

Kent Schoolchild Survey

The object of this investigation is to obtain a clearer picture of respiratory disease in schoolchildren. This investigation is being undertaken jointly by the Department of Clinical Epidemiology and Social Medicine, St. Thomas's Hospital and the Public Health Department of Kent County Council under the direction of the County Medical Officer, Dr. A.E. Elliott.

The main objects of Stage I. of this investigation are to determine in schoolchildren of different ages coming from different areas and from different social backgrounds:

1. The prevalence of respiratory symptoms and signs.
2. The prevalence of past respiratory disease.
3. The levels of ventilatory function.

Stage II. of this investigation will entail further investigation into the possible causes for differences in prevalence of symptoms and differences in levels of lung function, and an attempt to assess the effect of anti-smoking propaganda on children with different levels of ventilatory function.

Method

Areas of Study

This study is taking place in four areas (Appendix 1).

1. Rochester M.B. a town with industry, most of its inhabitants coming from social classes III, IV and V.
2. Tonbridge Urban District: a town with light industry with more individuals in social classes II and III rather than IV and V.
3. Cranbrook R.D., Tenterden M.B. and R.D., Romney Marsh R.D., Lydd M.B. and New Romney M.B. a predominantly rural area with no large towns.
4. Maidstone R.D. an area where there is both light industry and farming.

These areas were chosen not only because of the environmental and social differences but also because of the willingness of the School Medical Officers to undertake the investigation.

Population

Table 1 shows the schedule of examinations for the children in the selected areas. This utilises the current time-table of routine school medical examinations of schoolchildren in Kent. All children going to school in Kent are normally examined at ages 5, 11 and 14. We are examining all children aged 5, 11 and 14 going to school in the particular areas mentioned above, in the years 1964 and 1965. Estimates of the total number of schoolchildren who will be examined at these ages are given below (Table 2).

Because of administrative difficulties, the examinations are restricted to children going to school in the particular geographic areas chosen. A few children who are domiciled in the survey areas but who go to school outside these areas are excluded. Where, however, the School Medical Officers taking part in the survey also examine children outside the area and find one from the survey areas, this child will be included in the survey. Also included will be children who are going to special schools from the particular survey areas.

The children will be followed as shown in Table 1. It is hoped that arrangements can be made with the local authorities to follow those children who move out of the chosen areas.

Method of Approach

As the children are examined anyway by the School Medical Officers, this examination is considered as routine. However, to ensure participation, letters are sent to each of the parents before the investigation in order to explain to them the reasons and methods (Appendix 2). In addition, the Headmasters of each of the schools have been given a detailed exposition of the reasons and method of the investigation and great emphasis has been placed on the necessity of examining every child who goes to school in the survey areas and who is domiciled in these areas (Appendix 3).

The schoolchildren receive a copy of the questionnaire which they take home for completion by the parent (Appendix 4). At the School medical examination, the School Medical Officer and School Nurse check that this questionnaire has been properly completed. The School Medical Officer

completes Form B (Appendix 5) which includes an examination of the upper respiratory tract, a measure of ventilatory function using the Wright Peak Flow Meter, and height and weight. In addition, the school completes Form C (Appendix 6) on school attendance which gives a listing of all those children who should have been included in the survey and of their school absences. The School Medical Officers concerned in the investigation are listed in Appendix 7. These Medical Officers have been trained in performing a standardised examination and in performing the tests of ventilatory function in a standard manner. The question on smoking history included in form B, which is completed by the School Medical Officer, is done as tactfully as possible and not in the presence of the parent.

Great emphasis is laid on obtaining 100% co-operation from all children at risk. In the case of the test of ventilatory function, in a few of the five year olds co-operation is not fully obtained. This is noted on Form B and these results will not be included in the analysis.

