27 years of uninterrupted contact tracing *The 'Tyneside Scheme'*

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The purpose of this paper is to draw the attention of today's venereologists to the 'Tyneside Scheme', which seems to have been largely forgotten outside Northumbria. Basically this was a local authority programme of education, social study, and contact tracing. It was inaugurated as an experiment in 1943, was found to be successful, and has been continued to the present day.

The scheme and its application are described in detail, and the results achieved in 1970 may provide a yard-stick by which other workers in this field of venereology may care to measure their own results.

It was Osler himself who mentioned the need for the employment of social workers in venereal diseases clinics (Osler, 1917). Holland and Russia seem to have been the first countries to make use of the social worker in the campaign against venereal disease (Fessler, 1946). A few clinics in London appointed social workers in the 1920s, but their main function appears to have been to help patients in their problems. Contact tracing, as we understand it, probably started in the early 1930s in America, and it was in the American Forces in Great Britain during the early years of their war, that contact tracing was first seriously undertaken in a determined effort to reduce the amount of venereal disease among American troops (Editorial, *Brit. J. vener. Dis.*, 1945). An awareness of their work, coupled with somewhat alarming V.D. rates in Northumberland and Durham, led the then Medical Officer of Health for Newcastle upon Tyne, Dr. John Charles (later Sir John Charles, Chief Medical Officer to the Ministry of Health) to conceive and develop the 'Tyneside Scheme' (1944).

An article entitled 'Tyneside Experimental Scheme in Venereal Disease Control' (1945) gave an account of the first 6 months of the experiment. Fessler (1946) recalled that, at a meeting of the Medical Society for the Study of Venereal Diseases in 1944, it had been

unanimously agreed that the social worker had become an 'indispensable member of the staff of the Venereal Diseases Clinic'. Since 1946 only eight papers on contact tracing have appeared in the *British Journal of Venereal Diseases*. Haworth and Nicol (1954) recorded giving contact slips to 149 (78 per cent.) of 190 men with gonorrhoea attending St. Bartholomew's Hospital between April, 1951, and August, 1953; 34 females (18 per cent.) were traced and 29 (15 per cent.) found to have gonorrhoea. All were secondary or subsequent contacts. Health Visitors sought only two contacts; one was traced but she refused to attend.

Nine years later, Dunlop (1963) reported that 100 men with gonorrhoea, questioned by a physician, had named 100 source contacts, of whom six attended and all had gonorrhoea, and 22 subsequent contacts of whom eighteen (82 per cent.) attended and fourteen (64 per cent.) had gonorrhoea.

Burgess (1963) recorded his results in the West Riding of Yorkshire between 1948 and 1961, using Form I (Revised). This was used only where the contact slip method had failed. Of 1,503 contacts notified on these forms, 1,414 (94 per cent.) were located, and of these, 1,248 (83 per cent.) were examined; 906 were free from infection, 25 had 'other conditions', 181 had syphilis, and 105 had gonorrhoea. Thus 286 cases of venereal disease were brought to treatment. These represented 19 per cent. of 1,503 notifications and were mostly source contacts; subsequent contacts were included but most of the latter had already responded to the contact slip method (personal communication). Burgess did not give the results obtained by the contact slip method in the same district. The figures, though gratifying, were not impressive as they were spread over 12 years, but the net was being more widely cast; this was no parochial effort.

Willcox, Jefferiss, and Naughten (1966), at St. Mary's Hospital, quoted results concerning 212 West Indian men with gonorrhoea. Only 81 (38.2 per cent.) contact slips could be issued and these brought in

35 women, of whom thirty were subsequent contacts. Of these 35, only fifteen had gonorrhoea, representing 7.1 per cent. of the original tally. Ultimately, the source of infection was proved in only four (1.9 per cent.) of the 212 cases. These results persuaded these authors of the need for a social worker, who was duly employed. She interviewed 330 men with gonorrhoea; eighty named sources were traced, and 64 (80 per cent. of those traced, or 19.4 per cent. of those involved) attended. Of these 47 had gonorrhoea and two examined elsewhere likewise had gonorrhoea. These 49 represented 14.8 per cent. of the total of sources of infection. On the other hand, of 86 subsequent contacts named, 45 were traced; 41 attended and 21 (24 per cent. of those named) had gonorrhoea. The source contact was known in only 29.7 per cent. of male West Indian cases.

In the same year, Lamb (1966) gave an excellent description of the type of work involved, in a paper entitled 'New Methods of Contact Tracing'. She increased the contact attendance for syphilis from 1.7 to 12.1 per cent. and for gonorrhoea from 10.6 to 19.7 per cent.

Muspratt and Ponting (1967) recorded a 'Pilot Study' at the London Hospital and St. Thomas's Hospital which had been inaugurated in 1964, just 21 years after the Tyneside Scheme (to which no reference was made) had been launched. This London team improved the results obtained by the contact slip and tactful interrogation method from 1964 to 1965 from 29.3 to 45.1 per cent. in the case of source contacts, but effected no change in the case of subsequent contacts (32 down to 31 per cent.).

Hare, Lamb, and King (1970) reported from the London Hospital a limited survey showing that 40 per cent. of source contacts and 82 per cent. of subsequent contacts of 119 West Indian patients with gonorrhoea were persuaded to attend that clinic.

Also from the London Hospital, Dunlop, Lamb, and King (1971) reported their results of contact tracing for 1969 and compared them with those for 1960 (Dunlop, 1963). Source ('reservoir') contacts per 100 male gonorrhoea cases increased from six to 36, and subsequent contacts from six out of eleven to eighteen out of 25. The overall contact attendance thus improved from twelve to 54. These workers emphasized the approach towards unity of the female : male ratio (1 : 2 in 1969) and suggested that contact tracing contributed to this, as it must undoubtedly do. They also hinted that the actual drop in male cases attending the Whitechapel clinic had been partly effected by this process. This is difficult, if not impossible, to prove. The female : male gonorrhoea ratio in Newcastle (1 : 1.9 in 1969 and 1 : 1.6 in 1970) is lower than that for White-

chapel, but the male gonorrhoea cases have doubled between 1960 and 1969 (225 to 445), though it seems reasonable to suggest that the rate of increase has been less than it might otherwise have been.

