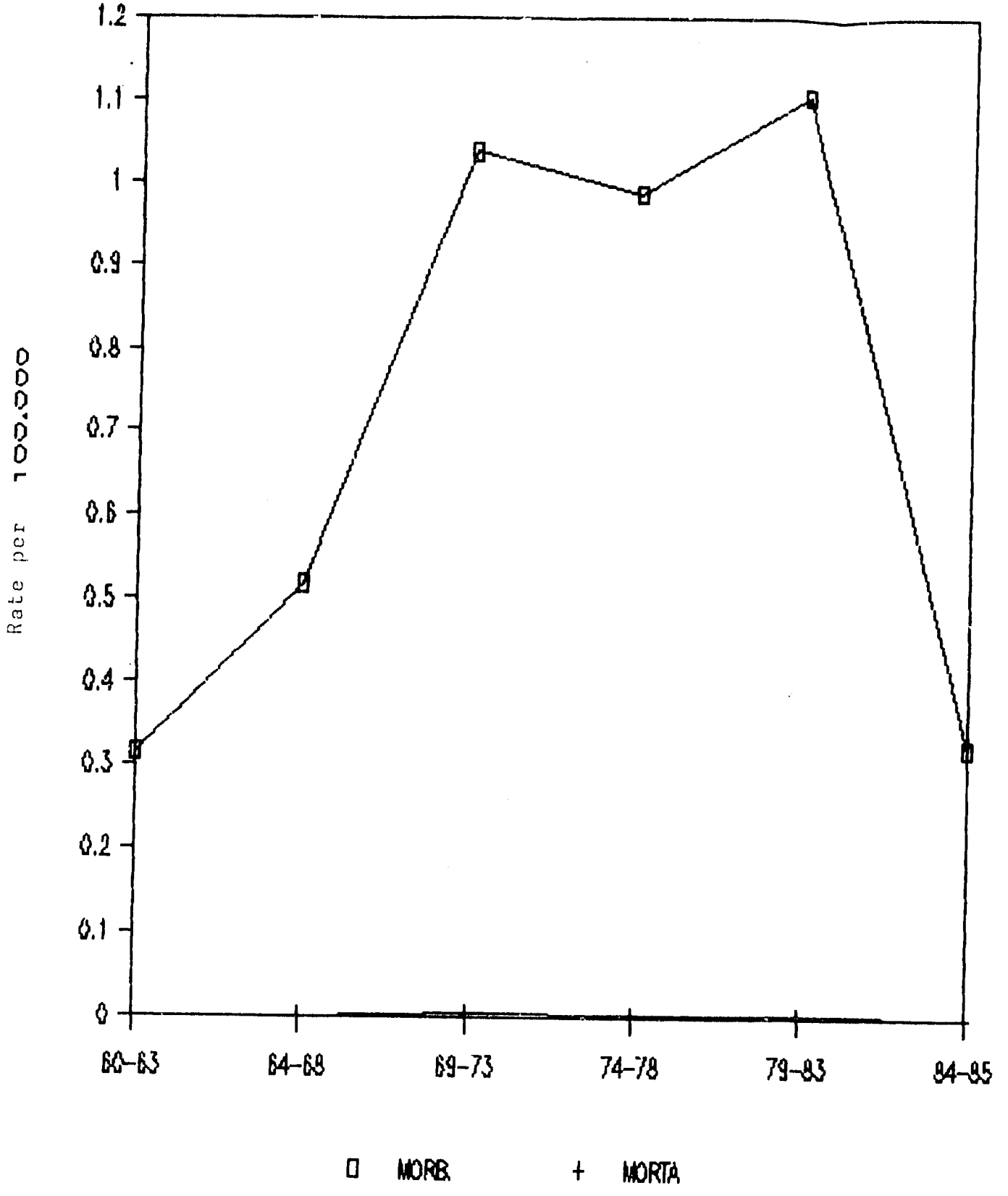
4

INFLUENZA MORBIDITY TREND 1960-1986

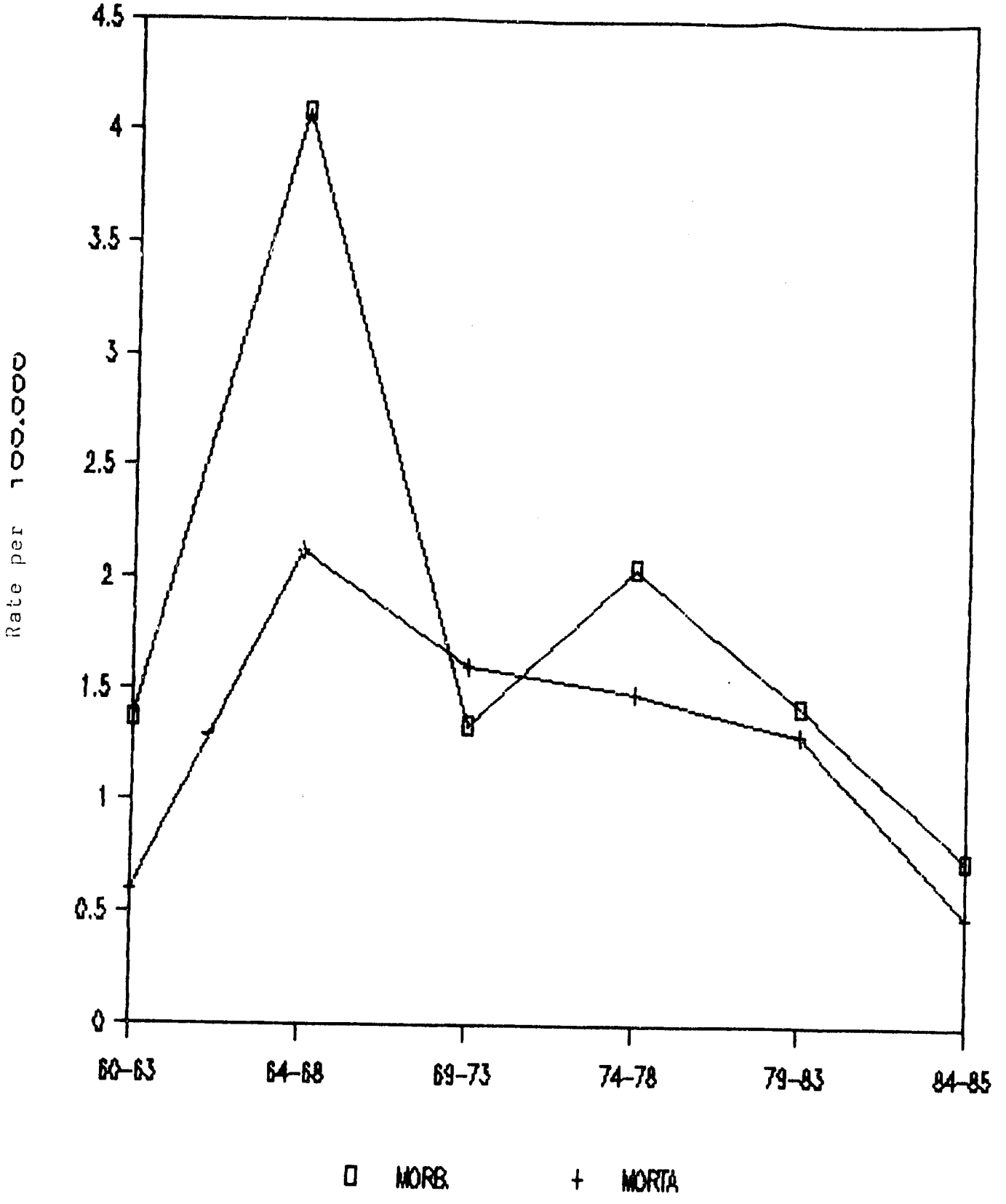


5

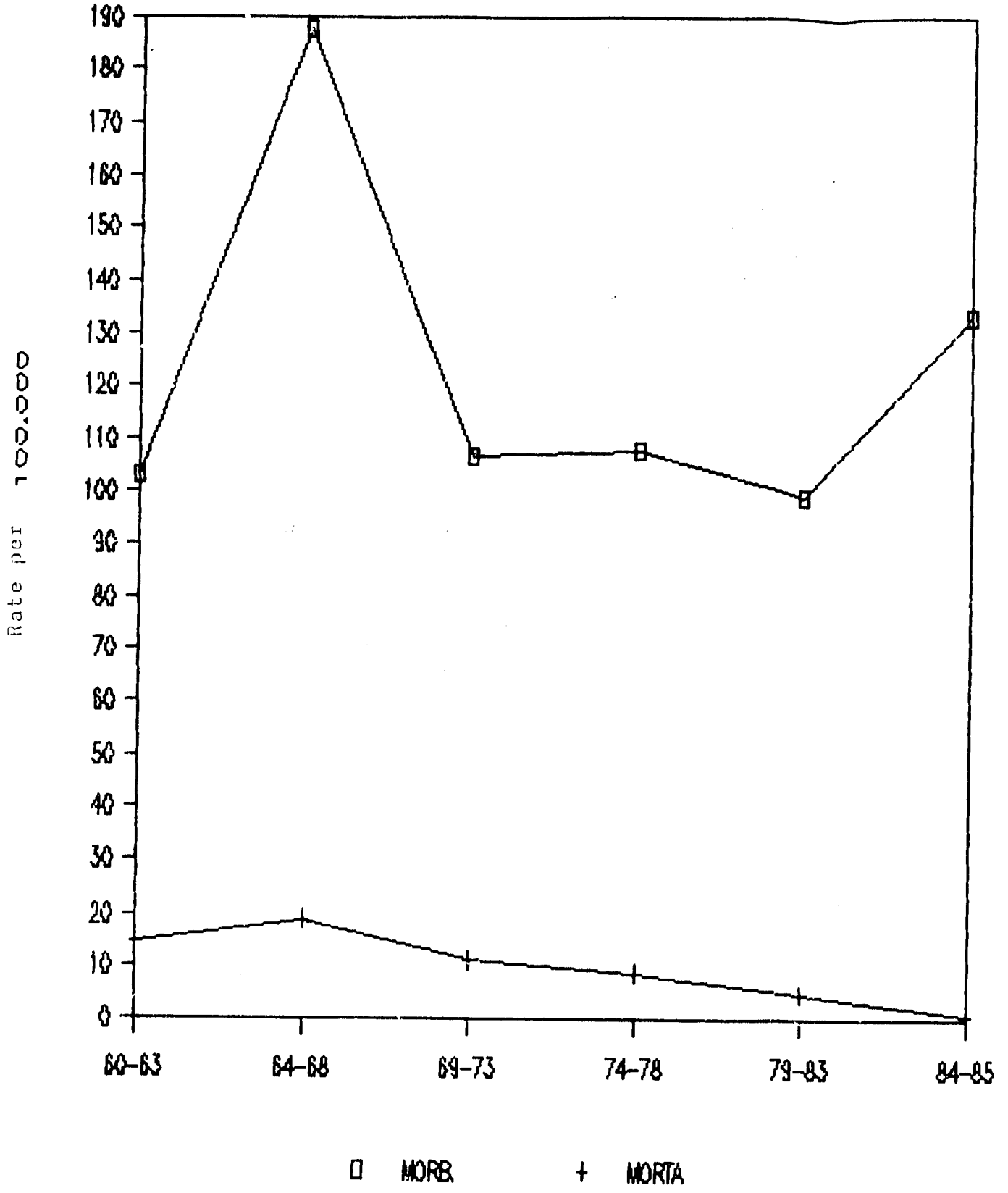
MALARIA MORBIDITY TREND 1960-1986



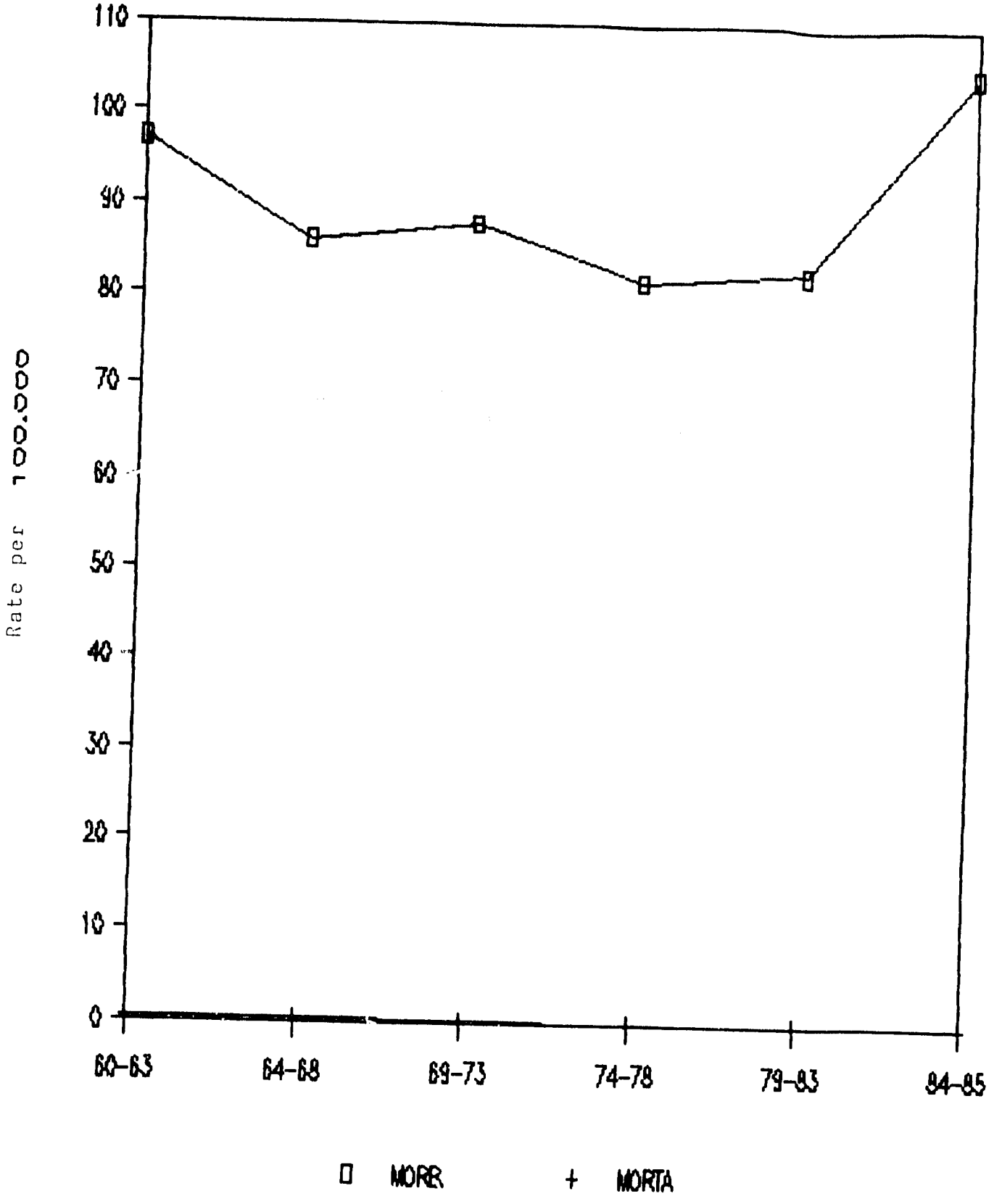
POLIOMIELITIS MORBIDITY TREND 1960-1986



MEASLES MORBIDITY TREND 1960-1986

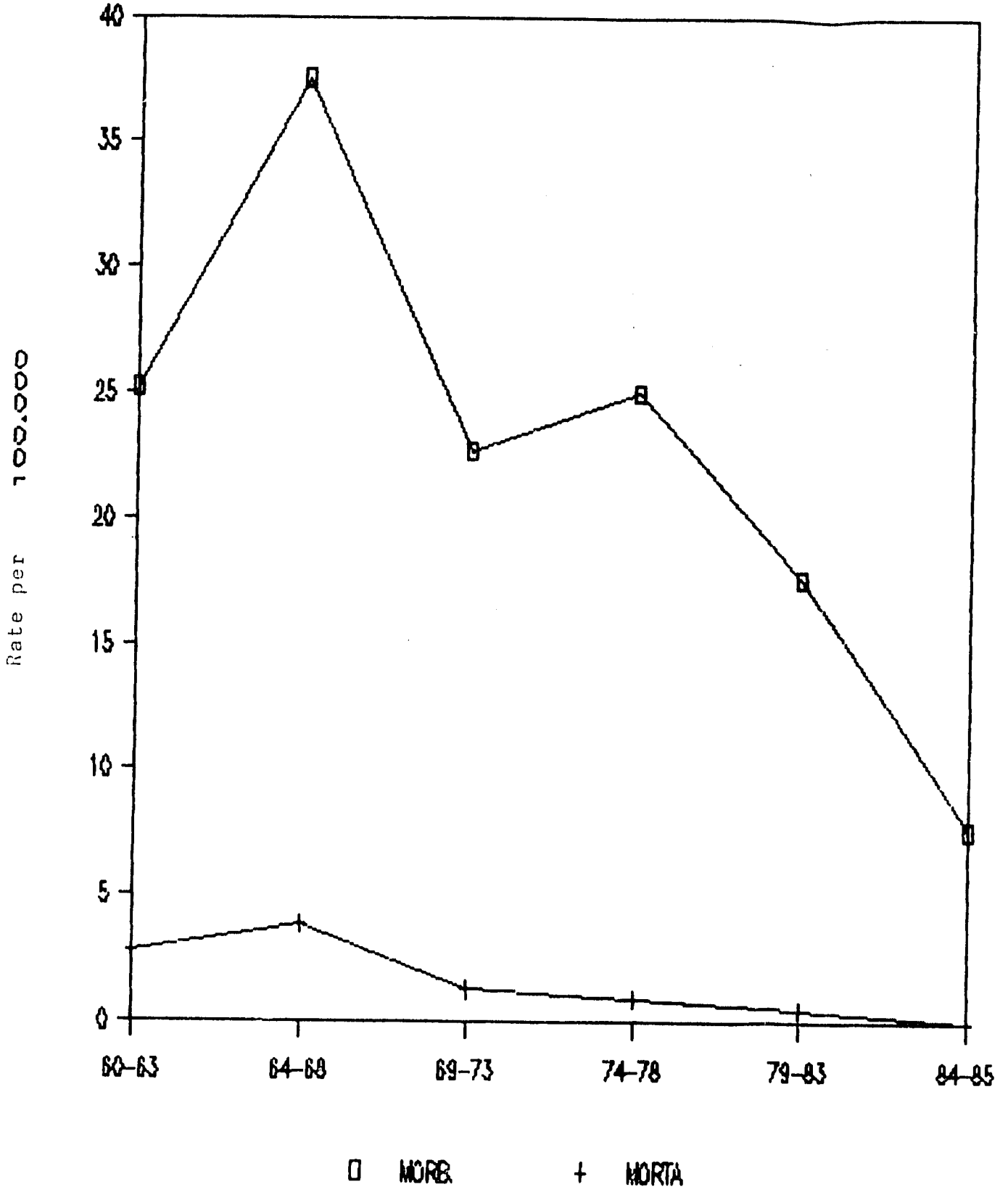


SYPHILIS MORBIDITY TREND 1960-1986

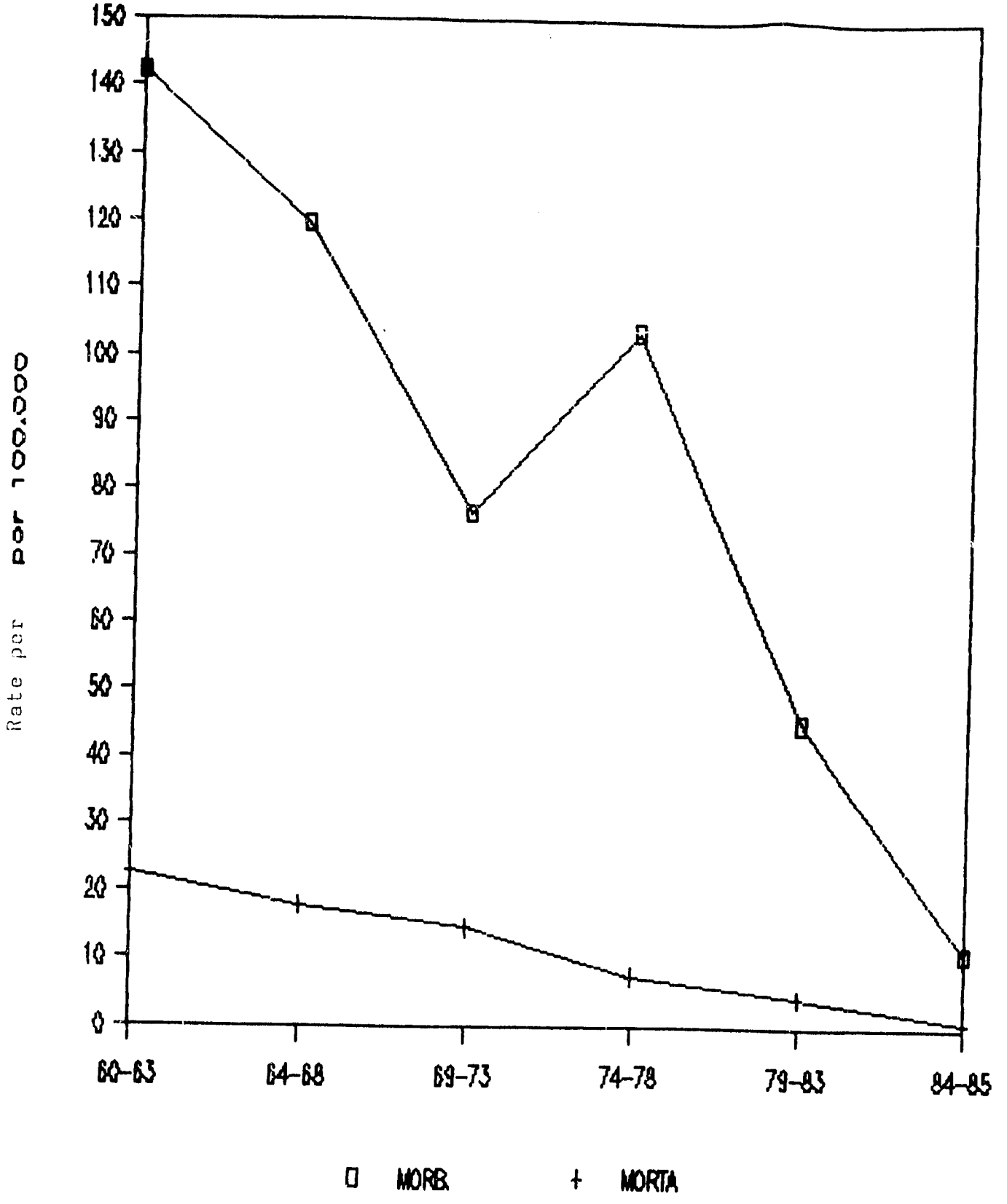


9

TYPHOID MORBIDITY TREND 1960-1986

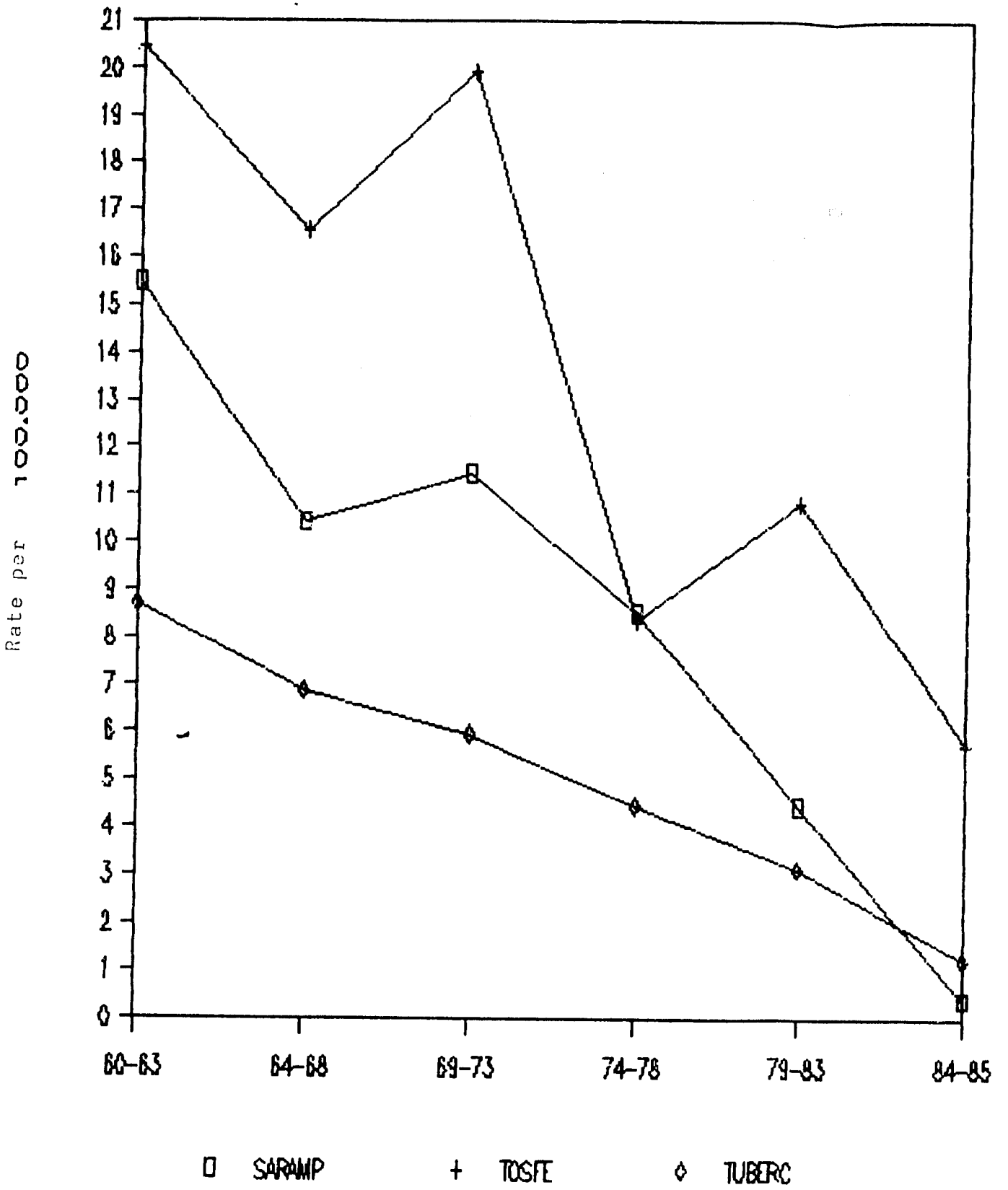