In addition to the training received by the School Medical Officers, each of these Medical Officers is visited at intervals by a member of the Department of Clinical Epidemiology and Social Medicine from St. Thomas's, who checks on the standardisation of the technique used and also tests the ventilatory function of the schoolchildren seen during his presence with a Wright Peak Flow Meter, in order to determine what variation there is between the School Medical Officer and the observer from the Department of Social Medicine.

Equipment used

Wright Peak Flow Meter: this is issued to each Medical Officer taking part in the survey. The peak flow meters are recalibrated every three to six months by the manufacturers, Airmed Ltd., in order to ensure that the apparatus remains standard.

Weight is recorded to the nearest 1 lb. below.

Height is recorded to the nearest $\frac{1}{2}$ " below. Details of the coding used is given in Appendix 8.

Method of Analysis

The prevalence of the various respiratory symptoms and respiratory diseases will be tabulated by age, area and by social class. Similarly, the values of lung function will be examined by age, area and social class. Tests will be performed on variation between observers, between schools and between instruments.

Future

It is hoped that children aged 5 and 11 will be followed at subsequent medical examinations both within the county and if they should move from it. Emphasis will be placed on following those children who give a history of marked respiratory symptoms or past disease and of those children who have a low ventilatory function; a series of matched controls will also be followed as it is not expected that we would be able to follow all 15,000 children completely for the next ten to fifteen years. In addition, a further examination will be undertaken by home visiting of those children with marked impairment of ventilatory function and with marked respiratory symptom prevalence. It is hoped that Health Visitors and School Medical Officers will be able to visit the families of these children in order to determine what factors played a part in the evolution of this symptom-function complex. A matched, random sample of normal children will be examined similarly.

Those children who reach age 14 will be subdivided into those with marked impairment of ventilatory function and the rest. Those with marked ventilatory function impairment will be divided, at random, into two groups. One group will receive intensive anti-smoking propaganda by home visits from the Health Department, the other group will be left alone. A matched sample of normal children will be similarly divided, at random, into these two groups and one sample will receive similar anti-smoking propaganda. All four groups will be followed at annual intervals by tests of ventilatory function, in order to determine whether there is any difference in the evolution of ventilatory function in children who take up smoking and those that do not, according to their ventilatory function status at age 14. It is also hoped to discover whether any particular level of ventilatory function plus or

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minus a particular respiratory disease symptom leads to a greater risk of development of future respiratory disease.

This work is being supported, partly by funds from the Department of Clinical Epidemiology and Social Medicine, partly by the work of the Kent County Council Health Department and partly by a grant in aid from the Ministry of Health. Facilities for analysis of the data are being provided under the Endowed Research Time Scheme of I.B.M.

Table 1

Schedule of Examinations for Kent schoolchildren in
selected areas

Year of examination	Date of birth					
	1959/60	1958/9	1953/4	1952/3	1949/51	1948/50
1964		*1 Age 5		*1 Age 11		*1 Age 14
1965	*2 Age 5		*1 Age 11		*1 Age 14	
1966						*5 Age 16
1967				*2 Age 14	*5 Age 16	
1968			*2 Age 14			*5 Age 18
1969				*5 Age 16	*5 Age 18	
1970		*2 Age 11	*5 Age 16			*5 Age 20
1971	*2 Age 11			*5 Age 18	*5 Age 20	
1972			*5 Age 18			
1973		*3 Age 14		*5 Age 20		
1974	*3 Age 14		*5 Age 20			

*1 = 1st examination at age 5, 11 or 14

*2 = 2nd examination at age 11 or 14

*3 = 3rd examination at age 14

*5 = Examination of selected samples at ages 16, 18 or 20

Table 2

Approximate estimates of numbers of schoolchildren
to be examined by area, age and sex

Age and sex	Aren				Total
	Rochester	Tonbridge	Cranbrook Tenterden Romney Marsh	Malling	
5 M F	752	356	550	634	2292
	706	332	560	578	2176
11 M F	778	320	612	684	2394
	796	328	590	638	2352
14 M F	912	374	744	852	2882
	1006	376	676	880	2938
Total M F	2442	1050	1906	2170	7568
	2508	1036	1826	2096	7466
	4950	2086	3732	4266	15,034