A point of marked contrast between the Whitechapel figures for 1969 and the Newcastle figures for 1970 concerns the statement by Dunlop and others (1971) that 49 per cent. of men with gonorrhoea acquire their infections from girl friends and 'regular girl friends' (whom they define). Why then only 36 per cent. of source contacts attending? It is the experience in Newcastle that remarkably few men acquire their infections from girl friends (see Appendix II). To-day's attitude to sexual intercourse results in girl friends, whether regular or not (as well as wives), acquiring their infections mostly as subsequent contacts. The contribution of prostitutes to the spread of venereal disease is less than it was. Dunlop and others (1971) quoted 31 per cent. of cases of gonorrhoea in men as being contracted from prostitutes in 1960 and 14 per cent. in 1969. In Newcastle, the figures were 27 per cent. (1960) and 17 per cent. (1970), but in 1969 a further 16 per cent. of infections were acquired from women who had accepted lodging, drinks, etc., in lieu of cash. The affluent good-time 'easy amateur' is today's major source of infection; it is somewhat euphemistic for a patient to label her his 'girl friend', especially when he 'picked her up last week'. The sharp rise in the incidence of venereal disease in women is clearly related to the cult of premarital intercourse and this is what today's VD problem is largely about. Economics and the sexual climate lessen prostitution, but not disease, more than do the rigours of the law. It may now be questioned whether society's condemnation of prostitution is not an anachronism.

The authors of the eight papers cited above quoted only thirteen references, and none of them mentioned the article by Fessler (1946) who gave 25 references. They did not refer to the 'Tyneside Scheme', nor to the three papers on the Medico-Social Aspects of the Venereal Diseases by Macfarlane (1948a, b) and Macfarlane and Johns (1964). Nicol (1971), who has lately referred to the work of Muspratt and Ponting, also failed to mention the Tyneside contribution to the subject. It may be supposed that these war-time and immediate post-war articles did not have a wide distribution or have been assumed to have little relevance in the present sexual climate. Had wider publicity been given to the scheme, and had Newcastle's example been generally followed in the matter of contact tracing as it was in serological screening of antenatal cases, the venereal diseases situation in the United Kingdom today might well have been different.

The Tyneside Scheme

Yesterday

Taking part in the scheme were the County Councils of Durham and Northumberland and the County Borough Councils of Gateshead, Newcastle upon Tyne, Tynemouth, and South Shields. The area covered was approximately 2,000 square miles involving the whole of Northumberland and the north west portion of Durham and the population amounted to close on one and a half million. The scheme embraced

- (i) An education programme for all interested in fighting VD (the Central Council for Health Education organizing twelve conferences in the first 6 months);
- (ii) The routine serological testing of antenatal cases (with what results few can be unfamiliar);
- (iii) The inauguration of a contact-tracing scheme.

The scheme was, to quote Sir Wilson Jameson (1944) then Chief Medical Officer to the Ministry of Health, 'for all practical purposes a pioneer effort on the part of a Local Government organization in this country'. Four clinics participated – Newcastle, Tynemouth, South Shields, and Blyth (the last has since been closed). The late Dr. A. E. W. McLauchlan was Physician in Charge, soon to be succeeded by the late Dr. W. V. Macfarlane. Miss Hilda Johns, M.A., O.B.E., of the Tyneside Council of Social Service, was appointed whole-time Liaison Officer and Chief Almoner. Working with her were a full time clerk and nine part-time Health Visitors, who combined contact-tracing with their other health visiting, thus camouflaging the nature of their special work. The importance and success of this experiment were recognized by the award of the O.B.E. to Miss Hilda Johns.

At first, only a reduction in the amount of disease was intended by contact tracing but the process of questioning patients, locating and visiting their contacts, and then persuading them to attend revealed for the first time the social background of the venereal diseases. Excellent descriptions are contained in the preliminary report of the first 6 months' progress (Johns, 1945), and in subsequent articles by Macfarlane (1948a, b). As a single example, Appendix II shows the changing venue of cases and their contacts. So much for the Street Offences Act! To-day one can be introduced to one's infection in the spurious glamour and comfort of a night club much more congenially than in the dead-pan atmosphere of the railway station, but still the street corner claims its victims.

Additionally, the Organization lent itself to tackling the defaulter problem, and this became and remains an important feature of the scheme.

The figures for the first 6 months of the Tyneside Scheme are shown in Appendix I which is reproduced from the original report. The number of male patients with infectious venereal disease is not shown, but the volume of work undertaken by the social unit, and its success and value are evident. 241 female contacts were identified out of 451 named. 211 were accounted for and 103 proved to have syphilis and/or gonorrhoea. The figures for 12 months (January 1, 1945, to December 31, 1945) are shown with the above and are fairly comparable.

Also shown in Appendix I are the figures relating to contacts named through Regulation 33B Form I, less than half of whom were traced or identified and examined. The total nominated in 6 months (132) must have been a trifling number compared with venereal cases occurring in the armed forces and acquired not 5 minutes walk from Fenham Barracks. Regulation 33B was abrogated on December 31, 1947.

The situation by 1946, was reported as follows: '80 per cent. of 1,991 contacts (both sexes) sought on reasonable evidence were located. Of these, however, only 38 per cent. co-operated as a result of the patients' efforts, which usually implied the patients giving contact letters to the suspects. Where the contact letter was effective, new clients were almost invariably wives or husbands or fiancées or regular consorts of the patients in question. The contact letter was generally useless in enlisting the co-operation of promiscuous women, and only as the result of painstaking efforts by the social workers were the remainder (62 per cent.) persuaded to attend. Altogether, 7,030 efforts were expended in the form of letters, visits, and personal interviews before 1,599 contacts responded to our efforts, yet 65 per cent. of them were found to be suffering from venereal disease' (Macfarlane, 1948a).