WHOOPING COUGH MORBIDITY TREND 1960-1986



LETHALITY TREND 1960-1986

MEASLES, WHOOPING COUGH, AND TUBERCULOSIS



RATES

YEAR	YEAR	POPU-LATION	POLIOMIELITIS Morb	POLIOMIELITIS Morta	LETHAL	MEASLES Morb	MEASLES Morta	LETHAL	DIPHTHERIA Morb	DIPHTHERIA Morta	WHOOPING COUGH Morb	WHOOPING COUGH Morta
60	60	1942846	1.390	0.978	70.37	81.581	[illegible]	[illegible]	0.257	0.00	0.00	59.449	25.53
61	61	2020419	2.376	0.445	18.75	99.732	[illegible]	[illegible]	0.990	0.45	45.00	180.210	26.33
62	62	2096160	0.477	0.572	120.00	74.947	[illegible]	[illegible]	0.525	0.29	54.55	176.609	14.31
63	63	2168714	1.245	0.415	33.33	155.945	[illegible]	[illegible]	0.323	0.74	228.57	152.763	24.72
64	64	2237783	1.698	0.760	44.74	226.474	[illegible]	[illegible]	0.223	0.45	200.00	189.071	12.87
65	65	2303921	11.502	3.255	28.30	190.588	[illegible]	[illegible]	0.217	0.48	220.00	126.480	19.62
66	66	2383995	1.594	2.181	136.84	200.042	[illegible]	[illegible]	0.419	0.38	90.00	103.775	21.77
67	67	2465729	3.204	2.393	74.68	180.474	[illegible]	[illegible]	0.406	0.32	80.00	77.989	18.41
68	68	2551551	2.430	1.999	82.26	141.012	[illegible]	[illegible]	0.235	0.04	16.67	101.154	16.03
