INCIDENCE OF PULMONARY TUBERCULOSIS AMONGST NATIONAL SERVICE MEN

BY

Major SIMON FREEMAN, T.D., L.R.C.P. and S.(Edin.), L.R.F.P. and S.(Glasw). Royal Army Medical Corps (T.A.)

During the years 1950 and 1951, while I was acting as medical officer to Manchester Garrison, sporadic cases of pulmonary tuberculosis came to light amongst young National Service men who were undergoing their full-time service. While the incidence did not cause alarm, it was considered sufficiently important to justify a visit from an Army M.M.R. team. The Manchester Garrison Medical Centre is located in the Army Pay Office (Officers’ Accounts), Stockport Road, Manchester, in which building the bulk of National Service men in Manchester area are employed.

The centre had its first visit from No. 7 M.M.R. Team, Western Command, in March, 1952. The visit was repeated in February, 1953, in June, 1953, in September, 1953, and again in March, 1954. The reason for the repeated investigations in 1953 was that in each instance a case of pulmonary tuberculosis was discovered and confirmed by further investigation. This was considered of sufficient significance to justify repeat investigation by M.M.R. as every case was that of a young man or woman in the late ‘teens. A feature of note was that in each case previous radiological examination of the chest had been carried out within a relatively short period with no abnormality seen.

Approximately 450 personnel were examined on each of the five visits of the M.M.R. team, of whom 90 per cent. were National Service employed at the Army Pay Office. Troops at this office live in private billets in the neighbourhood and supervision of their leisure hours in the evenings and week-ends is more than difficult. In many cases the lure of the dance hall or picture house is more attractive than an outdoor game or sport.

Analysis of M.M.R. examination shows interesting results, as a result of which more rigorous chest supervision is now enforced in this area. In all the cases examined, a routine chest radiograph had been carried out prior to enlistment at the behest of the Ministry of Labour and National Service.

Visits by No. 7 M.M.R. Team, Western Command


Result.—One case of pulmonary tuberculosis diagnosed and confirmed. National Service man, aged 19. This soldier was radiographed in July, 1951, prior to enlistment. He had completed seven months’ service. Category FE. No previous history of illness.
2. **February, 1953**: Total radiographed—445.

*Result.*—One case of pulmonary tuberculosis diagnosed and confirmed. National Service man, aged 19. Eleven months' service. This soldier was radiographed in January, 1952, prior to enlistment. Category FE. No previous history of illness.

3. **June, 1953**: Total radiographed—347.

*Result.*—One case of pulmonary tuberculosis diagnosed and confirmed. National Service man, aged 19. Eleven months' service. This soldier was radiographed in May, 1952, prior to enlistment. Further radiograph by M.M.R., February, 1953. No abnormality discovered on either occasion. No history of illness between February and June, 1953. Never reported sick during that period. Category FE.

4. **September, 1953**: Total radiographed—486.

*Result.*—One case of pulmonary tuberculosis diagnosed and confirmed. W.R.A.C., aged 20. Five months' service only. Radiographed prior to enlistment. Category FE. No history of illness during period of service.

5. **March, 1954**: Total radiographed—528.

*Result.*—One case of pulmonary tuberculosis diagnosed and confirmed. National Service man, aged 20. Twenty-one months' service. Previous chest investigations:

- May, 1952. Radiograph prior to enlistment.
- September, 1953. M.M.R. Manchester. None showed any chest abnormality.

No history of illness during military service. Category FE throughout.

<table>
<thead>
<tr>
<th>Date of M.M.R.</th>
<th>Total radiographed</th>
<th>Confirmed pulmonary tuberculosis</th>
<th>Previous illness during service</th>
<th>Medical Cat.</th>
<th>Last radiograph of chest</th>
</tr>
</thead>
<tbody>
<tr>
<td>March, 1952</td>
<td>414</td>
<td>One</td>
<td>Nil</td>
<td>FE</td>
<td>8 months previously</td>
</tr>
<tr>
<td>February, 1953</td>
<td>445</td>
<td>One</td>
<td>Nil</td>
<td>FE</td>
<td>13 months previously</td>
</tr>
<tr>
<td>June, 1953</td>
<td>347</td>
<td>One</td>
<td>Nil</td>
<td>FE</td>
<td>4 months previously</td>
</tr>
<tr>
<td>September, 1953</td>
<td>486</td>
<td>One</td>
<td>Nil</td>
<td>FE</td>
<td>6 months previously</td>
</tr>
<tr>
<td>March, 1954</td>
<td>528</td>
<td>One</td>
<td>Nil</td>
<td>FE</td>
<td>6 months previously</td>
</tr>
</tbody>
</table>