It is interesting to observe that with today's sexual freedom and less squeamish approach to venereal matters, there has been a complete reversal in the ratio of contacts persuaded to attend by patients (including most of the subsequent contacts and two-thirds of the source contacts—amounting in all to 193 or 77 per cent.)—and those persuaded by contact tracers—57 (23 per cent.) see Table III).

Also in 1946 the social team had reduced the defaulter rate; in male cases, of syphilis from 26 to 8 per cent. and of gonorrhoea from 39 to 10 per cent.; for women, the figures were reduced from 44 to 11 per cent. and from 48 to 11 per cent. respectively. No defaulter was given up as hopeless until three reminder letters had been sent and three social worker's visits had been made, the last to deliver personally a firm letter from the Director of the clinic. This routine continues and today an initial

defaulter rate of approximately 30 per cent. is reduced to an ultimate 11 per cent. Even this figure would be improved upon were it not for the inevitable recording of false addresses.

This excellent work, originally undertaken as an experiment, has been sustained uninterruptedly and is now routine and integral. Since its inception, 19,721 female and male contacts have been recorded. Of these, 577 were overseas (recent records only); 3,132 were out of the area; 6,422 were unknown and 9,590 have been sought. 42 per cent. of the latter (*i.e.* 4,030) attended Newcastle with venereal disease and the remainder (5,560) either had no venereal disease or were not found.

The Tyneside Scheme Today

FEMALE CONTACTS

The success or otherwise of the unit's efforts may be better comprehended and more readily compared with that of other workers by a scrutiny of the 1970 results recorded in Tables I to VIII and X to XIII.

Table I relates to all contacts, both male and female, of all men with infectious venereal disease (gonorrhoea and syphilis) attending Ward 34 at the Newcastle General Hospital during 1970, and is indicative of the size of the problem. The total number of source contacts nominated (502 female and 39 male) differs from the total number of cases (511) for three reasons:

- Some itinerant men particularly seamen and lorry drivers would leave without attending the social unit for interview;
- Many men would admit to multiple contacts without knowing who was the real source or who was subsequently at risk;
- Some patients admitted both heterosexual and homosexual contact.

Infectious syphilis relates to both primary and secondary cases. The number of early latent infections involved in 1970 amounted to only six (3 female, 3 male); none was productive in the search for new cases and their omission from Table I does not materially affect the statistics here presented.

Table II shows the task facing the social unit as far as female contacts were concerned. The total of 502 source contacts had of necessity to be reduced to 203 by the elimination of 299 for the reasons shown. One-quarter (125) of the total (502) lived outside the Newcastle region, either abroad (21) or elsewhere in the United Kingdom (104), which indicates the importance of mobility in the spread of venereal disease. It should be noted that all the cases of syphilis heterosexually acquired had to be excluded because one contact was unknown and the other eight

TABLE I *Contacts of men with infectious syphilis and gonorrhoea*

Diagnosis	Syphilis	Gonorrhoea	Total cases
No. of men with infectious VD			
Heterosexually acquired	9	469	478
Homosexually acquired	1	32	33
Total	10	501	511
No. of possible female source contacts nominated by men	9	493	502* (Table II relates)
No. of possible male source contacts nominated by men	1	38	39
No. of subsequent contacts nominated	2	103	105 (Tables II and III relate)
Total of all contacts nominated	12	634	646

Notes Early latent syphilis cases are excluded

*The comparable figure for 1960 was 242. In 10 years the work has doubled; the staffing is static

TABLE II *Total female source contacts, less deductions including untraceable; and total subsequent contacts, 1970*

These figures with Table VI indicate the size of the task of the social unit in 1970

No. of female source contacts (including nine with presumptive syphilis)	502
DEDUCTIONS	
Multiple infections, <i>i.e.</i> No. of infections caused by contacts already nominated (79 infections caused by 28 women)	51
Unknown contacts or insufficient information for tracing (including 1 syphilis)	123
Contacts allegedly overseas (including 1 syphilis)	21
Contacts in United Kingdom but outside Newcastle region (including 7 syphilis)	104†
Total female source contacts remaining to be sought	203*
Total female subsequent contacts to be sought (wives 86, friends 11, fiancées 3, 'permanent liaisons' 5)	105*
Total female contacts to be sought	308*

*See Table III †See Table XII

resided outside the region. One case of infectious syphilis was diagnosed in a traced prostitute, and one of her subsequent contacts was treated with 2.5 mega

units of Triplopen for gonorrhoea before his exposure to syphilis had been discovered; it could not therefore be determined whether or not he was incubating syphilis. He was shortly afterwards killed in a brawl, so making the point academic.

The unit finally searched locally for 308 female contacts (203 source and 105 subsequent — see Table III).

Table III shows the results of the social unit's efforts in tracing and Table IV shows the diagnoses in those examined. The final figures show that 87.7 per cent. of source contacts who were considered traceable and 97.1 per cent. of all subsequent contacts (90.9 per cent. of all traceable contacts) were examined. This total of 280 cases, 178 source and 102 subsequent contacts (Table III), examined in Newcastle or elsewhere in the region plus 25 examined elsewhere in the United Kingdom (Table XIII) means that approximately 60 per cent. of ALL female contacts nominated were finally investigated. These figures, though leaving room for improvement, demonstrate the excellence of the work of the social unit. The factors which contributed to these results, namely the size of the social unit's staff, the compactness of the city, and the clear definition of the catchment area, are discussed later.

