ARMY HEALTH TRAINING AND PRACTICE

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Introduction

To select military personnel in accordance with high physical and mental standards, to subject them to long and expensive training, and then to dissipate a large portion of this human treasure in non-productive man-hours wasted through preventable ill-health is uneconomical to say the least, and, when manpower resources are limited the issue is nationally vital.

In order to conserve military manpower, therefore, it is necessary to make a deep and special study of the soldier and his environment with a view to applying all available knowledge to the promotion and maintenance of his health. The study and practical application of the various military, medical, scientific, engineering, sociological and other disciplines involved is brought together under the heading of "Army Health". The successful practice of Army Health calls for team-work in which everyone in the Army, irrespective of regiment, corps, trade, grade, mode of employment and rank, has a part to play. Members of the "team," in this context, may be considered according to the following broad groups; medical officers and other personnel of the Army Medical Services; formation commanders; unit commanders, subordinate leaders of all kinds and administrators; all ranks, in the context of personal health discipline.

Medical Officers and other R.A.M.C. personnel. Despite the fact that the commander is responsible for the health of his troops, the experience of the last one hundred years or so have taught us that good health administration springs from an alert and watchful medical service. The task of medical officers, in this context, is summarised in paragraph 22(a) of REGULATIONS FOR THE MEDICAL SERVICES OF THE ARMY (1954) which is as follows:-

The duty of recommending to general and other officers commanding, verbally or in writing, any precautionary or remedial measures, relating to stations, garrisons, barracks, hospitals, movements, food, transports, encampments, billets, bivouacs, dress physical training, drills, duties and all other matters that may, in their opinion, conduce to the preservation of the health of the troops.

This is our "charter", and the following important points concerning it require stressing:- First, it applies to **all** medical officers, irrespective of mode of employment. Second, this "charter" is not merely permissive; it goes much further than giving us the power to advise. It is obligatory; and charges us with a **duty** from which there is no escape. If we give advice only when asked to do so we are failing in our duty. And, third, our advice does NOT need to be backed up by any form of authority in the shape of rules and regulations, other than the one quoted above. That phrase " which in **their opinion** " is all important.

To prepare medical officers to discharge this duty is no mean task, particularly as the majority of newly qualified doctors have but the scantiest knowledge or understanding of the principles of preventive medicine. The postgraduate courses at the Royal

Army Medical College and at the Army School of Health make good this basic deficit in our system of medical education; but they cannot provide a real understanding of the soldier and his environment which can be gained only by service with troops. Therefore, continuation training supervised by senior administrative medical officers, with the assistance of army health specialists, is necessary.

Health Appreciations. If he is to discharge the duty placed upon him by Regulations for the Medical Services of the Army, the medical officer must become skilled in the art of making health appreciations. The subject of health appreciations of overseas theatres has already been studied at a previous DGMS Exercise and is dealt with in Medical Directorate Bulletin No. 21 dated September, 1962. Important though that type of appreciation may be, there is another more common type of health appreciation which medical officers should be making, as an almost continuous and day-to-day routine of disciplined thought, concerning the troops for whom they have medical responsibilities. This is, in fact, the first stage of a process which ends with the giving of advice by medical officers on all matters that may, "**in their opinion**", conduce to the preservation of the health of the troops. A recommended discipline of thought for such an appreciation is as follows:-

a. *The troops themselves*

- (1) Selection and PULHEEMS. (2) Vaccination state.
- (3) Chemoprophylaxis. (4) State of physical fitness.
- (5) Work, training, rest, recreation, rehabilitation.
- (6) Morale, mental health, motivation, man-management.
- (7) Health education and personal health discipline.

b. *Their Basic Requirements*

- (1) Water and food. (2) Clothing and personal equipment.
- (3) Accommodation, for both living and working.
- (4) Facilities for personal hygiene. (5) Waste disposal.

c. *Climate*

- (1) Extremes of heat. (2) Extremes of cold. (3) High altitudes.

In relation to the above:- (1) Specialised accommodation, clothing, equipment and supplies. (2) Specialised personal behaviour. (Personal and communal health discipline).

d. *Communicable diseases*

- (1) Transmitted by INGESTION.
(Faeces and urine, fingers, food, fluids, flies, fomites).
- (2) Transmitted by CONTACT.
(Personal hygiene, fomites, infested water, infested earth).
- (3) Transmitted by AIR-BORNE organisms.
(Accommodation, ventilation, dust suppression, fomites).
- (4) Transmitted by ARTHROPODA.
(Clothing, nets, insect repellent, miticide, insecticide, anti-arthropod sanitation).

