No Journal

Reprinted from the "S.A. Medical Journal", Vol. 47, 17th November 1973, Pages 2181 - 2188

468

To Mr P. R. B. Lewis

With best wishes

Louis Eisenberg

12/12/74

Syphilis in the Bantu of Soweto

A SEROLOGICAL STUDY

L. EISENBERG, M.B. B.CH. UNIV. RAND, *Chief Medical Officer (Personal Health), City Health Department, Johannesburg*

Reprinted from the "S.A. Medical Journal", Vol. 47, 17th November 1973, Pages 2181 - 2188

Syphilis in the Bantu of Soweto*

A SEROLOGICAL STUDY

L. EISENBERG, M.B. B.CH. UNIV. RAND, *Chief Medical Officer (Personal Health), City Health Department, Johannesburg*

SUMMARY

This study is an attempt to arrive at a reliable index of latent syphilis in a large and complex urban Bantu community. It is the result of 23 years of routine serological investigations of both outpatient and antenatal cases attending the 8 different Johannesburg City Council Clinics situated in Soweto.

S. Afr. Med. J., **47**, 2181 (1973).

In 1959 I decided to record clinical material at Jabavu Clinic, Soweto, to determine whether the incidence of syphilis was on the up- or down-grade. I took numerous blood specimens from patients attending the clinics over the years and treated the positive reactors. A comparison of the incidences from year to year should prove illuminating and it would be valuable to extend this comparison to include all 8 Soweto clinics under the jurisdiction of the City Health Department, Johannesburg. From the data compiled for the years 1949 - 1971 (23 years), a comparison was made of the incidences of latent syphilis in the antenatal clinics and syphilis diagnosed in the outpatient services. The positive reactors were classified according to the strength of the quantitative Kolmer result expressed in units.

This article is concerned with latent syphilis; it refers to clinical latency in untreated or inadequately treated cases after healing of the primary and secondary lesions, and before tertiary manifestations become apparent.

INCIDENCES OF SEROLOGICAL FINDINGS ELSEWHERE

In earlier studies of the incidence of venereal disease, investigators were mainly concerned with clinical observations. A select committee in the Cape, in 1888, gave the number of Bantu who were suffering from venereal disease as 3 052 out of a total of 5 529, i.e. 55%.[1] A more accurate evaluation of the incidence of venereal disease resulted from the use of serological testing by the Wassermann reaction. Seventy-four specimens of blood, taken from an unselected group of 1 000 Bantu men, showed a positive reaction giving a percentage of 7,4.[2]

Harding le Riche, in a health survey of Bantu children in Alexandra Township, Johannesburg, examined 496 schoolchildren in whom the Wassermann reaction was positive in 12,9%.

*Date received: 28 June 1973.

A table in the report of the Medical Officer of Health, Local Health Commission of Natal, 1946, reveals that of 437 outpatient and 715 antenatal cases tested, 27,46% and 20,1%, respectively, were positive (Landau).

The Medical Officer of Health of Springs (1938 - 1944) reported 23,97% positive Wassermann reactors in a group of 2 828 women at the antenatal clinic, and 26,5% positive in a group of 4 011 municipal male workers.

Rauch and Saayman[3] at Germiston found a percentage of 40,5% positive out of a total of 227 antenatal cases; and 44,4% positive in a total of 712 outpatient cases.

Table I shows the serological incidence of positive Wassermann reactions at the antenatal clinics in the Sanctuary and Bridgman Memorial Hospitals, Johannesburg, since 1951.[4] Note the decrease in the positive percentage in later years.

TABLE I. SEROLOGICAL INCIDENCE OF POSITIVE WASSERMANN REACTIONS AT 2 HOSPITALS, 1951 - 1963

	Sanctuary Hospital		Bridgman Hospital	
Year	No. of patients	Percentage positive	No. of patients	Percentage positive
1951	1 266	30	—	—
1952	1 137	34	3 408	21,68
1953	1 098	27,5	3 771	17,42
1954	1 216	25	4 629	14,56
1955	1 257	25,4	—	—
1956	1 264	18,27	2 774	9,37
1957	1 317	14,3	2 687	10,56
1958	1 262	10,57	2 772	7,54
1959	1 145	12,1	2 822	7,23
1960	1 094	12,5	2 726	7,44
1961	1 119	10,36	2 726	7,63
1962	1 083	5	2 728	6,19
1963	781	5,89	—	—

Further afield, in Rhodesia, Cowan[5] (quoting Willcox) in his survey in 1949, investigated various groups. His findings are summarized thus: (*i*) routine antenatal female examinations at Bulawayo (1945 - 1949); 32,9% positive (including doubtfuls); (*ii*) routine antenatal female examinations at Salisbury (1945 - 1949), 14,1% positive (including doubtfuls); (*iii*) routine antenatal female examinations at Umtali (1948 - 1949), 16,7% positive (including doubtfuls); (*iv*) Salisbury Hospital 19% positive (including doubtfuls);

(*v*) BSAP recruits, Umtali (1948 - 1949), 4,5% (positive including doubtfuls); (*vi*) RA Rifles, Salisbury (1948 - 1949), 15,8% positive (including doubtfuls).