As the total intake of National Service personnel during the period March, 1952, to March, 1954, in this area was between 500 and 600, it will be seen that the total number investigated was about one thousand, intakes having balanced releases. This gives an approximate total morbidity of five cases per thousand,
although each separate visit of M.M.R. team gives a morbidity of approximately two per thousand per visit, which is statistically more correct.

Over the Manchester area, in an industrial belt covering a population of over two million, the incidence of pulmonary tuberculosis diagnosed on M.M.R. is approximately two per thousand. This covers all age groups except children. It is impossible to compare the two sets of findings with statistical accuracy, since all troops were investigated at the Medical Centre, whereas large numbers of civilians refuse to be investigated by M.M.R.; nevertheless, the results must be viewed with some apprehension.

Neither service nor civil statistical returns take into account cases of pulmonary tuberculosis diagnosed on examination or after history of haemoptysis, loss of weight, etc. It is worthy of note that all National Service men had already had chest radiographs before enlistment and therefore they presumably represent a healthy cross-section of the population from whom a lower incidence of pulmonary tuberculosis would normally be anticipated.

In the year 1951, the Senior Administrative Medical Officer, Manchester Regional Hospital Board, reports that 10,225 National Service recruits were examined by M.M.R. in the Manchester area. Nineteen cases of pulmonary tuberculosis were discovered, giving a morbidity of just under two per thousand.

**DISCUSSION AND CONCLUSION**

It is accepted amongst chest physicians that the susceptibility to pulmonary tuberculosis is higher than average in the late 'teens. This is borne out in repeated annual reports of the M.M.R. service of the Manchester Regional Hospital Board, and is apparently confirmed to a marked degree over the period during which routine M.M.R. examinations were made on National Service men in Manchester in 1952-1954.

As a result, the policy now adopted in the Garrison Medical Centre, Manchester, is as follows:

(1) All National Service personnel are radiographed at least once per year.
(2) All service personnel are radiographed before service overseas. This fact is recorded on the certificate of fitness to serve overseas.
(3) All service personnel have radiological examination of chest on return from overseas.
(4) All service personnel are radiographed prior to completion of Form MED 28 for release.

The last three examinations are conditional on no radiological examination of the chest having been carried out within the preceding three months.

Chest radiological examinations are carried out at short notice by appointment at Manchester Chest Clinic or at the Department of Radiology, Stockport Infirmary.

If the results obtained from investigations in Manchester represent a true cross-section of conditions existing generally amongst service personnel, it would imply that the ideal method of chest supervision amongst National Service personnel is as follows:
(a) Radiological examination of chest on medical examination prior to enlistment (already carried out, with very few escaping the net).

(b) Second examination at end of one year's service.

(c) Third examination prior to medical examination on release—i.e., after twenty-three months' service.

(d) Additional chest radiological examination prior to service overseas and on return from such service. To those of us who have served overseas it appears obvious that this could save considerable manpower and unnecessary public expense, and furthermore would increase the confidence of the public in the medical services of the armed forces.

Such radiological examinations could be carried out by Army M.M.R. teams where available and where numbers justify such a visit, and otherwise by local hospitals and chest clinics with the co-operation of Regional Hospital Boards. In my experience civil health authorities are very willing to co-operate in any matter which will assist in maintaining the health of service personnel.

In this connection I should like to express my gratitude to Dr. M. J. Greenberg, Consultant Chest Physician, Manchester, and to Major D. M. Coates, R.A.M.C. (T.A.), Consultant Radiologist, Stockport Infirmary, for the efficiency and courtesy with which they have been ready at all times to carry out chest examinations.

Note.—War Office states that after the initial examination on joining, M.M.R. is repeated as frequently as resources allow. A three-yearly period is considered the maximum and, where facilities are easily available, annual review is undertaken. Pre-release examination is carried out whenever possible. Assistance from civil sources is not always easily available, particularly to units in the less populous areas. To avoid the uneconomical use of resources, larger units are now often examined as a whole regardless of when individual soldiers were previously examined.)