69	69	2638088	1.403	2.009	143.24	96.509	[illegible]	[illegible]	0.114	0.08	66.67	69.065	12.09
70	70	2639097	0.758	1.326	175.00	154.712	[illegible]	[illegible]	0.114	0.11	100.00	82.377	14.85
71	71	2717238	1.214	1.509	124.24	157.402	[illegible]	[illegible]	0.552	0.07	13.33	111.694	15.24
72	72	2801492	2.356	1.999	84.85	79.708	[illegible]	[illegible]	0.071	0.14	200.00	67.535	22.49
73	73	2892247	0.968	1.141	117.86	44.256	[illegible]	[illegible]	1.314	0.03	2.63	52.174	8.92
74	74	2989577	0.903	1.070	118.52	78.473	[illegible]	[illegible]	0.067	0.00	0.00	147.412	8.63
75	75	3093299	0.938	1.552	165.52	100.152	[illegible]	[illegible]	0.065	0.00	0.00	178.321	10.73
76	76	3203029	0.937	1.374	146.67	131.313	[illegible]	[illegible]	0.094	0.09	100.00	101.904	8.40
77	77	3318040	5.274	1.748	33.14	76.491	[illegible]	[illegible]	0.000	0.06	0.00	41.380	5.55
78	78	3439017	2.152	1.657	77.03	151.758	[illegible]	[illegible]	0.058	0.06	100.00	50.770	4.25
79	79	3563823	6.173	1.992	32.27	137.353	[illegible]	[illegible]	0.056	0.00	0.00	68.774	4.24
80	80	3691027	0.081	1.436	1766.67	113.464	[illegible]	[illegible]	0.000	0.00	0.00	67.813	6.72
81	81	3820951	0.471	1.256	266.67	153.286	[illegible]	[illegible]	0.000	0.00	0.00	47.423	5.50
82	82	3955116	0.202	0.986	487.50	61.844	[illegible]	[illegible]	0.000	0.00	0.00	29.102	3.14
83	83	4092175	0.195	0.831	425.00	28.542	[illegible]	[illegible]	0.000	0.00	0.00	13.440	2.13
84	84	4231567	1.371	0.496	36.21	118.821	[illegible]	[illegible]	0.000	0.00	0.00	14.888	1.70
85	85	4372487	0.114	0.480	420.00	148.108	[illegible]	0	0.000	0.00	0.00	7.662	0.00
86	86					0.000	0.000						0.00