GEOGRAPHICAL PATTERN OF SOWETO AND CLINICS

Soweto is a vast complex of townships situated to the south-west of Johannesburg and administered by the Johannesburg City Council. The population of Soweto is approximately 600 000, so that numerically it is one of South Africa's largest cities.[6]

The people of Soweto are all Bantu and almost all the tribes living in South Africa are represented. Zulus and Sothos predominate, with smaller numbers of Venda and Tsonga. The various tribes are housed in the townships according to their ethnic grouping; thus the Sothos occupy mainly the townships of Naledi, Tladi, Moletsane, Mapetla, Molapo, Jabavu, and Orlando East. The Zulus occupy Emdeni, Zola, Jabulani, Zondi, Mofolo, Moroka, Phiri, Senaoane, Dlamini, Dube and Orlando West. The other tribes are concentrated mainly in the Chiawelo and Pimville areas, while in the north-east of Soweto a small township, Noordgesig, houses Coloured people.

The background of living conditions before the start of this investigation (1949) was as follows: Orlando existed as a township with permanent brick houses. Shanty, as the name implies, was a shantytown with hovels built of mud, hessian and corrugated iron. Pimville was a slum dating back to 1905. Jabavu/Moroka area, too, was built of temporary building materials in 1946.

The clinic, where the writer began to work in 1947, was in a marquee. Infectious diseases were rife, e.g. venereal disease, smallpox, leprosy. In the pre-penicillin days it was common practice to fill Red Cross ambulances with venereal disease cases once or twice a week and send them to Rietfontein Hospital for treatment. Unrest and crime were endemic. The first permanent buildings made of concrete were erected in 1948. The improved site became White City, Jabavu. Gradually, brick houses were erected, but it was not until 1955 that order emerged from chaos.

Today medical services are provided by the City Health Department at clinics centrally situated in the areas (Fig. 1). There are 6 clinics at Soweto: at Jabavu, Moroka, Pimville, Orlando, Shanty, and Noordgesig. A seventh clinic, at Eastern Bantu Township, is situated East of Johannesburg. Until 1961, an eighth clinic operated in Western Bantu Township which is now occupied by Coloureds. A comprehensive medical service, including outpatient and midwifery services, is provided. Outpatient clinics operate 6