Table IV shows the diagnoses of contacts examined in Newcastle or elsewhere and the percentages of syphilitic or gonococcal cases. The two early syphilis infections do not affect the percentages materially, so that the figures for total cases and for gonorrhoea cases are virtually the same. 86.5 per cent. of source contacts and 77.6 per cent. of subsequent contacts were shown to be infected, an overall infection rate

of 80.4 per cent. If the contact slip and patient persuasion method had been used alone, some 57 contacts would have been lost (Table III, D iii), and it is estimated that the incidence of VD in men in the Newcastle region is between 70 and 90 per cent. of what it would have been without the aid of the social unit.

To consider this supposition from another aspect, Table IV (overleaf) shows that 143 source contacts out of 165 attending Ward 34 had gonorrhoea. Twelve of these contacts came to the clinic of their own accord and all were found to have gonorrhoea; thus 131 women with gonorrhoea (143 minus 12) had attended as a result of the social unit's efforts. This represents 42.7 per cent. of the total of 307 post-pubertal female cases of gonorrhoea diagnosed in 1970—a considerable (albeit immeasurable) reduction in the size of the infectious pool.

The observation that only 77.6 per cent. of subsequent contacts were found to be infected compared to 86.5 per cent. of source contacts may bear out the well-known fact that not all those exposed to venereal disease become infected, but it may also reflect the persuasion which the contact tracers exert. If there is any doubt whether a wife or girl friend is at risk, then prudence dictates that she be examined. Of the 37 subsequent contacts residing in the city, 35 (94.6 per cent.) were found to be infected (Table XI).

MALE CONTACTS

The acute symptomatic nature of gonorrhoea in men causes most men to seek advice soon after infection but women, with subacute or chronic asymptomatic

TABLE III Results of tracing female contacts in 1970

No. of female contacts sought	Source 203		Subsequent 105		Total 308	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
A						
Failed to attend (untraced 16, lost before attendance 4, refused 5, promised but failed 3)	25	12.3	3	2.9	28	9.1
B						
Referred to general practitioners	—	—	3	2.9	3	1
C						
Examined elsewhere, <i>i.e.</i> at other clinics within the region	13	6.4	2	1.9	15	4.9
D						
Attended Ward 34 Newcastle						
(i) Own accord	12	5.9	—	—	12	3.9
(ii) Contact slip and patient persuasion	100	49.2	93	88.5	193	62.6*
(iii) Health visitor	53	26.1	4	3.8	57	18.5*
Total attending Newcastle (<i>i</i> + <i>ii</i> + <i>iii</i>)	165	81.2	97	92.3	262	85
Total examined and tested in Ward 34 or elsewhere (or adequately treated without examination (2 cases)) B + C + D	178	87.7	102	97.1	280	90.9

*The 77 and 23 per cent. respectively mentioned in the text are the percentages of the 153 contacts here involved.

TABLE IV *Diagnoses of female contacts, 1970*

Where examined	Type of contact	No. of contacts	Diagnosis of contacts			Percentage venerea
			Non-venereal	Syphilis	Gonorrhoea	
Elsewhere (i.e. other clinics in region and G.P.s)	Source	13	3	—	10	76.9
	Subsequent	5	5*	—	—	—
Ward 34 Newcastle	Source	165	21	1†	143	87.3
	Subsequent	97	24	1	72‡	75.3
Total	Source	178	24	1	153	86.5
	Subsequent	102	29	1	72	77.6
	Total source and subsequent	280	53	2	225	80.4

Notes *Including two contacts receiving penicillin for other conditions without an attempt at diagnosis of venereal disease

†A prostitute nominated by a male gonorrhoea case. She was found also to have gonorrhoea, *T. vaginalis*, and *Candida*—see text

‡Innocent wives and official fiancées at risk are treated prophylactically after one attempt at diagnosis (including cultures from urethra and cervix). This figure would be higher if treatment was delayed

disease, especially if promiscuous, disseminate their infection before they can be advised to attend the nearest clinic. The result is that more men attend than women, but more women are nominated as contacts. When the female contacts attend they will often merely 'cross name' the male consort who is already under treatment. Such promiscuous women are notoriously forgetful or unco-operative when it comes to revealing the identity of other male consorts. Homosexual males are even less productive in identifying their source contacts. Unknown male source contacts, heterosexual or homosexual, constitute a higher proportion (48.3 per cent.) of 'wanted' males than do unknown females (24.5 per cent.) of 'wanted' females. Table IX shows this more clearly. Nevertheless, all women with gonorrhoea, except selected patients such as innocently infected wives and fiancées, are interviewed in the social unit. Pedersen and Harrah (1970) found that 88.5 per cent. of 748 male contacts of women questioned were infected and that all but nineteen (2.5 per cent.) had previously been treated; they concluded that interviewing infected women for their contacts 'had little value'. In Newcastle in 1970, of 164 men nominated by women or by homosexual men as source or subsequent contacts, it was found possible to seek 44 (26.8 per cent.); 39 of these were traced and 25 (15.2 per cent. of the total nominated) were found to be infected. Tracing of males nevertheless seems worth while, especially in view of the increasing number of asymptomatic male carriers of gonococci, to which Benfield (1971) has drawn attention by recording 22 cases of gonorrhoea attributable to one such carrier. It is imperative to trace the contacts of women with infectious syphilis, but the employment of a male health visitor for such work is not, as yet, recommended for a

limited populace and clientele as in Newcastle. Tables V to VIII shows the tracing of male contacts to be less spectacular than the tracing of females but none the less satisfying from the epidemiological point of view.