Check in relation to the above:- Vaccines; Chemoprophylaxis; Camp siting.

e. *Special occupational hazards*

- (1) "Industrial". (Workshops).

- (2) Handling of certain weapons and equipment. (Vehicles, rockets, radio-activity).
- (3) Responsibility for the health of others (e.g. cooks).

The medical officer should survey the population for which he is responsible and, under each of these headings, he should be able to detect points concerning which, in his opinion, action is required to preserve the health of troops. A separate appreciation, on similar lines, can be made for families if these are included. The nature of the appreciation will vary according to the area of responsibility of each medical officer. The general practitioner or R.M.O. will be concerned with the entire range as it affects the units and family groups from which his patients are drawn. The hospital medical officer ought to know the facts concerning the living and working conditions of his patients so that he can say when they are fit to return to those conditions and so that he can advise on employability. In addition, he may perceive valuable clues regarding matters which, in his opinion, need action by persons outside the hospital to preserve the health of the troops. The military surgeon will have a special interest in injuries and their prevention, and all hospital medical officers will be concerned with the prevention of hospital infections, that is to say, the practice of preventive medicine within the hospital confines. Army health specialists must, of course, be expert in the entire field. They must co-ordinate the work of all concerned and, in so doing, provide the link between the hospitals, general practitioners and military units. Since specialists in Army Health advise administrative medical officers, it is up to the latter to ensure that the appropriate advice is translated into executive action by commanders. This is perhaps the most vital link of all, because experience has shown that the implementation of health advice is the most difficult part of the whole process.

Formation commanders. It is probably true to say that all senior commanders (Brigade commanders and above) are well aware of the importance of military hygiene, and that they have learned the appropriate lessons by personal observation, experience and commonsense, to say the least. If they appear to pay scant attention to the subject it is likely to be due to their preoccupation with other things combined with a belief that all under their command are properly trained in the subject and are acting accordingly. Hence the need for senior administrative medical officers to keep their commanders well briefed in army health matters and to give timely advice at appropriate moments early enough to forestall trouble. It is important to ensure that health matters are considered at the earliest possible stage in the planning of military operations.

Unit commanders, subordinate leaders and administrators. In every post-war era there comes a time when there are even battalion commanders who have not learned lessons of military hygiene by personal experience. That time has arrived already, although there is, as yet, no evidence to suggest that this situation has had any deleterious consequences. However, it is a potential danger which reinforces the need for ever-watchful medical officers sufficiently well-informed and competent to impress upon their combatant colleagues that the practice of military hygiene is an essential military skill without which no leader or administrator can discharge his responsibilities, at any level in the Army.

It is greatly to be regretted that, for various reasons, the courses at the Army School of Health for the more junior regimental officers have had to be discontinued. The amount of time available for the study of army health during officer cadet training is extremely

limited and, since these under training have had little or no service with troops at that stage, they are unable to link theory with personal practical experience. This means that regimental officers must learn army health in their units, and this they will do only if the Medical Services provide the impetus through senior medical officers assisted by army health specialists and R.M.O's. The curriculum of instruction for all below brigade commander level should be according to the headings of a routine health appreciation described above. In fact, they should be taught to make these appreciations themselves, to make decisions accordingly and to check the practical details that flow therefrom.

All Ranks. The fourth area of responsibility is applicable to all ranks because it relates to personal health discipline. Individual soldiers must be able to look after themselves; they must know the personal hygiene of life in weapon-pits, fox-holes, bivouacs, camps, barracks and on the move. It is clear that their leaders and administrators should practice the same expertise, for they also have the responsibility of setting a good example besides thinking in terms of the community as well as individuals.

Future Progress and Special Problems

Before considering future progress and special problems we must remind ourselves of the need to consolidate progress already made and to ensure that the old lessons we have learned do not become obscured and forgotten in our desire for progress. There is a very real danger, in peace, that vital but hum-drum matters relating to such things as ordinary camp sanitation and personal hygiene are considered of no great account. In addition, we must ensure that we concentrate on matters which are of **military** importance, instead of becoming side-tracked by matters which, although of great medical interest, have little or no bearing on the ability of a military commander to achieve his aim; an appreciation of priorities in this respect is the hall-mark of the military doctor.