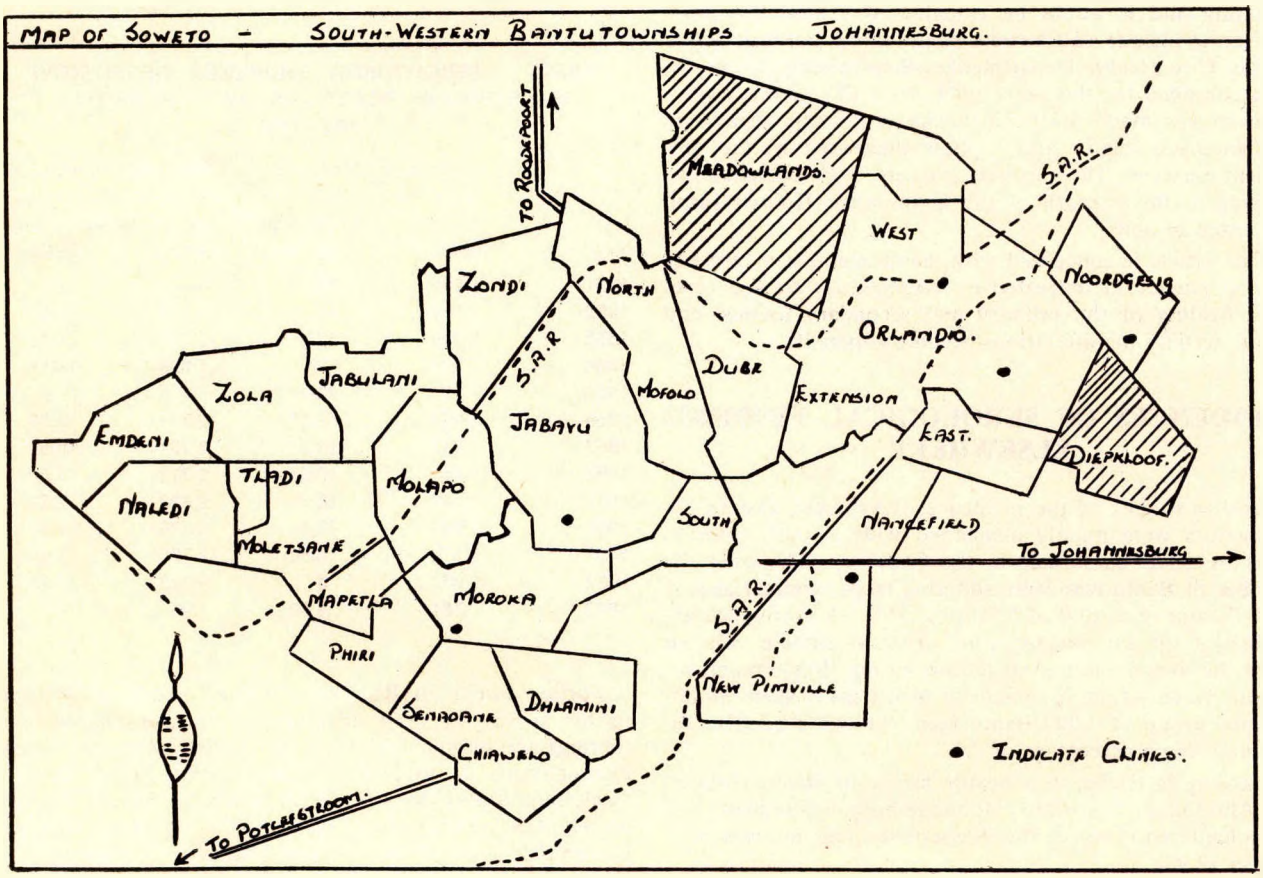

Fig. 1. Map of Soweto, Johannesburg.

days a week with referral of cases to the nearby Baragwanath Hospital. Antenatal clinics are held daily and confinements are carried out at home by trained midwives.

MATERIALS AND METHODS

At outpatient clinics, specimens of blood were taken from patients for the serological test for syphilis if the Medical Officer suspected an underlying latent infection. Treatment consequent on positive tests did not always follow; patients do either not report or discontinue treatment.

At antenatal clinics all new cases are subjected to routine Wassermann reaction and Rh tests. All WR-positive reactors are treated promptly and in the main, adequately. In Soweto, with its stable population, women of childbearing age often attend the clinic every 2 years or so, when pregnant; with each pregnancy blood tests are repeated.

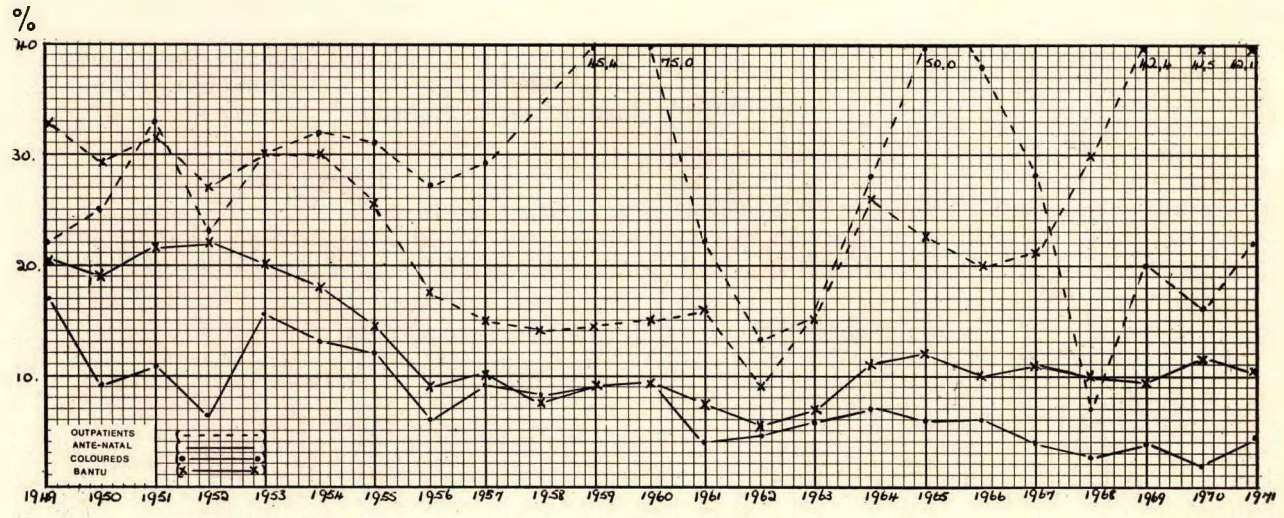

Fig. 2. See text.