Table V is the equivalent for men of Table I for women. If an unspecified number of women whose male contacts had already attended, had not been accepted as subsequent contacts of their male consorts (which they may not have been) and if many of those attending as source contacts had not insisted on 'cross-naming', then the number of possible male source contacts of females (114) would have been higher. This figure includes multiple nominations by a number of promiscuous women. Coupled with homosexual nominations (39) and subsequent nominations (11), a total of 164 possible source and subse-

TABLE V *Derivation of male contacts, 1970*

No. of male cases of infectious VD acquired homosexually (32 Gc, 1 Sy)	33
No. of female cases of infectious VD acquired heterosexually (307 Gc, 3 Sy)	310
No. of possible male infectious VD source contacts nominated by males	39
No. of possible male infectious VD source contacts nominated by females (including 3 Sy)	114
Total possible male infectious VD source contacts nominated	153 (Table VI relates)
Total male subsequent contacts (all nominated by females)	11
Total male contacts nominated (including 4 syphilis)	164

quent male contacts was the original target for the social unit.

Table VI shows how the original 153 possible source male contacts had to be drastically reduced, leaving, together with eleven subsequent contacts, only 44 men to trace in the Newcastle region.

Table VII shows that 39 (88.6 per cent.) of these 44 men were successfully traced. Table VIII (overleaf) shows that 25 of these 39 (64.1 per cent.) were infected. These included three cases of early infectious syphilis which might have caused an urgent epidemiological problem had it not been for the enthusiastic perseverance of the social unit staff.

City results

Contact tracers, employed by the Public Health authority, have a defined area in which to operate,

though other health visitors participate by visiting neighbouring areas under the jurisdiction of other Medical Officers of Health. The results of the Newcastle social unit's efforts within the city itself as opposed to the whole region are of interest. The same principles of elimination apply to city contacts as to those of the region.

Of 202 female source contacts alleged by male patients to reside in the city of Newcastle, 59 were unknown and thirty were duplicated, *i.e.* seventeen women were said to be responsible for 47 infections. This left 113 contacts to be sought, just over half the total for the whole region (203—Table II).

Of 105 subsequent contacts, 38 were alleged to reside in the city. These two figures head the statistics shown in Table X which, for the city of Newcastle, corresponds to Table III for the whole region. The

TABLE VI Details of male contacts, 1970

No. of male source contacts involved		Heterosexual 114 Homosexual 39		153
<i>Deductions</i>				
Unknown heterosexuals		45	}	74
homosexuals		29		
Overseas heterosexuals		7	}	8
homosexuals		1		
Inside United Kingdom but outside Newcastle region	heterosexual	31	}	38 (Table XII relates)
	homosexual (including 1 syphilis)	7		
Total male source contacts to be sought	heterosexual		31	}
	homosexual		2	
Total male subsequent contacts to be sought (all heterosexual)				11*
Total male contacts to be sought				44*

*See Table VII

TABLE VII Results of tracing male contacts, 1970

	Source	Subsequent	Total
No. of male contacts sought	33	11	44
A			
Failed to attend (untraced 2, lost before attendance 1, refused 2)	5	—	5
B			
Referred to general practitioner	1	—	1
C			
Examined elsewhere (<i>i.e.</i> other clinics within region)	6	—	6
D			
Attended Ward 34 Newcastle			
(i) Own accord	12	5	17
(ii) Contact slip and patient persuasion	7	6	13
	(including 2 homosexuals)		
(iii) Health visitor	2	—	2
Total (i + ii + iii)	21	11	32
Total examined and tested in Ward 34 and elsewhere B + C + D	No. 28 Per cent. 84.7	11 100	39 88.6

TABLE VIII *Diagnoses of male contacts, 1970*

Type of contact	Where examined	No. of contacts	Diagnosis			Per cent. venereal
			Non-venereal	Syphilis	Gonorrhoea	
Source	Elsewhere (i.e. other clinics in region and by G.P.s (1))	7	1	2	4	—
	Ward 34	21	8	1	12*	—
	Total	28	9	3	16	67.8
Subsequent	Ward 34	11	5	—	6	54.5
Total source and subsequent		39	14	3†	22	64.1

*Including two homosexuals

†These were the contacts of the early infectious syphilis patients included in the 114 of Table V

total approximates to half that for the whole region and the percentages bear a close resemblance to those shown in Table III, except that the twelve source contacts attending of their own accord are the same as appear in Table III. These twelve represent 10.6 per cent. of contacts to be sought in the city as

TABLE IX *Numbers and proportions of 'unknown' male and female contacts, 1970*

Source contacts	No. nominated	Unknown	
		No.	Per cent.
Female	502	123	24.5
Male			
Heterosexual	114	45	39.5
Homosexual	39	29	74.3
Total	153	74	48.3

opposed to 5.9 per cent. of the total to be sought in the region. The total of 35 brought in by contact tracers from within the city is almost double the eighteen (53–35—Table III) fetched from outside the city by the contact tracers of neighbouring authorities. It is emphasized that most of those 'examined elsewhere' were sought by these same contact tracers, for whose efforts equal praise is due.

Table XI shows the ultimate diagnoses of the hundred female source and 37 female subsequent contacts living in the city of Newcastle.

In the city male contacts nominated by women and by homosexual men are not accounted for separately, but appear in Tables VI and VII.

Special Clinic Contact Report (revised September, 1970)

Many patients nominate contacts residing right outside the Newcastle region. Of 502 possible female

TABLE X *Results of tracing female contacts. City of Newcastle, 1970*

	Source		Subsequent		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
No. of female contacts to be traced	113		38		151	
A						
Failed to attend (untraced 10, lost before attendance 1, refused 1, promised but failed, 1)	13	11.5	1	2.6	14	9.2
B						
Referred to G.P.s	—	—	—	—	—	—
C						
Examined elsewhere	5	4.4	—	—	5	3.3
D						
Attended Ward 34 Newcastle						
(i) Own accord	12	10.6	—	—	12	7.9
(ii) Contact slip and patient persuasion	48	42.5	34	89.5	82	54.3
(iii) Health visitor	35	31	3	7.9	38	25.2
Total (i + ii + iii)	95	84.1	37	97.4	132	87.4
Total examined C + D	100*	85.5	37	97.4	137	90.7