YEAR	POPULATION	AMIBIASIS LETHAL	AMIBIASIS Morb	AMIBIASIS Morta	DIARRHEIC LETHAL	DIARRHEIC Morb	DIARRHEIC Morta	TYPHOID FEVER LETHAL	TYPHOID FEVER Morb	TYPHOID FEVER Morta	BACILLARY DYSENTERY LETHAL	BACILLARY DYSENTERY Morb	BACILLARY DYSENTERY Morta
60	1942846	42.94	0.000	0.309	0.00	367.502	0.000	0.00	25.427	5.507	21.66	0.000	0.154
61	2020419	14.61	0.000	0.000	0.00	809.832	0.000	0.00	25.242	0.000	0.00	0.000	0.000
62	2096160	8.10	0.000	0.000	0.00	1379.379	0.000	0.00	20.180	2.910	14.42	0.000	0.000
63	2168714	16.18	0.000	0.000	0.00	573.381	0.000	0.00	29.787	2.674	8.98	0.000	0.000
64	2237783	6.81	806.557	0.000	0.00	1451.928	0.000	0.00	45.894	3.664	7.98	0.000	0.000
65	2303921	15.51	750.547	0.000	0.00	1437.376	42.015	2.92	32.683	3.516	10.76	0.000	0.000
66	2383995	20.98	760.027	0.000	0.00	1343.795	50.000	3.72	36.661	3.901	10.64	0.000	0.000
67	2465729	23.61	639.689	0.000	0.00	680.488	37.879	5.57	36.338	5.881	16.18	459.580	0.000
68	2551551	15.85	116.204	0.392	0.34	351.982	72.270	20.53	36.135	2.195	6.07	93.629	0.000
69	2638088	17.51	88.132	0.000	0.00	1041.588	90.444	8.68	30.742	2.426	7.89	172.208	2.312
70	2639097	18.03	270.017	0.189	0.07	1413.514	100.527	7.11	33.345	1.213	3.64	739.457	37.210
71	2717238	13.64	251.174	0.478	0.19	129.875	77.836	59.93	17.407	0.773	4.44	337.217	17.739
72	2801492	33.30	277.245	0.928	0.33	645.513	95.556	14.80	17.491	0.964	5.51	195.182	20.132
73	2892247	17.10	322.690	1.279	0.40	2257.656	110.433	4.89	14.383	0.692	4.81	298.868	20.226
74	2989577	5.85	423.404	0.736	0.17	2601.639	87.738	3.37	17.427	0.636	3.65	173.904	7.660
75	3093299	6.02	577.830	0.259	0.04	3315.101	88.643	2.67	27.640	1.164	4.21	129.506	10.151
76	3203029	8.24	563.404	0.219	0.04	3399.938	69.060	2.03	29.129	0.999	3.43	71.058	5.901
77	3318040	13.40	479.530	0.542	0.11	273.866	71.518	26.11	31.494	0.844	2.68	40.657	5.334
78	3439017	8.36	343.238	0.262	0.08	3210.016	49.316	1.54	19.192	0.611	3.18	27.711	10.439
79	3563823	6.16	336.605	0.140	0.04	3772.157	56.204	1.49	21.634	0.617	2.85	28.930	1.852
80	3691027	9.91	352.802	0.054	0.02	5741.031	48.929	0.85	19.859	0.515	2.59	25.386	1.219
81	3820951	11.59	34.599	0.000	0.00	5376.436	50.459	0.94	18.085	0.523	2.89	28.710	1.387
82	3955116	10.77	334.908	0.101	0.03	4678.927	50.213	1.07	15.701	0.253	1.61	23.994	1.163
83	4092175	15.82	418.164	0.122	0.03	4767.782	3.348	0.07	12.903	0.269	2.08	19.183	0.464
84	4231567	11.43	280.676	0.000	0.00	4610.727	0.000	0.00	11.012	0.000	0.00	8.933	0.000
85	4372487	0.00	270.144	0.000	0.00	4462.129	0.000	0.00	4.345	0.000	0.00	9.743	0.000
86			0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000