TABLE II. WASSERMANN REACTIONS—BANTU TOWNSHIPS

	Outpatients				Antenatal			
Year	Positive WR	Negative WR	Total	%	Positive WR	Negative WR	Total	%
1949	1 669	3 323	4 992	33,3	790	3 005	3 795	20,8
1950	1 254	2 965	4 219	29,7	988	4 093	5 081	19,4
1951	1 403	3 035	4 438	31,6	1 315	4 722	6 037	21,7
1952	1 782	4 538	6 320	28,1	1 784	6 287	8 071	22,1
1953	2 465	5 699	8 164	30,1	2 110	8 085	10 195	20,6
1954	2 480	5 698	8 178	30,3	1 849	8 155	10 004	18,4
1955	1 657	4 516	6 173	26,8	1 061	5 710	6 771	15,6
1956	1 087	4 702	5 789	18,7	735	7 089	7 824	9,3
1957	740	3 828	4 568	16,1	1 111	9 954	11 065	10,0
1958	495	2 981	3 476	14,2	1 019	12 269	13 288	7,6
1959	576	3 140	3 716	15,5	1 359	13 458	14 817	9,1
1960	411	2 106	2 517	16,3	1 434	13 065	14 499	9,8
1961	488	2 277	2 765	17,6	1 136	13 389	14 525	7,8
1962	200	2 016	2 216	9,0	941	13 161	14 102	6,6
1963	240	1 294	1 534	15,6	1 051	13 391	14 442	7,2
1964	394	1 229	1 623	24,2	1 757	13 826	15 583	11,2
1965	463	1 553	2 016	22,9	1 535	11 254	12 789	12,0
1966	392	1 515	1 907	20,5	1 372	12 110	13 482	10,1
1967	423	1 549	1 972	21,4	1 401	10 991	12 392	11,3
1968	277	642	919	30,1	1 247	10 535	11 782	10,5
1969	485	657	1 142	42,4	1 070	10 063	11 133	9,6
1970	574	807	1 381	41,5	1 348	9 976	11 324	11,9
1971	617	847	1 464	42,1	1 204	9 932	11 136	10,8
Total	20 572	60 917	81 489		29 617	224 520	254 137	

In the course of the years under review, a woman could have attended the antenatal clinic for 5 or more pregnancies.

The percentages of positive reactors from both general outpatient and antenatal clinics have been compared. It will be noted that the percentage of positive reactors among outpatients is higher—they were suspected of latent infection. The lower percentage among antenatal cases serves as a general guide to the level of latent infection in the population.

Prior to 1955 syphilis was treated at the clinics with arsenic and bismuth; courses consisted of arsenic and bismuth alternately, each course lasting 10 weeks, and treatment was prolonged up to 2 years. From 1955, penicillin was introduced generally—for all sorts of medical conditions, including syphilis. From 1955, the following schedule of treatment was followed by the clinics. Penicillin, in the form of procaine penicillin G in oil, with 2% aluminium monostearate (PAM), was used; 2,4 million units were injected intramuscularly, followed by 4 injections of 1,2 million units at 3- to 4-day intervals. A total of 7,2 million units of PAM was administered.

PERIOD OF INVESTIGATION

Between 1949 and 1953 reports on Wassermann reactions were: positive, doubtful, or negative. From 1953 the quantitative Kolmer test has been used, results being expressed in units. Doubtful results prior to 1953 were classified as negative. Prior to 1948 the crude antigens used in tests were relatively insensitive and often produced exaggerated false-positive reactions. The newer cardiolipin antigens used produce fewer false-positives and all the latter reactors have been included in this survey.[7]

RESULTS

The population of all areas served by the clinics is Bantu except for Noordgesig which has a Coloured population.

TABLE III. WASSERMANN REACTIONS—COLOURED CLINIC

	Outpatients				Antenatal			
Year	Positive WR	Negative WR	Total	%	Positive WR	Negative WR	Total	%
1949	55	187	242	22,7	24	113	137	17,9
1950	82	241	323	25,3	15	142	157	9,5
1951	99	197	296	33,4	11	86	97	11,3
1952	68	227	295	23	13	152	165	7,8
1953	199	460	659	30,1	32	168	200	16
1954	209	429	638	32,7	29	190	219	13,2
1955	129	285	414	31,1	27	194	221	12,2
1956	73	193	266	27,4	17	228	245	6,9
1957	29	71	100	29	18	168	186	9,6
1958	—	5	5	—	20	220	240	8,3
1959	5	6	11	45,4	26	257	283	9,1
1960	3	1	4	75	23	219	242	9,5
1961	2	7	9	22,2	12	274	286	4,1
1962	2	13	15	13,3	16	308	324	4,9
1963	2	11	13	15,3	13	249	262	4,9
1964	4	10	14	28,5	22	265	287	7,6
1965	4	4	8	50	17	257	274	6,2
1966	7	11	18	38,8	18	270	288	6,2
1967	6	15	21	28,5	11	248	259	4,2
1968	1	12	13	7,6	7	264	271	2,6
1969	2	8	10	20	11	281	292	3,7
1970	9	47	56	16	6	283	289	2
1971	10	35	45	22,2	13	285	298	4,6
Total	1 000	2 475	3 475		401	5 121	5 522	

TABLE IV. BLOOD TESTS FOR BOTH RACIAL GROUPS 1949 - 1971 (TOTAL BLOOD TESTS DONE 344 623)

	Outpatients			Antenatal		
Race	Positive WR	Negative WR	Total	Positive WR	Negative WR	Total
Coloureds	1 000	2 475	3 475	401	5 121	5 522
Bantu	20 572	60 917	81 489	29 617	224 520	254 137
Total	21 572	63 392	84 964	30 018	229 641	259 659