*See Table XI

TABLE XI *Diagnoses of female contacts. City of Newcastle, 1970*

Where examined		No. of contacts	Diagnosis			Per cent. venereal
			Non-venereal	Syphilis	Gonorrhoea	
Source	Elsewhere	5	5	—	—	—
	Newcastle	95	15	1	79	84.2
	Total	100	20	1	79	80
Subsequent Newcastle		37	1	1	35	94.6
Total source and subsequent		137	21	2	114	83.2

source contacts of infected men and 153 possible male source contacts of infected women and homosexual men, some 142 (104 females and 38 males) of the total of 655 allegedly resided outside the Newcastle 'catchment' area. This proportion (22 per cent.) is an important factor from the epidemiological point of view and demands action. These individuals are often known to patients being questioned, who assure the social worker of their intention to write to or telephone them. In some of these cases, the unit writes to the Physician in Charge of the clinic concerned asking him to expect such contacts and to take action if they failed to attend. In many instances these 'out of the area' contacts would be unknown, but with some there is enough information to enable the social unit to notify the Medical Officer of Health or the Physician in Charge of the nearest VD clinic. This procedure, derived from the former Regulation 33B Form I, was used with considerable persistence and modest success by Burgess (1963), who has since had even more success with an infection rate of 80 per cent. amongst those traced (personal communication).

It has been used in Newcastle since 1943, long before the introduction of the Special Clinic Contact Report (Revised 9/70) forms. Table XII shows the results of this special endeavour. Of 142 possible source contacts 'out of the area', 61 (42.9 per cent.)

were notified by post to appropriate medical authorities and to these notifications there were 25 replies (17.6 per cent. of the original 142). There was only one attempted overseas tracing but to this there was no response.

Table XIII (overleaf) shows the diagnoses of these 25 contacts, of which 22 were found to have venereal disease. The numbers are small but the effort is worth while and were this technique universally pursued the beneficial effects would be substantial.

The total of Special Clinic Contact Report (Revised 9/70) forms received in 1970 in Newcastle has not been recorded, because forms with insufficient information to enable a search are routinely destroyed at the request of the Department of Health. An attempt at tracing was made in only four cases (1 syphilis, 3 'failed to trace').

Contact slips issued by medical and nursing staff

Contact slips are also issued by the medical and nursing staff of the clinic to the following categories of patients: those attending out of hours with no intention of returning when the social unit is open, such as travellers, long-distance lorry drivers, and coastal merchant seamen; and those whose non-gonococcal and non-syphilitic condition warrants a

TABLE XII *Contacts outside Newcastle area, 1970*

Contacts	Male			Female	Total
	Homosexual	Heterosexual	Total		
No. of source contacts in U.K. but outside Newcastle region	7	31	38	104	142
No. notified to other authorities	2	11	13	48	61 (42.9 per cent.)
No. of replies received from other clinics	2	8	10	15	25* (17.6 per cent.)

*See Table XIII

TABLE XIII *Diagnoses of contacts outside Newcastle area, 1970*

Contacts		Male			Female	Total
		Homosexual	Heterosexual	Total		
Replies received		2	8	10	15	25
	Non-venereal	8	—	—	3	3
Diagnoses of named contacts	Syphilis	1	—	1	2	3
	Gonorrhoea	1	8	9	10	19
Total venereal		2	8	10	12	22 (88 per cent.)

request to see their contacts, such as the husbands of women with trichomonal vaginitis and the wives of men with non-gonococcal urethritis or *Candida balanitis*. Conversely, a number of patients attend with contact slips issued both by the clinic staff of Ward 34 (mostly non-venereal) and by other VD clinics. Table XIV shows the results of this aspect of contact tracing initiated in the female clinic. Approximately half the male contacts of non-venereal female cases attended. These eighteen men mostly presented with no signs of disease but, where appropriate, they were invited to accept treatment for *Trichomonas vaginalis* infestation.

Table XV is the male clinic's counterpart of Table XIV and shows that just over one-third (36.8 per cent.) of the women who should have received contact slips from men with non-venereal conditions attended, a figure almost equalled by women attend-

ing with contact slips from elsewhere. The fact that patients are told that their condition is non-venereal may result in reluctance to hand on the contact slip or in the recipients' reluctance to attend.

It is not known how many contacts of Newcastle patients receiving these contact slips were examined elsewhere, but the total of venereal cases in which contacts were unaccounted for in the clinic's register of contact slips issued (as opposed to the social unit's register) was only six female cases of gonorrhoea. The total of 'non-venereal' contacts of Newcastle patients accounted for was 45 (27 females, 18 males). The overall total of 'non-venereal' contacts attending was 64 (45 female and 19 male).

Tables XIV and XV deal with much smaller numbers of patients than are the concern of the social unit, but the figures may be of interest to those in

TABLE XIV *Contact slips issued by medical and nursing staff at female clinic, 1970*

Diagnosis	Syphilis	Gonorrhoea	Non-venereal	Total
No. of contact slips issued to females by clinic staff (not social unit)	—	—	37	37
No. of males attending with above contact slips	—	—	18*	18 (50 per cent.)
No. of males attending with contact slips from elsewhere	—	1	1	2
Total number of males attending with contact slips, apart from those issued by social unit	—	1	19	20

*Mostly Nothing abnormal discovered—see text

TABLE XV *Contact slips issued by medical and nursing staff of male clinic, 1970*

Diagnosis	Syphilis	Gonorrhoea	Non-venereal	Total
No. of contact slips issued to males by clinic staff (not social unit)	—	7	69	76
No. of females attending with above contact slips	—	1	27	28 (36.8 per cent.)
No. of females attending with contact slips from elsewhere	1	7*	18	26
Total attending with contact slips not issued by social unit	1	8	45	54

*Including five whose 'receipt' of their 'contact slips' was verbal by long-distance telephone calls from their boy friends

charge of clinics that employ no professional contact tracers.