Medical causes of manpower wastage and non-effectiveness. A great deal of progress has already been achieved in maintaining the health of troops. The annual rates both for admission to hospital and for men unfit for duty for medical reasons have steadily declined. But, for obvious reasons, the smaller these rates become the more difficult it is to achieve further improvements.

HOSPITAL ADMISSIONS AND NON-EFFECTIVES

Year	Total Admissions (Annual rate per 1,000 strength)	(Daily Non-effectives Number per 1,000 strength)
1921	649.9	41.2
1931	467.7	23.6
1947	321.4	21.9
1957	200.3	9.7
1962	191.9	8.6
1964	187.8	10.0

No modern military force should ever be hampered to its task by epidemic typhus, scrub typhus, malaria, plague, yellow fever, smallpox, cholera or enteric.

SOME CLASSICAL DESTROYERS OF ARMIES

Disease	Mainstay of Prevention
EPIDEMIC TYPHUS	RESIDUAL INSECTICIDES
SCRUB TYPHUS	MITICIDES
PLAGUE	RESIDUAL INSECTICIDES, VACCINE, CHEMOPROPHYLAXIS
MALARIA	CHEMOPROPHYLAXIS
CHOLERA	WATER PURIFICATION AND VACCINE
SMALLPOX	VACCINE
ENTERIC	VACCINE

Nevertheless, in times of war it may not be easy to protect military forces against these diseases, particularly when there are epidemics in civilian populations. Also, there is an ever-present possibility that organisms may develop resistance to chemoprophylactic and chemotherapeutic agents, that arthropods may develop resistance to these insecticides which are at present effective, and that the appearance of new strains may defeat our vaccines. There is, therefore, no room for complacency; the threat of these diseases must never be forgotten. Communicable diseases which might cause embarrassment are schistosomiasis, dengue fever, sandfly fever, trypanosomiasis, leishmaniasis, and perhaps the arbor-virus encephalitides.

POTENTIAL CAUSES OF EMBARRASSMENT

Disease	Mainstay of Prevention
POLIOMYELITIS	VACCINE
SCHISTOSOMIASIS	DISCIPLINE IN RELATION TO INFESTED SURFACE WATER
DENGUE FEVER	} VECTOR CONTROL, BOTH PERSONAL & COMMUNAL
SANDFLY	
LEISHMANIASIS	} CHEMOPROPHYLAXIS ? (FURTHER RESEARCH REQUIRED)
TRYPANOSOMIASIS	
ARBOR ENCEPHALITIS	

But casualties due to these conditions are unlikely to be so numerous as to prevent the attainment of a military aim, particularly when medical intelligence is good and present knowledge applied.

Current problems of man-power wastage. None of the diseases listed above are interfering to any serious extent with military efficiency at present, therefore we must look elsewhere for opportunities of improving the health and efficiency of the Army.

CURRENT PROBLEMS

Communicable Diseases	Mainstay of Prevention
THE DYSENTERIES	} HYGIENE OF FOOD, WATER AND WASTE DISPOSAL
GASTROENTERITIS	
INFECTIOUS HEPATITIS	
SKIN INFECTIONS	
RESPIRATORY INFECTION	
LEPTOSPIROSIS	
Non-communicable Conditions	} APPLIED ERGONOMICS AND DISCIPLINE FLUID AND ELECTROLYTE BALANCE SPECIAL CLOTHING, TRAINING AND DISCIPLINE PERSONNEL SELECTION AND MAN-MANAGEMENT
ACCIDENTAL INJURIES	
HEAT ILLNESSES	
COLD INJURIES	
PSYCHIATRIC CONDITIONS	

This we may consider to be our "short-list" of conditions which provide scope for the reduction of current man-power wastage. Every one of these is a difficult nut to crack because, at present, there is not a specific prophylactic remedy for any of them. With the exception of leptospirosis, prevention is concerned with the practice by all ranks of the ordinary routine military hygiene applicable to life in camps, barracks and in the field.

Infectious hepatitis is a special problem for two reasons. First, because those afflicted are unfit for full duty for a considerable time. And second, because the incidence tends to be higher in officers, with a consequent greater impairment of military efficiency of the units and formations concerned. Although the attainments of even higher standards of hygiene in relation to food, water, waste-disposal and so forth ought to result in successful control, the prophylactic use of gamma-globulin, as currently practised by the Americans, merits serious consideration if only for key personnel.