Fig. 2 indicates the percentage positive rate for each year during the period 1949 - 1971. The outpatient graphs are shown throughout as broken lines and the antenatal as continuous lines. Statistics for each clinic are available. However, for the purposes of this article Bantu clinic attendances and investigations done have been totalled, and

TABLE V. NUMBER OF POSITIVE TESTS IN KOLMER UNITS, 1953 - 1971

	Kolmer units							
	2½	5	10	20	40	80	160	Total
Outpatients								
Coloureds	71	87	115	118	87	56	44	578
Bantu	860	1 206	1 550	1 781	1 456	1 150	2 248	10 251
Antenatal								
Coloureds	52	50	59	53	45	28	17	304
Bantu	2 653	3 612	4 185	4 038	3 160	2 096	2 207	21 951

TABLE VI. QUANTITATIVE KOLMER TESTS—BANTU TOWNSHIPS

Kolmer units		Outpatients								Antenatal							
		2½	5	10	20	40	80	160	Total	2½	5	10	20	40	80	160	Total
1953	**No.**	82	96	114	113	75	55	57	592	84	120	127	114	82	50	37	614
	%	13,8	16,2	19,2	19,0	12,6	9,2	9,6		13,6	19,5	20,6	18,5	13,3	8,1	6,0	
1954	**No.**	237	274	338	354	214	130	153	1 700	224	233	313	315	205	126	112	1 528
	%	13,9	16,1	19,8	20,8	12,5	7,6	9,0		14,6	15,2	20,4	20,6	13,4	8,2	7,3	
1955	**No.**	90	113	168	222	163	106	123	985	62	121	189	189	122	85	62	830
	%	9,1	11,4	17,0	22,5	16,5	10,7	12,4		7,4	14,5	22,7	22,7	14,6	10,2	7,4	
1956	**No.**	46	73	103	117	97	59	77	572	66	85	116	123	93	46	46	575
	%	8,0	12,7	18,0	20,4	16,9	10,3	13,4		11,4	14,7	20,1	21,3	16,1	8,0	8,0	
1957	**No.**	51	84	120	137	120	83	88	683	81	137	203	209	176	140	93	1 039
	%	7,4	12,2	17,5	20,0	17,5	12,1	12,8		7,7	13,1	19,5	20,1	16,9	13,4	8,9	
1958	**No.**	33	35	67	91	71	54	84	435	88	136	173	218	166	110	96	987
	%	7,5	8,0	15,4	20,9	16,3	12,4	19,3		8,9	13,7	17,5	22,0	16,8	11,1	9,7	
1959	**No.**	41	79	85	97	79	50	98	529	134	227	235	240	215	109	134	1 294
	%	7,7	14,9	16,0	18,3	14,9	9,4	18,5		10,3	17,5	18,1	18,5	16,6	8,4	10,3	
1960	**No.**	19	29	61	62	51	43	105	370	93	158	246	304	234	143	182	1 360
	%	5,1	7,8	16,4	16,7	13,7	11,6	28,3		6,8	11,6	18,0	22,3	17,2	10,5	13,3	
1961	**No.**	24	34	68	70	70	49	160	475	88	137	201	232	178	118	156	1 110
	%	5,0	7,1	14,3	14,7	14,7	10,3	33,6		7,9	12,3	18,1	20,9	16,0	10,6	14,0	
1962	**No.**	3	12	22	25	33	21	72	188	45	102	174	175	166	100	159	921
	%	1,5	6,3	11,7	13,2	17,5	11,1	38,2		4,8	11,0	18,8	19,0	18,0	10,8	17,2	
1963	**No.**	8	30	24	36	24	24	90	236	120	167	165	162	141	114	163	1 032
	%	3,3	12,7	10,1	15,2	10,1	10,1	38,1		11,6	16,1	15,9	15,6	13,6	11,0	15,7	
1964	**No.**	39	51	46	56	49	37	103	381	367	356	309	243	194	107	161	1 737
	%	10,2	13,3	12,0	14,6	12,8	9,7	27,0		21,1	20,4	17,7	13,9	11,1	6,1	9,2	
1965	**No.**	44	53	68	51	63	48	131	458	294	318	278	203	168	108	122	1 491
	%	8,6	12,5	14,8	11,1	13,7	10,4	28,6		19,7	21,3	18,6	13,6	11,2	7,2	8,1	
1966	**No.**	34	35	49	54	44	51	99	366	212	242	265	179	186	140	103	1 327
	%	9,2	9,5	13,3	14,7	12,0	13,9	27,0		15,9	18,2	19,9	13,4	14,0	10,5	7,7	
1967	**No.**	22	39	47	53	60	46	123	390	136	211	259	228	188	166	139	1 327
	%	5,6	10,0	12,0	13,5	15,3	11,7	31,5		10,2	15,9	19,5	17,1	14,1	12,5	10,4	
1968	**No.**	16	17	24	40	37	32	103	269	158	185	231	220	164	146	128	1 232
	%	5,9	6,3	8,9	14,8	13,7	11,8	38,2		12,8	15,0	18,7	17,8	13,3	11,8	10,3	
1969	**No.**	19	41	42	61	44	80	174	461	123	199	199	199	152	87	83	1 042
	%	4,1	8,8	9,1	13,2	9,5	17,3	37,7		11,8	19,0	19,0	19,0	14,5	8,3	7,9	
1970	**No.**	23	61	62	67	75	91	183	562	133	249	285	265	181	108	85	1 306
	%	4,0	10,8	11,0	11,9	13,3	16,1	32,5		10,1	19,0	21,8	20,2	13,8	8,2	6,5	
1971	**No.**	29	50	47	75	86	90	225	602	141	227	212	217	145	92	142	1 176
	%	4,8	8,3	7,8	12,4	14,2	14,9	37,3		11,9	19,3	18,0	18,4	12,3	7,8	12,0	
Total		860	1 206	1 555	1 781	1 455	1 149	2 248	10 254	2 649	3 610	4 180	4 035	3 156	2 095	2 203	21 928
Ave.	%	8,3	11,7	15,1	17,3	14,1	11,2	21,9		12,0	16,4	19,0	18,4	14,3	9,5	10,0	