ANO	POBLA-CION	TUBERCULOSIS LETAL	TUBERCULOSIS Morb	TUBERCULOSIS Morta	LEPRA LETAL	LEPRA Morb	LEPRA Morta	HEPATITIS LETAL	HEPATITIS MORB	HEPATITIS Morta	MALARIA LETAL	MALARIA Morb	MALARIA Morta
60	1942846	0.00	146.383	0.000	0.00	0.103	0.103	100.00	4.015	0.00	0	324.421	0.000
61	2020419	0.00	137.348	11.681	11.68	5.197	0.049	0.95	0.000	0.00	0	286.871	0.000
62	2096160	0.00	106.099	12.928	12.93	1.336	0.191	14.29	0.000	0.05	0	322.017	0.000
63	2168714	0.00	132.936	10.283	10.28	1.014	0.231	22.73	0.000	0.23	0	326.322	0.000
64	2237783	0.00	116.231	8.535	8.54	2.368	0.357	15.09	11.261	0.69	7.936507	297.750	0.000
65	2303921	0.00	95.259	7.943	7.94	1.215	0.217	17.86	12.327	0.39	3.169014	301.746	0.000
66	2383995	0.00	91.569	7.299	7.30	0.881	0.210	23.81	11.997	0.08	0.699300	720.304	0.000
67	2465729	0.00	85.289	6.165	6.16	1.054	0.203	19.23	6.692	0.12	1.818181	655.060	0.000
68	2551551	0.00	87.476	4.389	4.39	0.823	0.118	14.29	13.325	0.55	4.117647	613.979	0.000
69	2638088	1.34	64.744	5.421	5.42	0.265	0.076	28.57	13.381	0.30	2.266288	1121.418	0.000
70	2639097	5.03	61.801	5.002	5.00	0.796	0.038	4.76	10.875	1.33	12.19512	1308.667	4.132
71	2717238	5.26	66.354	6.404	6.40	0.589	0.037	6.25	17.923	1.18	6.570841	1788.066	2.463
72	2801492	10.31	76.459	5.747	5.75	0.643	0.143	22.22	18.954	2.11	11.11111	665.752	2.135
73	2892247	6.77	66.246	7.192	7.19	0.069	0.000	0.00	31.291	0.55	1.767955	306.405	1.178
74	2989577	4.40	61.313	5.954	5.95	0.067	0.000	0.00	25.188	0.17	0.664010	250.972	2.973
75	3093299	7.84	64.074	3.879	3.88	0.097	0.000	0.00	36.660	0.10	0.264550	979.278	2.576
76	3203029	8.30	44.957	3.434	3.43	0.250	0.000	0.00	31.439	0.06	0.198609	1523.683	1.034
77	3318040	13.12	47.558	5.063	5.06	0.060	0.000	0.00	36.769	0.21	0.573770	1187.870	1.155
78	3439017	37.67	41.494	3.926	3.93	0.029	0.029	100.00	30.590	0.03	0.095057	1006.276	1.778
79	3563823	6.40	41.051	3.143	3.14	0.000	0.000	0.00	39.059	0.06	0.143678	704.917	1.279
80	3691027	4.80	42.779	3.170	3.17	0.000	0.000	0.00	43.565	0.08	0.186567	1165.231	0.786
81	3820951	4.83	44.387	3.559	3.56	0.262	0.052	20.00	42.293	0.03	0.061881	1292.296	0.461
82	3955116	4.85	43.336	3.262	3.26	0.228	0.076	33.33	41.971	0.13	0.301204	1453.358	0.437
83	4092175	2.42	47.285	2.517	2.52	0.000	0.000	0.00	48.800	0.00	0	917.263	0.278
84	4231567	0.00	49.154	2.505	2.50	0.000	0.000	0.00	38.804	0.00	0	645.907	0.147
85	4372487	0.00	52.007	0.000	0.00	0.000	0.000	0.00	37.210	0.00	0	0.000	0.000
86			0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000

YEAR	POPULATION	SYPHILIS LETHAL	SYPHILIS Morb	SYPHILIS Morta	INFLUENZA LETHAL	INFLUENZA Morb	INFLUENZA Morta
60	1942846	0.00	88.942	0.000	0.00	971.719	23.213
61	2020419	0.00	113.095	0.247	0.22	582.255	17.274
62	2096160	0.00	111.871	0.286	0.26	909.997	23.281
63	2168714	0.00	74.653	0.369	0.49	759.990	11.620
64	2237783	0.00	88.525	0.223	0.25	828.945	8.446
65	2303921	0.00	37.675	0.130	0.35	710.224	8.160
66	2383995	0.00	108.557	0.294	0.27	1150.464	40.562
67	2465729	0.00	115.341	0.446	0.39	222.206	6.205
68	2551551	0.00	79.324	0.314	0.40	207.834	4.037
69	2638088	0.37	76.154	0.000	0.00	129.260	14.783
70	2639097	0.19	106.921	0.038	0.04	574.060	8.526
71	2717238	0.12	90.533	0.037	0.04	507.869	5.299
72	2801492	0.18	82.206	0.178	0.22	464.181	4.712
73	2892247	0.97	83.395	0.035	0.04	970.975	5.739
74	2989577	1.03	62.651	0.000	0.00	974.352	3.479
75	3093299	0.11	83.902	0.000	0.00	1279.346	2.716
76	3203029	0.08	99.500	0.031	0.03	2223.864	3.590
77	3318040	0.15	79.897	0.030	0.04	2000.006	3.828
78	3439017	0.13	76.010	0.029	0.04	2389.084	1.716
79	3563823	0.11	68.999	0.056	0.08	3307.993	1.992
80	3691027	0.04	71.606	0.000	0.00	4401.458	1.490
81	3820951	0.04	74.222	0.000	0.00	4443.396	1.204
82	3955116	0.02	93.600	0.000	0.00	4748.533	0.708
83	4092175	0.02	103.612	0.000	0.00	4350.889	0.782
84	4231567	0.00	110.999	0.000	0.00	2785.871	0.000
85	4372487	0.00	98.662	0.000	0.00	0.000	0.000
86			0.000	0.000	0.00	0.000	0.000

YEAR	SYPHILIS LETHAL	SYPHILIS Morb	SYPHILIS Morta	INFLUENZA LETHAL	INFLUENZA Morb	INFLUENZA Morta
60-64	0.00	95.417	0.225	0.24	810.581	16.767
65-69	0.12	83.410	0.237	0.28	483.998	14.749
70-74	0.26	85.143	0.058	0.07	598.287	5.551
75-79	0.11	82.661	0.029	0.04	2240.058	2.768
80-85	0.03	92.117	0.000	0.00	3455.025	0.697
60-63	0.00	97.140	0.226	0.23	805.990	18.847
64-68	0.00	85.885	0.281	0.33	622.935	13.482
69-73	0.25	87.844	0.058	0.07	529.269	7.812
74-78	0.16	81.392	0.018	0.02	1773.330	3.066
79-83	0.04	82.408	0.011	0.01	4250.454	1.235
84-85	0.00	104.831	0.000	0.00	1392.936	0.000