Discussion

The key workers in the epidemiological field are the two contact tracers, one of whom is in attendance during every clinic session. Both now do their own interviewing of patients, which is much more satisfying and effective than having the questioning done by someone else and being given instructions as to whom to trace. These workers are assisted by four members of the clerical staff from the clinic and together they constitute the staff of the social unit. Outside the immediate region of Newcastle there are thirteen part-time contact tracers who cover the county of Northumberland and the north-west quarter of County Durham. Every case of infectious venereal disease, male or female (except, at the medical staff's discretion, innocently infected wives and fiancées), passes through the unit. It is not enough for the doctor to hand a contact slip to those who say they know their contacts. Skilful contact tracers gently extract much more valuable information from patients who are apt to remember more when they are persuaded of the need. Social case-recording, cross-referencing, keeping the case diary, book-keeping, and making statistical returns, etc., are all part of efficient tracing. It behoves all concerned to press relentlessly, not only for a sufficient number of health visitors of the right calibre but for an adequate clerical staff. For every eight new registrations a day, at least one contact tracer with supporting clerical staff is essential. Anything less than this will result in professional frustration and epidemiological drift.

The problems, techniques, and subtleties of contact tracing have been well documented (Manchée, 1945; Wailes, 1945; Johns, 1945; Lamb, 1966). Once the team is soundly organized and each member's task is thoroughly respected, the work can proceed smoothly and successfully.

Residentially speaking, Newcastle has a relatively stable community. There is no immigrant VD problem and seamen now provide only 10 per cent. of our new male registrations, half way between students at 8 per cent. and the professional classes, including teachers in training, at 12 per cent.

The kind of problem facing Ward 34 must be greatly magnified in the larger conurbations and in the metropolis itself. In London the need for liaison and co-operation will be obvious, as most London clinics have catchment areas that overlap, often with more than one neighbour.

It remains to ask 'Is it worth while?' In the present situation wherever contact tracing is pursued, the

VD figures usually appear to rise, just as they do where it is not pursued. Likewise, with or without contact tracing, the ratio of male to female cases of gonorrhoea approaches 1:1 (Ministry of Health, 1967). Nevertheless, it is to be doubted if Newcastle's figure of 1.6:1 can be improved upon except by clinics where contacts are chased just as vigorously, as for example in Sheffield. The sex ratio in Newcastle has moved closer towards unity than the national average for many years. Appendix III shows this aspect of the subject, which has been referred to in connection with the paper by Dunlop and others (1971) and is pursued in greater detail by Morton (1970). Ultimately, the VD rate per 100,000 of the population is what matters; it is calculated on a population basis that the Newcastle rate is approximately 80 per cent. of the rate for the country as a whole, and a similar figure is reached when the presumed effect of having no social unit is assessed. (See text above).

When the Royal Commission on Venereal Disease of 1913 reported in 1916 it urged, in so many words, medical officers to moralize for the benefit of patients! None do so to-day but it is felt with conviction that many patients interviewed in the social unit leave with an added sense of social responsibility and this is truly a function of the unit.

Finally, the author wishes to state that he makes no personal claim for any success achieved in Newcastle because he has been a member of Newcastle's team for only 2½ years. Both credit and gratitude are due to the many workers involved now and in the past; in particular to Miss Hilda M. Johns, O.B.E., who led the way and to Miss Marjorie L. Pringle and Miss Muriel Hogg, who have carried on so effectively and good humouredly for so many years. Nor could this paper have been prepared without the praiseworthy work, of almost a life time, of Mrs. J. Eglinton, who has meticulously maintained the records of innumerable and invaluable statistics for most of the period reviewed, and of Mrs. M. Preston, amanuensis extraordinary.

Summary

A description is given of the 'Tyneside Scheme' which included the first routine serological testing of antenatal cases and the pioneer effort in contact tracing, inaugurated in 1943, by a local authority and continued ever since. The literature relating to contact tracing in British clinics since 1946 is reviewed as a basis for comparison with Newcastle's efforts and results.

By 1946 the scheme had resulted in the attendance of 1,599 contacts out of 1,991 sought, an 80 per cent.

success rate. Defaulter rates had been reduced to about a quarter of the previous totals.

Records up to 1970 show that 19,721 male and female contacts were recorded; 9,590 could be sought and 4,030 (42 per cent.) have attended with venereal disease.

The work of the unit for 1970 is reported in detail in 15 tables, showing the results of contact tracing by all methods and the diagnoses of contacts of both sexes, including homosexual males, in the Newcastle region and elsewhere.

511 men, almost all with gonorrhoea nominated 607 female and 39 male source contacts; 308 female contacts could be sought and of these 280 (90.9 per cent.) were examined; 225 (80.4 per cent.) had infections, mostly gonorrhoea.

164 male contacts were nominated by women and 33 homosexual men, but only 44 of the total could be sought; 39 (88.6 per cent.) were examined and 25 (64.1 per cent.) had venereal disease.

With 142 contacts residing outside the region there was sufficient information for 61 (42.9 per cent.) Special Clinic Contact Reports to be forwarded and 25 (17.6 per cent. of the total) replies were received; 22 (88 per cent.) of those traced and reported upon had VD.

The work of the unit and the size of the staff required are discussed. For every eight new registrations per day, at least one full-time contact tracer is needed together with supporting clerical staff.

It is estimated that efficient tracing lowers the rate of venereal disease by about 20 per cent. A male : female ratio currently standing at 1.6 : 1 in Newcastle and for many years approximately 5 years ahead of the national average is claimed to be proof enough that the work must continue.

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Vingt-sept ans de recherches sans interruption des contacts dans la région de la Tyne—Le 'schéma de la région de la Tyne'*

SOMMAIRE

On décrit le 'Schéma de la région de la Tyne', introduit en 1943 par une autorité locale (de la cité de Newcastle) et continué depuis ce temps, qui comprenait le premier examen sérologique de routine des cas prénataux et un effort d'avant-garde dans la recherche des contacts. La littérature se rapportant à la recherche des contacts dans les cliniques britanniques depuis 1946 est passée en revue pour servir de base de comparaison avec les efforts de Newcastle.