indicate as a single entity the results obtained. Tables II and III indicate positive and negative reactors, totals, and percentage positive for each year.

Positive Reactions

The analysis comprises a total of 84 964 blood tests at the outpatient clinics, and 259 659 tests at antenatal clinics, giving a total of 344 623 for all clinics, between 1949 and 1971 (Table IV).

Bantu antenatal incidence: Between 1949 and 1956 the percentage positive reactors fell dramatically from over 20% to 8%. Thereafter the fall to 6% (in 1962) was gradual and inconstant. From 1963, however, there is once again a rise to a mean of just over 10% (1971).

Bantu outpatient incidence: Generally, this shows a similar trend at a higher level and with a far greater rise in incidence between 1963 and 1971.

Coloured antenatal and outpatient incidence: The incidence of positive reactors among Coloured antenatal cases has declined irregularly from 18% in 1949 to 4% in 1971. The incidence of positive reactors among the outpatients is roughly parallel but at a higher level.

Degree of Positivity

The positive reactors in both the outpatient and antenatal clinics were classified according to the degree of positivity.

TABLE VII. QUANTITATIVE KOLMER TESTS—COLOURED CLINIC

		Outpatients								Antenatal							
Kolmer units		2½	5	10	20	40	80	160	Total	2½	5	10	20	40	80	160	Total
1953	No.	11	25	14	12	7	6	7	82	1	1	2	2	2	—	—	8
	%	13,4	30,4	17	14,6	8,5	7,3	8,5		12,5	12,5	25	25	25	—	—	
1954	No.	28	33	38	45	39	15	11	209	4	5	5	5	5	3	2	29
	%	13,3	15,7	18,1	21,5	18,6	7,1	5,2		13,7	17,2	17,2	17,2	17,2	10,3	6,8	
1955	No.	17	16	32	28	17	11	8	129	4	3	3	6	4	6	—	26
	%	13,1	12,4	24,8	21,7	13,1	8,5	6,2		15,3	11,5	11,5	23	15,3	23	—	
1956	No.	9	6	19	14	13	8	4	73	2	1	1	6	6	1	—	17
	%	12,3	8,1	26	19,1	17,8	10,9	5,4		11,7	5,8	5,8	35,2	35,2	5,8	—	
1957	No.	1	5	7	8	2	4	1	28	1	3	2	1	4	2	—	13
	%	3,5	17,8	25	28,5	7,1	14,2	3,5		7,6	23	15,3	7,6	30,7	15,3	—	
1958	No.	—	—	—	—	—	—	—	—	3	4	3	4	3	1	1	19
	%	—	—	—	—	—	—	—	—	15,7	21	15,7	21	15,7	5,2	5,2	
1959	No.	—	1	—	1	1	2	—	5	3	3	4	5	2	5	2	24
	%	—	20	—	20	20	40	—		12,5	12,5	16,6	20,8	8,3	20,8	8,3	
1960	No.	1	—	—	—	2	—	—	3	4	2	2	10	3	—	1	22
	%	33,3	—	—	—	66,6	—	—		18,1	9	9	45,4	13,6	—	4,5	
1961	No.	—	—	—	—	—	—	2	2	2	2	3	2	1	2	—	12
	%	—	—	—	—	—	—	100		16,6	16,6	25	16,6	8,3	16,6	—	
1962	No.	1	—	1	—	—	—	—	2	—	3	5	1	2	3	2	16
	%	50	—	50	—	—	—	—		—	18,7	31,2	6,2	12,5	18,7	12,5	
1963	No.	1	—	—	1	—	—	—	2	—	4	1	2	4	1	1	13
	%	50	—	—	50	—	—	—		—	30,7	7,6	15,3	30,7	7,6	7,6	
1964	No.	—	—	—	—	1	—	3	4	7	2	6	2	2	2	1	22
	%	—	—	—	—	25	—	75		31,8	9,1	27,3	9,1	9,1	9,1	4,5	
1965	No.	—	—	1	1	—	—	2	4	7	1	6	2	1	—	—	17
	%	—	—	25	25	—	—	50		41,2	5,9	35,3	11,8	5,9	—	—	
1966	No.	—	1	—	1	1	2	2	7	3	6	6	1	—	—	2	18
	%	—	14,2	—	14,2	14,2	28,5	28,5		16,6	33,3	33,3	5,5	—	—	11	
1967	No.	—	—	1	1	3	1	—	6	3	4	—	1	2	1	—	11
	%	—	—	16,6	16,6	50	16,6	—		27,2	36,3	—	9	18	9	—	
1968	No.	—	—	1	—	—	—	—	1	1	1	2	1	2	—	—	7
	%	—	—	100	—	—	—	—		14,2	14,2	28,5	14,2	28,5	—	—	
1969	No.	—	—	—	—	1	1	—	2	3	4	2	—	1	—	1	11
	%	—	—	—	—	50	50	—		27,2	36,3	18,1	—	9	—	9	
1970	No.	1	—	1	1	—	4	2	9	1	—	1	1	—	—	3	6
	%	11,1	—	11,1	11,1	—	44,4	22,2		16,6	—	16,6	16,6	—	—	50	
1971	No.	1	—	—	5	—	2	2	10	3	1	5	1	1	1	1	13
	%	10	—	—	50	—	20	20		23	7,6	38	7,6	7,6	7,6	7,6	
Total		71	87	115	118	87	56	44	578	52	50	59	53	45	28	17	304
Ave.	%	12,2	15,0	19,8	20,4	15,0	9,6	7,7		17,1	16,4	19,4	17,4	14,8	9,2	5,5	