COUNTY OF KENT



REFERENCES

- Borough and Urban District Boundaries as shown on the 1901 Census
- Parish Boundaries as shown on the 1901 Census
- Parish Boundaries as shown on the 1901 Census
- Parish Boundaries as shown on the 1901 Census

KENT COUNTY COUNCIL
SCHOOL HEALTH SERVICE

HEALTH DEPARTMENT,
COUNTY HALL,
MAIDSTONE.

As you will know, there have been dramatic reductions in the amount of illness and loss of life caused by such diseases as diphtheria, scarlet fever, tuberculosis and poliomyelitis. However, there still remain other diseases which might be similarly controlled if more was known about them, and their causes. In this country, chronic bronchitis is responsible for a very high proportion of sickness and deaths, and the Chief Medical Officer of the Ministry of Health in his Annual Report for 1962 laid stress on the need for research so that all possible means of prevention and early treatment may be used.

The Kent Education Committee has agreed to take part with medical research workers from St. Thomas's Hospital, London, in an enquiry which it is hoped will help to throw more light on this problem and I would be most grateful for your help.

It is proposed that when the routine medical examination of children in certain selected areas takes place the parents should be asked to complete a questionnaire, a copy of which I enclose marked "Form A", and that each child should be given a simple breathing test at the time of the actual examination. It is most important that every child, whether healthy or otherwise, should be included and I do trust that you will be willing to help by completing the form and returning it to your child's school for the information of the medical officers.

The results will be followed up at subsequent medical examinations and in a small number of cases, whether the child is healthy or otherwise, further enquiry may be made at a later date, probably after one year. These enquiries will be carried out by staff attached to the School Health Service and if you are asked I hope you will be willing to help in this way also.

A. ELLIOTT,
Principal School Medical Officer.



tel ext 218
our ref 3
your ref
date

Appendix 3

A Elliott MD DPH County Medical Officer
Principal School Medical Officer

Dear Sir/Madam,

Survey of Respiratory Diseases in School Children

The Kent Education Committee has agreed to join with St. Thomas' Hospital, London, in an investigation into the possible causes of chronic bronchitis by obtaining information at the routine medical examination of school children in selected parts of Kent. In addition to the usual examination, the school doctor will give each child a simple breathing test.

It is important for the success of this investigation that every child is included, and I am, therefore, asking you to help by completing the enclosed Forms 'C', and distributing the enclosed explanatory leaflets and collecting the enclosed Forms 'A' when they have been completed by the parents of the children due for routine medical examination. Children in the eight-year-old age-group are not included in the enquiry.

As the examination of children in the survey may take a little longer than usual, you should ask the medical officer how much time (s)he would like allowed for each child.

I should like to take this opportunity of thanking you for the trouble you are taking to help in this investigation.

Yours faithfully,

A Elliott

Principal School Medical Officer.

KENT COUNTY COUNCIL - ST. THOMAS' HOSPITAL

Form A1

SCHOOLCHILD SURVEY

Initial Form

*This form is to be completed by mother, father or guardian
All information will be treated in strict confidence*

OFFICE
USEPLEASE ANSWER ALL QUESTIONSTo be completed at School

Surname of schoolchild _____

First names _____

Sex Boy ☐ Girl ☐Name and address of school: _____

Date questionnaire given: _____

To be completed by parent or guardian

Date of birth of schoolchild _____

Place of birth of schoolchild (town, village and county) _____

Present address _____

Occupation of father: Position _____
 Industry _____

Is mother working?

Yes

No

If YES, Part time

Yes

No

Full time

Yes

No

Names and years of birth of brothers and sisters.