En 1946, l'application du schéma a conduit 1.599 contacts à consulter sur 1.991 recherchés, soit un taux de succès de 80 pour cent et la proportion des défailtants a été réduite d'environ 1/4 par rapport aux totaux précédents.

L'examen des registres jusqu'à 1970 montre que 19.721 contacts hommes et femmes ont été enregistrés; 9.590 ont été recherchés, parmi lesquels 4.040 (42 pour cent) ont été trouvés atteints de maladie vénérienne.

Le travail de l'Unité responsable pour 1970 est rapporté en détail en 15 tableaux montrant les résultats de la recherche des contacts par toutes les méthodes et les diagnostics partés chez les contacts des deux sexes, y compris les homosexuels masculins, dans la région de Newcastle et ailleurs.

*Tyne, rivière passant à Newcastle (N.d.T.)

511 hommes, presque tous gonococciques, ont désigné comme agents contaminateurs 607 femmes et 39 hommes; 308 contacts femmes ont pu être recherchées, et parmi ceux-ci, 280 (90,9 pour cent) ont été examinés; 225 femmes (80,4 pour cent) étaient infectées, la plupart par le gonocoque.

164 contacts masculins furent désignés par des femmes ou par des homosexuels hommes, mais seulement 44 de ceux-ci purent être recherchés; 39 (88,6 pour cent) ont été examinés et 25 (64,1 pour cent) avaient une maladie vénérienne.

Pour 142 contacts résidant hors de la région, on obtint une information suffisante pour 61 (42,9 pour cent). Des formules de recherche de contacts utilisées dans les cliniques spécialisée furent postées; 25 (17,1 pour cent du

total) réponses furent reçues: 88 pour cent des contacts dépistés furent signalés comme ayant une maladie vénérienne.

Le travail de l'Unité et l'importance du personnel requis sont discutés. Pour chaque série de huit nouveaux malades infectés par jour, au moins un enquêteur plein temps est nécessaire, auquel il faut adjoindre le personnel de secrétariat.

On estime qu'une détection efficace diminue le taux des maladies vénérienne d'environ 20 pour cent. Le rapport hommes malades/femmes malades se fixant habituellement à 1,6/1 à Newcastle depuis plusieurs années (approximativement cinq ans en avance sur la moyenne nationale) est considéré comme une preuve suffisante que le travail doit continuer.

APPENDIX I Statistical results of the Tyneside Scheme*

Total number of contacts	Oct., 1943, to March, 1944	Jan. to Dec., 1945
Complete information	177	320
Incomplete	63	122
Vague	110	
Insufficient information for tracing	101	390
Total	451	832
Contacts identified by Contact Tracers	160	180
Without contact tracing effort	81	140
Total	241	320
Disposal of contacts identified		
Total attending clinic	155	250
(New registrations 102, already registered 53)		
Referred to Services, Private Doctors or to Medical Officers of Health in other areas	30	9
Identified with previously named contacts	26	47
Unco-operative (refused or failed to attend)	21	14
Not yet examined	9	—
Total	241	320
Diagnosis of contacts attending clinics		
Syphilis	37	163
Gonorrhoea	52	
Syphilis and Gonorrhoea	14	
Clearance	46	67
Not yet diagnosed	6	20
Total	155	250
Visits and interviews of identified and unidentified contacts		
Visits of enquiry or contacts not at home	557	
First interviews	131	
Second interviews	45	
Third and later interviews	22	
Total	755	
Contacts taken to Clinic by Contact Tracers	46	110
Contacts named more than once	19	
Regulation 33B, Forms I from sources other than local Clinics		
From the Royal Navy	59	
Army	34	
Royal Air Force	11	
Colonial and Allied Forces	8	
Civilian Medical Officers	16	
Miscellaneous Sources	4	
Total	132	

<i>Regulation 33B Results</i>	
Found and examined	56
identified with others	10
not examined	19
total	85
Not yet found	47
Total	132
<i>Contacts who were named more than once on Forms I</i>	
Named twice	3
Named three times	2
Named four times	2

*As originally presented 27 years ago

APPENDIX II *Comparison of meeting places of patients and their source contacts (percentages)*

<i>Meeting place</i>	<i>Pre 1948</i>	<i>1970</i>
Public house	62	47
Street	13	12
Night club	—	10
Friend's house	2	10
Dance hall (discothèque)	8	6
Café	1	4
Party	—	4
Hotel	—	3
Ship	1	1
Working men's club	—	1
Station	10	1
University	—	1
Coffee stall	1	—
Brothels, theatre bars, hostels, parks	2	—

APPENDIX III *Ratio of male : female gonorrhoea cases for England and Wales compared to Newcastle upon Tyne*

<i>Year</i>	<i>England and Wales</i>			<i>Newcastle</i>		
	<i>Male</i>	<i>Female</i>	<i>Ratio</i>	<i>Ratio</i>	<i>Male</i>	<i>Female</i>
1949	—	—	—	4 : 1	505	114
1950	17,007	3,497	5 : 1	3·7 : 1	379	101
1955	14,079	3,766	3·7 : 1	3·7 : 1	247	66
1960	26,618	7,152	3·7 : 1	2·8 : 1	245	87
1965	27,890	8,725	3·2 : 1	2 : 1	262	122
1969	36,346	14,802	2·4 : 1	1·9 : 1	445	231
1970		Not available		1·6 : 1	501	307
Increase (per cent.)						
1950-69	114	323			17	128
1969-70	—	—			10	33

N.B. The figures for England and Wales were compiled from quarterly figures supplied to Physicians in charge of clinics. Similar figures quoted by Morton (1970) were taken from the Reports of the Chief Medical Officer to the Ministry of Health. Newcastle ratios run parallel to the Sheffield ratios. (See text)