Leptospirosis is another special problem which currently exercises the minds of those

responsible for the health of troops operating in the jungles of the Far East, and it must be admitted that we have not yet found the answer to it. There are so many different strains of leptospire that protection by a vaccine does not seem a practicable proposition at present. Neither is there any effective chemoprophylactic agent which can be recommended for routine mass administration, particularly as the incidence of the disease is, in fact, quite low. Since the main portal of entry of infection appears to be the skin, some suitable barrier to this would be an ideal answer. But the use of impermeable protective clothing is obviously impracticable, and to recommend such would be nonsense. One must hope, therefore, for the development of a leptospire repellent or even a leptospiricide which can be applied either to the skin or to the clothing, perhaps to both. But, until a suitable skin barrier is devised, all we can do is to ensure that, by proper water purification, the disease is not contracted by ingestion, and to advise troops to avoid whenever possible the areas most likely to be infected—that is to say, muddy river banks.

Of the non-communicable conditions, accidental injuries are by far the most universal and important cause of man-power wastage. To reduce the incidence there are two distinct courses of action open to us. To prevent accidents which might result in injuries we need to know a lot more about the causes of accident in our community and the circumstances involved. This is a study in which practically every medical officer can participate, irrespective of his speciality or mode of employment. Prevention of the injuries themselves involves the study of the mechanics of injury causation with a view to developing either protective clothing, equipment or personal behaviour which will prevent injury even though an accident does occur. It is probable that our surgeons are in the best position to contribute to advances in this field.

Positive Health

So far, this paper has been confined almost entirely to the prevention of man-power wastage due to disease and injury. Nevertheless, it must be remembered that the responsibilities and interests of army doctors go far beyond this. It is their duty to advise on everything which will improve the quality of health itself. This involves physical and mental training and development, studies of diet and energy expenditure, techniques of measurement of physical and mental capacity and methods of improving human performance. It is therefore necessary to take a positive attitude towards health and not to concentrate solely on the prevention of disease.

Summary and Conclusion

FIRST, we must consolidate the successes already achieved through the use of insecticides, chemoprophylaxis and vaccines, by continued training in their correct use, so that the lack of an immediate threat by the diseases against which they protect us does not lead to complacency.

SECOND, by constant research and investigations we must seek new insecticides and chemoprophylactic drugs which can be held in reserve in case resistance problems become really serious.

THIRD, we must strive to raise still further the standard of ordinary military hygiene in relation to food, water, waste, disposal, accommodation and personal health discipline. Above all, we must avoid an attitude of *laissez faire* regarding these matters which is apt to supervene insidiously in piping times of peace.

FOURTH, we must pay due regard to mental hygiene and avoid complete preoccupation with physical health.

FIFTH, we must seek answers to special problems posed, for example, by accidental injuries, infectious hepatitis and leptospirosis.

SIXTH, we must not be content merely with the prevention of disease, but must seek to improve the quality of health itself.

FINALLY, every medical practitioner who gains a commission in the R.A.M.C. accepts a preventive medicine mission; it is not a matter to be left entirely to specialists in Army Health.

Honorary Consultants to the Army in Scotland

Mr. A. Logan, M.A., M.B., F.R.C.S., F.R.C.S.(Edin.), has been appointed Honorary Consultant to the Army in Scotland from 25th January, 1966, as successor to Mr. B. W. Dick.

HONORARY CONSULTANT

The death occurred on the 25th July, 1965, of Dr. Thomas Forrest Cotton, M.D., F.R.C.P., Honorary Consulting Cardiologist to The Queen Alexandra Military Hospital 1931 to 1951.

Order of St. John of Jerusalem

Recent promotions and appointments include:

As Commander (Brother), Lieutenant-General Sir Robert Drew, K.C.B., C.B.E., Q.H.P., F.R.C.P.

As Serving Brother, Lieutenant-Colonel D. G. C. Whyte, D.S.O., R.A.M.C.(Retd.).

Society of Occupational Medicine Prize 1965

Major A. G. Harwood, M.B., B.S., D.P.H., D.T.M. & H., shared this prize awarded at the end of a three months course at the London School of Hygiene and Tropical Medicine with another outstanding student.

Society of Apothecaries

Sir Arthur Porritt, Bt., the immediate Past Master, has been elected to succeed the late Mr. Alan Brews as Master of the Worshipful Society of Apothecaries of London.