Name

Year of birth

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Please turn over

Name and address of general practitioner _____

1. How many attacks of sore throats has he/she had in the past 12 months? _____

2. Has he/she suffered from a running ear in the past 12 months? YES/NO

3. If YES, how often? _____

4. Has he/she ever had whooping cough? YES/NO

5. If YES, age at illness? _____

6. Has he/she ever had asthma? YES/NO

7. If YES, age at first attack? _____

8. Has he/she ever had pneumonia? YES/NO

If YES, how often? _____

Age at first attack _____

9. Has he/she ever had bronchitis? YES/NO

If YES, how often? _____

Age at first attack _____

10. Has he/she ever had any other serious chest trouble? YES/NO

If YES, how often? _____

What did the doctor call it? _____

Age at first attack? _____

11. Has he/she ever been admitted to hospital? YES/NO

If YES, why was this? _____

How often? _____

Age? _____

Name of hospital(s) _____

12. Has he/she ever had his/her tonsils out or cut? YES/NO

If YES, age this was done? _____

13. Has he/she ever had eczema? YES/NO

If YES, age this started? _____

14. Has he/she ever had her adenoids out or cut? YES/NO

If YES, age? _____

15. Has he/she ever had sinus infection and/or treatment? YES/NO

If YES, how often? _____

Age started? _____

KENT COUNTY COUNCIL - ST. THOMAS' HOSPITAL

Form B
OFFICE
USE

SCHOOLCHILD SURVEY

This form is to be completed by Medical Officer at school medical examination

1. Name of child _____
2. Sex: Male/female
3. Name and address of school: _____

4. Date of birth: _____
5. Date of examination _____
6. Has questionnaire A been returned? YES/NO
7. Standing height _____
8. Weight _____
9. Ears

	Right	Left
Discharge	YES/NO	YES/NO
Drum perforation	YES/NO	YES/NO
Scarring of drum	YES/NO	YES/NO
Not examined	Wax Otherwise	Wax Otherwise
10. Tonsils

Not removed
Remnants
No tonsillar tissue
11. Peak Expiratory Flow Rate
 1. _____ 2. _____ 3. _____ 4. _____ 5. _____
12. Has the child understood the test and co-operated? YES/NO
 Please ask the following questions, emphasising that it will not be used for disciplinary purposes
13. Do you smoke? YES/NO

If YES, how many cigarettes do you smoke per week? _____
If NO, have you ever smoked? YES/NO
If YES, do you smoke any cigarettes at all now? YES/NO
If YES, how many cigarettes do you smoke per week? _____
14. School absence record in past year (not for 5 year olds)

No. of days absent _____
No. of days present _____
No. of days in current school year _____

KENT COUNTY COUNCIL - ST. THOMAS' HOSPITAL

Form C

SCHOOLCHILD SURVEY

To be completed at each school before each medical examination

Names of children in age-group for medical examination School _____	Medical Examina- tion YES/NO	If NO, reason for refusal	Question- naire comp- leted & returned YES/NO	No. of days		
				In present school year	Absent	Present
1. _____						
2. _____						
3. _____						
4. _____						
5. _____						
6. _____						
7. _____						
8. _____						
9. _____						
10. _____						
11. _____						
12. _____						
13. _____						
14. _____						
15. _____						
16. _____						
17. _____						
18. _____						
19. _____						
20. _____						

The School Medical Officers involved
in the survey

Dr. E. Allen	Cranbrook, Tenterden
Dr. R.G. Brennen	Rochester
Dr. J.T. Cecil	Tonbridge, Cranbrook, Malling
Dr. D.J. Dennison	Tonbridge, Cranbrook
Dr. D.J. Gilbert	Romney Marsh
Dr. E. Griffith	Rochester
Dr. C. Harrison	Rochester, Malling
Dr. W.H.N. Heavens	Rochester
Dr. W.P. Holmes	Tonbridge
Dr. E.K.J. Paterson	Malling
Dr. D.G. Sharvelle	Malling
Dr. M.M. Urquhart	Rochester

SCHOOLCHILD SURVEY

NAME

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