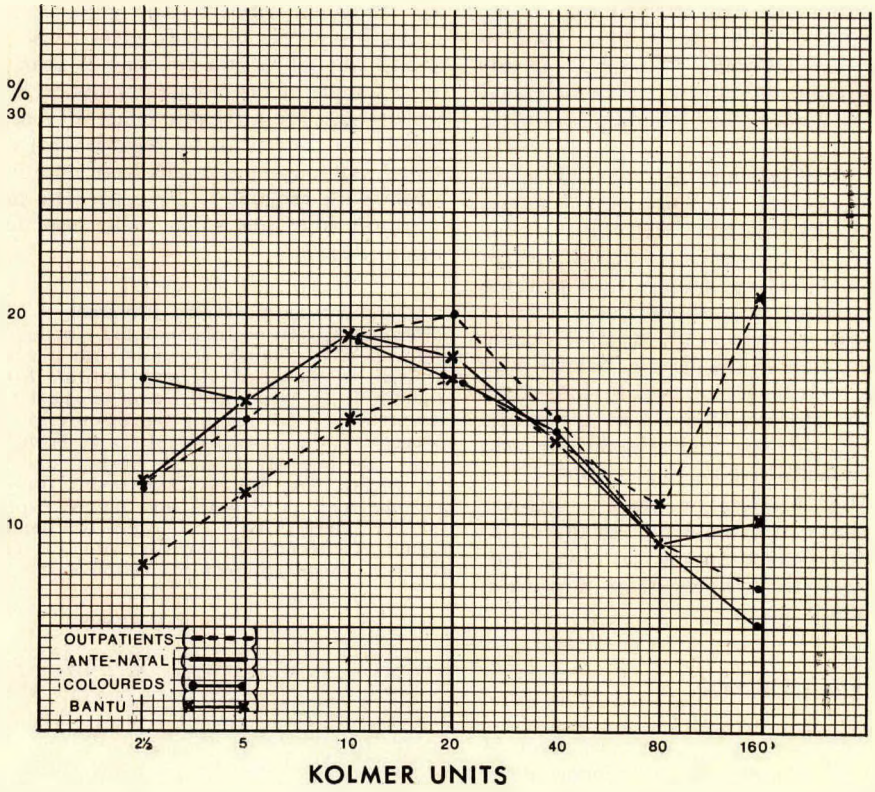

Fig. 3. See text.

Table V tabulates the results for all the outpatient and antenatal clinics, expressed in units 2½, 5, 10, 20, 40, 80 and 160; 10 829 quantitative Kolmer tests were done in the outpatient and 22 255 in the antenatal clinics, giving a grand total of 33 084. Tables VI and VII show these results classified in units for each year.

It will be noted that the total figures for each year may not coincide with the total of positive reactors, due to the fact that in the latter, not all results received were in units; some were given as positive only. At the bottom of each table the total number of reactors under each unit heading, is given for the years 1953 - 1971 inclusive. Under the totals the average percentage is calculated, and from this the graphs have been drawn up. The base-line for each is composed of the quantitative Kolmer tests in units, ranging from 2½ to 160. The vertical lines consist of the percentage of patients for each number of units shown at the bottom of each table in the outpatient and antenatal sections.

An arbitrary vertical line was drawn through the 20-unit point as being half-way between 2½ and 160 units, in order to demonstrate whether the graph was higher to the left or to the right of 20 units.

In Fig. 3 there is a distinct contrast between the patterns of antenatal and outpatient sections. In the antenatal graphs the left limb, i.e. to the left of the midline, is much higher than the right limb, which is seen to drop down steeply. Quantitative positive results in the Bantu outpatients show a shift to the right. The graph for the Coloured sector follows that of the Bantu antenatal cases.

DISCUSSION

The explanation for the striking drop in the percentage of positive tests in the antenatal sections of all clinics, is largely the fact that in all clinics penicillin came into general use in 1955. (The use of penicillin in patients with latent syphilis would certainly bring down the serological titres or convert them to negative.)

With the urbanization of the majority of Bantu, a greater number of positive cases is to be expected. This is demonstrated. Although in the early years housing was, to a large extent, inadequate, it is gratifying to note that since 1955 the position has improved enormously. The establishment of numerous housing schemes, a number of schools, libraries, swimming pools, sports grounds and sport stadia has brought about more satisfactory living conditions and a more pleasant environment. Alcohol, however, is used freely and plays a deleterious role in the incidence of venereal disease in the townships.

The most important factor, with regard to the control of positive serological syphilis in the antenatal population, is the detection of the cases and their subsequent treatment and follow-up. Penicillin has made the course of treatment short compared with the long treatment schedules

of the arsenic and bismuth era. The gradual rise in the incidence among the antenatal cases from 1961 - 1962 to date, is due to the greater incidence of syphilis in the general population. The proper treatment of the antenatal cases is essential to safeguard the offspring of these mothers.

The hormonal factor which pertains to syphilis in pregnancy should not be overlooked. 'The hormonal changes of pregnancy are said to have a beneficial effect on the course of syphilis. There is a lower incidence of neurosyphilis in women who have borne children than in those who have not, and by both neurosyphilis and cardiovascular syphilis being less common in the female'.[8] Again, 'Pregnancy modifies the course of the disease. Women who become pregnant in the early stages of syphilis commonly lose the signs of infection and are likely to be spared the late serious effects. As Parran has said: "Syphilis is bad for pregnancy, but a pregnancy is good for syphilis".'[9]

The whole aim of this investigation was to discover whether the level of latency of syphilis among the childbearing female population was dropping or rising. Unfortunately, the results show that the percentage, at present, is higher than it was 10 years ago.

CONCLUSION

The tables and graphs are the continuous records over 23 years of the percentage of positivity of the female population at risk and of childbearing age in the Soweto complex, in contrast to the percentage of positive reactors in the outpatient services. The gradual rise of positive reactors from 1963 onwards, gives cause for concern. Continuous annual records covering 23 years, in contrast to the usual sample of the female population at risk and of childbearing age, are a reliable index of venereal disease in the population. They can be regarded as a serological 'barometer'. Although the results have improved over the years, much work remains to be done. The important lesson to be learnt from this study is the need to test for syphilis, and to treat it.

I should like to thank Professor A. H. Smith, Medical Officer of Health of Johannesburg, for his encouragement and permission to publish. I should also like to thank Dr G. M. Macnab of the South African Institute for Medical Research and Dr T. H. Stewart, Assistant Medical Officer of Health of Johannesburg, for reading the manuscript; Professor I. W. F. Spencer of the University of Cape Town for his encouragement; the late Mr J. A. H. Boshoff and Mrs A. S. Bakkes, Statistician, City Health Department, for drawing the graphs and the map of Soweto, and tables; Professor Shirley Siew for her interest; Miss A. Gygax for her suggestions for the layout of the article, and my wife, Dr Tanya Siew, for her constant encouragement to complete the work.

REFERENCES

1. Laidler, P. W. (1940): S. Afr. Med. J., **14**, 71, 490.
2. O'Malley, C. K. and Wilson, A. J. (1949): *Ibid.*, **23**, 73.
3. Rauch, J. H. and Saayman, L. R. (1938): *Ibid.*, **12**, 885.
4. Sieff, B. (1965): Med. Proc., **11**, 400.
5. Cowan, W. (1962): Cent. Afr. J. Med., **8**, 202.
6. Non-European Affairs Department (1969): *Soweto: A City within a City*. Johannesburg: City Council.
7. MacNab, G. M. (1966): Personal communication.
8. Wilcox, R. R. (1964): *Textbook of Venereal Diseases and Trepanomatosis*, 2nd ed. p. 231. London: William Heinemann Medical Books.
9. King, A. and Nicol, C. (1964): *Textbook of Venereal Disease*, p. 10. London: Cassell.

Collection Number: A1132

Collection Name: Patrick LEWIS Papers, 1949-1987

PUBLISHER:

Publisher: **Historical Papers Research Archive, University of the Witwatersrand, Johannesburg, South Africa**
Location: **Johannesburg**

LEGAL NOTICES: